



# ISLE OF MAN ENGINEERING & MANUFACTURING STRATEGY: PHASE ONE REPORT

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# EXECUTIVE SUMMARY

The Isle of Man (IOM) engineering and manufacturing (E&M) sector is an established sector on the Island, generating high value jobs and an alternate income stream. With many of the companies having long historical roots on the Island or being owned by passionate residents, the IOM is a strong exporter into high value sectors such as defence, energy, automotive and aerospace. In recent years, the future of the E&M sector has been uncertain with unstable job numbers and lower national income growth. With the IOM Government historically investing considerable sums of money into the sector, it has raised questions about the financial viability of maintaining an E&M sector on the Island. As part of this Phase One Report, Gemserv and IfM Engage have collated large portions of primary and secondary evidence regarding the performance of the IOM's E&M sector. Despite numerous challenges facing the Island, the E&M sector has remained remarkably resilient with several high performing companies that are successful in highly competitive markets. Despite these core strengths, a range of deep-rooted and structural challenges are present which result in significant growth opportunities being missed. Encouragingly, these challenges aren't impossible to overcome, creating potential for an E&M strategy in alignment with IOM's existing Economic Strategy which emphasises on actively investing in skills, productivity, infrastructure, businesses and sectors such as E&M to deliver a strong and diverse economy. Evidence from the comparator analysis shows that policies can be enacted to build upon the Island's strength and mitigate the weaknesses. Highlighted below are the key takeaways that emerged from the analysis, which are further reinforced with evidence throughout the body of this report.

**Despite the higher cost base of doing business on the Island, the IOM possesses a strong baseline of existing E&M businesses and a network of entrepreneurs.** While many businesses acknowledged the higher costs of doing businesses on the Island, these are already built into the business models of the firms. In fact, many of the businesses operate in higher value and niche sectors which command a price premium. Therefore, the IOM Government should be ensuring the businesses maintain their quality, innovation and unique value as these are much more important competitive drivers when compared to pricing management.

**The high quality of life, taxation benefits and access to decision makers are unique selling points for the Island and should be leveraged more to attract businesses, people and high net worth individuals.** A key differentiator for the IOM compared to competitor regions is the higher quality of life on offer, especially compared to some other UK regions with strong manufacturing sectors. The low levels of personal taxation, despite the recent increases, is still a significant pull for individuals. Interestingly, the excellent track record on low crime rates and personal safety are a considerable draw for young families, a key demographic the Island is trying to attract, and should be promoted more actively.

**Access to talent was the resounding business constraint emerging from the Island's E&M sector.** Access to talent was a consistent theme that emerged from both larger businesses and smaller firms on the Island. Most felt entry level skills for operating staff were well covered by University College Isle of Man but middle management talent is incredibly hard to acquire. In some cases for larger companies this is inhibiting growth but for smaller companies the lack of talent and plans for succession put the businesses at genuine risk.



**Length of decision making to acquire or expand facilities was a major concern for foreign direct investment**

**opportunities and smaller businesses on the Island.** Numerous companies looking to establish a manufacturing or R&D footprint on the Island have expressed frustration in accessing new facilities. The time it takes for government to make a decision has meant investment decisions have been lost to competitor regions and the Island has failed to benefit from tangible growth opportunities. For more established businesses, some raised the expansion and rationalisation of existing sites as an issue, but this was a less prominent concern.

**Access to finance was a common constraint across both established and new businesses.** The nature of financial support, both from government and private capital was cited as a key barrier for growth. Some established businesses praised the Financial Assistance Scheme for providing flexible support during the COVID-19 pandemic and evidence shows the E&M sector has benefited from financial assistance. However, many perceived the current financial assistance scheme to be too cumbersome, which contains onerous requirements on job creation, favours existing companies doing business as usual and not taking risks on smaller, more higher growth potential companies. Moreover, the fact grants are issued after all spending has occurred means it further incentivises larger businesses compared to those smaller businesses who need to de-risk investments.

**Innovation and new products emerge solely from the private sector and should be further encouraged and**

**incentivised by the IOM Government.** The IOM doesn't have any universities or innovation centres to generate or share knowledge. Many comparator regions possess these institutions which can turn academic knowledge into high growth start-ups, or act as centres of excellence that attract more businesses and skills into the region. Given that unique value and innovation is a key order winning criteria (enables businesses to win work) for many of the businesses, fostering relationships with UK institutions, or creating a knowledge sharing institution within the IOM is key to maintaining competitiveness.

**The opportunities for the E&M sector to supply into the clean tech sector emerged from both entrepreneurs on the Island but also existing businesses that supply into energy, defence and aerospace sectors.**

Through the extensive stakeholder engagement and company research it became evident the IOM's E&M sector has a window of opportunity to capitalise on the growing clean technology sector. Many entrepreneurs exist on the Island with intellectual property (IP), businesses and ideas that fit into the broader clean technology sector and could grow on the Island with the right support. Moreover, many of the established businesses on the Island see the decarbonisation of manufacturing as a key opportunity and already supply into sectors that are on the cusp of a low carbon transition. These industries will be relying on their existing value chains (which is the IOM E&M sector) to supply them with components suitable for the transition.

**The Island can profitably manufacture products but it's more suited to luxury / high end products where the**

**logistical challenges are less pronounced.** The Phase One review has reinforced the belief that the IOM is more suited to lower volume, niche products that don't have to meet strict just-in-time requirements. The Island can manufacture products at volume, but these tend to be smaller, lightweight products that can easily be shipped and stored in the UK to meet stringent just-in-time requirements.



**The Island's natural strength across digital technologies and sectors could be utilised to improve the performance of E&M businesses and forge new opportunities in digital manufacturing.** Through engagement with the businesses on the Island, it became evident the level of digitalisation across the businesses is varied. An immediate step would be to provide mentorship support for the sector to understand quick ways to implement cost-effective digital technologies to improve productivity and business performance. A longer term strategy would be to work with Digital Isle of Man on a joint digital manufacturing strategy and identify tangible growth areas that benefit both sectors.

**Consolidation of operations from multinational firms away from the IOM is a major threat to the future of the E&M sector.** The global economic climate of rising costs and protectionism puts many manufacturing sites at risk unless they can demonstrate profitability and strategic importance. The largest threat facing the IOM E&M sector is the multinational companies owning the largest businesses on the Island deciding to move away from the Island. The 4-5 largest companies are foundational to the sector, employing many people and generating value. Understanding the strategic direction of these firms and how the IOM plays into this strategic vision will be vitally important to anchor these firms to the IOM.

**Growth opportunities could be missed in the future unless decision-making processes versus competitor regions are shortened.** Unless the IOM Government works in a co-ordinated way across departments to overcome issues regarding energy planning and access to facilities, new business opportunities will be lost to competitor regions. Despite the attractive offer the IOM offers in terms of personal benefits and company taxation, nations/regions such as Wales, the Midlands and Northwest are more proactive in offering incentive packages to foreign direct investment and new start-ups.

**A range of potential growth initiatives have been identified as part of Phase One that need to be verified as part of Phase Two.** Based on the strengths, weaknesses, opportunities, and threats identified in Phase One, 28 potential growth initiatives have been highlighted. These fall into four broad categories based on the type of intervention mechanism whether it's an offensive, defensive, strengthening or survival initiative.





# STUDY OVERVIEW

## RATIONALE FOR THE STUDY

The core engineering and manufacturing (E&M) sector in the Isle of Man (IOM) consists of approximately 1,200 employees and 120 businesses<sup>1</sup> contributing around 1.5% of the IOM's gross domestic product (GDP)<sup>2</sup>. The products typically manufactured are high value, low volume, serving niche markets, where the vast majority of products are exported. The E&M sector currently manufacture for a broad range of markets including energy, aerospace, automotive, telecommunications, medical, pharmaceuticals and consumer products. In addition, the E&M sector tends to be relatively more productive with high job creation multipliers for adjacent sectors such as logistics and local amenities versus other service-based sectors.

However, in recent decades the sector has experienced a downward trend due to competition with lower cost jurisdictions and the significant growth and reward of financial services and digital sectors which are likely more attractive to potential employees<sup>3</sup>. This downward trend was further intensified due to a combination of external pressures such as COVID-19 and Brexit. The most recent business confidence survey by the Economic Recovery Group (now the Economic Strategy Board) identified that approximately a quarter of businesses expected the outlook to worsen after the transition period of Brexit and COVID-19, with specific concerns raised for the E&M sector<sup>4</sup>. To ease this pressure, the IOM Government stepped in during the COVID-19 pandemic creating specialised assistance for the E&M sector via Appendix 13 of the Financial Assistance Scheme (FAS). This support helped the larger players navigate the significant downturn experienced in the aerospace sector, avoid consolidation away from the Island and ultimately prevented major job losses. Nonetheless, the generous support offered during this period has raised questions around the long term viability of actively sustaining an E&M sector. Though one of the largest recipients of financial awards during the COVID-19 period, the E&M sector represents a small proportion of GDP and jobs. Reviewing the level of support for the E&M sector also operates within a wider context of persistent inflation, higher energy costs and wage inflation, alongside an increase to a higher rate of personal income tax announced recently<sup>5</sup>. Therefore, it is important that any future support for the E&M sector is grounded in an evidence-based growth strategy. Support for the sector is, however, consistent with IOM's existing economic strategy, which notes a need to support and develop the producing sector on the Island, which includes low-volume/high-value manufacturing and specialised engineering businesses<sup>6</sup>.

The Department for Enterprise and Business Isle of Man recognises that the Island's E&M sector is at a critical point in time. A decision must be made on whether the IOM Government presides over a period of managed decline for the E&M sector, or, works with industry to define a new growth strategy. The inherent strengths of the IOM and its E&M sector could present an opportunity for the Island to diversify its economy, provide a wider range of employment

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<sup>1</sup> Economic Advisory (2024). Economic Dashboard. Available at:

<https://app.powerbi.com/view?r=eyJrIjoiMWY4NzE4NjItMTVhNi00NTkxLTkxMTctN2JmM2I2MDBlOTYwIiwidCI6IjM5ZAwODM2LWVvMTItNDhkYS05Yik3LTU5NGQ4MDhmMDNINSIsImMiOiI9>

<sup>2</sup> Statistics Isle of Man (2024). National Income 2021/22. Available at: [https://www.gov.im/media/1382559/2021\\_2022-national-income-report.pdf](https://www.gov.im/media/1382559/2021_2022-national-income-report.pdf).

<sup>3</sup> Business Isle of Man (2022). Business Isle of Man Programme 2023. Available at:

[https://www.businessisleofman.com/media/bdkdyik4/4548\\_iom\\_dfe\\_-\\_business\\_iom\\_-\\_programme\\_aw\\_web\\_v2-1.pdf](https://www.businessisleofman.com/media/bdkdyik4/4548_iom_dfe_-_business_iom_-_programme_aw_web_v2-1.pdf)

<sup>4</sup> Isle of Man Government (2021) Economic Recovery Group Business Survey September 2020. Available at: [2020-09-economic-recovery-group-business-survey-september-2020.pdf \(gov.im\)](https://www.gov.im/media/1382351/2020-09-economic-recovery-group-business-survey-september-2020.pdf)

<sup>5</sup> Isle of Man Government (2024). Pink Book 2024-25. Available at: <https://www.gov.im/media/1382351/pink-book-2024-25-final-website-compressed.pdf>

<sup>6</sup> Isle of Man Government (2022). Our Island, Our Future: Isle of Man Economic Strategy. Available at: [https://www.gov.im/media/1377113/iom-gov-economic-strategy-22-32\\_web.pdf](https://www.gov.im/media/1377113/iom-gov-economic-strategy-22-32_web.pdf)

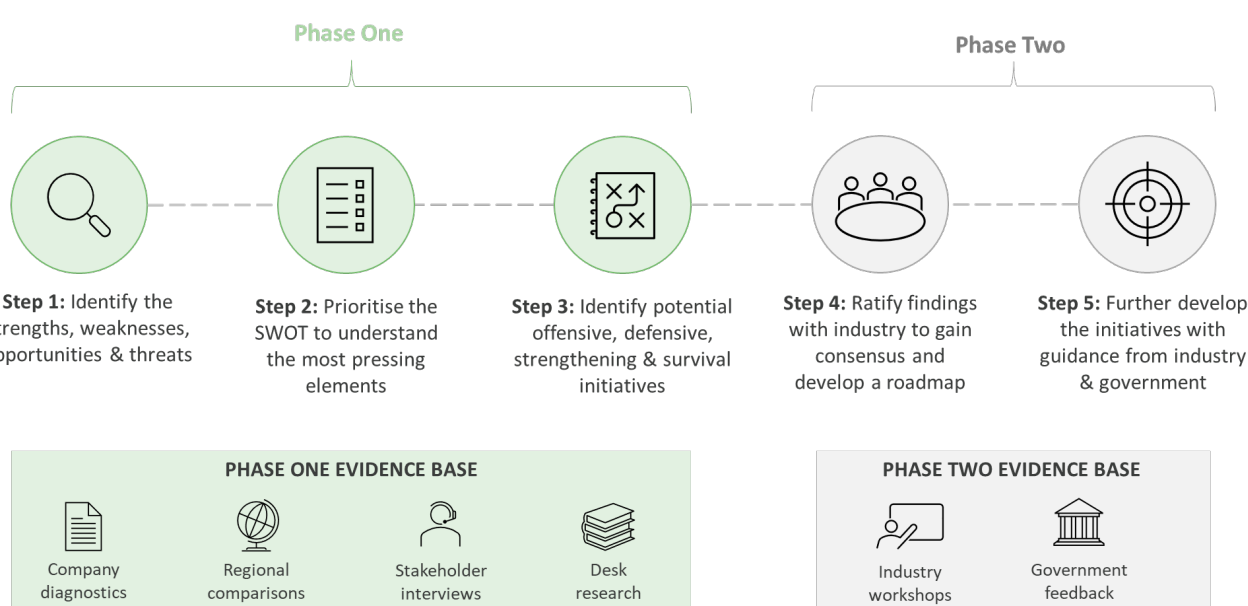


options and increase the export of high value goods to global customers. To help determine a potential strategy and its feasibility, the Department for Enterprise has enlisted Gemserv and IfM Engage to conduct a strategic review of the Island's E&M sector and devise a 10-year strategy for the sector, as outlined in the recent Business Isle of Man Programme 2024<sup>7</sup>.

## STUDY OVERVIEW AND REPORT STRUCTURE

The 10-year strategic review aims to provide an honest assessment of the Island's current E&M sector. It then uses the baseline assessment to generate an ambitious growth strategy that is cognisant of the Island's strengths, weaknesses, potential opportunities and likely threats. **Figure 1** provides an overview of the key steps used to assess the E&M sector alongside the evidence base that supports the findings in each step.

**Figure 1: Overview of the evidence base and key steps involved in Phase One & Two of the E&M strategy**



Phase One establishes the evidence base, drawing on information from multiple sources to create a detailed strengths, weaknesses, opportunities, threats (SWOT) of the current capabilities of the IOM's E&M sector. A wide variety of sources have been used to inform the SWOT, prioritise the most pressing elements and identify potential growth initiatives. These sources include:

- **Bespoke company diagnostics** were conducted by IfM Engage who identified key order winning criteria and constraints for 10 businesses. IfM Engage delivered individual reports to each business alongside a sector summary that's included in this report.
- **Regional comparisons** and definition of key metrics relevant for businesses making investment decisions were completed by Gemserv. An indicative cost comparison between regions was carried out using five business archetypes. In addition to quantitative metrics assessing the competitive nature of the IOM, Gemserv conducted a high-level policy review to understand how competitive the IOM's offer versus comparator nations is.

<sup>7</sup> Business Isle of Man (2023). Business Isle of Man Programme 2024. Available at: <https://www.businessisleofman.com/media/tozpfyll/business-iom-programme-2024-edit-v4.pdf>



- **Stakeholder interviews** were conducted by Gemserv with key figures from government departments, smaller businesses who were not involved in the company diagnostic and other business organisations.
- **Desk research** carried out by both Gemserv and IfM Engage was used to augment the primary research, provide case studies, and understand the wider IOM policy context and broader E&M trends.

Now the baseline position has been established, Phase Two will collaborate with industry to develop a 10-year strategic roadmap. It is acknowledged that government will only be prepared to invest if there is the right return, which is highly dependent on where investment is directed and the response of businesses – and as such, it is vital to develop a common understanding of the areas where support is needed and of the willingness of government and businesses to mutually commit to an approach. Underpinning this 10-year strategic roadmap will be an action plan that provides additional detail, including stakeholders' preferred growth initiatives. The purpose of this report, however, is to articulate the findings from the baseline review conducted in Phase One. As such, the report structure mirrors the evidence gathering process.

The [first section](#) is dedicated to understanding the current E&M sector on the Island. Using key statistics from the IOM Government combined with the project team's evidence gathering, the section provides an overview of the key company types and differences between the more established companies versus the network of smaller companies. This section also challenges the current boundary conditions of IOM's E&M sector and looks to the UK as an example of how broad and far-reaching the definition of the E&M sector can be.

The [second section](#) provides key input from the individual company diagnostic reports conducted by IfM Engage. While most of the output generated in this stage was confidential with the individual companies, a selection of anonymised insights are provided in key areas. The first chart indicates the most common order winning criteria and constraints across the 10 businesses. The second chart highlights the average gross value added (GVA) of each manufacturing company, a metric not collected by Statistics Isle of Man or Treasury. The final chart represents whether the companies perceive the Five Grand Challenges for manufacturing as potential opportunities or imminent threats<sup>8</sup>.

The third and fourth sections focus on comparing the IOM with key comparator regions. [The third section](#) highlights relevant metrics that indicate how attractive the business environment is in the IOM versus some selected comparator regions and nations. Example metrics include energy prices, wages, industrial land costs and level of skills and innovation funding present within a jurisdiction. An indicative overall cost comparison is presented for five business archetypes, showing the relative position of the IOM to other regions. [The fourth section](#) then looks at the policies each region or nation has in place to make the business environment more favourable. These include access to universities and R&D institutions, subsidies for machinery and Capital Expenditure (CAPEX) alongside policies to support the growth of SMEs or reduce energy costs.

The [fifth section](#) then takes all the data gathered during the research process and provides a high-level scoring of the manufacturing and innovation capabilities on the Island. Using the smart specialisation format championed by IfM Engage<sup>9</sup>, the first part assesses the IOM's ability to generate, diffuse and absorb knowledge across industry and

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<sup>8</sup> World Economic Forum (2023) The Future of Industrial Strategies: Five Grand Challenges for Resilient Manufacturing. Available at: [https://www3.weforum.org/docs/WEF\\_The\\_Future\\_of\\_Industrial\\_Strategies\\_2023.pdf](https://www3.weforum.org/docs/WEF_The_Future_of_Industrial_Strategies_2023.pdf)

<sup>9</sup> IfM Engage (2016). Making 'smart specialisation' smarter: an industrial-innovation system approach. Available at: [https://www.ifm.eng.cam.ac.uk/uploads/Resources/Reports/Smart\\_Specialisation\\_Report\\_agritech.pdf](https://www.ifm.eng.cam.ac.uk/uploads/Resources/Reports/Smart_Specialisation_Report_agritech.pdf)



academia. The second part then evaluates what type of products are most suitable for manufacturing on the Island, taking into account inherent characteristics of the IOM.

The [sixth section](#) condenses all the evidence gathered during the Phase One process and identifies the key strengths, weaknesses, opportunities and threats for the IOM. Each of these SWOT elements are then prioritised using a bespoke scoring method, with potential offensive, defensive, strengthening, survival and enabling growth initiatives identified that address various elements of the SWOT. It should be noted that **the growth initiatives identified in Phase One are still emerging findings** and will be formalised during Phase Two. A successful E&M strategy relies on industry co-creating it and while the evidence-base that the project team has gathered is compelling, it's no substitute for getting cross-industry buy-in.

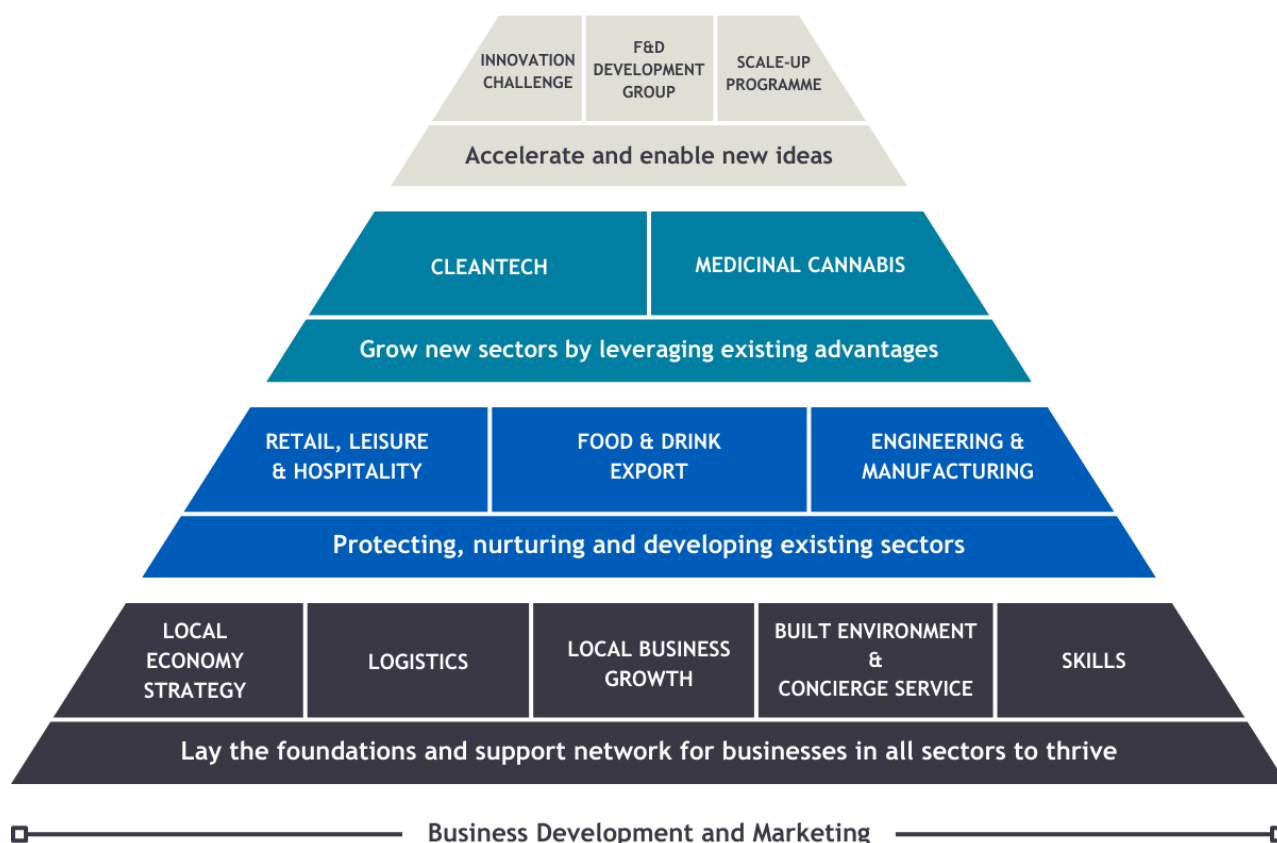


# 1. UNDERSTANDING THE E&M SECTOR IN THE ISLE OF MAN

## 1.1. AN OVERVIEW OF ENGINEERING AND MANUFACTURING (E&M) IN THE IOM

As part of the Isle of Man's Economic Strategy<sup>10</sup>, a range of sectors were identified as crucial for growing the Island's economy. The E&M sector falls under the producing category alongside other sub-sectors such as biomedical, food and drink and medicinal cannabis. The responsibility for setting the strategic direction of the E&M sector sits within Business Isle of Man, an executive agency within the Department for Enterprise of the IOM Government. As part of the recent 2024 Programme, Business Isle of Man reiterated that the E&M sector is one that requires protecting, nurturing and developing (see **Figure 2**).

**Figure 2: Key sectors identified as part of Business Isle of Man's Programme 2024**



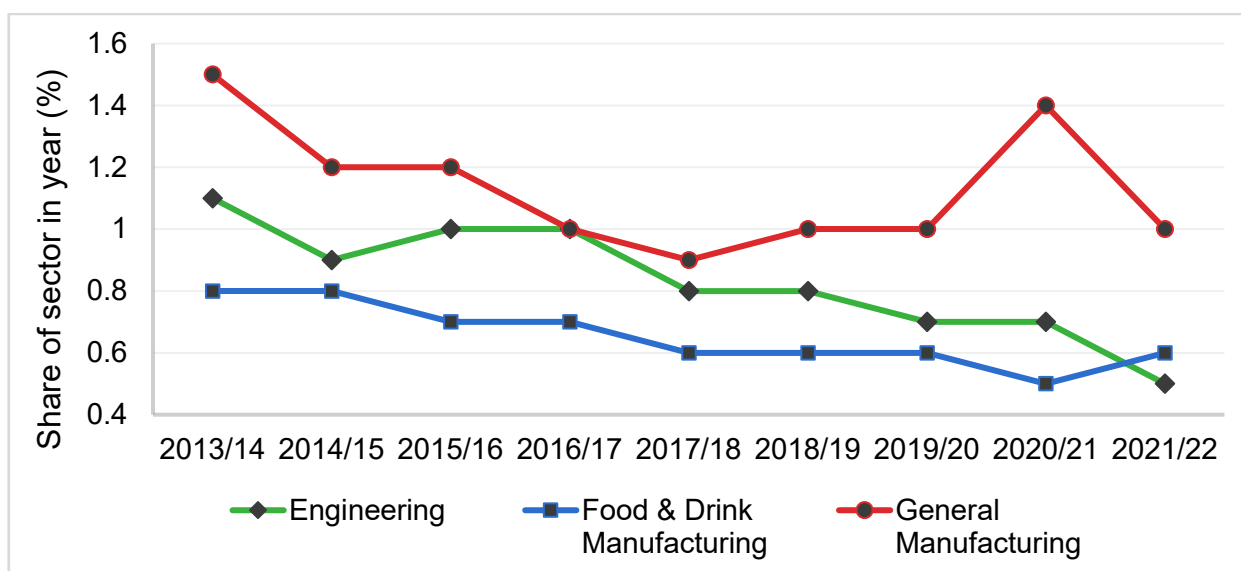
The following section provides an overview of the historic and current economic performance of the E&M sector using multiple data sources across several government departments. The purpose is to convey the current state of the sector versus other sectors of the wider economy. The first metric is the economic contribution of the E&M sector to the wider IOM economy. Data from the annual National Income reports provides a decade long view on the E&M sector

<sup>10</sup> Isle of Man Government (2022). Our Island, Our Future: Isle of Man Economic Strategy. Available at: [https://www.gov.im/media/1377113/iom-gov-economic-strategy-22-32\\_web.pdf](https://www.gov.im/media/1377113/iom-gov-economic-strategy-22-32_web.pdf)

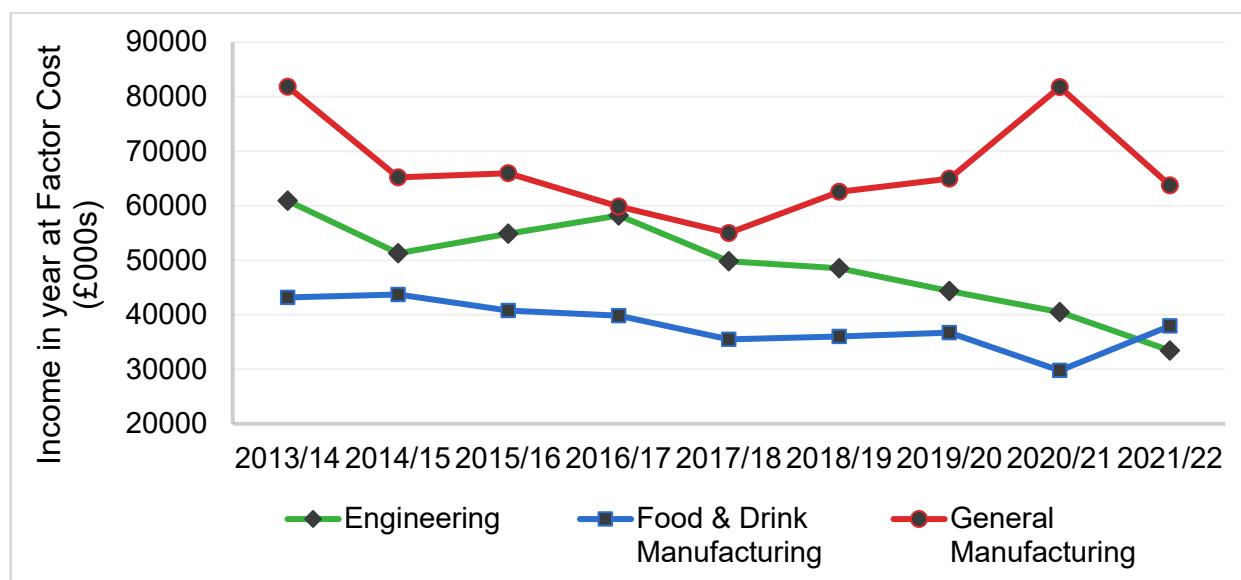


performance. **Figure 3** highlights that in 2013/2014 the percentage of national income attributed to the E&M sector was 2.6% (3.4% when including food and drink). In 2021/2022, the percentage share of the E&M sector had contracted to 1.5% of national income (2.1% when including food and drink). The engineering sub-sector has witnessed a steady decline since 2016/2017, falling below food and drink manufacturing for the first time in 2021/22. On the other hand, general manufacturing witnessed a rapid decline from 2013/2014 onwards hitting a low point in 2017/2018, however from 2018/2019 the sector gathered momentum hitting a considerable peak in 2020/2021.

**Figure 3: % of IOM sourced income for manufacturing sub-sectors<sup>11</sup>**



**Figure 4: National income for manufacturing sub-sectors, constant prices (2023£)<sup>12, 13</sup>**



<sup>11</sup> Data sources: Isle of Man Cabinet Office, Isle of Man National Income 2013/14-2021/22 (2015-2024). Available at: <https://www.gov.im/about-the-government/departments/cabinet-office/statistics-isle-of-man/national-income/>

<sup>12</sup> Current values converted to constant 2023 prices using CPI data (Isle of Man Cabinet Office, HISTORIC DATSETS JANUARY 2024 (2024). Available at: <https://www.gov.im/about-the-government/departments/cabinet-office/statistics-isle-of-man/inflation/>

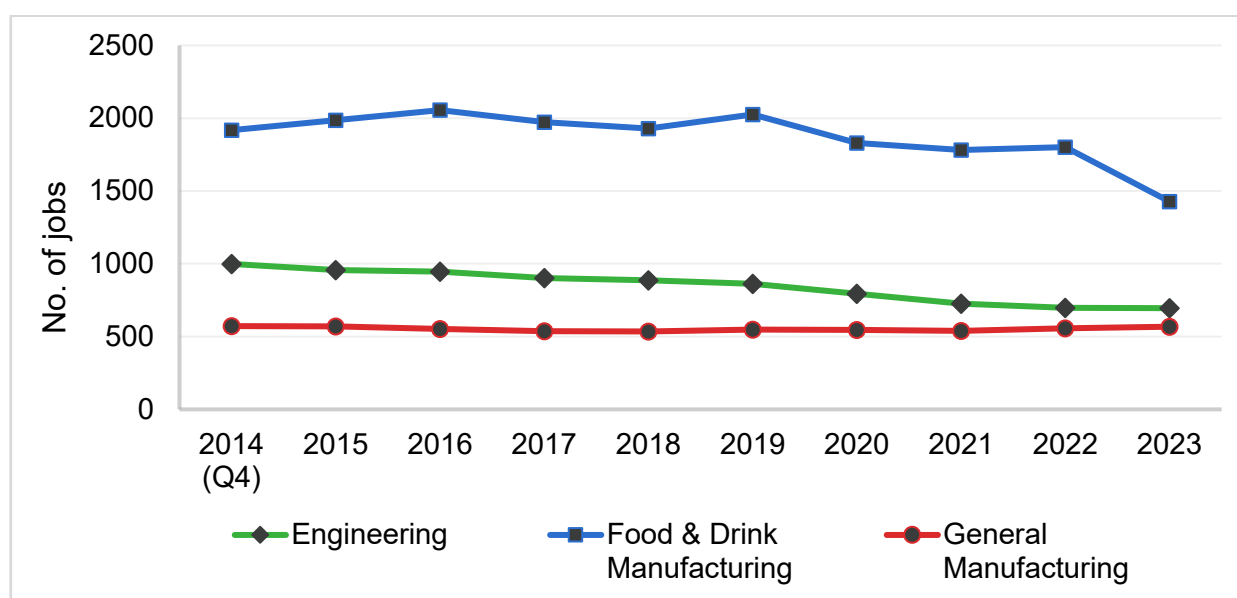
<sup>13</sup> Data sources: Isle of Man Cabinet Office, Isle of Man National Income 2013/14-2021/22 (2015-2024). Available at: <https://www.gov.im/about-the-government/departments/cabinet-office/statistics-isle-of-man/national-income/>



Interestingly the rise for general manufacturing isn't explained by a contraction in the wider economy. In fact, while the IOM-sourced income for the entire economy shrank by over 10% from 2019/2020 to 2020/2021, **Figure 4** demonstrates that national income measured in constant prices increased 25% for general manufacturing. Given the global downturn experienced in the aviation sector at that time, one possible explanation for this rise was the E&M sectors' support to the IOM and UK Government during the pandemic<sup>14</sup>.

Another important criterion for the Department for Enterprise and Treasury is the number of jobs the E&M sector creates in the economy. As none of the E&M businesses currently pay corporation tax, the key revenue generation mechanism for the Government is national insurance and income tax contributions. Data from Isle of Man's Economic Dashboard compiled by The Treasury shows a mixed picture for job creation (see **Figure 5**). In 2014, total jobs across engineering and general manufacturing totalled 1,571 (3,488 including food and drink). By 2023 total jobs across engineering and general manufacturing reduced by 20% totalling 1,264 (2,692 including food and drink). When looking at the two sub-sectors, the trends are markedly different. In the engineering sector, the total number of jobs have witnessed a steady year on year decline, reducing from 999 in 2014 to 695 in 2023, a 30% reduction in less than a decade. Total jobs in general manufacturing on the other hand have stayed remarkably stable with no change in almost a decade. Discussions with Business Isle of Man have raised that there may be misclassifications in the private sector jobs counts. For example, anecdotal evidence suggests that businesses such as car garages are included in the engineering sector while hotel and restaurants have been included for the food and drink sector. Business Isle of Man are, however, moving towards using standard industrial classification (SIC) codes to negate this issue in future, and to align with UK figures.

**Figure 5: Private sector jobs in manufacturing sub-sectors<sup>15</sup>**



<sup>14</sup> Department for Enterprise (2020). Isle of Man Engineering and Manufacturing businesses come forward to support Covid-19 response. Available at: <https://www.iomdfenterprise.im/news-events/isle-of-man-engineering-and-manufacturing-businesses-come-forward-to-support-covid-19-response/>

<sup>15</sup> Data source: Isle of Man Treasury, Economic Dashboard (2024). Available at:

<https://app.powerbi.com/view?r=eyJrIjojMWY4NzE4NjltMTVhNi00NTkxLTkxMTctN2JmM2I2MDBIOTYwIiwidCI6IjM5YzAwODM2LWVhMTItNDhkYS05Yjk3LTU5NGQ4MDhmMDNINSIsImMiOiI9>



With total jobs and national income data available, **Table 1** provides a national income per private sector job to indicate the level of labour productivity across the sectors. The E&M sector performs the best compared to other producing sectors like food and drink manufacturing, agriculture forestry and fisheries and mining, quarrying and construction. General manufacturing performs the best with a very high annual income per private sector job. While some way off digital orientated sub-sectors like eGaming and ICT, this suggests that job creation in E&M is worth more to the domestic economy than other producing sectors.

**Table 1: Sector comparison of national income and jobs<sup>16,17</sup>**

Sector	National Income – 2021/2022 (£'000)	Private sector jobs (Q1 2022)	Indicative annual national income per private sector job (£ per job)
Engineering	33,441	703	47,569
General Manufacturing	63,734	548	116,303
Food and Drink Manufacturing	37,971	1,766	21,501
Agriculture, Forestry and Fisheries	22,234	469	47,407
Mining Quarrying and Construction	10,043	3,392	2,961
eGaming	958,152	864	1,108,972
ICT	282,966	1,423	198,852

The next criteria for assessing the health of the E&M sector is the average weekly earnings across the sub-sectors. This metric indicates the relative attractiveness of the sector to both potential employees and The Treasury who would receive a higher rate of income via higher wages. **Figure 6** provides the real average weekly earnings for engineering, general manufacturing and food and drink, in 2023 prices. In 2022, the highest salaried sub-sector was general manufacturing where employees earn on average £867 per week. For engineering, weekly wages were lower at £739 per week with food manufacturing at £567 per week. Encouragingly all sectors have seen increased or similar real wages between 2017 (when individual data is available) and 2022. General manufacturing experienced an 11% increase in real average weekly earnings since 2017, food and drink manufacturing witnessed a 16% increase, while engineering saw a 1% increase. Nevertheless, despite growth, average weekly earnings for all three sub-sectors are below the IOM average for the whole economy which stood at £927 in 2022<sup>18,19</sup>.

<sup>16</sup> Values given in 2023 prices; current values converted to constant 2023 prices using CPI data (Isle of Man Cabinet Office, HISTORIC DATSETS JANUARY 2024 (2024). Available at: <https://www.gov.im/about-the-government/departments/cabinet-office/statistics-isle-of-man/inflation/>)

<sup>17</sup> Data source: Isle of Man Treasury, Economic Dashboard (2024). Available at: <https://app.powerbi.com/view?r=eyJrjoiMWY4NzE4NjltMTVhNi00NTkxLTkxMTctN2JmM2I2MDBlOTYwliwidCI6IjM5YzAwODM2LWVhMTItNDhkYS05Yjk3LTU5NGQ4MDhmMDNINSIsImMiOiI9Ij>; Isle of Man Cabinet Office, Isle of Man National Income 2013/14-2021/22 (2015-2024). Available at: <https://www.gov.im/about-the-government/departments/cabinet-office/statistics-isle-of-man/national-income/>

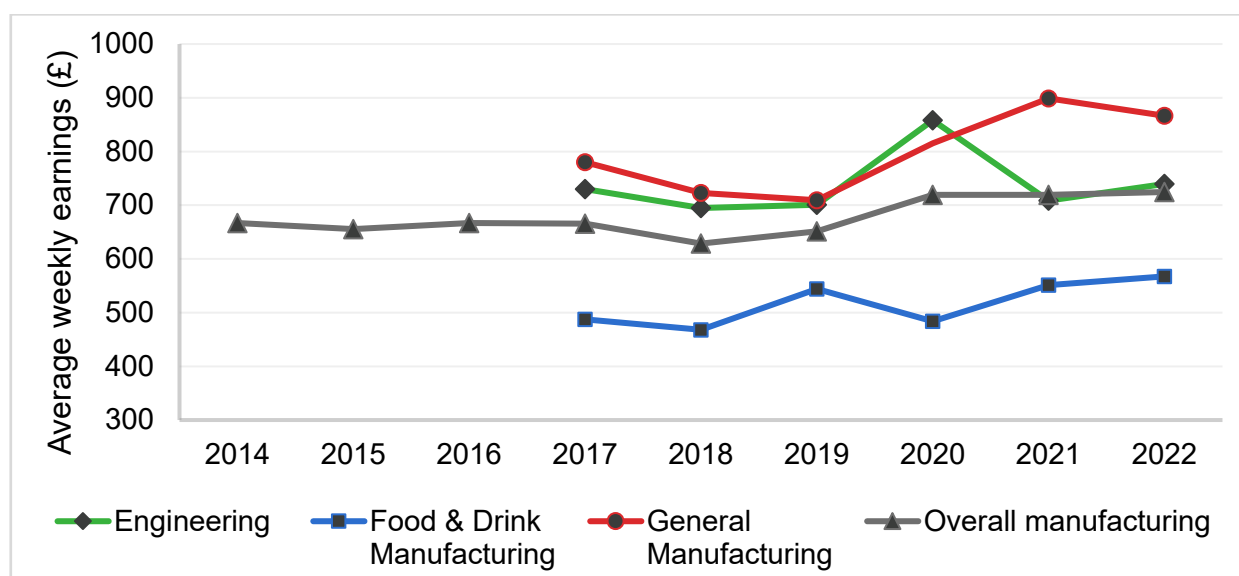
<sup>18</sup> Data source: Isle of Man Cabinet Office, Isle of Man Earnings Survey Reports 2014-2022 (2015-2023). Available at: <https://www.gov.im/about-the-government/departments/cabinet-office/statistics-isle-of-man/earnings-survey/>

<sup>19</sup> Value given in 2023 prices; current values converted to constant 2023 prices using CPI data (Isle of Man Cabinet Office, HISTORIC DATSETS JANUARY 2024 (2024). Available at: <https://www.gov.im/about-the-government/departments/cabinet-office/statistics-isle-of-man/inflation/>)



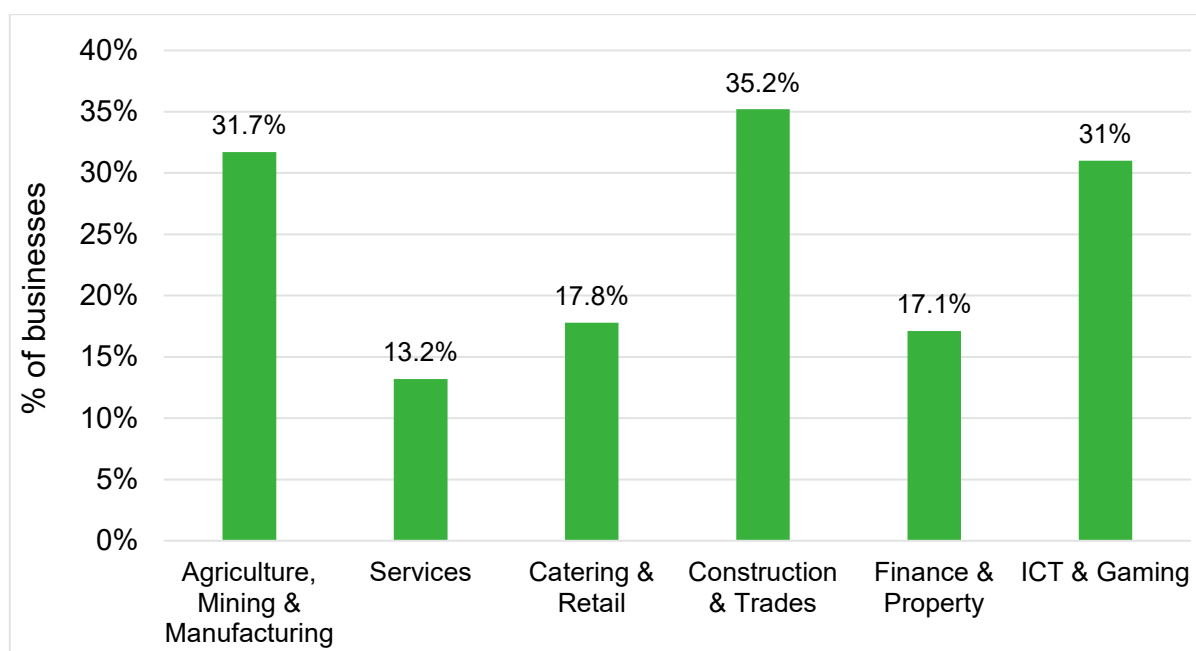


**Figure 6: Average weekly earnings for manufacturing sub-sectors, constant prices (2023£)<sup>20, 21, 22</sup>**



The final element explored in this section is industry's attitudes on the challenges facing their sector. These data points are sourced from the latest Business Confidence Survey which was last released during the COVID-19 pandemic in January 2021 (**Figure 7** and **Figure 8**).

**Figure 7: % of businesses experiencing skills shortages<sup>23</sup>**



<sup>20</sup> Current values converted to constant 2023 prices using CPI data (Isle of Man Cabinet Office, HISTORIC DATSETS JANUARY 2024 (2024). Available at: <https://www.gov.im/about-the-government/departments/cabinet-office/statistics-isle-of-man/inflation/>

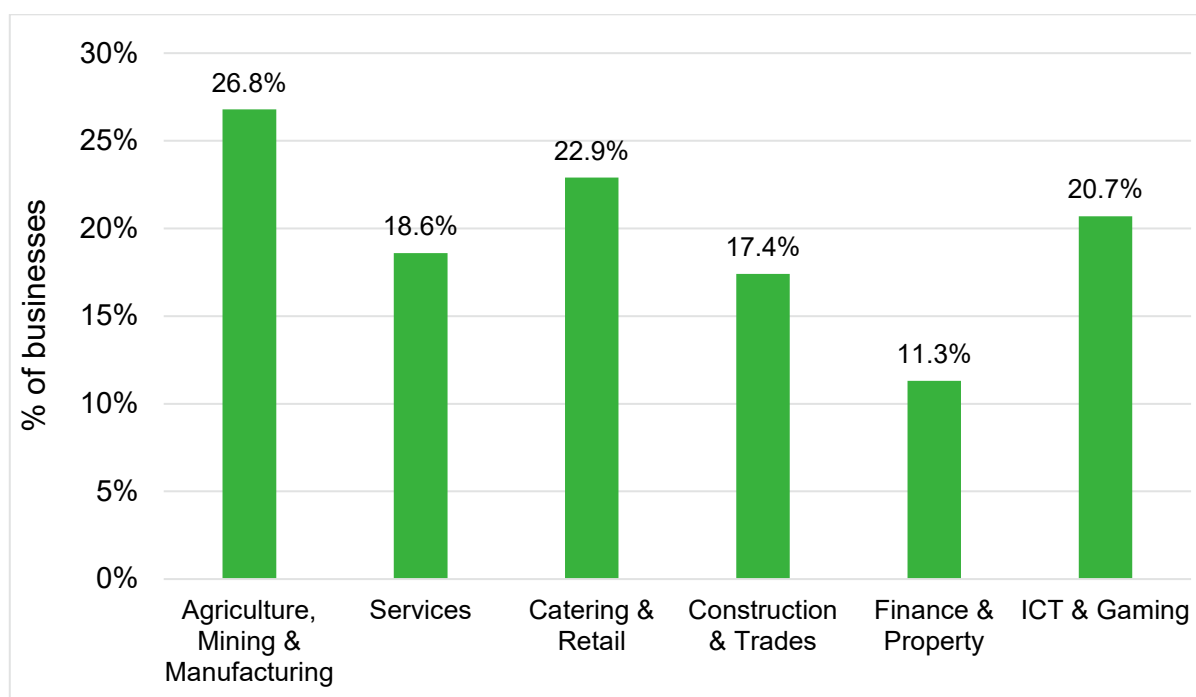
<sup>21</sup> Only overall manufacturing values available for 2014-2017, values for overall manufacturing 2017-2022 are estimated (average of sub-sector values), smoothed values calculated for General manufacturing in 2020 due to lack of data

<sup>22</sup> Data sources: Isle of Man Cabinet Office, Isle of Man Earnings Survey Reports 2014-2022 (2015-2023). Available at: <https://www.gov.im/about-the-government/departments/cabinet-office/statistics-isle-of-man/earnings-survey/>

<sup>23</sup> Cabinet Office (2021). Economic Recovery Group Business Survey. Available at <https://www.gov.im/media/1371883/2020-09-economic-recovery-group-business-survey-september-2020.pdf>



**Figure 8: % of businesses without adequate access to financing<sup>24</sup>**



**Figure 7** highlights a consistent issue raised in relation to the IOM which is access to talent and skills. 31.7% of manufacturing businesses (alongside agriculture and mining) felt that they were experiencing skills shortages. In fact, demand for engineering talent was in the top 5 of specified workers needed across the economy, highlighting the cross-sector importance of engineering skill sets.

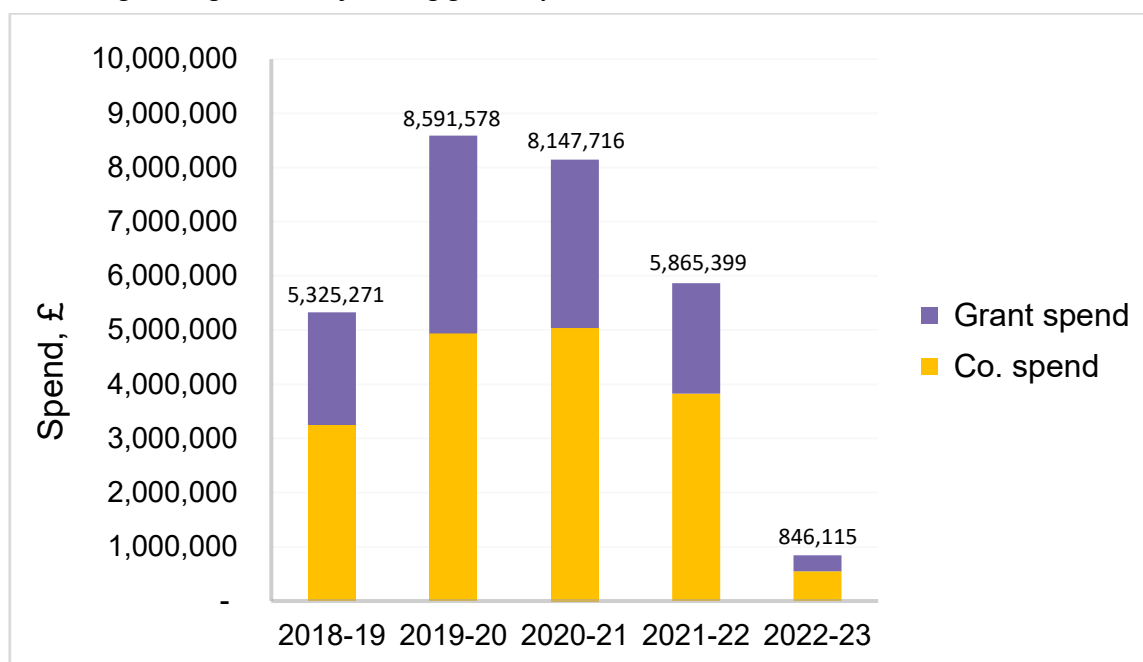
The data provided in **Figure 8** highlights that over a quarter of businesses within the manufacturing sector (alongside agriculture and mining) do not have adequate access to finance. Given the high proportion of small to medium enterprises (SMEs) within the manufacturing sector, this isn't surprising as cash flow is often a key issue for many small businesses. However, it could also indicate that access to investors, access to debt or the level of grant support on offer isn't adequate. It should be noted that this survey was also conducted before Appendix 13 was added to the FAS. Nevertheless, Appendix 13 was primarily targeted at larger businesses conducting R&D with evidence from stakeholder engagement pointing to lack of finance for SMEs.

The final part of this section looks at financial assistance in more detail, using E&M grant data provided by the Department for Enterprise. **Figure 9** shows the total E&M grant-related spend over the past 5 years, including the split of grant and company spend. The most notable feature here is the much lower spend in financial year 2022/23 compared to previous years – an 86% decrease from the value for 2021/22 and a 90% decrease from the high point in 2019/20. Some decrease was seen in other metrics at this time (food and drink private sector jobs, national income for engineering and general manufacturing sub-sectors), though the impacts of this lower spend may be more evident in future years. The proportion of total spend that is grants rather than company spend varies from 35% to 43% in this period.

<sup>24</sup> Cabinet Office (2021). Economic Recovery Group Business Survey. Available at <https://www.gov.im/media/1371883/2020-09-economic-recovery-group-business-survey-september-2020.pdf>



**Figure 9: IOM engineering and manufacturing grants Apr 2018-Mar 2023**

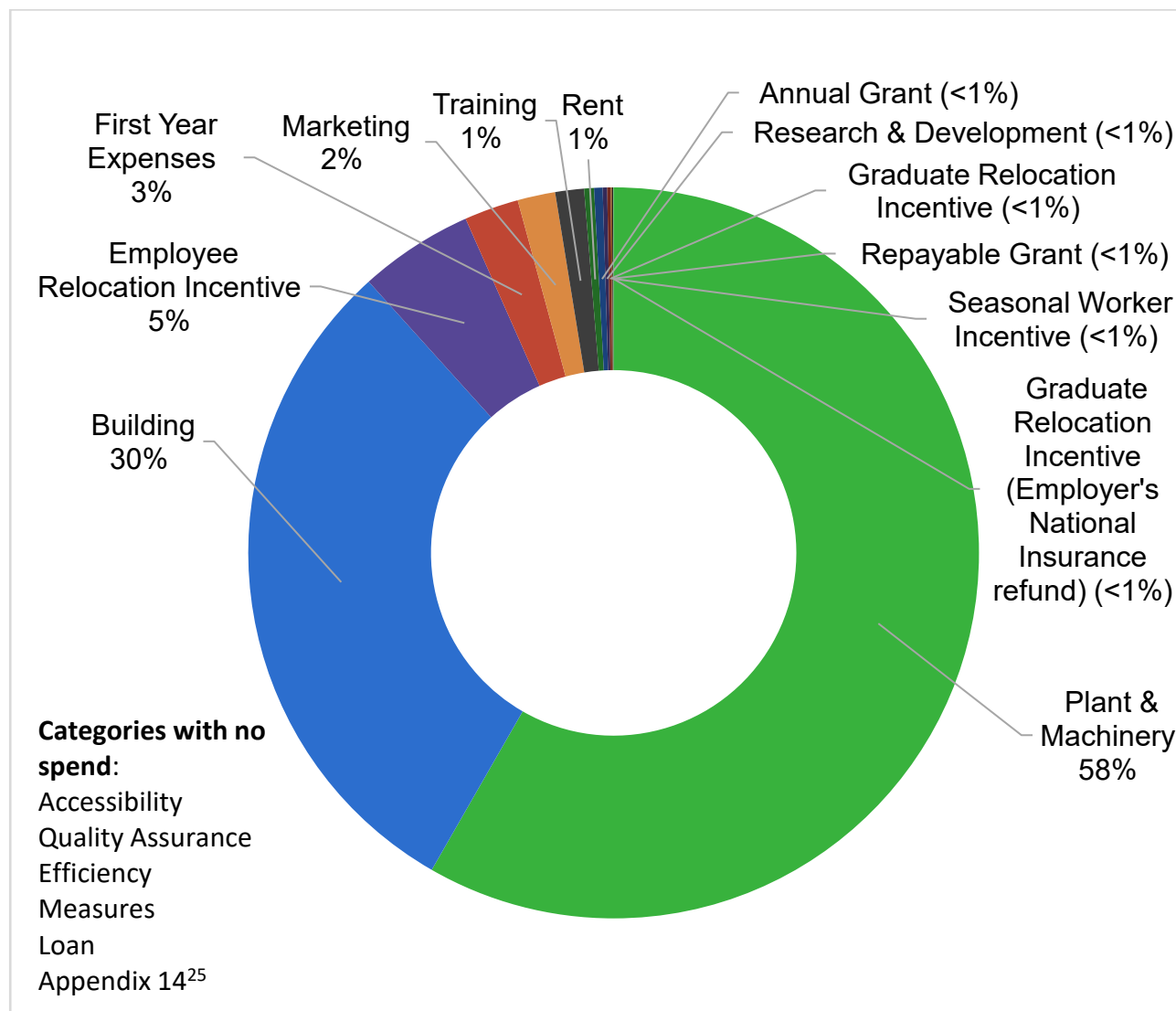


**Figure 10** shows the breakdown of funding types for all E&M grant-related spending in the Apr 2018-Mar 2023 period. The most significant areas of funding are plant & machinery and building, at 58% and 30% respectively. This is followed by Employee Relocation Incentive (ERI), first year expenses, marketing, training and rent, representing 5%-1% of spending each. Grant funding for plant, machinery and building costs is key as an enabler for E&M business to improve their operations, given the high capital cost of these developments; it therefore follows that these are the most significant areas of E&M funding.

Areas with less than 1% of spend include research and development – which is particularly notable considering the contribution that research and development funding can make towards a thriving engineering and manufacturing sector, as considered in the competitive scoring section of this report. It is also worth noting that this R&D spend arises from only the 2021/22 year in this period, highlighting a lack of intention to support this area consistently.



**Figure 10: IOM engineering and manufacturing grants (and company spend) Apr 2018-Mar 2023**



Within this initial assessment, it is difficult to make strong overall conclusions about the health of the sector, for example directly comparing the amount of spending to the performance of the sector, due to the importance of where spend is directed and collaboration with businesses. Phase two of this project provides an opportunity to ascertain the potential of certain policy initiatives through workshops between industry and government, gauging willingness levels on both sides.

<sup>25</sup> Appendix 14 relates to the Seasonal Worker Incentive, however is listed additionally as a separate category in IOM's grant data

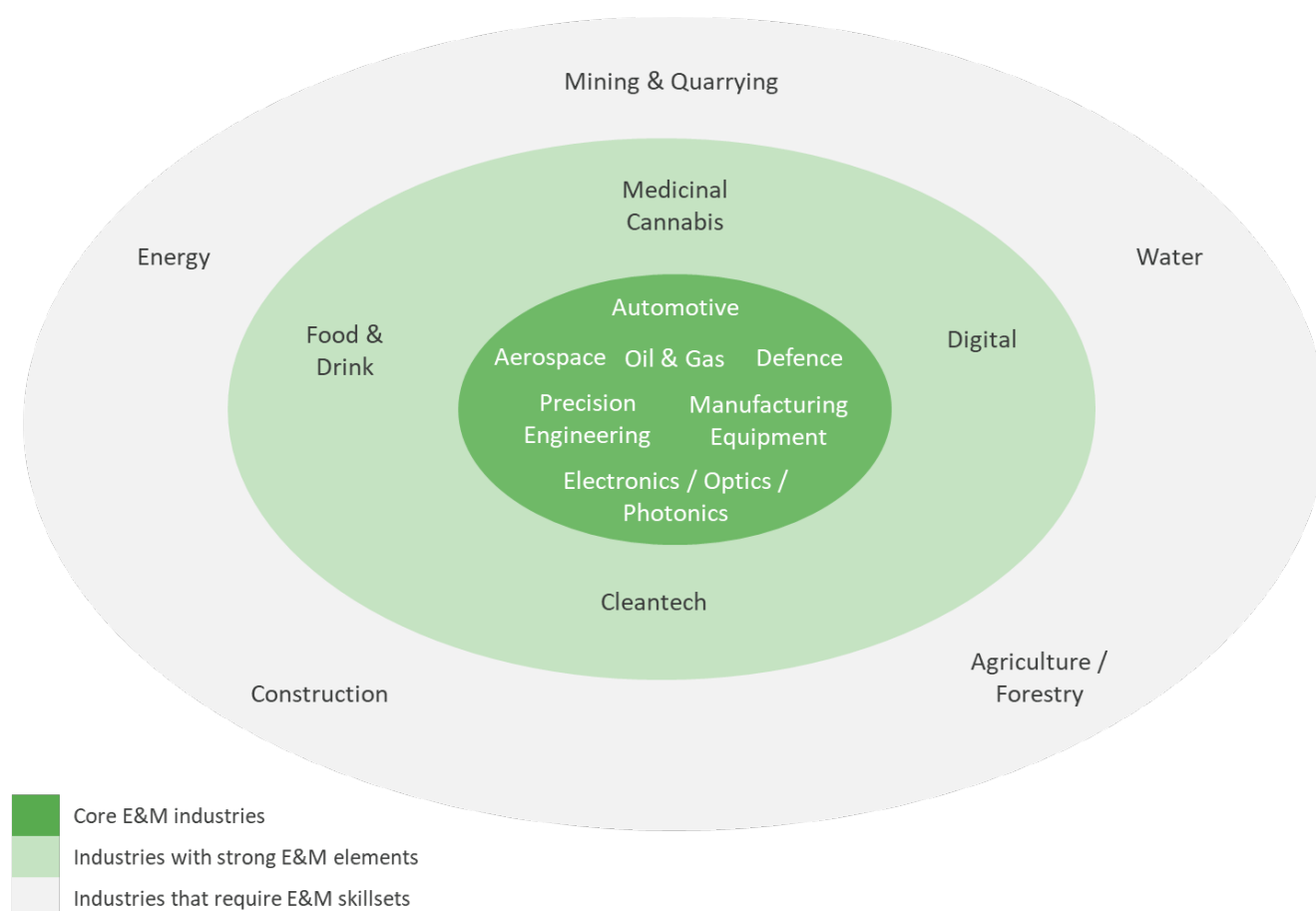


## 1.2. HOW THE IOM DEFINES ENGINEERING AND MANUFACTURING

It's evident from the several Business Isle of Man Programmes and the recent Our Island Plan that the definition of the E&M sector is subject to debate. This challenge isn't specific to the IOM, with sector research continually having to define boundaries<sup>26</sup>. As highlighted earlier, it was suggested that some of the E&M statistics may be capturing particularly non-relevant industries (such as car garages and hospitality businesses) which could distort company numbers, wage earnings and national income figures. For example, food and drink manufacturing is highlighted out but it's unclear in statistical methodologies notes whether consumer items, machine tool providers or digital engineering services are captured.

Perhaps a more important finding was that during the stakeholder engagement, it became apparent that a certain view had formed about what the E&M sector is on the Island and the role of engineering in the economy. Many associated the E&M sector with the larger multinational companies on the Island and the network of precision manufacturing companies. While this is an important subgroup, it underplays the scope of the E&M sector. **Figure 11** highlights a new way that can be used to contextualise the IOM E&M sector's influence and indicate how mechanisms intended to support the E&M sector have wider economic impact and relevance to a broader range of sectors. A brief description of each layer is provided below.

**Figure 11: A new way to articulate the importance of the E&M sector**



<sup>26</sup> For example, IfM Engage's UK Innovation reports undertake a definition process when providing insights to a particular sub-sector, e.g., Cambridge Industrial Innovation Policy (2024). UK Innovation Report 2024. IfM Engage. Institute for Manufacturing, the University of Cambridge. Available at: [https://www.ciip.group.cam.ac.uk/wp-content/uploads/2024/03/UK-Innovation-Report-2024\\_FINAL-20.03.24.pdf](https://www.ciip.group.cam.ac.uk/wp-content/uploads/2024/03/UK-Innovation-Report-2024_FINAL-20.03.24.pdf)



**Core E&M industries:** This inner circle represents the key industries and sectors typically associated with the IOM's E&M sector. These industries use manufacturing equipment to produce highly specified hardware that is intended for highly regulated or advanced sectors. A high proportion of their workforce possess engineering degrees or apprenticeships and are well versed in engineering practices such as lean manufacturing to improve efficiency and performance. Many of these companies must go through rigorous, often long, design and commercialisation processes to get from proof-of-concept through to production.

**Industries with strong E&M elements:** The middle circle represents those sectors that aren't immediately recognised as the IOM's E&M sector, but are strongly reliant on similar principles, skillsets, and machinery that the core E&M companies rely on. For example, while the IOM separates out cleantech from the E&M sector, many technologies essential for net zero require advanced manufacturing. Batteries, hydrogen, wind turbines, electric motors, electronics, and sustainable materials all rely on advanced engineering and manufacturing to be realised. These technologies also go through long cycles of development often associated with the core E&M sector. Similarly, medicinal cannabis and the food and drink sector also rely on processes or equipment similar to the core E&M sector and can benefit from the same principles of lean manufacturing or implementation of digital technologies. Finally, digital has been placed in this middle circle as many of the concepts and challenges the sector faces are akin to the E&M sector. These companies often adopt an engineering mind-set to problem solving and ultimately produce software, as opposed to hardware. Software products often go through the same development cycle of inception, proof-of-concept, and commercialisation, just at an accelerated pace.

**Industries that require E&M skillsets:** These industries are further removed from the E&M sector but still rely on the skillsets for certain activities. For example, energy and water will rely on maintenance and process engineers to ensure the smooth running of their operations. Adjacent producing sectors like mining and quarrying and agriculture will also rely on some capital machinery and a logistics infrastructure to transport their products. Thus, primary industries will face similar challenges such as access to skills, logistics and the external force of decarbonisation and industrial innovation.

The rationale for illustrating these similarities is that while the core E&M sector may only be a small proportion of current national income and job numbers, the way the Island measures E&M sector activity is politically important. Therefore, understanding the precise remit of the E&M sector and articulating that more widely to the business community, The Treasury and other sectors will help underscore the sector's importance. Phase 2 of this project involves the development of an E&M landscape taxonomy, supporting clarification of the sector with government and industry to enable the formation of a future strategy.

Additionally, aligning with E&M definitions used elsewhere can be valuable for some purposes. For IOM, aligning more closely with the UK SIC codes (outlined in **Table 2**) would not only enable better UK comparator regional analysis but help illustrate the breadth of the E&M sector and potential opportunities. As noted previously, Business Isle of Man are working on this transition at present, however it is unclear when this approach will be adopted by Statistics Isle of Man and Treasury for better data classification.



**Table 2: List of UK SIC code divisions under the manufacturing group<sup>27</sup>**

UK Manufacturing SIC codes
Division 10: Manufacture of food products
Division 11: Manufacture of beverages
Division 12: Manufacture of tobacco products
Division 13: Manufacture of textiles
Division 14: Manufacture of wearing apparel
Division 15: Manufacture of leather and related products
Division 16: Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
Division 17: Manufacture of paper and paper products
Division 18: Printing and reproduction of recorded media
Division 19: Manufacture of coke and refined petroleum products
Division 20: Manufacture of chemicals and chemical products
Division 21: Manufacture of basic pharmaceutical products and pharmaceutical preparations
Division 22: Manufacture of rubber and plastic products
Division 23: Manufacture of other non-metallic mineral products
Division 24: Manufacture of basic metals
Division 25: Manufacture of fabricated metal products, except machinery and equipment
Division 26: Manufacture of computer, electronic and optical products
Division 27: Manufacture of electrical equipment
Division 28: Manufacture of machinery and equipment n.e.c.
Division 29: Manufacture of motor vehicles, trailers and semi-trailers
Division 30: Manufacture of other transport equipment
Division 31: Manufacture of furniture
Division 32: Other manufacturing
Division 33: Repair and installation of machinery and equipment

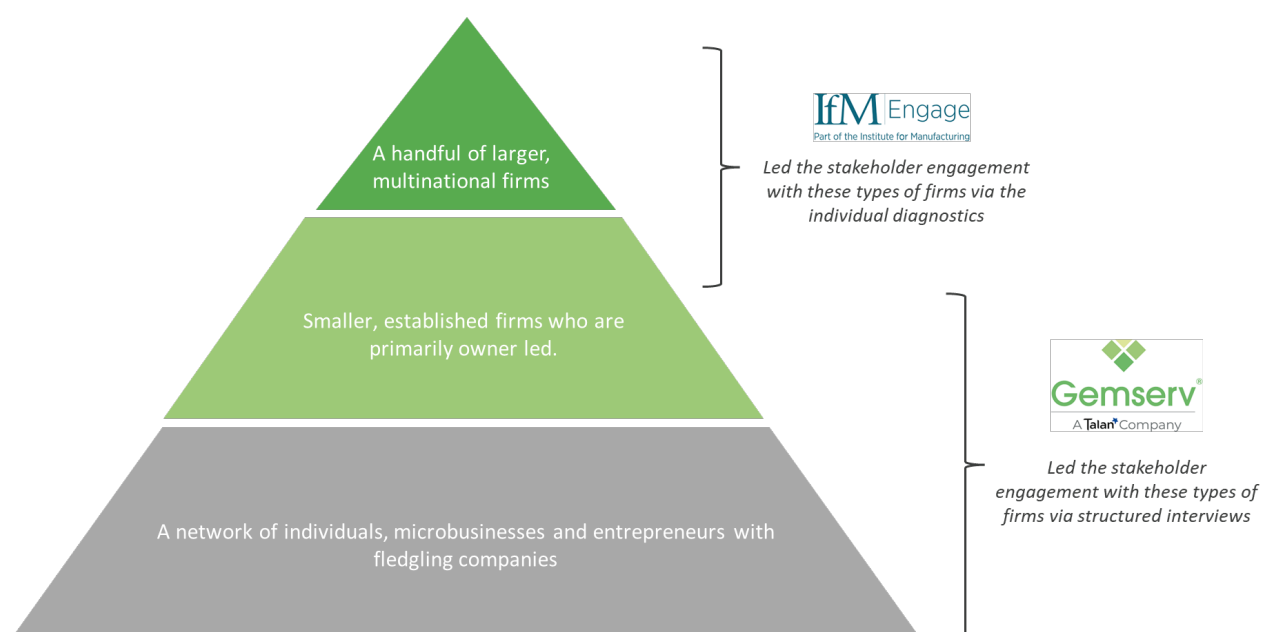
### 1.3. THE LANDSCAPE OF CORE ENGINEERING COMPANIES

**Figure 12** illustrates the three broad categories of core E&M companies present in the IOM. The first tier represents a handful of larger, multinational companies who make up the bulk of activity. The second tier represents the numerous established firms, typically owner-led, that employ between 10-25 people and operate in specialised markets. The final tier represents the broad network of microbusinesses and entrepreneurs who operate across a broad range of markets.

<sup>27</sup> ONS (2024). UK Standard Industrial Classification (SIC) Hierarchy. Available at: [https://onsdigital.github.io/dp-classification-tools/standard-industrial-classification/ONS\\_SIC\\_hierarchy\\_view.html](https://onsdigital.github.io/dp-classification-tools/standard-industrial-classification/ONS_SIC_hierarchy_view.html)

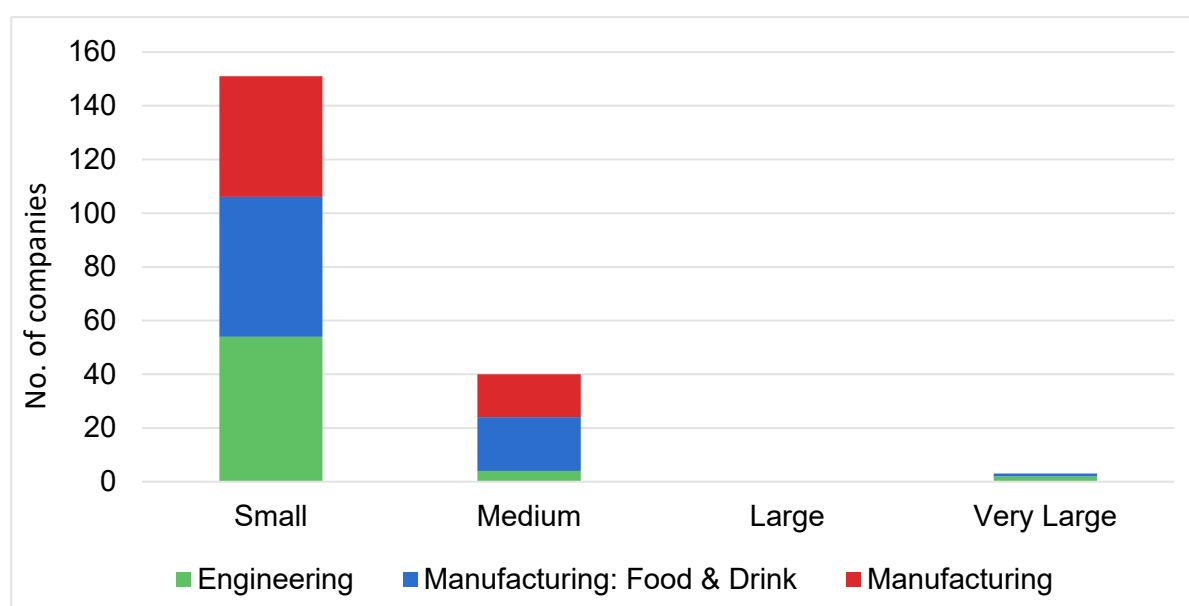


**Figure 12: Three tiers of E&M companies based in the Isle of Man**



This company size structure is also supported by the data provided by the IOM Government<sup>28</sup>. As **Figure 13** shows, over 81% of engineering and general manufacturing businesses employ 1-9 employees, with only 16% of companies employing 10-100 employees. As part of the study, IfM Engage and Gemserv engaged with different types of companies as part of the stakeholder engagement process. IfM Engage conducted individual assessments on the larger firms and some of the smaller, established firms. Gemserv on the other hand engaged with the network of smaller firms on the Island alongside companies who had considered investing in the IOM. A brief description of each type of company is provided below to offer a background to the types of E&M firms operating in the IOM.

**Figure 13: Number of companies in the E&M sector by company size**



<sup>28</sup> Isle of Man Government (2023). Economy. Available at: <https://www.gov.im/about-the-government/government/open-data/economy/>





### 1.3.1. Larger multinational firms

A handful of larger multinational firms such as *Strix*, *Ronaldsway*, *Triumph* and *Swagelok* dominate the Island's E&M sector. During interviews, it became clear that conversations about the needs of the E&M sector focused mainly on these companies, as they employ a significant portion of E&M workers. Their presence on the Island spans multiple decades, with some dating back to historic IOM residents who initially founded the companies. For example, *Ronaldsway Aircraft Company* was founded in 1955 by Jean Burrell, sister of Sir James Martin co-founder of *Martin-Baker Aircraft Company*<sup>29</sup>. Until 1989, *Ronaldsway* was a dedicated subcontractor to *Martin-Baker*, but diversified its customer base to service a range of aviation clients. Similarly, the origins of *Strix* span back to 1951 when Eric Taylor founded *Castletown Thermostats* to develop heating controls to maintain the temperature heated suits worn by Royal Air Force pilots. It wasn't until the 1980s and 1990s where the company expanded its product portfolio and now holds a dominant market share in control systems for boiling water<sup>30</sup>.

The presence of other larger companies on the Island have emerged via acquisition. For example, *Swagelok's* presence on the Island was established in 2003 when it purchased *Kenmac*, a local manufacturer of high-quality instrumentation valves and manifolds, pressure regulators, process interface valves, and piping products<sup>31</sup>. Originally employing around 130 people, the site has significantly expanded its operations and capabilities since the acquisition with over 200 people now employed with an appetite to grow. Similarly, *Triumph's* presence in the IOM was established via the acquisition of *GE's* hydraulic actuation business, which *GE* acquired from *Smiths Aerospace* in 2007. Now as part of the actuation and control systems business unit of *Triumph Group*, the IOM facility produces components and assemblies for the aerospace and military marine sectors<sup>32</sup>.

Another notable company that is markedly different from the other traditional engineering companies is *Astrea Bioseparations*, a biotechnology company specialising in advanced chromatography solutions. Their innovative technologies enable the biopharmaceutical industry to streamline production processes, ensuring high product purity and yield<sup>33</sup>. Owned by multi-national company *Biotage* who acquired *Astrea Bioseparations* in 2023, their Island footprint is significant. Based on the Island since 1989, the company employs around 65 people with around 50 employees in production and R&D. Over the last 5 years the company has grown significantly and invested in their manufacturing facilities, providing a significant increase in production scale<sup>34</sup>.

Despite varied histories and company structures, what links all these companies together is the existence of multiple operations around the globe. As a result, this reduces the ability of government to influence decision making as in most cases key investment decisions and strategy are made off-Island. Moreover, if decisions are made on Island, these firms also possess a higher risk of compelling offers being made in jurisdictions in the UK and further afield. This means more strategic engagement with senior management is required alongside a deeper understanding of the broader parent company's strategic roadmaps. What's clear is that if any of these companies moved away from the IOM, it would have a profound effect on the Island's engineering and manufacturing base regarding jobs, exports, the impact on skills provision and revenue from employee taxation.

<sup>29</sup> Machinery (2004). Ronaldsway investment rules. Available at: <https://fpreflib.findlay.co.uk/article-images/3706%5CRonaldswayInvestment.pdf>

<sup>30</sup> Reference for Business. 2003. Strix Limited. - Company Profile, Information, Business Description, History, Background Information on Strix Limited. Available from: <https://www.referenceforbusiness.com/history2/74/Strix-Ltd.html>

<sup>31</sup> Control Engineering (2003). Swagelok acquires Kenmac. Available at: <https://www.controleng.com/articles/swagelok-acquires-kenmac/>

<sup>32</sup> Isle of Man Aerospace Cluster (2023). Triumph Integrated Systems. Available at: <https://aerospace.co.im/triump-integrated-systems/>

<sup>33</sup> Astrea Bioseparations (2024). Our Company. Available at: <https://www.astreabioseparations.com/en/our-company/>

<sup>34</sup> Astrea Bioseparations (2024). Life on the Isle of Man. Available at: <https://www.astreabioseparations.com/en/our-company/our-locations/isle-of-man/>.



### 1.3.2. Smaller, established firms

Underneath the larger multinational firms are numerous established firms who operate on the Island across various industries. These businesses tend to be founder-led companies that are either family owned, a spin out from another historic firm, or a merger of previous IOM companies. Common sectors include precision engineering, optical products and machine tool providers, alongside a few health and instrumentation companies.

The most common business type in this tier are precision engineering companies that deliver specialised components for highly regulated industries such as aerospace, oil and gas, defence and automotive. *Kiartys Engineering* for example was formed in February 2017 following the purchase of two formerly independent and successful IOM engineering companies – *Manx Engineers* and *Kiartys Limited*<sup>35</sup>. They machine complex metal components that perform in demanding environments including aircraft engines, military applications, oil and gas sub-sea piping. Another notable precision engineering company is *Precimatic* who have manufactured precision components on the Island since 1975. Key sectors include aerospace and subsea machined components for the oil and gas sector where they have been awarded supplier of the year by *Siemens Subsea* numerous times for delivery performance and the quality of their machined components<sup>36</sup>. There is also some capability on the Island for polymer moulding with *EBIS Engineering and Plastics* being an injection moulding, toolmaking & precision engineering specialist with prototype and large production tooling facilities for almost any polymer<sup>37</sup>.

Another key sub-sector where the IOM has established itself as an industrial cluster is precision optics<sup>38</sup>. *Technical Optics Limited* was established in 1973 by brothers Mike and David Lunt. They first set up business in North Wales but moved to the Isle of Man as there were attractive start-up grants for small companies to diversify the Island's economy<sup>39</sup>. With various acquisitions through its history, the final incarnation *CVI Technical Optics* closed in 2014 but the accumulated experience paved the way for the creation of other companies<sup>40</sup>. As of today, three optics companies remain on the Island and include *SLS Optics*, *Manx Precision Optics* and *Island Optics* who all have active manufacturing bases. *Manx Precision Optics* is a family-led company established in 2013 that manufacture a wide range of precision optics, specialising in ultra-fast and high power lasers used by many leading companies and research facilities throughout the world<sup>41</sup>. With in-house manufacturing from initial substrate shaping and grinding, through to polishing and coating, the IOM facility can produce a range of volumes. *Island Optics* was also formed in 2013 with the company providing high quality optics for various markets including research, medical, aerospace, semiconductors, display technologies and telescopes<sup>42</sup>. *Island Optics* possess the in-house capability to manufacture a full range of optical flats from 25mm diameter up to 600mm diameter as well as refurbishment and recalibration services for clients<sup>43</sup>. Finally, *SLS Optics*, established in 1997, is a manufacturer of Fabry-Perot Etalons, precision laser optics and thin film coatings.

<sup>35</sup> Isle of Man Aerospace Cluster (2018). Interview with Nick Onyemem, General Manager, Kiarty's Engineering Limited. Available at: <https://aerospace.co.im/kiartys-case-study/>

<sup>36</sup> Precimatic Limited (2024). Precision Engineering to All Industries. Available at: <http://www.precimatic.im/>

<sup>37</sup> Isle of Man Aerospace Cluster (2023). EBIS Engineering & Plastics. Available at: <https://aerospace.co.im/ebis-engineering-plastics-ltd/>

<sup>38</sup> Cambridge University Press (2021). A history of high-power laser research and development in the United Kingdom. Available at: <https://www.cambridge.org/core/journals/high-power-laser-science-and-engineering/article/history-of-highpower-laser-research-and-development-in-the-united-kingdom/290FE05EC0CF8FF2E4DDE1931080DB7E>

<sup>39</sup> Cambridge University Press (2021). A history of high-power laser research and development in the United Kingdom. Available at: <https://www.cambridge.org/core/journals/high-power-laser-science-and-engineering/article/history-of-highpower-laser-research-and-development-in-the-united-kingdom/290FE05EC0CF8FF2E4DDE1931080DB7E>

<sup>40</sup> Manx Radio (2013). CVI Technical Optics closing. Available at: <https://www.manxradio.com/news/isle-of-man-business/cvi-technical-optics-closing/>

<sup>41</sup> Manx Precision Optics (2020). Company Profile. Available at: <https://mpo.im/wp-content/uploads/2020/06/Company-Profile-FINAL.pdf>

<sup>42</sup> Island Optics (2023). Capability. Available at: <https://www.island-optics.com/products/capability/>

<sup>43</sup> Island Optics (2023). Optical Flats: Available at: <https://www.island-optics.com/products/capability/>



Similar to the other precision optics companies on the Island, their key markets include medicine, aerospace, defence, astronomy, microlithography and cutting-edge research<sup>44</sup>.

A series of other sub-products and sectors make up the network of smaller established firms, including manufacturing equipment producers and health / medical product manufacturers. *Moynihan Precision Engineering* is a well-established designer and producer of manufacturing and tooling equipment. The type of products produced include high speed assembly machines, product life testing machines, special measuring and gauging equipment, non-contact part recognition and measuring vision systems, and high-pressure product testing machines. The company has also produced prototype and pre-production mouldings for companies including *Ford Motor Co.*, *Ricardo*, and *Honda UK*<sup>45</sup>. Another company active in this sub-sector is *Matrix Engineering*. Established in July 2009, *Matrix Engineering* is a manufacturer of high-quality creasing matrix for use in the folding carton industry<sup>46</sup>.

A more niche sub-sector that has formed is around health technologies with *Bodystat*, a medical device manufacturer. *Bodystat* have a long history on the Island, being established in 1990 when the owner set up the company. *Bodystat* conduct R&D and manufacturing on devices for bioelectrical impedance technology that accurately measure body composition and hydration within the human body, non-invasively<sup>47</sup>. Key markets include medical, research and fitness, and while manufacturing is done off-Island, the key management team, software services, quality assurance and distribution are located on Island.

### 1.3.3. Network of micro-businesses and entrepreneurs

The final tier of companies is a range of micro-businesses and entrepreneurs who live on the Island. There are two distinct groups in this category. The first category is established microbusinesses with a manufacturing presence on the Island, servicing specialised and niche customers with high value items. *Roger W Smith*, a bespoke manufacturer of luxury watches is one example of this type of company. With a very limited production run, the watches are hand designed and crafted meaning customers expect long lead times and high quality given the international reputation of Roger Smith OBE. Another similar company operating on the Island is *Progress Shaving Brush* (Vulfix) (i.e. Simpsons shaving brushes) a producer of handcrafted shaving brushes and one of the last companies in Britain hand manufacturing shaving brushes. The company relocated to the Isle of Man in 2008 and operate using the same manufacturing processes used in the 1920s, with a high-end customer base including celebrities and royalty<sup>48</sup>. Similarly, *Gibson, McDonald & Arnold* operate in a niche space, restoring and engineering vintage cars for collectors for across the world. While these companies operate in different segments, all these businesses manufacture high-end, luxury items with direct sales to consumers and are heavily reliant on unique skill, human talent and inherited knowledge.

The second category are entrepreneurial residents who live on the Island that perhaps operate a sales office but haven't committed to setting up a larger R&D presence or manufacturing base. The owners of these businesses are often very eager to set up a greater presence in the IOM but through various reasons relocate elsewhere due to problems establishing on the Island, or more attractive offers from elsewhere. However, what's crucial is that many of these entrepreneurs are personally committed to the Island and would consider greater R&D and manufacturing presence under the right conditions. A commonality across these two categories is that the capabilities and unique

<sup>44</sup> SLS Optics (2012). About Us. Available at: <http://www.sls optics.com/about-us/>

<sup>45</sup> Isle of Man Aerospace Cluster (2023). Moynihan Precision Engineering. Available at: <https://aerospace.co.im/moynihan-precision-engineering/>

<sup>46</sup> Matrix Engineering. (2024). About us. Available at: <https://www.creasingmatrix.com/about-us/>

<sup>47</sup> Bodystat. (2024). About us. Available at: <https://www.bodystat.com/about>

<sup>48</sup> Simpsons Shaving Brushes (2024). Our Heritage. Available at: <https://www.simpsonshavingbrushes.com/our-heritage/>



selling points of these businesses reside within one or two people within the company. Therefore, if these key people decide to leave the Island, or step back from the business, the capability is at risk of disappearing.



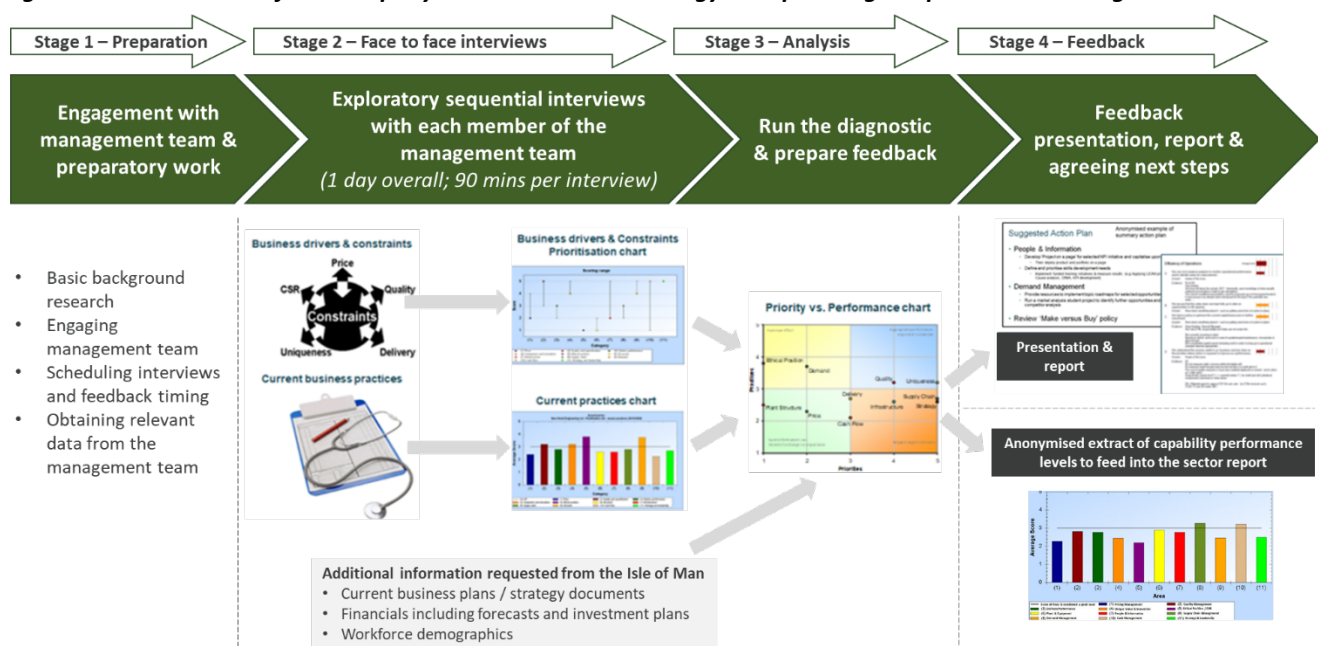
## 2. CROSS COMPANY INSIGHTS FROM THE INDIVIDUAL DIAGNOSTICS

As outlined in the study overview and report structure, 10 IOM businesses had an individual diagnostic approach applied, with a confidential, in-depth company report produced for each. The process and overarching insights are presented in this section.

### 2.1. OVERVIEW OF THE INDIVIDUAL DIAGNOSTIC APPROACH

Developed by the Institute for Manufacturing over 15 years ago, the prioritisation diagnostic has been delivered to over 1,000 manufacturing businesses of varying sizes (including a number of PLCs) operating across a range of sectors and countries. The diagnostic has four main stages, including: preparation; face-to-face interviews; analysis; and feedback/next steps (see **Figure 14**).

**Figure 14: An overview of the company assessment methodology incorporating the prioritisation diagnostic**



During the preparation stage, initial contact is made with the senior management team, company context is discussed, then dates and times for individual interview participants are agreed, with further background information and data requested in order to understand more of the overall context and key characteristics of the business. The face-to-face interviews themselves often took place during a single day visit to the production facility, and were sequential, meaning that typically, no single manager needs to give up more than 60-90 minutes of their time on the day. The interviews cover two main points:

- Understanding each interviewee's opinion on the priorities of competitive drivers and likely constraints that are impacting the business;
- The current performance levels of key capabilities for managing these drivers and constraints.



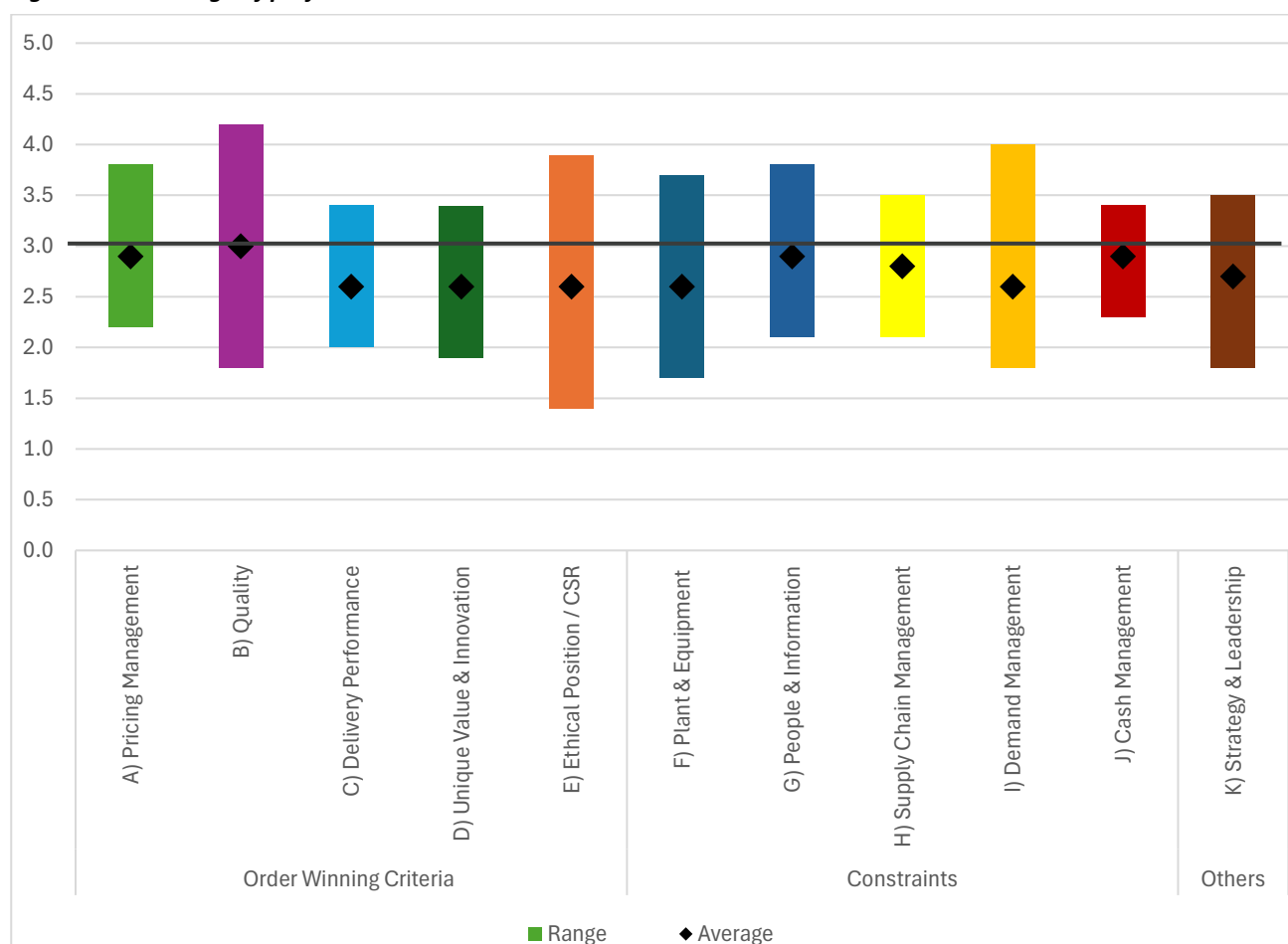
Once all the data is gathered on the priorities of the competitive drivers and likely constraints, a priority and performance chart is plotted that informs businesses on the performance of an order winning criteria / constraint and the priority it is for each business. Those that are high priority and low performance are highlighted as elements that a business should focus on improving. Each company was then issued with a management report highlighting the high and low performing areas of the business and summary actions and tools to improve performance. For the sector level review, IfM Engage have provided Gemserv with three pieces of information:

1. The range of performance across 10 businesses for the order winning criteria and constraints
2. Average GVA numbers at a company level
3. Businesses perceptions on the global engineering and manufacturing challenges facing governments and industry

## 2.2. KEY ORDER WINNING CRITERIA AND CONSTRAINTS

A key output from the diagnostic reports is to gauge how well businesses perform across a selection of order winning criteria and constraints. Order winning criteria are factors that enable businesses to win work versus their competitors, whereas constraints are factors that are holding back the companies from growing. What's important is that order winning criteria and constraints are *internal* factors that businesses have control over improving. **Figure 15** highlights the range of performance scores across the 10 businesses in each of the eleven metrics IfM Engage assessed.

**Figure 15: The range of performance across the 10 businesses**





A score of 3, highlighted by the black line, is deemed a good level of performance from IfM Engage so a score above that means a business is performing well. The black diamonds articulate the average scores across the 10 businesses and shows a good level of average performance in quality, pricing management, people and information and cash management. The range of performance scores across the businesses is also quite prominent, with the biggest ranges found in ethical position / CSR, quality and demand management.

However, despite the ranges and averages being interesting, what's more important are the order winning criteria and constraints businesses highlighted as the highest priority. If government just decided to fund an initiative to improve the area that is weakest on average, this could likely force businesses into initiatives that might not help them with their priorities. Therefore, based on the strategic prioritisation, quality and unique value & innovation were the two order winning criteria that businesses cited as the most important factors to winning business. 8 out of 10 of the businesses interviewed placed unique value & innovation as a key order winner; with five companies putting it as the most important, two placing it as the second most important and one company placing it third. For quality, 6 out of 10 businesses had it as an important order winner criterion, with three companies citing it as the most important and another three companies placing it as the second most important criteria. A key theme that emerged during the interviews was that due to the higher cost base and niche industries the companies supply into, being the highest quality and bringing unique value via innovative products was integral to these businesses continued success.

In terms of constraints, plant and equipment alongside people and information were consistently highlighted as the most likely constraints to growth moving forward. All manufacturers that were interviewed highlighted people & information as a highly likely constraint. Four businesses indicated that it was their most important constraint, five cited it as their second most important constraint, while only one company placed it as the third most important. For plant and equipment, 5 out of 10 of the businesses interviewed highlighted it as a likely constraint, with two citing it as the most important constraint, two claiming it was the second most important constraint, and one placing it as the third most important constraint.

### 2.3. INDICATIVE GVA OF THE COMPANIES SELECTED

An additional piece of data IfM Engage collected was the gross value add (GVA) for each manufacturing company. GVA at the firm-level is often measured using the production approach, i.e. turnover minus intermediate consumption. Intermediate consumption is the total purchases of energy, goods, materials and services that are consumed as inputs by a process of production. IfM Engage calculated GVA using the following calculation:

*GVA = Profit before Tax + Employee/Labour costs including social security / national insurance + depreciation / amortisation*

Please note that the approaches to measuring GVA described above tend not to be suited to pre-commercial activity (such as the product development phase of a new start company), or a business with strong focus on R&D, during which negative GVA can be generated as no income is being produced at a time when costs are being incurred. However, as all the 8 businesses who provided GVA figures are established companies, the total GVA amounted to approximately £62.9m representing around £97,500 per employee. These figures are based upon 8 out of 10 of the manufacturing companies who have so far shared these figures and are typically based upon the most recently completed annual reporting period, alongside the proportion of employees located in the IOM only, whenever there





are multiple sites included. It should be noted that firm level GVA metrics can't be compared with sectoral or national level GVA numbers as the calculations are different.

## 2.4. INDUSTRY'S PERCEPTIONS ON THE GLOBAL ENGINEERING AND MANUFACTURING CHALLENGES

The final cross-company insight from the diagnostic was the perceptions of businesses on the global engineering and manufacturing trends facing both industry and government in the coming years. As part of the engagement process, IfM Engage asked each company to state how strongly they perceived a series of E&M global mega trends as a potential opportunity or threat. The five key mega trends were taken from a recent World Economic Forum report co-authored by IfM Engage and presented at Davos in 2023<sup>49</sup>. A description of each mega trend is provided in more detail below.

### **Decarbonising manufacturing operations, products and supply chains**

In the context of net zero ambition across the globe, decarbonisation of manufacturing is a key aim. This requires manufacturers to not only assess their immediate emissions but the downstream emissions of their supply chains (Scope 3) which are a large proportion of manufacturing companies' emissions. Further development of technologies/approaches, knowledge and supporting infrastructure/policy is rapidly needed<sup>50</sup> with regions like the IOM being particularly vulnerable as the speed of change can often be dependent on other larger jurisdictions<sup>51</sup>.

### **Enhancing supply chain resilience**

With geopolitical instability and supply chain shocks experienced in the past few years, resilience is an important topic, and especially to island regions with dependency on imports and more difficult transport links<sup>52</sup>. Considerations include visibility of supply chains, contingency planning, trusted/nearby sourcing, and the balance of higher stocks versus efficiency of supply chains<sup>53</sup>. Collaboration at different levels is particularly needed to support this area – between businesses and governments, and internationally – including improvement of transport links<sup>54</sup> and developing trusted partnerships<sup>55</sup>.

### **Securing the future of the manufacturing workforce**

A diminishing workforce for engineering and manufacturing is evident globally, with ageing of the current workforce, requirement for new skills and difficulties securing the next generation of the workforce<sup>56</sup>. For some regions, including the IOM, an ageing population is more evident than others, and already poses challenges to employers<sup>57</sup>. Action is

<sup>49</sup> World Economic Forum (2023) The Future of Industrial Strategies: Five Grand Challenges for Resilient Manufacturing. Available at: [https://www3.weforum.org/docs/WEF\\_The\\_Future\\_of\\_Industrial\\_Strategies\\_2023.pdf](https://www3.weforum.org/docs/WEF_The_Future_of_Industrial_Strategies_2023.pdf)

<sup>50</sup> World Economic Forum (2023) The Future of Industrial Strategies: Five Grand Challenges for Resilient Manufacturing. Available at: [https://www3.weforum.org/docs/WEF\\_The\\_Future\\_of\\_Industrial\\_Strategies\\_2023.pdf](https://www3.weforum.org/docs/WEF_The_Future_of_Industrial_Strategies_2023.pdf)

<sup>51</sup> PricewaterhouseCoopers (2023) Island Index Report 2023: Sustaining prosperity and growth. Available at: <https://www.pwc.com/jg/en/publications/island-index-report-2023-sustaining-prosperity-and-growth.pdf>

<sup>52</sup> PricewaterhouseCoopers (2023) Island Index Report 2023: Sustaining prosperity and growth. Available at: <https://www.pwc.com/jg/en/publications/island-index-report-2023-sustaining-prosperity-and-growth.pdf>

<sup>53</sup> World Economic Forum (2023) The Future of Industrial Strategies: Five Grand Challenges for Resilient Manufacturing. Available at: [https://www3.weforum.org/docs/WEF\\_The\\_Future\\_of\\_Industrial\\_Strategies\\_2023.pdf](https://www3.weforum.org/docs/WEF_The_Future_of_Industrial_Strategies_2023.pdf)

<sup>54</sup> PricewaterhouseCoopers (2023) Island Index Report 2023: Sustaining prosperity and growth. Available at: <https://www.pwc.com/jg/en/publications/island-index-report-2023-sustaining-prosperity-and-growth.pdf>

<sup>55</sup> World Economic Forum (2023) The Future of Industrial Strategies: Five Grand Challenges for Resilient Manufacturing. Available at: [https://www3.weforum.org/docs/WEF\\_The\\_Future\\_of\\_Industrial\\_Strategies\\_2023.pdf](https://www3.weforum.org/docs/WEF_The_Future_of_Industrial_Strategies_2023.pdf)

<sup>56</sup> World Economic Forum (2023) The Future of Industrial Strategies: Five Grand Challenges for Resilient Manufacturing. Available at: [https://www3.weforum.org/docs/WEF\\_The\\_Future\\_of\\_Industrial\\_Strategies\\_2023.pdf](https://www3.weforum.org/docs/WEF_The_Future_of_Industrial_Strategies_2023.pdf)

<sup>57</sup> PricewaterhouseCoopers (2023) Island Index Report 2023: Sustaining prosperity and growth. Available at: <https://www.pwc.com/jg/en/publications/island-index-report-2023-sustaining-prosperity-and-growth.pdf>





needed to ensure routes to employment and job safety, at the level of government, businesses and educational institutions. Policy and work environment changes will be needed to enable a wider demographic of older citizens and parents to participate in the workforce – such as reducing the current gender pay gap<sup>58</sup>. Improvements to digital connectivity could enable wider access to talent – but require investment<sup>59</sup>.

### **Accelerating the scaling up & adoption of novel industrial technologies**

New industrial technologies have potential to both enable better solutions and create disruption – including changing markets, increasing productivity, changing workforce needs and changing risks, such as cybersecurity<sup>60</sup>. The ability to deploy and prepare for new technologies may be more difficult for island regions, contributed to by workforce challenges, and a need for significant investment<sup>61</sup>. However, capital costs may be seen to be less of a barrier where novel technology developments are more digital than physical<sup>62</sup>.

### **Linking business values with social & environmental responsibility**

Related to supply chain visibility and decarbonisation, consumer/government demands for better social and environmental responsibility are driving change in the engineering and manufacturing sector. The changing ways that organisations operate could provide opportunities to improve, where higher priority is put on fairness, transparency and positive impact<sup>63</sup>. These efforts could also increase trust – important for retaining and attracting talent<sup>64</sup>. The changing regulatory environment also poses challenges, particularly where alignment with multiple standards is sought, as may be the case for the IOM (EU-wide and UK regulations)<sup>65</sup>.

### **Discussion of the results**

The results of IfM Engage's grand challenge analysis reveal a spread of different opinions across the 10 businesses on the grand challenges, as shown in **Figure 16**. The two most frequently highlighted threats to IOM manufacturers are the challenges of securing the future of the manufacturing workforce, and the challenge of enhancing supply chain resilience. Strong feelings were expressed regarding securing the future of the manufacturing workforce which echoes early findings on people and information being the most likely constraint moving forward. Supply chain resilience was perhaps chosen due to numerous global shocks occurring recently that have driven up costs and lead times and reflects a broader global trend of industries assessing the vulnerabilities of their supply chains. Decarbonising manufacturing operations products & supply chains was seen mainly as an opportunity, and in two cases a strong opportunity. Given that many of the businesses in the IOM supply into the existing energy industry, this indicates there could be strong opportunities in leveraging the energy industries transition to net zero. Interestingly, the challenge of accelerating the adoption of novel industrial technologies seemed to divide the manufacturers. This perhaps reflects the level of engagement the businesses have with digital technologies and more advanced forms of Industry 4.0 practice.

<sup>58</sup> PricewaterhouseCoopers (2023) Island Index Report 2023: Sustaining prosperity and growth. Available at: <https://www.pwc.com/jg/en/publications/island-index-report-2023-sustaining-prosperity-and-growth.pdf>

<sup>59</sup> PricewaterhouseCoopers (2023) Island Index Report 2023: Sustaining prosperity and growth. Available at: <https://www.pwc.com/jg/en/publications/island-index-report-2023-sustaining-prosperity-and-growth.pdf>

<sup>60</sup> World Economic Forum (2023) The Future of Industrial Strategies: Five Grand Challenges for Resilient Manufacturing. Available at: [https://www3.weforum.org/docs/WEF\\_The\\_Future\\_of\\_Industrial\\_Strategies\\_2023.pdf](https://www3.weforum.org/docs/WEF_The_Future_of_Industrial_Strategies_2023.pdf)

<sup>61</sup> PricewaterhouseCoopers (2023) Island Index Report 2023: Sustaining prosperity and growth. Available at: <https://www.pwc.com/jg/en/publications/island-index-report-2023-sustaining-prosperity-and-growth.pdf>

<sup>62</sup> Digital Isle of Man feedback

<sup>63</sup> World Economic Forum (2023) The Future of Industrial Strategies: Five Grand Challenges for Resilient Manufacturing. Available at: [https://www3.weforum.org/docs/WEF\\_The\\_Future\\_of\\_Industrial\\_Strategies\\_2023.pdf](https://www3.weforum.org/docs/WEF_The_Future_of_Industrial_Strategies_2023.pdf)

<sup>64</sup> PricewaterhouseCoopers (2023) Island Index Report 2023: Sustaining prosperity and growth. Available at: <https://www.pwc.com/jg/en/publications/island-index-report-2023-sustaining-prosperity-and-growth.pdf>

<sup>65</sup> PricewaterhouseCoopers (2023) Island Index Report 2023: Sustaining prosperity and growth. Available at: <https://www.pwc.com/jg/en/publications/island-index-report-2023-sustaining-prosperity-and-growth.pdf>



**Figure 16: Opportunity and threat scoring across the 10 businesses for each grand challenge<sup>66</sup>**

Grand challenges for companies & governments		Randomised									
1	Decarbonising manufacturing operations, products and supply chains	2	1	1	0	4	2	5	5	1	0
2	Enhancing supply chain resilience	0	-1	-3	-1	-5	-4	-1	2	-4	-2
3	Accelerating the scaling up & adoption of novel industrial technologies	5	-5	0	0	3	2	5	-3	0	2
4	Securing the future of the manufacturing workforce	2	-5	-3	-4	-3	-2	-3	-5	0	-4
5	Linking business values with social & environmental responsibility	0	1	2	0	3	2	0	1	0	0

**Key:**

<div style="display: inline-block; width: 15px; height: 15px; background-color: red; border: 1px solid black;"></div>	<div style="display: inline-block; width: 15px; height: 15px; background-color: lightcoral; border: 1px solid black;"></div>	<div style="display: inline-block; width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div>	<div style="display: inline-block; width: 15px; height: 15px; background-color: lightgreen; border: 1px solid black;"></div>	<div style="display: inline-block; width: 15px; height: 15px; background-color: green; border: 1px solid black;"></div>
Threat → Opportunity				

<sup>66</sup> The score represents to what degree the challenge was perceived as an opportunity or threat over the next 18 months or so, with scores between +1 and +5 indicating a small to large positive impact (opportunities), and scores between -1 and -5 indicating a small to large negative impact (threats).



## 3. COMPETITIVELY SCORING THE ISLE OF MAN VS COMPETITOR REGIONS

### 3.1. DEFINING A COMPETITOR REGION

Before defining a list of metrics, careful consideration was given to what regions are useful comparators. Much of the literature on comparing the IOM economy to other regions tended to focus on other Crown Dependencies such as Jersey and Guernsey<sup>67,68</sup>. This is due to the fact they are all islands and have strong financial service centres together with a favourable tax regime. However, when comparing the E&M sector, other Crown Dependencies, and larger comparators like the G7 nations or UK economy aren't suitable. For this analysis, three broad region types were selected: relevant UK island nations; UK regions with sector competitors; and international island nations.

Relevant UK island nations include the Scottish Highlands and Islands and the Isle of Wight. These were chosen as they have the same logistical difficulties, concerns around demographics and challenges in gathering a critical mass of companies to form clusters. These regions also possess an E&M sector within similar industries to the IOM.

The second type are regions within the UK that could compete with the IOM for similar E&M business based on sector strength. These were areas that had core strengths in advanced manufacturing, particularly in aerospace, precision engineering and optical products. Desk research and interviews were also used to pick regions where the IOM had a business or academic connection to, for example, where other parent company sites were based.

The final region type are international islands that also possess a manufacturing industry. Like the IOM, these nations often focus on advanced manufacturing products that are either niche, specialised or where the country has a historic presence in. The full list of regions included in this analysis, alongside their rationale for selection, can be found in **Table 3** below.

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<sup>67</sup> PricewaterhouseCoopers (2023). Island Index Report 2023: Sustaining prosperity and growth. Available at: <https://www.pwc.com/jg/en/publications/island-index-report-2023-sustaining-prosperity-and-growth.pdf>

<sup>68</sup> KPMG (2021). Our Big Picture: Evidence Base Report. Available at: <https://www.gov.im/media/1377114/our-big-picture-phase-1-part-1-report-final-public.pdf>



**Table 3: List of comparator regions with a rationale for their selection**

Region Type	Region	Rationale for selection
UK island nation	Isle of Wight	An island in the UK that will have similar logistical challenges to the IOM. The local government also has a strong focus on advanced manufacturing, in particular renewables and aerospace sectors.
	Scottish Highlands and Islands	A large land area with a mixture of islands and rural areas. Will have similar logistical challenges and has struggled with creating E&M clusters but does possess some E&M activity.
UK region with sector competitors	Mid-Lancashire	Has a strong E&M base with a critical mass of aerospace companies alongside another RLC site in close proximity. IOM also has close relations with the area through the North West Aerospace Alliance and UCM visiting Preston College.
	Flintshire and Wrexham	The region home to Deeside which has multiple engineering zones and institutions for advanced manufacturing. Wales was also cited as a place IOM loses investment to with <i>Triumph</i> also having a site in Deeside.
	Torbay	Mainly selected due to its technical specialism in photonics which is a sector expertise area closely related with optical products. Is also fairly remote with an aging population with manufacturing not being a high proportion of its economy.
International island nations	Malta	A case study island nation that has focused on digital, manufacturing and financial services as part of their core strategy. They have transformed their economy over the past ten years with manufacturing becoming a bigger portion of their economy.
	Cyprus	Another island region that has focused on advanced manufacturing and engineering including similar sectors such as aerospace and instrumentation and electronics parts.
	Singapore	An aspirational target for the IOM to understand what a best-in-class island region is. In a space of 40-50 years, Singapore has transformed itself from a developing country into one of the most advanced economies in the world with E&M a core pillar of their economy.



### 3.2. WHAT METRICS WERE USED

We sought to compare the E&M landscape in the IOM with other regions, using indicators that highlight general economic factors, ease of doing business, innovation environment, skills and workforce. There were some challenges in securing comparative data for all regions, since we are not only considering other countries, but for example small regions of the UK which have different sources of data to equivalent metrics at country-level. Additionally, it is important to note that much of the data used is specific to a particular year, and therefore may not be fully representative of the average values over time for a given region. This was particularly apparent for the IOM, partly due to the less systematic release of statistics compared to other regions<sup>69</sup>.

For the region and its E&M sector overall, we chose *population*, *total GDP*, *manufacturing GVA* (as an absolute value and percentage) and *% of Foreign Direct Investment (FDI) in manufacturing*. *Population* and *total GDP* provide a reference point for the scale of the region being considered, while *manufacturing GVA* shows the contribution that the manufacturing sector makes to the economy of the region. *% of FDI in manufacturing* provides another angle for the investment and strategy of the region towards its manufacturing sector.

Metrics chosen for ease of doing business incorporate selected key direct cost elements to businesses: *average wages*, *average energy prices*, *price of industrial land*, *corporation tax rates* and *business rates*. More indirect factors are also included: a measure for *quality of logistics* for the region, and *timeliness of planning applications* (for UK regions only). Given different ways of measuring logistics we had to do a qualitative scoring based on a mixture of quantitative and qualitative insights.

We measure innovation environment by considering the *level of innovation funding* (UK only), *expenditure on R&D*, and *% of total employees in general R&D occupations*. Skills and workforce metrics used are the *level of post-secondary education* (using an approximation of % of residents aged 25 or over with post-secondary qualifications) and *% of the population under 40 years of age*, providing insight into the demographics of the region and the size of the potential workforce to support the E&M sector.

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<sup>69</sup> Digital Isle of Man feedback.



### 3.3. COMPARATOR ANALYSIS RESULTS

**Table 4: General performance indicators**

GENERAL PERFORMANCE INDICATORS					
	Population	Total GDP (£mn)	Manufacturing GVA (£mn)	Manufacturing % of total GVA/GDP	% of FDI in manufacturing
Isle of Man	84,530	6,372	No data	2 % <sup>70</sup>	No data
Isle of Wight	140,889	3,489	312	11 %	22 %
Scottish Highlands and Islands	99,774	3,075	284	10 %	22 %
Mid-Lancashire	402,573	16,294	3,230	22%	8 %
Flintshire & Wrexham	290,208	10,470	3,695	39 %	19 %
Torbay	139,446	2,803	99	4 %	39 %
Malta	533,000	14,082	1,246	7 %	4 %
Singapore	5,976,000	350,173	83,254	22 %	25 %
Cyprus	908,000	22,707	333	6 %	N/A

<sup>70</sup> All other comparators were % of GVA whereas the Isle of Man is % of E&M national income of total GDP.



**Table 5: Key business factors**

KEY BUSINESS FACTORS								
	Annual average wages (£)	Industry Electricity Prices - Median (p/kWh)	Industrial land value (£/ha)	Main Corporation Tax Rate	Planning applications on time (%)	Logistics rating <sup>71</sup>	Business rates (£/sqft) <sup>72</sup>	Annual rent (£/sqft)
Isle of Man	48,309	25.3	1,336,711	0 %	43 % <sup>73</sup>	1	0.68	6.61
Isle of Wight	28,248	21.9	842,034	25 %	86 %	1	8.92	21.52
Scottish Highlands and Islands	29,364	21.9	120,081	25 %	58 %	2	3.69	7.40
Mid-Lancashire	32,095	21.9	603,458	25 %	88 %	2	7.00	16.88
Flintshire & Wrexham	31,145	21.9	297,500	25 %	63 %	5	6.55	14.39
Torbay	27,630	21.9	400,000	25 %	92 %	2	8.45	20.38
Malta	21,798	11.5	21,588,918	35 %	N/A	N/A	-	7.00
Singapore	37,356	14.7	46,424,651	17 %	N/A	N/A	1.30	13.01
Cyprus	18,636	16.7	1,194,845	12.5 %	N/A	N/A	-	4.03

<sup>71</sup> Rating based on % of business units that are logistics-focused, with the values for the UK regions placed proportionally on a scale of 1 to 5 (and rounded to the nearest whole number). For IOM no comparable quantitative data was available, so assumed to be the same as for Isle of Wight, based on qualitative insight.

<sup>72</sup> Estimation of business rates per area of premises based on % business rates applicable in the region, combined with average rateable values for industrial premises in each region.

<sup>73</sup> The measure for IOM is based on an 8-week time frame only, whereas UK values also include 13-week time frames.



**Table 6: Skills and knowledge**

INNOVATION, SKILLS AND KNOWLEDGE						
	Total annual government-led R&D funding in E&M (£) <sup>74</sup>	Total estimated annual private and public R&D funding in E&M (£) <sup>75</sup>	Gross domestic expenditure on research and development (% of GDP)	Total employees in R&D (%)	Estimated % of workforce with post-secondary qualifications	% of population under 40
Isle of Man	732,260	No data	0.4% <sup>76</sup>	No data	31 %	42 %
Isle of Wight	30,386,945	No data	1.7 %	1.1%	31 %	38 %
Scottish Highlands and Islands	4,576,268	No data	0.5 %	0.2%	45 %	41 %
Mid-Lancashire	4,305,470	No data	0.9 %	0.8%	38 %	48 %
Flintshire & Wrexham	12,091,642	No data	1.2 %	0.9%	37 %	47 %
Torbay	559,845	No data	1.2 %	0.8 %	31 %	41 %
Malta	N/A	54,074,457	0.7 %	0.4 %	31 %	51 %
Singapore	N/A	4,163,710,466	1.7 %	2.4 %	63 %	46 %
Cyprus	N/A	55,854,000	0.8 %	0.4 %	48 %	54 %

<sup>74</sup> IOM value based on financial assistance to manufacturing and engineering businesses via FAS Appendix 13, and additional R&D-categorised E&M funding from FAS (separate to Appendix 13), including both government committed funding and matched investment, UK regional values based on UKRI funding (see Appendix 1 for sources and notes).

<sup>75</sup> Based on “engineering and technology” R&D expenditure, and incorporates both government funding and private-led R&D that wasn't stimulated by government grants.

<sup>76</sup> Based on R&D category spend under FAS, including grant value and potential related company spend. Average taken over 5 years, 2017/18-2021/22.





## 3.4. RESULTS

### 3.4.1. General metrics

General metrics in **Table 4** above help aid understanding of the relative size and scope of activities between regions. Out of the IOM and UK areas analysed, population size is most similar between the IOM, the Scottish Highlands and Islands, Torbay and Isle of Wight, ranging from 85,000 (IOM) to 141,000 (Isle of Wight). The other UK regions move towards the scale of populations of the small countries analysed. Mid-Lancashire has a population of 400,000, and Malta a population of 530,000, followed by Cyprus at 910,000. Singapore is distinct from the other considered areas with a population of 6 million.

A similar pattern is seen for total GDP, with the smallest being £2.8 billion for Torbay. There are similarly low values for IOM (£6.4 billion), Isle of Wight and the Scottish Highlands and Islands. The largest GDP value is in Singapore, with a figure of £350 billion. The absolute amount of GVA associated with manufacturing again follows a similar pattern, except for Cyprus – for which manufacturing GVA (£333m) is at a similar scale to that of the Isle of Wight (£312m) and Scottish Highlands and Islands (£284m). Limitations of data mean that for IOM, only E&M national income is available, at £134m. Manufacturing GVA for the UK regions varies from Scottish Highlands and Islands at the highest, and Torbay at the lowest (£99m)<sup>77</sup>.

As with the absolute amount of manufacturing contribution to the economy, for IOM the % contribution is only available on a GDP basis, rather than GVA as used for the other regions. With this measure, IOM has the lowest rate out of all regions considered, at 1.5%, and is much lower than even the lowest regions such as Torbay (7%), Cyprus (11%) and Malta (15%). Compared to sector-based competitor regions, such as Mid-Lancashire (22%) and Flintshire and Wrexham (39%), the proportion of economic activity is far lower, indicating these regions have a much stronger established base of manufacturing.

Data could not be obtained for the IOM or Cyprus for percentage of FDI in manufacturing. Out of the remaining regions, Torbay has the highest percentage of FDI in manufacturing, despite having the second lowest percentage of GVA in manufacturing in the previous metric. This indicates the success of Torbay's FDI policies that have been put in place to attract international optics companies. Mid-Lancashire has the lowest rate of FDI in manufacturing compared to the other UK areas analysed, and second lowest out of all the areas with available data, suggesting a nationally focused industry. Malta has the lowest percentage of FDI in manufacturing.

### 3.4.2. Business metrics

As shown in **Table 5** average annual wages are estimated to be highest for the IOM out of all the areas analysed, at £48,309, followed by Singapore at £37,356. Cyprus has the lowest average wages at £18,636, with Malta second lowest at £21,798. Out of the UK regions analysed, Torbay has the lowest average wages (£27,630), and Mid-Lancashire the highest (£32,095). While data obtained for IOM is positive for the IOM Government in terms of income, higher average wages put IOM at a distinct disadvantage for manufacturers deciding to relocate to the IOM. A factor to consider,

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<sup>77</sup> It's expected GVA will be much lower than national income as it factors in intermediate consumption.



however, is the types of jobs that contribute to the average wage, and as such the figure for the IOM may be skewed, for example, by the presence of a significant finance sector.

The industrial electricity price is also estimated to be highest for IOM, at 25.3p/kWh, compared to 21.9p/kWh for UK regions. The countries analysed all have lower industrial electricity prices, with Malta the lowest at 11.5p/kWh. Singapore in particular has a different structure for industrial electricity prices. Therefore, the value provided is a median of relevant rates, which has a significant range.

Out of all the regions analysed, the IOM is estimated to have the third highest industrial land price, at around £1.3m/ha. Malta and Singapore have industrial land prices an order of magnitude higher, whereas Cyprus is comparable to the IOM. Out of the UK regions analysed, Scottish Highlands and Islands is estimated to be the lowest (£0.12m/ha), and Isle of Wight the highest, at £0.84m/ha.

The corporation tax rate is the lowest for the IOM compared to all the other areas analysed, with Cyprus second lowest at 12.5%, followed by Singapore at 17%. Malta has the highest corporation tax rate out of all the areas analysed, at 35%, and the value for UK regions stands at 25%. 0% corporation tax is an attractive feature of the IOM to E&M businesses. The relative benefit of this to an individual company is dependant profit levels and the contribution of other cost factors – therefore an overall view of the benefit of this policy is hard to quantify. It is also important to note that larger multinational companies will likely be subject to corporation tax in future in the IOM, in line with OECD requirements<sup>78</sup>.

We compare the rate of on-time planning applications for the IOM and UK regions only, due to difficulties obtaining comparable data for the countries analysed. From the data collected, the IOM has the lowest rate for on-time planning applications out of these regions, at 43%. This is followed by the Scottish Highlands and Islands at 58%. The region analysed with the best performance on planning applications is Torbay, with 92% of applications resolved on-time, closely followed by Mid-Lancashire and Isle of Wight, at 88% and 86% respectively. It is important to note however that the IOM data compares against an 8-week period, whereas UK data also includes 13-week periods.

The logistics ratings are difficult to compare between the country regions analysed and the smaller jurisdictions. Therefore, we have focused on smaller regions for the logistics ratings metric, with Flintshire & Wrexham performing best, and the IOM and Isle of Wight performing worst. For UK regions, this metric is based on the percentage of business units used for logistics as a proxy measure for the concentration of logistics firms and quality of service. Due to lack of data for the IOM, we have determined from qualitative assessment that IOM logistics are likely to be similar to the Isle of Wight.

We have collected business rate data for each region, including both the percentage rate that is applied to the “rateable value” of the business premises (an estimate of the annual rent value of the property) when calculating the amount due, and average rateable values for industrial premises. IOM has very low rates compared to the UK regions analysed, at £0.68/sqft, compared to £3.69-8.92/sqft for the UK regions. Internationally, Singapore’s business rates are on the low end of the scale, a £1.30/sqft, while Malta and Cyprus have no business rates applied.

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<sup>78</sup> Isle of Man Government Website (2024). Isle of Man’s next step in implementing OECD’s Pillar Two global tax framework. Available at: <https://www.gov.im/news/2024/may/20/isle-of-mans-next-step-in-implementing-oecd-s-pillar-two-global-tax-framework/>



Aside from business rates, we also estimated the annual rent cost of an average industrial premises in each region. IOM has one of the lowest annual rent costs compare to other regions, falling at £6.61/sqft, which is second lowest only to that of Cyprus at £4.03/sqft. Regions in England and Wales, in contrast, have the highest annual rent values compared to the other regions, averaging around £18/sqft – with business premises in Isle of Wight having the most expensive rent values at £21.52/sqft. Scottish Highlands and Islands and Malta are at the lower end of the scale, at £7.40/sqft and £7.00/sqft respectively.

It is interesting to note the differences between the annual rent and industrial land value metrics – given that it could be assumed that rents would be reflective of land values. There is lack of alignment between these metrics particularly for Isle of Man and the international regions analysed, for which rents are much lower than would be expected, based on the relationship seen in the UK between rents and land values. A possible factor at play for the IOM values is government influence over rental contracts – however, in our data collection we have sought to include a range of types of site ownership.

### 3.4.3. Innovation metrics

**Table 6** illustrates innovation metrics across all jurisdictions, including funding, R&D skills, and workforce. It's worth noting that the amount of E&M R&D funding and expenditure was difficult to assess across all regions due to differences in available data.

For the IOM and UK regions we estimated government-led R&D funding in engineering and manufacturing<sup>79</sup>. The value for the IOM (£0.7m) is at the lower end of the scale for UK regions, comparable to Torbay (£0.6m). Flintshire and Wrexham performs second best, at £12.1m, with the Isle of Wight the highest at £30.4m. It should be noted that the figure used for the IOM is a best estimate for an equivalent figure to the UK values – see Appendix 1 for notes on data used.

To provide a sense of scale of R&D activity for the other regions, we use total expenditure on engineering and technology R&D – incorporating both private-led and government-led funding. Values for Malta and Cyprus are significantly lower than that of Singapore: £54m, £56m and £4.2bn respectively.

For an indication of the overall position on R&D, we also use the gross domestic expenditure on R&D as a percentage of GDP. While no IOM Government metric exists, Gemserv used the total R&D expenditure in FAS, including matched funding, and divided this by GDP. Although it might not show all the R&D spending that occurs, this is the best estimate from the available data. Once calculated, it emerges that the IOM's spend on R&D is 0.4% of GDP – lowest out of the comparator regions assessed. At the top end of the scale are Isle of Wight and Singapore, both with values of 1.7%. Next highest are Flintshire and Wrexham, and Torbay, at 1.2%. The Scottish Highlands and Islands has the lowest value aside from IOM, at 0.5%. Despite the caveats around availability of data for spend on R&D, this seems to suggest IOM R&D spending in general is low and something that needs to be measured and improved upon.

The percentage of employees in R&D roles follows the pattern of gross domestic expenditure on R&D fairly well, with Singapore and Isle of Wight highest (2.4% and 1.1% respectively), and Cyprus, Malta and Scottish Highlands and Islands

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<sup>79</sup> Government-initiated spend, using Innovate UK UKRI data and Business IOM financial assistance scheme data (see Appendix 1 for sources).



coming lowest (0.4%, 0.4% and 0.2%, respectively). Once more, the IOM has no metric on this and would be useful to capture as part of the Business Surveys.

### 3.4.4. Skills and workforce metrics

Some slight differences in the definition of the education-level metric were seen across regions, but values were deemed comparable. The IOM performs at the lower end of the scale compared to all the regions analysed, with 31% of the workforce estimated to have higher level qualifications – the same as for Torbay, Malta and the Isle of Wight. The highest value out of the UK regions is for Scottish Highlands and Islands at 45%. Cyprus is similar at 48%, but Singapore is significantly higher at 63%.

The percentage of the IOM population under 40 years of age is on the lower end of the scale (42%) compared to all the areas analysed, similar to Scottish Highlands and Islands and Torbay, and roughly central compared to the UK areas analysed. The Isle of Wight has the lowest rate, at 38%. The highest rates are seen for Malta and Cyprus, at 51% and 54%.

### 3.4.5. Key takeaways for the IOM

Overall, the IOM performs relatively well on industrial land price (when comparing internationally) and corporate tax rate. The IOM has a fairly central position on the age demographics metric out of all areas analysed. The Island however performs poorly on other metrics such as manufacturing % of total GVA / GDP, industry electricity prices, on-time planning applications, logistics rating (estimated) and government-led R&D funding both generally and in the E&M sector. Other metrics are missing for the IOM due to unavailable data on GVA and FDI. Therefore, comparison in these areas was limited.

### 3.4.6. Indicative overall cost comparison

In order to provide an indication of cost levels between the regions analysed, the monetary metrics in the business factors comparison were applied to five theoretical company archetypes, based on a sample of businesses in the IOM, and insights from Business Isle of Man<sup>80</sup>. **Table 7** provides the details of the company archetypes.

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<sup>80</sup> Most archetype values were generated randomly using the mean and standard deviation of groups of companies within the sample, based on small, medium and medium-large. Business Isle of Man informed the addition of further archetypes to better represent key company types on the Island.



**Table 7: Company archetypes used in the indicative cost comparison**

	ARCHETYPE 1	ARCHETYPE 2	ARCHETYPE 3	ARCHETYPE 4	ARCHETYPE 5
No. of full time employees (FTE)	11	48	61	43	202
Annual electricity consumption (kWh)	30,000	25,000	51,000	36,000	52,000
Annual taxable profits (£)	447,410	1,659,729	3,000,000	2,757,935	3,005,099
Size of business premises (sqft)	4,733	20,496	51,365	146,080	153,627

Archetypes 1 to 3 show a general increase in size of business, primarily in terms of FTE and size of premises, with possible cases for electricity consumptions and taxable profits. Archetypes 4 and 5 provide two cases for larger businesses on the island, Archetype 4 having a much lower FTE than Archetype 5 – representing a possible effect of more vs less automation of operations.

These archetypes have been selected in order to demonstrate a range of possible cost outcomes when comparing between different regions, since different aspects of the archetype will have a greater or lesser effect in different regions, dependent on the regional metrics. **Table 8** shows the results of the analysis.

**Table 8: Indicative cost in comparator region compared to IOM, coloured according to low to high costs within each archetype**

	ARCHETYPE 1	ARCHETYPE 2	ARCHETYPE 3	ARCHETYPE 4	ARCHETYPE 5
IOM	100 %	100 %	100 %	100 %	100 %
Isle of Wight	92 %	95 %	112 %	177 %	101 %
Scottish Highlands and Islands	86 %	84 %	92 %	108 %	78 %
Mid-Lancashire	93 %	97 %	109 %	157 %	99 %
Flintshire & Wrexham	91 %	93 %	105 %	146 %	94 %
Torbay	91 %	93 %	109 %	170 %	98 %
Malta	59 %	67 %	72 %	83 %	58 %
Singapore	75 %	88 %	93 %	116 %	90 %
Cyprus	59 %	52 %	56 %	58 %	46 %



For Archetype 1, IOM has the highest indicative costs compared to the other regions, with Scottish Highlands and Islands having 86% of the costs (the lowest out of the UK regions), and Cyprus and Malta having 59% of the costs (the lowest out of all the regions compared). For this archetype, wages and electricity costs make the highest contribution to costs out of the elements considered, with IOM having the highest contributions compared to the other regions.

For Archetype 2, IOM again has the highest indicative costs compared to other regions – but this time Mid-Lancashire follows closely behind at 97% of IOM costs. The cheapest regions are again Cyprus and Malta, at 52% and 67% of IOM costs respectively, and Scottish Highlands and Islands, at 84% of IOM costs. For this archetype, wages make the highest contribution to indicative overall costs across all regions (as with Archetype 5, noted below), followed by electricity costs – both of which are more expensive for IOM than the other regions.

For Archetype 3, IOM is in the middle of the range of indicative costs compared to the other regions. Isle of Wight has the highest costs, at 112% of IOM costs, and Scottish Highlands and Islands has the lowest cost out of UK regions, at 92% of IOM costs. Out of all regions, Malta has the lowest cost, at 56% of the IOM costs. For this archetype, total wages and electricity costs are generally the highest contributing cost elements, however the other elements can also contribute significantly. For example, the contribution of higher business rates, rent and corporation tax for Isle of Wight outweighs the higher total wages and electricity costs for IOM. For the results of this archetype, it is worth keeping in mind that the rental price data for IOM is low compared to the land price data – see further comments in the Business metrics section above.

For Archetype 4, IOM has the third lowest indicative cost compared to the other regions, with only Cyprus and Malta having lower costs – 58% and 83% of the IOM costs, respectively. Scottish Highlands and Islands has the lowest cost out of UK regions, and Isle of Wight has the highest costs, at 177% of the IOM costs. For this archetype, the contributions of different cost elements are distributed more evenly, and though IOM is highest out of the regions compared for some elements (wages and electricity costs), it is lowest or at the lower end for others, notably annual estimated rent, which has the highest contribution to overall costs for some regions. The results of this archetype could indicate the advantages of automation, particularly for large businesses operating on the Island. As with Archetype 4, it is worth keeping in mind that the rental price data for IOM is low compared to the land price data – see further comments in the Business metrics section above.

For Archetype 5, IOM is amongst the highest cost regions, with Isle of Wight, Mid-Lancashire and Torbay similarly high. The lowest cost regions are the same as those seen for Archetype 2: Cyprus, Malta and Scottish Highlands and Islands, at 46%, 58% and 78% of IOM costs respectively. For this archetype, as with Archetype 2, wages are the highest contributing cost element for each region – however business rates and annual rents have a higher contribution than in Archetype 2, pushing Isle of Wight more expensive than IOM under the metrics considered.

In summary, Archetype 4 followed by Archetype 3 are the most favourable for the IOM out of the five archetypes analysed. This may indicate higher suitability of medium-large manufacturing businesses on the Island, with relatively low numbers of employees and high profits. As noted, this could particularly apply to highly automated manufacturing processes. However, though the archetypes show a range of possibilities, it should be noted that not all costs relevant to businesses are included in this analysis, and that metrics are based on available data and are average values (where possible) – therefore cost comparisons for a specific businesses may be significantly different. IOM rent prices are particularly important to caveat due to divergence from land values, and influence over the results.



## 4. COMPARING POLICY MECHANISMS IN THE IOM VS COMPETITOR REGIONS

### 4.1. RATIONALE FOR ASSESSING KEY POLICY AREAS

To augment the quantitative scoring matrix, a high-level policy analysis was also conducted to compare the policy mechanisms on offer in the IOM compared to the other regions. A range of policies exist in the IOM to expand existing business activity, and Gemserv has compared what the Island offers versus comparator regions. **Table 9** lists all the policy scoring criteria for the assessment alongside the rationale for the metrics selection.

**Table 9: A list of policy scoring criteria with a rationale for why it was selected.**

Policy scoring criteria	Rationale for selection
Clarity of engineering & manufacturing vision and sub-sector prioritisation	The clarity of the vision and strategy provides an indication of how focused the region is. If it highlights certain sub-manufacturing sectors, then it shows a more sophisticated prioritisation.
Subsidies that encourage FDI into the region	FDI is a crucial way of growing sectors. Mechanisms that attract FDI from both multinational companies and SMEs can help augment and accelerate existing capabilities.
Subsidies that support companies investing in CAPEX / machinery	Investing in CAPEX and machinery is a key way to improve productivity, expand into new markets and ultimately grow a business. CAPEX subsidies are one of the first elements a company looks at when deciding to invest in a certain region.
Levels of investment into local R&D	The levels of investment into local R&D can be used as a proxy to assess how much innovation occurs in a sector or region. Those regions that invest heavily in R&D are generating new knowledge which can be leveraged to improve a sector.
Policies / environment that supports access to facilities	Appropriate facilities are a key requirement for companies wishing to set up or expand their manufacturing or engineering base. Policies that make industrial sites readily available and accelerate planning processes are often looked at more favourably.
Prevalence of enterprise zones / investment zones	Enterprise zones, investment zones and freeports offer key tax and regulatory relief to businesses. Having access to these zones to attract new engineering and manufacturing companies is a compelling reason for relocation.



<b>Support to reduce manufacturing energy costs</b>	Certain engineering and manufacturing sectors consume a lot of energy that makes up a considerable portion of their costs. Having dedicated tariffs or CAPEX support to reduce energy costs for the E&M sector plays a role in growing the sector.
<b>Policies to support the growth of SMEs</b>	Most developed economies have SMEs as the backbone of their economy. Mechanisms to support the growth of SMEs across their commercialisation journey is key to anchoring capability in a region.
<b>Proximity to universities and innovation institutions</b>	Access to universities and innovation institutions is an attractive pull for many businesses. As the E&M sector relies on continuous innovation and high skill levels, access to these institutions is important to maintain competitiveness.
<b>Support for skills and talent development</b>	A healthy pipeline of skills is important for the longevity of any business. A pipeline of skills and a good network of colleges and schools is also important for the E&M sector.





## 4.2. POLICY ASSESSMENT MATRIX

The policy assessment matrix below offers a comprehensive overview of the scoring output derived from our high-level policy analysis, which was conducted to compare the policies available in the IOM with those in comparator regions. The rationale behind the qualitative assessment scoring provided is detailed in the subsequent sections.

**Table 10: Scoring output of E&M policy analysis of IOM against comparator nations**

Policy Scoring Criteria	Comparator Nations								
	Isle of Man	Isle of Wight	Scottish Highlands & Islands	Mid-Lancashire	Flintshire and Wrexham	Torbay	Malta	Cyprus	Singapore
Clarity of engineering & manufacturing vision and sub-sector prioritisation	3	=	=	+	+	+	+	+	+
Subsidies that encourage FDI into the region	3	-	=	+	+	+	+	=	+
Subsidies that support companies invest in CAPEX / machinery	2	+	+	+	+	+	+	+	+
Levels of investment into local R&D	2	+	+	+	+	+	+	+	+
Policies / environment that supports access to facilities	2	=	+	+	=	+	+	+	+
Prevalence of enterprise zones / investment zones	3	-	=	+	+	-	=	=	+
Support to reduce manufacturing energy costs	3	+	+	+	+	-	+	+	+
Policies to support the growth of SMEs	3	+	+	=	=	=	=	+	+
Proximity to universities and innovation institutions	1	+	+	+	+	+	+	+	+
Support for skills and talent development	5	-	-	-	-	-	-	-	=
<b>Total Score</b>	<b>27</b>	<b>+</b>	<b>+</b>	<b>+</b>	<b>+</b>	<b>+</b>	<b>+</b>	<b>+</b>	<b>+</b>



(+) Scores higher, (-) Scores lower, (=) Scores equal



### 4.2.1. Clarity of E&M vision and sub-sector prioritisation

A clear vision and strategy provide an indication of how focused the region is on building the E&M sector. Regions will have various levels of focus, prioritisation and appetite to grow their E&M sector. **Table 11** provides the qualitative scoring criteria used to assess the regions, with the scoring for each region also provided.

**Table 11: Scoring definitions for clarity of engineering and manufacturing vision**

Score	Description
1	No mention of the E&M sector as part of the wider economic strategy.
2	Mentions E&M as a sector of interest but there's no granularity on the sub-sector strengths or growth strategy.
3	A fair E&M strategy which highlights E&M as one of many sectors and provides a high-level overview of the regional strengths.
4	A strong E&M strategy which highlights E&M as a key sector, identifies some strong sector competencies in the region and suggests potential growth markets.
5	A clearly articulated E&M strategy which identifies key regional areas of strength, targeted areas for growth and a coherent set of actions / policies to achieve growth.

Isle of Man	Isle of Wight	Scottish Highlands & Islands	Mid-Lancashire	Flintshire and Wrexham	Torbay	Malta	Cyprus	Singapore
3	3	3	5	4	5	4	4	5

As each region chosen had some degree of E&M capability, it is unsurprising each jurisdiction had identified its relative strengths in the sector. The IOM scored 3 in this metric as it outwardly states its capabilities in aerospace, precision engineering and other niche sectors while also noting the sector has declined in recent years<sup>81</sup>. However, most jurisdictions articulated a future vision and competitiveness more compellingly, clearly delineating which sectors to focus on and enacting policies to grow or protect their sectors. Mid-Lancashire and Torbay are two comparator regions which stand out. In response to COVID-19, the Lancashire Enterprise Partnership responded rapidly to the shocks witnessed in the aerospace industry. By October 2020, the region had generated a sector outlook, potential interventions and scenario planning under the Lancashire Aerospace Task Force<sup>82</sup>. Similarly, Torbay has witnessed a rapid rise in microelectronic, photonics and optical businesses in the region in terms of employment and GVA<sup>83</sup>. This has been down to multiple regional initiatives, spearheaded via EPIC Centre, and mutually reinforced by multiple economic strategies placing growth of microelectronics and photonics at its core<sup>84</sup>. From an international perspective, Singapore for many years has pursued a strategy that enabled it to leapfrog away from “heavy industries” and focus on

<sup>81</sup> Business Isle of Man (2022) Business Isle of Man: Programme 2023. Available at: [https://www.gov.im/media/1379668/4548\\_iom\\_dfe\\_business\\_iom\\_programme\\_aw\\_web\\_v2-1.pdf](https://www.gov.im/media/1379668/4548_iom_dfe_business_iom_programme_aw_web_v2-1.pdf)

<sup>82</sup> Lancashire LEP (2020). Lancashire's Aerospace Task Force: Development of a Plan. Available at: <https://lancashirelep.co.uk/wp-content/uploads/2020/10/Part2-from-Lancashire-Aerospace-Task-Force-A-Scenario-Based-Delivery-Plan-FINAL-2.pdf>

<sup>83</sup> Torbay Council (2022). Torbay Economic Strategy 2022-2030. Available at: <https://www.torbay.gov.uk/media/19564/evidence-base-2022-master.pdf>

<sup>84</sup> Epic Centre (2024). Torbay Hi-Tech Cluster, Photonics, and Microelectronics Cluster. Available at: <https://epic-centre.co.uk/hi-tech-cluster/>



lighter manufacturing methods for decades using additive manufacturing and advanced automation and robotics<sup>85</sup>. This has led to Singapore prioritising sectors such as semiconductors, nanotechnology and precision engineering. The insight that emerges here focusing on one or two sectors gives a clarity of purpose which makes it easier to build a strategy and vision around those sectors.

#### 4.2.2. Subsidies that encourage FDI into the region

FDI is a crucial way of growing sectors. Mechanisms that attract FDI from both multinational companies and SMEs can help augment and accelerate existing capabilities. **Table 12** provides the qualitative scoring criteria used to assess the regions, with the scoring for each region also provided.

**Table 12: Scoring definitions for subsidies to encourage FDI**

Score	Description							
1	No subsidies in place to attract foreign direct investment.							
2	Limited subsidies in place that aren't specifically targeted at FDI or the E&M sector.							
3	Some attractive subsidies for businesses that are targeted at FDI but not generally geared towards the E&M sector.							
4	Competitive subsidies for businesses that are targeted at the E&M sector.							
5	Very attractive and flexible subsidies, differentiated for both small and large companies, that are targeted towards the needs of the E&M sector.							

Isle of Man	Isle of Wight	Scottish Highlands & Islands	Mid-Lancashire	Flintshire and Wrexham	Torbay	Malta	Cyprus	Singapore
3	2	3	4	4	4	4	3	4

All assessed regions offer some level of incentive to attract FDI, with varying levels in the E&M sector. The IOM received a score of 3 in this regard, offering E&M firms relocating to the Island access to government grants, a secure environment for IP-sensitive projects, and notably, a 0% corporation tax rate<sup>86</sup>. The IOM's Financial Assistance Scheme (FAS) serves as the primary funding mechanism for E&M firms, providing up to 40% monetary support. However, while FAS prioritises export businesses and encourages FDI by supporting companies relocating to the IOM the scheme is not specific to supporting the E&M sector as it serves a diverse range of sectors<sup>87</sup>. In contrast, Torbay adopts a more targeted approach to attracting E&M FDI. For example, the region offers a "soft landings" growth package specifically designed and marketed for foreign-owned manufacturing companies seeking to relocate or expand in Torbay. Additionally, these companies are eligible for loans through the Torbay Economic Growth Fund, with amounts exceeding £250,000<sup>88</sup>. With these and other incentives in place, Torbay has experienced growth in the number of SMEs and multinational E&M companies in microelectronics operating in the region over the past decade<sup>89</sup>. Singapore has

<sup>85</sup> International Trade Administration (2020). Singapore Manufacturing. Available at: <https://www.trade.gov/market-intelligence/singapore-manufacturing>

<sup>86</sup> Business Isle of Man (2024). Engineering and Manufacturing. Available at: <https://www.businessisleofman.com/engineering-manufacturing/>

<sup>87</sup> Isle of Man Department of Enterprise (2024). Financial Assistance Scheme. Available at: <https://www.iomdfenterprise.im/financial-support/funding-2/financial-assistance-scheme/>

<sup>88</sup> Invest in Torbay (2024). Incentives. Available at: <https://investintorbay.com/invest/incentives/>

<sup>89</sup> EPIC Centre (2022). Torbay and South West Photonics and Microelectronics. Available at: <https://epic-centre.co.uk/wp-content/uploads/EPIC-Torbay-Hi-Tech-Cluster-2022.pdf>



been globally recognised for its ability to attract FDI in the E&M sector, despite its relatively small size. While Singapore has several active funding schemes, there are dedicated and generous streams for manufacturing companies. This includes the Pioneer Certificate Incentive where manufacturing businesses can receive a certificate which entitles them to a tax exemption or concessionary tax (5-10% for 5 years). Singapore also has the 100% Investment Allowance Scheme from which businesses can enjoy tax exemption of up to 100% of fixed capital expenditure incurred<sup>90</sup>. The main takeaway for the IOM is to adopt E&M sector specific incentives to attract FDI, which may encourage more E&M companies to choose the nation as a manufacturing base.

#### 4.2.3. Subsidies that support companies investing in CAPEX / machinery

Investing in CAPEX is a key way to improve productivity, expand into new markets and ultimately grow a business. CAPEX subsidies are one of the first elements a company looks at when deciding to invest in a certain region. **Table 13** provides the qualitative scoring criteria used to assess the regions, with the scoring for each region also provided.

**Table 13: Scoring definitions for subsidies to support companies investing in CAPEX / machinery**

Score	Description							
1	No grant / loan support for capital expenditure or machinery							
2	Limited grant / loan support on offer for the E&M sector with very rigid / unfavourable terms. Majority of the support on offer is from (supra)national measures vs regional.							
3	Modest grant / loan support for the E&M sector with a degree of flexibility on criteria and terms. Some regional specific support on offer that augment (supra)national measures.							
4	Competitive grant / loan regional support for the E&M sector that considerably improves what's available at the (supra)national level.							
5	Generous, up-front grant support or zero interest loans for capital expenditure that's targeted specifically at the region. The jurisdiction is flexible with terms while allowing multiple subsidies and allowances to be tapped into to reduce the burden of capital equipment.							

Isle of Man	Isle of Wight	Scottish Highlands & Islands	Mid-Lancashire	Flintshire and Wrexham	Torbay	Malta	Cyprus	Singapore
2	4	3	4	3	4	5	4	5

Most regions have demonstrated support for companies to invest in CAPEX through a range of loan and grant mechanisms. However, the IOM scores a 2 in this metric as it primarily provides grant support for the E&M sector under the FAS. Under FAS, manufacturing is considered a primary sector, but the onerous terms pose challenges for businesses to access support. The current terms overly prioritise job creation, offer reduced size grants vs competitor regions, and require an environmental impact assessment. Another downside is that the IOM Government does not provide up front grants, meaning any business awarded support has to spend all the allocated money up front before the grant is released<sup>91</sup>. These funding terms are attributed to the need for the IOM Government to de-risk tax payer

<sup>90</sup> ASEA Briefing (2024). Doing Business in Singapore. Available at: <https://www.aseanbriefing.com/doing-business-guide/singapore/taxation-and-accounting/tax-incentives-for-businesses>

<sup>91</sup> Department of Enterprise (2023). Enterprise Act 2008 Financial Assistance Scheme Guidelines. Available at: <https://www.iomdfenterprise.im/media/nnoomf2r/fas-guidelines-feb-2023-v4-1.pdf>



funds due to the prevailing 0% corporate tax. In comparison, Mid-Lancashire offers several favourable schemes that cater to supporting businesses in the E&M sector to invest in CAPEX. Funding is available from both regional and national sources, including the £20M Lancashire Urban Development Fund<sup>92</sup>, the £320M government-funded Lancashire Growth Deal<sup>93</sup>, and the now closed Lancashire Business Growth Fund supported by the UK Government Regional Growth Fund<sup>94</sup>. Malta also scores high in supporting CAPEX investments due to its range of grants, soft loans, loan subsidies, and loan guarantees provided by Malta Enterprise, the Government's economic development agency<sup>95</sup>. The Maltese Government's commitment to the E&M sector is evident through a €470M infrastructure investment program over an 8-year period<sup>96</sup>. This investment positively impacts the sector and creates a supportive environment for engineering and manufacturing. To further support companies investing in CAPEX/machinery, it is imperative for the IOM to build a larger portfolio of support across the product commercialisation stages. This would enhance the support available and encourage more businesses to invest in the E&M sector.

#### 4.2.4. Levels of investment into local R&D

The levels of investment into local R&D can be used as a proxy to assess how much innovation occurs in a sector or region. Those regions that invest heavily in R&D are generating new knowledge which can be leveraged to improve a sector. **Table 14** provides the qualitative scoring criteria used to assess the regions, with the scoring for each region also provided.

**Table 14: Scoring definitions for levels of investment into local R&D**

Score	Description
1	Limited / no local investment into R&D.
2	Some local investment into R&D. The majority of companies conduct private-led R&D with limited support from (supra)national sources and limited support from local institutions.
3	Modest local investment into R&D. There are some localised R&D funds that augments (supra)national sources.
4	Competitive levels of investment into local R&D. with regional funds significantly improving (supra)national sources of funding.
5	High levels of investment into local R&D via national and regional routes. Further enhanced by supportive regional institutions and company R&D centres that actively supports innovation.

Isle of Man	Isle of Wight	Scottish Highlands & Islands	Mid-Lancashire	Flintshire and Wrexham	Torbay	Malta	Cyprus	Singapore
2	4	4	4	4	5	5	5	5

<sup>92</sup> Lancashire Urban Development Fund (2024). Available at: <https://www.lancashireudf.co.uk/about>

<sup>93</sup> Lancashire Enterprise Partnership (2024). Growth Deal. Available at: <https://lancashirelep.co.uk/key-initiatives/growth-deal/>

<sup>94</sup> Lancashire Business Growth Fund (2024). Available at: <https://www.growthlancashire.co.uk/business-support-funding/lancashire-business-growth-fund/>

<sup>95</sup> Malta Enterprise (2024). Support Measures and Other Services. Available at: <https://www.maltaenterprise.com/support>

<sup>96</sup> Malta Today (2020). Factory zones set to expand vertically in 'largest' investment in industrial infrastructure. Available at: <https://www.maltatoday.com.mt/news/national/105735/factory-zones-set-to-expand-vertically-in-largest-investment-in-industrial-infrastructure>



All comparator nations demonstrate a strong commitment to local R&D investment, through regional and/or national routes. The IOM received a score of 2 in this metric, indicating a limited level of investment in local R&D, primarily driven by the private sector. The IOM's FAS serves as the main publicly backed funding mechanism, supporting diversification, R&D, new technology, and product design. However, the historic spend specific to R&D endeavours as per Appendix 7 of FAS has been very low<sup>97</sup>. In contrast, the comparator regions have demonstrated significant levels of regional funding that are highly competitive. For example, innovators in the Scottish Highlands and Islands benefit from schemes such as the Highlands and Islands Innovation Support<sup>98</sup>, the Innovation Voucher Programme, the Industry Engagement Fund<sup>99</sup>, and Scottish EDGE<sup>100</sup> in addition to wider UKRI funds. These schemes prioritise collaboration between industry and academia and are largely funded by Scottish Enterprise, HIE, and the Scottish Funding Council. Flintshire and Wrexham showcase their support for local R&D investment through the establishment of the £20M Advanced Manufacturing Research Centre (AMRC) Cymru, funded by the Welsh Government<sup>101</sup>. This centre focuses on R&D, skills development, and technology commercialisation. Additionally, the Welsh Government invests in "Magnet Projects" as part of their City and Growth Deal<sup>102</sup>, aiming to position Wales as a test bed for R&D and cutting-edge technologies. Cyprus excels in local R&D investment, with the establishment of the Deputy Ministry of Research, Innovation, and Digital Policy in 2020<sup>103</sup>. This initiative aims to boost Cyprus' global R&D presence. The country has received significant support, including EU funding, €400M of national government funding, and over €25M from the Research and Innovation Foundation<sup>104</sup>. To improve its score, the IOM should explore joint funding with the UK and Europe. Strengthening collaboration between UK academia and the E&M industry would also improve R&D performance for the IOM.

#### 4.2.5. Policies / environment that support access to facilities

Appropriate facilities are a key requirement for companies wishing to set up or expand their manufacturing or engineering base. Policies that make industrial sites readily available and accelerate planning processes are often looked at more favourably. **Table 15** provides the qualitative scoring criteria used to assess the regions, with the scoring for each region also provided.

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<sup>97</sup> Data provided by IOM Department of Enterprise

<sup>98</sup> Highlands and Islands Enterprise Innovation (2024). Available at: <https://www.hie.co.uk/support/browse-all-support-services/innovation/>

<sup>99</sup> Research Innovation Scotland (2024). Available at: [Funding Opportunities | Research Innovation Scotland \(research-innovation-scotland.co.uk\)](https://www.research-innovation-scotland.co.uk/funding-opportunities/)

<sup>100</sup> Scottish EDGE (2020). Available at: <https://www.scottishedge.com/>

<sup>101</sup> AMRC Cymru (2024). Available at: <https://www.amrc.co.uk/pages/amrc-cymru>

<sup>102</sup> Trade and Invest Wales (2024). Magnet Projects. Available at: <https://tradeandinvest.wales/regional-strengths>

<sup>103</sup> Cyprus Deputy Ministry of Research, Innovation and Digital Policy (2024). Available at: [https://www.dmid.gov.cy/dmid/research.nsf/home\\_en/home\\_en?opendocument](https://www.dmid.gov.cy/dmid/research.nsf/home_en/home_en?opendocument)

<sup>104</sup> Cyprus Profile (2022). Emerging R&D Powerhouse. Available at: <https://www.cyprusprofile.com/sectors/research-and-development>



**Table 15: Scoring definitions for policies / environment that support access to facilities**

Score	Description
1	Support from government to access or expand facilities is non-existent.
2	Limited support from government to access or expand facilities. High level mention regarding planning and access to facilities but no concrete plans / initiatives to combat the issue.
3	Some government support to access or expand facilities with some broad initiative aimed at accelerating planning and helping multiple sectors access facilities, not specifically geared towards the E&M sector.
4	Government promotes industrial land use for a wide variety of sectors, including the E&M sector. Some evidence of co-ordination to speed up planning decisions to increase chances of investment decisions.
5	Government actively dedicates industrial land for the E&M sector and pro-actively assists businesses to find appropriate facilities. Strong evidence of real coordination across departments to accelerate planning permissions, logistics and energy connections.

Isle of Man	Isle of Wight	Scottish Highlands & Islands	Mid-Lancashire	Flintshire and Wrexham	Torbay	Malta	Cyprus	Singapore
2	2	3	3	2	5	5	3	5

When comparing the land-use plans of different regions, it becomes evident that all regions have dedicated land for industrial purposes. However, the level of government involvement in facilitating business access to these facilities varies. The IOM, for instance, scores a 2 in this metric as its land-use planning is mentioned at a high level in the Isle of Man Strategic Plan 2016<sup>105</sup>. However, the IOM Government offers limited support when it comes to accessing these industrial spaces with the nation's economic strategy citing access to facilities as a potential constraint<sup>106</sup>. In contrast, Torbay's council takes a more proactive approach. They have developed an online commercial property database specifically for the E&M sector, allowing businesses to easily find spaces in strategic business parks<sup>107</sup>. This demonstrates a more active role from the local Torbay government in helping businesses access industrial space. Looking at notable comparator nations, Malta and Singapore stand out for their policies recognising the need for dedicated space for E&M companies. Malta Enterprise, for example, prioritises the allocation of industrial space as a support system for companies wishing to do business in the country. This space is typically part of the nation's existing "industrial estates" that already host companies of a similar nature<sup>108</sup>. Singapore, on the other hand, has successfully transitioned into a developed nation in less than 50 years, partly due to its strategic land-use policies. The nation has prioritised the development of industrial sites, known as technological corridors, where E&M companies can receive priority access to industrial space for their operations<sup>109</sup>. The key takeaway from this comparison is that strategic land-use policies that prioritise the E&M sector, coupled with active government support in accessing and expanding such facilities, are invaluable for the economic growth of a nation. Singapore serves as a prime example of how these factors can contribute to a nation's success.

<sup>105</sup> Isle of Man Government (2016). Isle of Man Strategic Plan 2016. Available at: [https://www.gov.im/media/1350906/the-isle-of-man-strategic-plan-2016-approved-plan-15\\_03\\_16.pdf](https://www.gov.im/media/1350906/the-isle-of-man-strategic-plan-2016-approved-plan-15_03_16.pdf)

<sup>106</sup> Isle of Man (2022). Economic Strategy. Available at: [https://www.gov.im/media/1377113/iom-gov-economic-strategy-22-32\\_web.pdf](https://www.gov.im/media/1377113/iom-gov-economic-strategy-22-32_web.pdf)

<sup>107</sup> Invest in Torbay (2024). Business in Torbay. Available at: <https://investintorbay.com/invest/business-in-torbay/>

<sup>108</sup> Malta Enterprise (2024). Doing Business in Malta. Available at: <https://www.maltaenterprise.com/why-malta>

<sup>109</sup> The Singapore Urban Systems Studies (2013). Industrial Infrastructure. Available at: <https://www.maltaenterprise.com/why-malta>





#### 4.2.6. Prevalence of enterprise zones / investment zones

Enterprise zones, investment zones and freeports offer key tax and regulatory relief to businesses. Having access to these zones to attract new engineering and manufacturing companies is a compelling reason for relocation. **Table 16** provides the qualitative scoring criteria used to assess the regions, with the scoring of each region also provided.

**Table 16: Scoring definitions for prevalence of enterprise zones / investment zones**

Score	Description							
1	No enterprise / investment zones or freeports within the region.							
2	Limited enterprise / investment zones or freeports within the region, or they are newly established and haven't started generating investment opportunities.							
3	Enterprise / investment zones or freeports are established in the region with E&M activity one of many sectors being targeted. Some evidence of E&M activity occurring in these zones.							
4	A handful of enterprise / investment zones or freeports have attracted a critical mass of E&M investment into the region. These zones are actively being marketed as an investment proposition as part of an FDI pitch deck.							
5	A highly sophisticated network of enterprise / investment zones and freeports within the region. These are actively marketed to a domestic and international E&M business with the benefits of locating within them clearly articulated. Evidence that investment zones have supported the clustering of certain technologies and sectors within E&M.							

Isle of Man	Isle of Wight	Scottish Highlands & Islands	Mid-Lancashire	Flintshire and Wrexham	Torbay	Malta	Cyprus	Singapore
3	1	3	4	4	1	3	3	5

The prevalence of enterprise/investment zones or freeports varies across regions. Isle of Wight and Torbay are the only regions without such zones. The tax regime within the IOM operates like a freeport or investment zone, offering tax benefits for the E&M sector<sup>110</sup>. However, despite these benefits, the E&M sector has not seen significant improvement, indicating a weakness in attracting mass investment. For these reasons the IOM scores a 3 in this metric. On the other hand, Mid-Lancashire and Flintshire and Wrexham have performed well, attracting E&M companies to their enterprise zones. Lancashire Enterprise Zone secured Enterprise Zone status for 4 development sites in Lancashire, creating an investment destination - Lancashire Advanced Manufacturing and Energy Cluster (LAMEC)<sup>111</sup>. The Deeside Enterprise Zone hosts companies such as Airbus UK, Toyota and Tata Steel in its cluster<sup>112</sup>. Singapore, with its extensive network of nine free trade designated areas, including the second largest free port in the world, has successfully attracted mass inward investment across various sectors, including E&M<sup>113</sup>. To stimulate inward investment, IOM should enhance its marketing efforts to promote the benefits of its freeport status.

<sup>110</sup> Crossleys (2021). About the Isle of Man. Available at: <https://www.crossleys.com/AboutUs-IsleOfMan.html>

<sup>111</sup> Invest in Lancashire (2024). Lancashire Enterprise Zones. Available at: <https://investinlancashire.com/lamec/>

<sup>112</sup> Business Wales (2024). Deeside Enterprise Zone. Available at: <https://businesswales.gov.wales/enterprisezones/deeside-enterprise-zone>

<sup>113</sup> ASEAN Briefing (2023). Taking Advantage of Singapore's Jurong Port Free Trade Zone: A Guide. Available at: <https://www.aseanbriefing.com/news/taking-advantage-of-singapores-jurong-port-free-trade-zone/#understandingsingaporesfreetradezonesHeader>





#### 4.2.7. Support to reduce manufacturing energy costs

Certain E&M sectors consume a lot of energy that makes up a considerable portion of their costs. Having dedicated tariffs or CAPEX support to reduce energy costs for the E&M sector plays a role in growing the sector. **Table 17** provides the qualitative scoring criteria used to assess the regions, with the scoring of each region also provided.

**Table 17: Scoring definitions for support to reduce manufacturing energy costs**

Score	Description							
1	No support offered to reduce manufacturing energy costs.							
2	A degree of energy support via differentiated tariffs, only available to a select few businesses. Limited grant support to transition to new energy technologies.							
3	Favourable tariff for a wider array of businesses, including the E&M sector. Reasonable grants to support the transition to cleaner energy although wouldn't cover the majority of energy use.							
4	More flexible and cost effective tariff support aimed at the E&M sector to help mitigate higher costs. Competitive subsidies on offer to decarbonise a significant portion of manufacturing and industrial processes.							
5	A suite of policies including generous and flexible tariffs for reduced OPEX costs and capital support for new energy technologies that specifically target the E&M sector. Would enable E&M sector to decarbonise a large majority of their energy demand.							

Isle of Man	Isle of Wight	Scottish Highlands & Islands	Mid-Lancashire	Flintshire and Wrexham	Torbay	Malta	Cyprus	Singapore
3	4	4	4	4	2	4	4	5

In comparing analysed regions' policies aimed at reducing energy costs in the E&M sector, most regions score high. However, the IOM scores a 3 in this metric. It offers differentiated tariffs to businesses<sup>114</sup>, including the E&M sector, and has funding mechanisms in place to support businesses in reducing energy costs through energy efficiency and transitioning to cleaner energy. The Business Energy Saving Scheme (BESS) on the Island provides 100% unsecured interest-free loans up to £20,000 for energy efficiency projects<sup>115</sup>, although they are not significant enough to effectively decarbonise the E&M sector. It is estimated that the cost of energy efficiency for decarbonisation ranges between £3-£50 per square foot of a building<sup>116</sup>, and considering industrial land sizes of a typical IOM E&M business, the £20,000 funding cap is low. Apart from the BESS, the IOM's FAS also includes discretionary grants for improving energy efficiency. In contrast, other regions in the UK offer more comprehensive support packages. For example, the Scottish Highlands and Islands are eligible for support from the £42M Scottish Industrial Energy Transformation Fund<sup>117</sup>, specifically designed for decarbonising Scotland's industrial manufacturing sector. Scotland's SME Loan Scheme also offers interest-free loans up to £100,000 for carbon-reducing upgrades<sup>118</sup>. Looking at an international

<sup>114</sup> Manx Utilities (2024). Business Tariffs. Available at: <https://www.manxutilities.im/your-business/electricity/business-tariffs/>

<sup>115</sup> Department for Enterprise (2024). Business Energy Saving Scheme. Available at: <https://www.iomdfenterprise.im/financial-support/funding/business-energy-saving-scheme/>

<sup>116</sup> Market Intelligence (2023) Decarbonising the built environment – EPC, MEES and the cost implications. Available at: <https://marketintel.gardiner.com/decarbonising-the-built-environment-epc-meess-and-the-cost-implications>

<sup>117</sup> Scotland Government Energy Efficiency (2024). Scottish Industrial Energy Transformation Fund. Available at: <https://www.gov.scot/policies/energy-efficiency/scottish-industrial-energy-transformation-fund/>

<sup>118</sup> Business Energy Scotland (2024). SME Loan Scheme. Available at: <https://businessenergyscotland.org/smeloan/>



comparator, Malta stands out. In response to the energy crisis of 2021, the Maltese Government provided significant support to mitigate energy price shocks for households and businesses. Their level of support, as a percentage of GDP, was the second highest in the EU after Germany<sup>119</sup>. Malta also launched the 'Investment Aid Energy Efficiency Fund', offering businesses up to €15M for energy efficiency installations or upgrades<sup>120</sup>, and the Smart and Sustainability grant, providing up to €50,000 to modify machinery or plant equipment for energy efficiency<sup>121</sup>. These examples highlight the importance of larger public financial support in reducing energy costs and decarbonising the E&M sector. The IOM should consider stimulating greater public financial support to achieve these goals.

#### 4.2.8. Policies to support the growth of SMEs

Most developed economies have SMEs as the backbone of their economy. Mechanisms to support the growth of SMEs across their commercialisation journey is key to anchoring capability in a region. **Table 18** provides the qualitative scoring criteria used to assess the regions, with the scoring of each region also provided.

**Table 18: Scoring definitions for policies to support the growth of SMEs**

Score	Description							
1	No policies in place to support the growth of SMEs.							
2	Limited policies in place to support the growth of SMEs, limited funding available / focus is on initial startup phase with the scheme general & not geared towards the E&M sector.							
3	Decent grants to support SMEs with limited business mentoring available that is somewhat relevant for the E&M sector. Generally focused on early starts ups an initial phase that explores some more advanced stages of growth.							
4	Competitive support for SMEs that offers favourable grants and business mentoring for the E&M sector. Supports SMEs from start up to just before pre-commercialisation with generally easy to follow, joined up support.							
5	Tailored support for SMEs in the E&M sector that incorporates grants, loans, IP / licensing advice, business mentoring, networking and route to market strategies. Government also has easy to follow, joined up support to assist businesses through their commercialisation journey.							

Isle of Man	Isle of Wight	Scottish Highlands & Islands	Mid-Lancashire	Flintshire and Wrexham	Torbay	Malta	Cyprus	Singapore
3	4	4	4	3	3	3	4	4

<sup>119</sup> EuroNews (2023). Energy crisis in Europe: Which countries have the cheapest and most expensive electricity and gas? Available at:

<https://www.euronews.com/next/2023/03/29/energy-crisis-in-europe-which-countries-have-the-cheapest-and-most-expensive-electricity-a>

<sup>120</sup> Malta Enterprise (2018). Investment Aid for Energy Efficiency. Available at: <https://maltaenterprise.com/support/energy-efficiency-projects>

<sup>121</sup> Malta Government (2023). Smart and Sustainable Investment Grant extended for 2024. Available at: <https://www.gov.mt/en/Government/DOI/Press%20Releases/Pages/2023/12/15/pr231988en.aspx>



In terms of policies to support SME growth, most regions fall within the mid-range performance scale. The IOM scores a 3 in this metric, indicating that it has some policies and funding in place to support the growth of SMEs, albeit limited in scope. The Island offers support through the Micro Business Grant Scheme, which provides funding of up to £15,000 for new startups towards living costs or as a grant, along with mentorship and training benefits<sup>122</sup>. Additionally, the Business Improvement Scheme offers up to £6,000 for small businesses to access technical services across various areas such as marketing, legal, or auditing<sup>123</sup>. The Business Isle of Man service serves as a one-stop platform for businesses to access information on available support, business registration, intellectual property, and legal issues to all businesses<sup>124</sup>. However, the main weakness is that while E&M businesses are eligible to apply, there is no dedicated scheme specifically tailored to enterprises in the E&M sector. This perhaps suggests why there has been no major investment in R&D or manufacturing from a new SME in over a decade. In comparison, the Isle of Wight offers support through the 'Manufacturing Growth Programme'<sup>125</sup>, a £6.5M package designed to cater to SME manufacturers. Participating SMEs receive ongoing business support and financial assistance, which provides a more comprehensive approach to supporting SME growth. From an international perspective, Singapore stands out with its diverse range of competitive funding schemes, including some specifically targeted at the E&M sectors. Additionally, the government service 'Go Business' acts as a central platform for businesses to apply for grants and licenses, as well as receive advice on market access<sup>126</sup>. This platform appears to be an efficient and seamless avenue for SMEs at different stages of growth. The highlight that emerges for the IOM is the need to adopt more E&M sector-specific support schemes and cater to SMEs at an advanced level of growth. By addressing these gaps and providing targeted support, the IOM can better facilitate the growth and development of SMEs in the E&M sector, ultimately enhancing the region's overall economic performance.

#### 4.2.9. Proximity to universities and innovation institutions

Access to universities and innovation institutions is an attractive pull for many businesses. As the E&M sector relies on continuous innovation and high skill levels, access to these institutions is important to maintain competitiveness.

**Table 19** provides the qualitative scoring criteria used to assess the regions, with the scoring for each region also provided.

<sup>122</sup> IOM Department for Enterprise (2024). Micro Business Grant Scheme. Available at: <https://www.iomdfenterprise.im/financial-support/funding-2/micro-business-grant-scheme/>

<sup>123</sup> IOM Department for Enterprise (2024). Business Improvement Scheme. Available at: <https://www.iomdfenterprise.im/financial-support/funding-2/business-improvement-scheme/>

<sup>124</sup> Business Isle of Man (2024). Engineering and Manufacturing. Available at: <https://www.businessisleofman.com/engineering-manufacturing/>

<sup>125</sup> Manufacturing Growth Programme (2024). Available at: <https://www.manufacturinggrowthprogramme.co.uk/>

<sup>126</sup> Go Business Singapore (2024). Available at: <https://www.gobusiness.gov.sg/>



**Table 19: Scoring definitions for proximity to universities and innovation institutions**

Score	Description
1	No universities or innovation institutions in the region.
2	Some universities or innovation institutions adjacent to the region that businesses could access.
3	Hosts one or two universities or innovation institutions in the region for the E&M sector and has some facilities open for businesses to use.
4	Hosts multiple university or innovation institutions in the region that are respected in the E&M sector with advanced facilities for businesses to use for innovation projects.
5	Hosts a network of universities and innovation institutions geared towards providing services for the E&M sector while also providing a steady stream of knowledge and talent in the area. If it's a sub-region, the region will often host national centres of excellence in the E&M sector.

Isle of Man	Isle of Wight	Scottish Highlands & Islands	Mid-Lancashire	Flintshire and Wrexham	Torbay	Malta	Cyprus	Singapore
1	2	3	4	5	4	5	3	5

The IOM scores the lowest in this metric compared to other regions, primarily due to the absence of universities or innovation institutions on the Island that provide facilities for businesses to utilise. Looking at regional comparisons, Flintshire and Wrexham stands out with the presence of the University of Sheffield Advanced Manufacturing Research Centre (AMRC)<sup>127</sup> and a Skills Factory in Deeside Enterprise Zone, developed by Coleg Cambria and Bangor University<sup>128</sup>. Similarly, Torbay has a thriving Hi-Tech Cluster<sup>129</sup>, with strong support from partners such as South Devon College, the Torbay Development Agency, and the Electronic and Photonics Innovation Centre. The presence of research and innovation centres in these regions has proven to be a catalyst for world-leading E&M companies to establish their businesses in the area. On an international scale, Singapore shines as a host to world-class research institutions that can provide the E&M sector with the innovation skills necessary to enhance its competitiveness<sup>130</sup>. Through collaborative efforts, industry and academia can identify research areas that lead to groundbreaking products and services<sup>131</sup>. Academic partners can then deliver the training and education required to produce highly skilled graduates, ensuring a continuous supply of talent for the sector. Therefore, it is essential for the IOM to consider either establishing or gaining access to nearby innovation institutions. This will not only attract investment but also nurture a skilled workforce that can contribute to the growth and success of the E&M sector in the region.

#### 4.2.10. Support for skills and talent development

A healthy pipeline of skills is important for the longevity of any business. Regions that support a pipeline of skills and have a good network of colleges and schools are also important for the E&M sector. **Table 20** provides the qualitative scoring criteria used to assess the regions, with the scoring for each region also provided.

<sup>127</sup> Advanced Manufacturing Research Centre Cymru (2024). Available at: <https://www.amrc.co.uk/pages/amrc-cymru>

<sup>128</sup> Deeside (2021). Deeside 'Skills Factory' one of first projects proposed as part of Coleg Cambria and Bangor University collaboration. Available at: <https://www.deeside.com/deeside-skills-factory-one-of-first-projects-proposed-as-part-of-coleg-cambria-and-bangor-university-collaboration/>

<sup>129</sup> EPIC Centre (2024). Hi Tech Cluster. Available at: <https://epic-centre.co.uk/hi-tech-cluster/>

<sup>130</sup> QS Top Universities (2024). QS World University Rankings 2024: Top global universities. Available at: <https://www.topuniversities.com/world-university-rankings>

<sup>131</sup> National University of Singapore (2024). Enterprise. Available at: <https://enterprise.nus.edu.sg/partnering-corporates/corporate-partnerships/>



**Table 20: Scoring definitions for support for skills and talent development**

Score	Description
1	Limited skills and talent development support in the area for the E&M sector.
2	Some evidence of fostering skills and talent development for the E&M sector. Government has highlighted it's an issue and articulated a strategy.
3	Sound evidence that policies are being enacted to encourage E&M skills at secondary, further and higher education level. Industry is also involved in promoting STEM skills.
4	The region invests in E&M skills provision making it one of their priorities. A fairly good relationship exists between industry and academia, so the courses are mostly relevant.
5	The region significantly invests and fosters close collaboration between the E&M sector and education institutes. Education providers are running a diversity of courses across age groups with the latest equipment while industry is constantly promoting STEM careers.

Isle of Man	Isle of Wight	Scottish Highlands & Islands	Mid-Lancashire	Flintshire and Wrexham	Torbay	Malta	Cyprus	Singapore
5	4	4	4	4	4	4	2	5

There is strong evidence of support for skills and talent development across most regions, except for Cyprus, which has limited development schemes resulting in a weakness in human capital in the E&M sector. In this metric, the IOM performs well, scoring a 5. The region has two vocational support schemes that assist local businesses in developing a future-ready workforce. Investment in skills, careers and training is prevalent. The employee relocation incentive is a strong skills development policy, offering a 20% grant (of the employee's first year salary) of up to £10,000 towards the cost of relocating an employee. This ensures the import of critical skills and advances the growth of the IOM workforce. The Vocational Training Assistance Scheme (VTAS) provides grants of up to 30% towards the cost of training, courses and exam fees<sup>132</sup>. Thus, developing the Island's skills, enhancing economic benefits due to a higher skilled workforce. The IOM also provides the Advanced Manufacturing Training Centre (AMTC)<sup>133</sup>, offering full-time courses in collaboration with the E&M industry, equipping students with the necessary skills for the industrial sector. Additionally, the IOM organises annual events like STEM Fest<sup>134</sup> and STEM group forums to promote STEM careers among different age groups. Similar to Singapore, which takes a comprehensive approach to not only focusing on skills development but also continuously upgrading the skills of the current E&M workforce, the IOM takes initiative on skill upcycling. A collaborative effort between industry, UCM, Department of Education, Sport and Culture, STEMForum and Awareness of Careers in Engineering ensures the promotion of lifelong learning in the workplace, recognising the dynamic nature of the E&M sector. This would ensure that the E&M sector remains adaptable and competitive in a rapidly evolving landscape.

<sup>132</sup> Isle of Man Government (2024). Vocational Training Assistance Scheme. Available at: <https://www.gov.im/categories/education-training-and-careers/vocational-training-assistance-scheme/>

<sup>133</sup> Isle of Man Government (2014). Engineering centre of excellence a boost for industry. Available at: <https://www.gov.im/news/2014/oct/01/engineering-centre-of-excellence-a-boost-for-industry/>

<sup>134</sup> Engineering Isle of Man (2024). STEMfest Isle of Man. Available at: <https://www.engineeringiom.com/inspire/stemfest-isle-of-man/>



## 5. SUMMARISING THE ISLE OF MAN'S MANUFACTURING AND INNOVATION CAPABILITIES

### 5.1. A REVIEW OF THE ISLE OF MAN'S INDUSTRIAL INNOVATION ECOSYSTEM

As part of the Phase One assessment, a high-level review was undertaken to understand the vibrancy of the IOM's industrial innovation ecosystem. A key challenge identified from the Isle of Man Economic Strategy was that "innovation and business dynamism were not a strong feature of the IOM's business culture"<sup>135</sup>. The aim of this section is to explore this sentiment further and logically assess gaps based on evidence from the individual diagnostics, competitor analysis, desk research and wider stakeholder engagement.

A regional innovation system can be broadly defined as "a set of interacting private and public interests, formal institutions, and other organisations that function according to organisational and institutional arrangements and relationships conducive to the generation, use, and dissemination of knowledge"<sup>136</sup>. Using an approach developed by IfM Engage<sup>137</sup>, this section explores the Isle of Man's knowledge generation, diffusion and absorption capacity. Below is a brief definition of the three types of interrelated innovation system capabilities:

- capabilities to create new knowledge (including research in universities, public and semi-public research centres, and private firms)
- capabilities to diffuse knowledge (including intermediary institutions, advanced business services, extension services, and industrial training in emerging technologies)
- capabilities to absorb knowledge (including firm in-house design and engineering, development, and application customisation).

Based on the evidence gathered, the Isle of Man's industrial innovation capabilities across industry and academia were scored, using comparator regions as a benchmark. **Table 21** provides the definition on what each score means. The scores and rationale for the scoring is given below.

<sup>135</sup> Isle of Man Government (2022). Our Island, Our Future: Isle of Man Economic Strategy. Available at: [https://www.gov.im/media/1377113/iom-gov-economic-strategy-22-32\\_web.pdf](https://www.gov.im/media/1377113/iom-gov-economic-strategy-22-32_web.pdf)

<sup>136</sup> Doloreux, D. and Parto, S. (2005): Regional innovation systems: Current discourse and unresolved issues. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S0160791X05000035>

<sup>137</sup> IfM Engage (2016). Making 'smart specialisation' smarter: an industrial-innovation system approach. Available at: [https://www.ifm.eng.cam.ac.uk/uploads/Resources/Reports/Smart\\_Specialisation\\_Report\\_agritech.pdf](https://www.ifm.eng.cam.ac.uk/uploads/Resources/Reports/Smart_Specialisation_Report_agritech.pdf)



**Table 21: Scoring criteria and results for knowledge generation, diffusion and absorption in academia & industry in the Isle of Man**

Score	Description
1	No evidence of capability in industry / academia.
2	Limited evidence of capability in industry / academia that is below most comparator regions.
3	Fair evidence of some capabilities in industry / academia that is in line with comparator regions.
4	Good evidence of capability in industry / academia that is competitive with comparator regions.
5	Extensive evidence of capability in industry / academia that surpasses most comparator regions.

	Knowledge Generation	Knowledge Diffusion	Knowledge Absorption
Academia	1	1	2
Industry	2	2	3

### 5.1.2. Knowledge generation

The ability to generate knowledge on the Island emerges purely from the private sector. The region has no universities or formal linkages to UK institutions for E&M research. This prevents the Island creating spin outs which are becoming a vital source of innovative, high growth companies for the UK economy. Any links with UK academia exist due to personal relationships within the businesses, usually formed via alumni ties. In addition, there is limited structured assistance from the Department for Enterprise or UCM on forming stronger relationships with respected E&M institutions in the UK.

Despite the lack of academic knowledge generation, evidence emerged from the diagnostics and wider stakeholder engagement that the larger companies and smaller network of entrepreneurs have the capacity to generate knowledge. In terms of the more established companies, the impact of COVID-19 on the aerospace industry has triggered several companies to explore diversifying into new markets. For the smaller businesses, the Isle of Man's capability to attract entrepreneurial people to the Island has resulted in microbusinesses emerging eager to set up on the Island. These companies are often reliant on one or two individuals who use their years of industry experience to set up a new business venture in a sector. Despite the sole reliance on the private sector as a source of innovation, limited support is offered to the sector by the IOM Government. As highlighted in the regional comparator analysis, the level of R&D funding dedicated to the E&M sector is low and tends to be awarded reactively based on external shocks such as COVID-19 or attempting to maintain a company on the Island. In fact, before Appendix 7 of FAS was introduced, very little R&D funding was awarded on the Island compared to other regions. The sentiment of reduced attractiveness of R&D funding was a theme that emerged during interviews. One respondent highlighted that the Enterprise Development Scheme, discontinued in 2019, had benefited their company well and termination of the scheme without replacing it with something similar was regrettable.

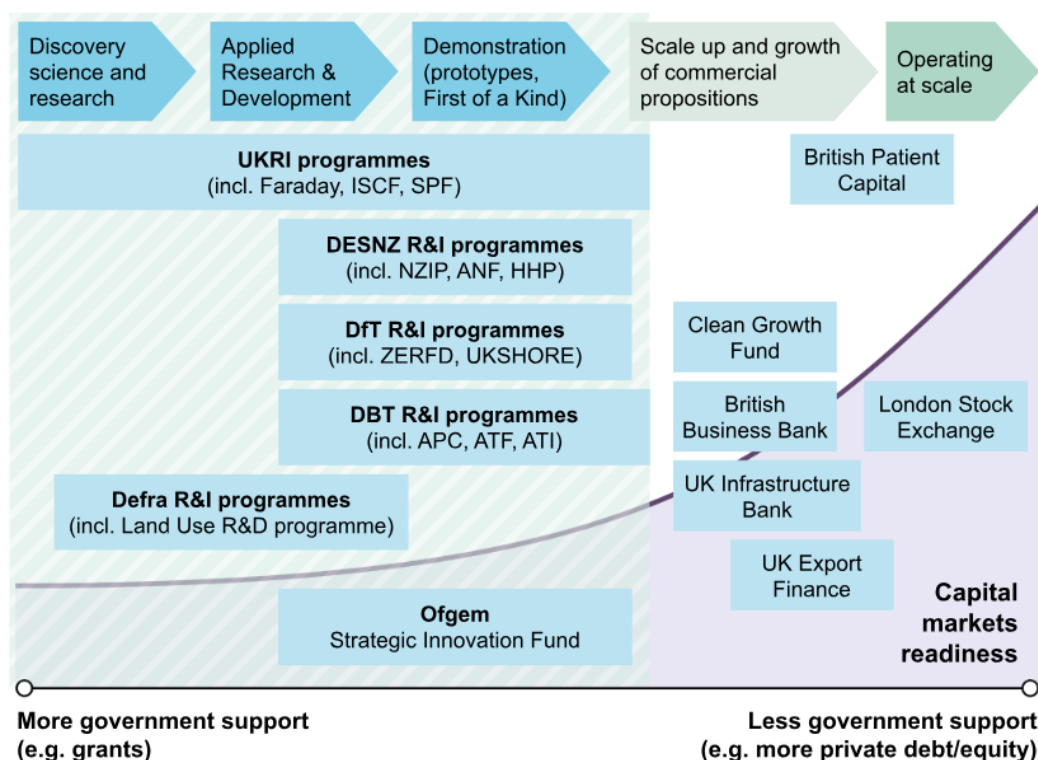
Another observation is that the Isle of Man doesn't have a joined-up funding ecosystem that guides companies through the "valley of death". **Figure 17** presents a snapshot of the innovation network in the UK that supports the engineering and manufacturing sector. While it's unrealistic for the IOM to replicate and resource the breadth of funding mechanisms offered in the UK, it highlights an example of a joined-up funding mechanism across the R&D landscape.





Much of the FAS grant support focuses on activities associated with scale-up and growth of commercial entities<sup>138</sup>. In fact, no dedicated funding mechanisms on the Island exist for purely exploratory science and research. Though funding exists for demonstration activities meant to lead to commercially feasible products, the amount is capped at £25,000 per annum and linked to job creation, presenting another limitation.

**Figure 17: UK research and innovation support ecosystem<sup>139</sup>**



In addition to the limited IOM R&D funding, companies based in the IOM are also currently excluded from accessing any UKRI funding – though the IOM does have capability to link into UKRI. Access is being worked on, but in the meantime, IOM sites of companies with UK offices are put at a distinct disadvantage as their UK offices can access large support. In short, the private sector’s knowledge generation capability on the Island occurs despite government support, rather than as a result of it.

### 5.1.3. Knowledge diffusion

The Island’s ability to diffuse knowledge is also severely limited compared to comparator nations. Again, due to the lack of universities or innovation centres on the Island, there’s no institution on the island whose primary purpose is to diffuse knowledge. Even compared to another Island nation like the Isle of Wight, its capabilities are limited. For example, the Isle of Wight’s sole college has formed a partnership with nearby universities within the Solent Cluster that enables it to diffuse knowledge from the other universities via the Institute of Technology<sup>140</sup>. While the AMTC is a

<sup>138</sup> Isle of Man Department of Enterprise (2024). Financial Assistance Scheme. Available at: <https://www.iomdfenterprise.im/media/phahxmkp/fas-guidelines-feb-2024-live.pdf>

<sup>139</sup> Department for Energy Security and Net Zero (2023). UK Net Zero Research and Innovation Framework: Delivery Plan 2022 to 2025. Available at: <https://www.gov.uk/government/publications/uk-net-zero-research-and-innovation-framework-delivery-plan-2022-to-2025/uk-net-zero-research-and-innovation-framework-delivery-plan-2022-to-2025>

<sup>140</sup> Isle of Wight County Press (2023). Isle of Wight CECAMM funding from South Coast Institute of Technology. Available at: <https://www.countypress.co.uk/news/23707986.isle-wight-cecamm-funding-south-coast-institute-technology/>





valuable presence in the IOM, the centre provides education on existing machinery that is geared towards current business practices and processes. Unlike many other university and innovation centres (like the Institute of Technology), the AMTC doesn't possess novel machinery or open innovation centres that can draw in industry and facilitate knowledge transfer.

Despite limited ability for knowledge diffusion to occur via academia in the IOM, industry and the IOM Government have established forums to share knowledge. The most notable knowledge-sharing vehicle, which no longer exists, was the Isle of Man Aerospace Cluster. It comprised multiple businesses on the Island that were part of the aerospace supply chain. In their 2017 strategy document, the first opportunity the cluster highlighted was cost cutting measures to make the network of companies more competitive<sup>141</sup>. Stated areas of collaboration included waste metal disposal, access to UK centres of excellence i.e. training and knowledge transfer, specific training courses, non-destructive testing (NDT), and transport and logistics and advanced manufacturing incl. metrology, robotics, ALM and materials. Following COVID-19 and the decline in aerospace work, the cluster was effectively dissolved, therefore no mention was made of it during the individual diagnostics or wider stakeholder interviews. While the IOM does also work closely with the Northwest Aerospace Alliance, their most impactful initiatives such as Watchtower<sup>142</sup> or Supply Chain Solutions Framework<sup>143</sup> aren't accessible to IOM based companies.

Other notable networks on the Island that include the E&M sector are Business Isle of Man<sup>144</sup> and the Isle of Man Chamber of Commerce<sup>145</sup>. Despite both of these organisations carving out special forums for STEM - supporting the E&M sector - the ability to offer tailored services beyond discussions on the challenges facing the Island and networking is limited. For example, given the higher costs of manufacturing on the Island, Business Isle of Man doesn't provide tailored support for the E&M sector with regards to patenting or licensing technology. Moreover, some businesses during the stakeholder feedback expressed concerns that the wide remit of Business Isle of Man to include retail and hospitality makes the networks less practical or relevant for the E&M sector. Finally, compared to regions in the UK there is also a shortage of large engineering consulting firms. These organisations work at the intersection of academia and industry and are crucial to diffusing knowledge between companies. However, a vehicle for knowledge diffusion to be used more is IOM's membership in the Cambridge Cleantech network. This network facilitates knowledge sharing on horizon scanning and helps identify potential partnerships with cleantech innovators interested in IOM. It also provides opportunities for existing E&M companies on the Island to diversify into new markets.

#### 5.1.4. Knowledge absorption

The Island's capacity to absorb knowledge is the strongest element with both academia and industry performing relatively well in this metric. A key theme from the individual diagnostic was that the most important order winning criteria for many of the businesses is quality and unique value. These two factors tend to be driven by companies offering high value, innovative products, and services, reflecting the larger companies' ability to integrate knowledge and apply it to their businesses. Moreover, many of the companies that supply into the aerospace sector are also exploring diversifying their product ranges, underscoring the willingness and ability to investigate new markets. Finally,

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<sup>141</sup> Isle of Man Aerospace Cluster (2017). Cluster Strategy. Available at: <https://aerospace.co.im/wp-content/uploads/2018/10/3-year-strategy-the-isle-of-man-aerospace-cluster-2017-2020-protected.pdf>

<sup>142</sup> Northwest Aerospace Alliance (2024). The Watchtower Initiative. Available at: <https://www.aerospace.co.uk/programmes/watchtower/>

<sup>143</sup> Northwest Aerospace Alliance (2024). Raising the Supply Chain Capability of the UK SME's; Boosting Growth, Quality and Delivery Performance. Available at: <https://www.aerospace.co.uk/programmes/supply-chain-solutions-scs/>

<sup>144</sup> Business Isle of Man (2024). Available at: <https://www.businessisleofman.com/>

<sup>145</sup> Isle of Man Chamber of Commerce (2024). Available at: <https://www.iomchamber.org.im/>



it should be noted that the region's ability to attract entrepreneurs with new businesses and ventures is another sign of the region's ability to use knowledge.

Despite these positive factors, the absorption capacity of industry could be improved. The most notable example identified in the IOM is the use of industrial digital technologies to improve existing processes. Many companies are at various stages of maturity in their digital journeys, and this perhaps explains why adoption of novel industrial technologies was so polarising in the individual diagnostics. A handful of businesses - mainly niche microbusinesses - outwardly rejected the use of any digital technologies in the design or production of products, as their unique selling point is the human craftsmanship. Others are implementing some forms of digital technology for in-line monitoring or to validate products. A good example of this is *Kiartys'* use of immersive technology solutions to validate BSI (British Standards Institution) standards. At the other end of the spectrum, some businesses actively make data and digital services part of their core offering, with the expertise being largely on Island. This difference in digital adoption not only highlights the lack of diffusion capability in businesses' ability to share best practices, but it also suggests major differences in industry capacity to adopt new knowledge. A reliance on SMEs for innovation and new products is also a risk. SMEs tend to have weak internal capabilities beyond their narrow field and lack the required expertise and resources to actively engage in innovation. SMEs are often unaware of the potential of new technologies and given their limited time and resources, tend to have a 'fear to innovate'<sup>146</sup>.

With regards to academia, their ability to absorb innovative ideas for learning and delivery of education is also limited. As UCM are a college, their E&M curriculum has been primarily geared towards training operating staff on production lines or ensuring students have the prerequisite grades to study engineering at universities in the UK<sup>147</sup>. While this provides industry with a steady flow of talent and increases their ability to absorb knowledge, UCM should ensure there is a critical mass of students to create a positive learning. Moreover, the ability for the IOM to trial or influence new courses and innovative approaches is limited. This is because courses from City and Guilds and OCR are strongly influenced by trends in England. For example, it was noted that the growing attention towards T-Levels from course providers, spurred by changes in England's education policy, has resulted in traditional qualifications being left unattended. For example, the current OCR engineering qualifications only have a few years left with little signal as to what will replace those courses. In short, this means that the IOM is often a follower of what happens in the UK and has limited scope to offer differentiated courses.

## 5.2. MANUFACTURING SUITABILITY IN THE IOM

Based on stakeholder feedback, results from the individual diagnostics and desk research, inherent characteristics of the IOM revealed certain types of products are more suitable for manufacturing on the Island. The two main constraints consistently cited were the higher cost base for manufacturing and the complexity of logistics which can limit the type of products made on the Island. **Figure 18** attempts to visualise the complexity of logistics versus the production volumes on a 3x3 matrix.

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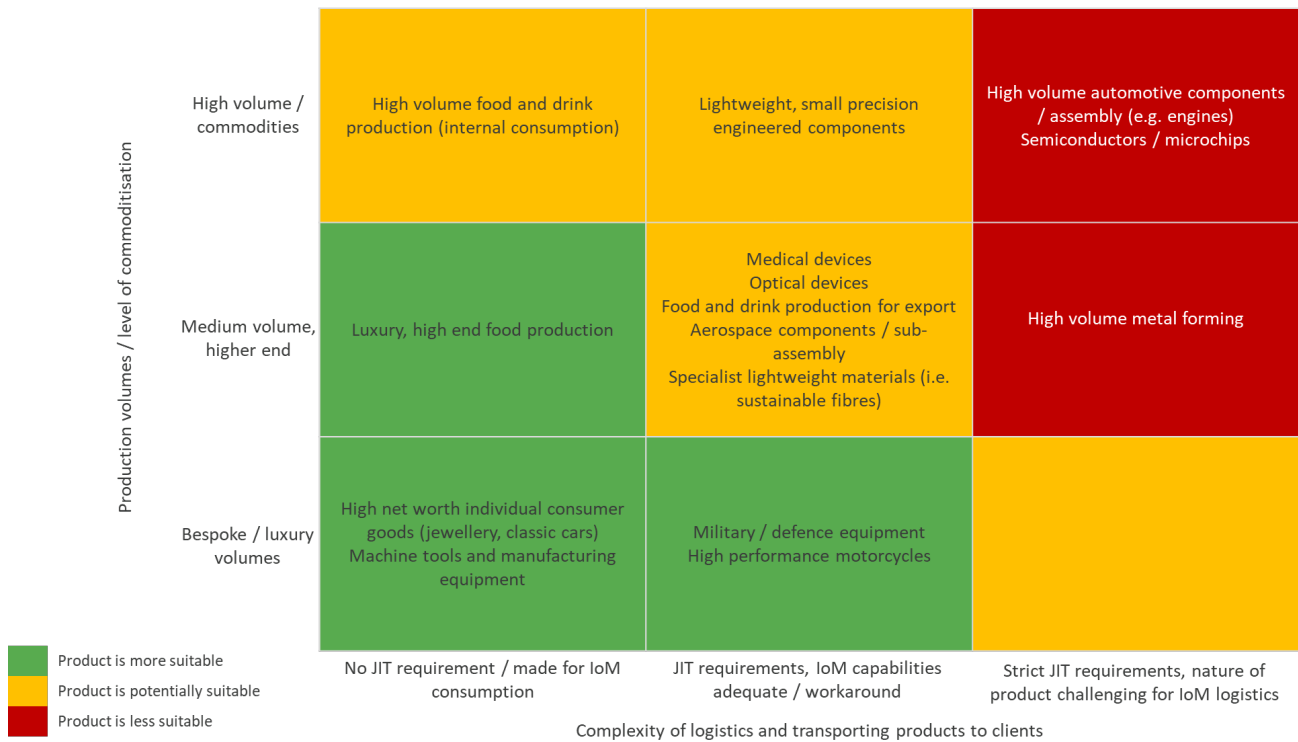
<sup>146</sup> IfM Engage (2016). Making 'smart specialisation' smarter: an industrial-innovation system approach. Available at:

[https://www.ifm.eng.cam.ac.uk/uploads/Resources/Reports/Smart\\_Specialisation\\_Report\\_agritech.pdf](https://www.ifm.eng.cam.ac.uk/uploads/Resources/Reports/Smart_Specialisation_Report_agritech.pdf)

<sup>147</sup> University College Isle of Man (2024). Higher Education – Engineering. Available at: <https://www.ucm.ac.im/courses/higher-education/engineering/>



**Figure 18: Manufacturing suitability matrix that assesses complexity of logistics vs production volume**



The y axis plots production volume and is split into bespoke / luxury volumes, medium volume, higher end /high-volume products, and more commoditised products. The descriptions for each category can be found in **Table 22**.

**Table 22: Volume categories description**

Volume category	Description
<b>Luxury and bespoke volumes</b>	These products command very high price premiums with limited production runs that often rely on highly skilled human labour. The customer base tends to be high net-worth individuals or businesses that demand high quality products to a demanding specification like luxury automotive or defence.
<b>Medium volume, higher end</b>	These products are typically produced on a production line but still command a price premium. It often involves skilled operators or the manufacturing processes involved require bespoke machinery. Examples of market segments include medical, aerospace, defence and high-end food and clothing products.
<b>High volume, more commoditised</b>	These products are mass produced items that possess high levels of automation and are often made-to-print. The margins on these products are low with customers distinguishing between suppliers based on price unless there are safety critical or performance benefits. Example market segments include mass market consumer electronics and high-volume automotive components.



The x axis conveys the complexity of logistics which is a multi-faceted metric that attempts to communicate: the nature of the product; the capabilities of the existing logistics network and the nature of the customer.

**The nature of the product** reflects inherent characteristics of the product like the size, weight and how difficult it would be to package multiple products within a shipping container. Ideally smaller, low weight products would be preferred but the IOM can cater for larger and bulkier items, depending on the volumes and the lead times a customer requires. Another element is whether the product requires more specialised logistics such as low-temperatures, inert environments or the product is classified as hazardous or dangerous.

**The capabilities of existing logistics network** refers to the capacity and capability of the road and shipping logistics network to handle products. In terms of road freight, the Isle of Man is well serviced by fleets of HGVs and vans. However, the limitation is a heavy reliance on shipping products to the UK. With limited shipments to and from the UK, it caps the number of containers manufacturers can ship over to the UK. It often means that IOM companies set up warehouses in the UK where they retain stock to cater for just-in-time (JIT) supply chains or next day customer deliveries which drives up costs as businesses expand.

**The nature of the customer** reflects whether a product is needed as part of a just-in-time value chain. For some more niche or specialised products, long lead times are expected with orders placed well in advance of delivery which better suits the IOM. In other markets where just-in-time principles are used, often in continuous production line environments, stringent just-in-time requirements are needed. As mentioned above, while the IOM does have businesses on the Island meeting stringent just-in-time requirements, it's usually for smaller components that can cost effectively be stock-piled in a UK storage facility.

The interaction of these three factors generates three levels of complexity for transporting products in the IOM and is detailed in **Table 23**.

**Table 23: Complexity of logistics categories description**

Complexity of logistics category	Description
<b>No JIT requirement / made for IOM consumption</b>	The nature of the product or customer segment means longer lead times are expected so businesses have time to gear logistics. Alternatively, this section also covers manufactured products that would primarily be intended for domestic consumption and not be exported off-Island.
<b>JIT requirements, IOM capabilities are adequate or there are workarounds</b>	The nature of product or customer segment means there are just-in time requirements that need meeting. Fortunately the IOM has sufficient logistics capability and workarounds to cater for this based on existing industries on the Island. However these workarounds will increase costs and could result in increased costs to businesses if production expands.
<b>Strict JIT requirements, nature of product is challenging for IOM logistics</b>	The nature of product or customer segments means there are strict just-in-time requirements. Unlike the previous category, the nature of the product (e.g. large or heavy) stretches the IOM logistics capability and pushes costs up where it becomes more unsustainable to ship that product from the IOM.



The 3x3 matrix results in 9 possible combinations of products which were assigned a red, amber, or green rating based on suitability for the Isle of Man. Green indicates a product type that is more suitable, amber represents a potentially suitable product with red showing a less suitable product. This matrix could be used for two purposes. The primary reason is to shortlist the types of E&M products and markets Business Isle of Man should be targeting for FDI. A secondary benefit could be helping existing E&M businesses on the Island identify more or less suitable markets and products for them to explore to diversify their business. The main insights that can be drawn from this matrix are:

**The IOM is better suited to bespoke / luxury products that don't have to meet strict just-in-time requirements.** There are many businesses in the IOM that carve out profitable niches selling highly specialised products. Examples include luxury goods such as watches and antique cars where long lead times are factored into the industry and are part of the allure for customers. Other examples of possible markets to explore include machine tools or manufacturing equipment where bespoke tools are made for certain operations and the customer often expects lead times of up to around one to two years depending on the equipment. The potential downside of these types of businesses is they are often highly knowledge intensive. The knowledge also resides with a select few individuals and the ability to scale up and generate jobs is limited, with the latter being a key metric for the IOM. However, these companies are often highly productive, export-heavy and are an important part of the wider E&M ecosystem.

**The IOM can be a location to mass manufacture depending on the product type.** Several companies manufacture products in medium to high volume on the Island and are profitable. Those IOM businesses that do manufacture at volume often produce products that are relatively easy to ship which eases logistics pressures. As a general trend however, as volumes go up, the product becomes less suitable for the IOM. This is because workarounds such as UK storage facilities need to be factored in or the current logistics capability in the IOM could hamper further growth. This assumption is supported by the wider stakeholder engagement and individual diagnostics where supply chain and logistics were highlighted across the companies as a potential growth constraint.

**High volume manufacturing of larger, heavier or complex products for industries that operate strict just-in-time principles should be avoided.** Certain manufacturing activities are less suited to the IOM. Examples would be medium to high volume vehicle or engine assembly that requires a constant flow of input materials and export of heavier products. Other industries that would be less suitable are high volume sectors like semiconductors or chemicals that also require specialist environments and unique logistical requirements to ensure the product is kept safe and maintains quality.

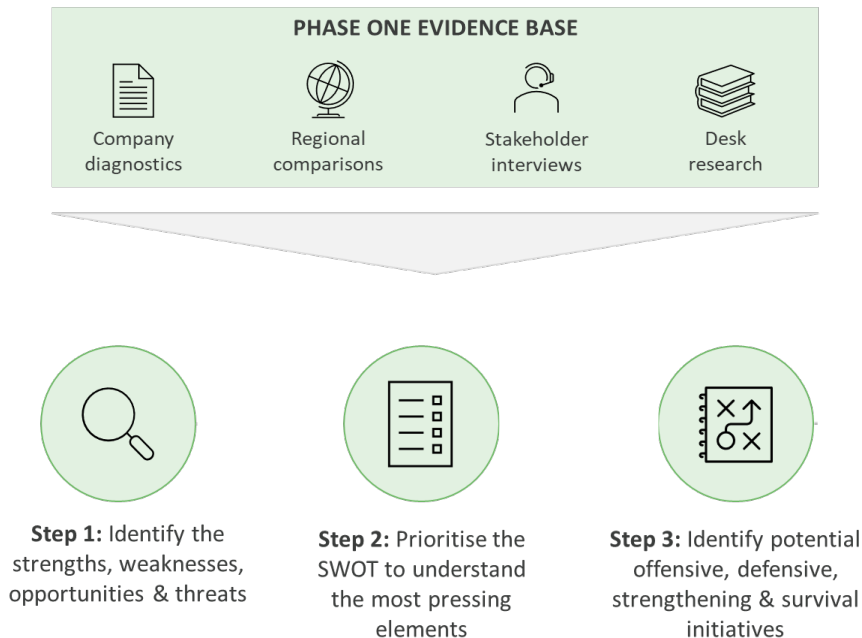


## 6. STRATEGIC SWOT OF THE ISLE OF MAN'S E&M SECTOR

The final section of this report uses the evidence gathered by Gemserv and IfM Engage and structures it into a draft E&M strategic outlook. **Figure 19** reinforces evidence that has been gathered via this Phase One study and outlines the steps to transition the SWOT analysis into potential growth initiatives. First, all the evidence gathered was condensed to arrive at a succinct number of strengths, weaknesses, opportunities and threats for the IOM's E&M sector. The second step prioritised each SWOT element to understand the most important strengths, critical weaknesses, promising opportunities and pressing threats. Once these were prioritised, potential growth initiatives were suggested based on the prioritised SWOT. These growth initiatives can be grouped into five categories:

- **Offensive initiatives** – how to leverage strengths to pursue opportunities
- **Defensive initiatives** - how to leverage strengths to guard against potential threats
- **Strengthening initiatives** – how to improve upon weaknesses to pursue opportunities
- **Survival initiatives** – how to improve upon weaknesses to guard against potential threats
- **Enabling initiatives** - cross-cutting policies, actions or recommendations that support the E&M sector. Many of these suggestions either relate to how the Department for Enterprise is structured or operational tactics.

**Figure 19: How the evidence base helps inform the strategic SWOT analysis and potential growth initiatives.**



It should be noted that the prioritisation of the SWOT and growth initiatives identified in Phase One are still in development. The next step to fully verify the SWOT and growth initiatives will occur in Phase Two which gathers key industry players together to chart the future strategy for the sector.



## 6.1. IDENTIFYING THE STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS

### 6.1.1. Strengths



**The IOM possesses a strong baseline of existing E&M businesses who are competitive in their sectors. The Island is also an attractive place for entrepreneurial, high-net-worth individuals to locate who are passionate about the IOM.**

**A strong base of existing businesses on the Island competing globally in high value areas**

**Strong capabilities in digital technologies and sectors which could help augment E&M capability**

**A compelling location for high-net-worth individuals to relocate to**

**A critical mass of entrepreneurs who would like to set up a greater E&M footprint in the IOM**

**Good industry-college relationship with courses suited to entry level E&M workers**

**Relatively easy access to decision makers**

#### **A strong base of existing businesses on the Island competing in high value areas**

Despite its relatively small size, the IOM possesses a core network of larger, multinational businesses who are competitive in their sectors. Businesses such as *Strix*, *Swagelok*, *Triumph* and *Ronaldsway* have a deep history in the IOM with established manufacturing and innovation bases. *Strix* for example is a high-volume manufacturer of kettle safety controls, heating and temperature controls, steam management and water filtration technologies. With an intricate knowledge of their customer base, they are globally competitive in their field; achieving a high market share relative to their size and footprint. Equally, *Swagelok* who have multiple sites across the world have significant testing, design for manufacture and hydrogen capabilities on the Island which differentiates them from their other global, high volume manufacturing sites.

#### **A compelling location for high-net-worth individuals to relocate to**

A consistent theme that emerged when engaging with businesses and government stakeholders was the attractiveness of the IOM. Given its favourable tax status, high net worth individuals are particularly attracted to the Island as an initial pull. However, what often convinces high-net-worth individuals to fully commit to relocating are the social and environmental benefits. These include aspects such as safety, access to the outdoors and the communal feel of the IOM. Aside from the large multi-national businesses present on the Island, the IOM has a significant network of entrepreneurial businesses that are owned by high-net-worth individuals. In fact, a successful strategy for attracting FDI has often been targeting individual business owners.

#### **A critical mass of entrepreneurs who would like to set up a greater E&M footprint in the Isle of Man**

In addition to the core capabilities of the larger companies in the IOM, the wider stakeholder engagement process uncovered a variety of entrepreneurs on the Island. From the interviews, it was clear the IOM has a rich network of experienced entrepreneurs who have spent many years in their respected industries. As mentioned previously, many people have been attracted to the Island for personal reasons, citing a higher quality of life becoming deeply passionate about the IOM. In fact, after settling on the Island, many of these entrepreneurs use their skillsets to set up high value or niche businesses that employ between 1-5 people. This demonstrates a distinct advantage the IOM possesses





over other regions: that business owners are intrinsically motivated to grow their companies on the Island to improve the local economy and community.

Many of the entrepreneurial businesses have expressed an interest in growing their footprint on the Island. Interestingly, the routes to growth differed between the organisations. Encouragingly, several businesses articulated a desire to expand their manufacturing footprint. For example, one interviewee expressed a desire to expand the scope of their activities, potentially manufacturing a specialised component that would compete with their incumbent suppliers. Another business who had initially explored manufacturing on the Island some years ago, is revisiting the proposition with a revised scope and another interviewee had an appetite to license their technology and processes, generating further revenue and IP. This diversity in businesses and potential avenues for growth for these businesses is a positive sign and something that should be nurtured.

### **Strong capabilities in digital technologies and sectors which could help augment E&M capability**

The financial services and digital sector make up a large proportion of the Isle of Man economy. While it was noted there is occasional competition amongst the sectors for skills, the digital skillsets required for businesses within financial tech, e-sports and e-gaming have synergies with the future skills needed in the engineering and manufacturing sectors. Many of the future focus areas identified in Digital Isle of Man's Programme 2023<sup>148</sup> and 2024<sup>149</sup> are also highly relevant for the engineering and manufacturing sectors. These include using machine learning to improve production processes or designs, digital twins to accelerate testing and validation, or gamification principles and user experience capability to enhance manufacturing line productivity. This adjacent capability in digital technologies is a key differentiator for the IOM vs competitor regions in the UK and across Europe such as Cyprus.

### **Good industry-college relationship with courses suited to entry level E&M workers**

Many businesses and government stakeholders commented on the good relationship between University College Isle of Man (UCM) and businesses. Over a decade ago, students were entering the E&M workforce at 16 years old with limited practical knowledge and required extensive mentoring in order to contribute to the business. As a result of this, the Advanced Manufacturing Training Centre was created, equipped with industry standard machinery that is typically used by businesses to train staff on the Island. Alongside this, UCM introduced engineering and manufacturing apprenticeships that were developed in tandem with the local businesses. This partnership has paid off. From the stakeholder engagement, many businesses claimed they didn't find it too difficult finding entry level engineers to fill operational roles. While the larger companies are more actively engaged in the course content and structure, the smaller businesses still benefit from dipping in and out and when required as their demands tend to fluctuate. The issue of skills for the E&M sector centres more around mid-level management, which is a potential threat identified later. Encouragingly UCM has also been trying to form links with other colleges to learn best practices. Last year for example, UCM visited Preston College to learn about their curriculum and see how they deliver courses for the local E&M workforce. Finally, another strong point identified in the research is how the E&M sector promotes awareness of careers and skills. Many interviewees in government, who worked in E&M and across different sectors, commented on the strength of the Awareness of Careers in Engineering (ACE) programme led by the STEM committee.

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<sup>148</sup> Digital Isle of Man. (2022). Digital Isle of Man Programme 2023. Available at: [https://islandplan.im/media/cuglh0gs/diom-programme\\_final.pdf](https://islandplan.im/media/cuglh0gs/diom-programme_final.pdf)

<sup>149</sup> Digital Isle of Man. (2023). Digital Isle of Man Programme 2024. Available at: <https://www.digitalisleofman.com/media/xnef3b2n/diomprogramme2024web.pdf>





### Relatively easy access to decision makers

The relative size of the Island vs other competitor regions in the UK and smaller scale of government was also highlighted as a positive. A sentiment that emerged from both the individual business assessments and wider stakeholder engagement was that access to relevant government departments was easier in the IOM than other regions. Both large and smaller businesses felt they could initially approach IOM Government with issues and growth opportunities. Although, there was a tendency for smaller businesses to feel that their issues weren't being acted on swiftly enough.

### 6.1.2. Weaknesses



**Despite strong foundational elements, the IOM E&M sector is consistently missing out on growth opportunities. This includes both creating new, innovative companies alongside supporting existing companies to explore new markets.**

**Difficulty accessing finance which is hampering growth**

**The length of time to acquire new facilities or expand existing facilities**

**Greater logistics challenges narrow the scope of products that could be manufactured in the IOM**

**Cultivating and attracting the right talent to work on the Island and in the E&M sector**

**Lack of university or innovation centre hinders ability to spin out innovations and anchor talent**

**The fundamental costs in the Isle of Man are higher vs the UK which is putting a strain on profitability**

#### Difficulty accessing finance which is hampering growth

One of the largest barriers consistently cited in the individual company diagnostic reports and wider stakeholder engagement was the lack of finance available for growth. While the Financial Assistance Scheme (FAS) provides grants and soft loan support to start-ups, smaller businesses and established businesses, a perception reiterated consistently during feedback was that the grant system appears more beneficial for established companies compared to smaller businesses and start-ups. In addition to this, specific issues were also highlighted with the current FAS including the criteria, the size of grants on offer, the time it takes for smaller businesses to apply, and the fact payments are made after purchases are made.

In terms of criteria, since the 2022 Island Plan sets out a bold vision which targets job creation, respondents expressed overwhelming criticism levelled at FAS for the stringent job creation requirement to access funding. While they understood the rationale for job creation requirement due to low business taxation, many businesses were frustrated with the lack of flexibility offered. Another issue that emerged with a few businesses who were looking to locate to the Isle of Man was the size of grants on offer. Many cited the more favourable terms and enthusiasm offered in regions like Wales who could offer a range of incentives and larger grant sizes. This has ultimately led to a few investments going elsewhere resulting in missed opportunities. A related issue is the time it takes to apply for grants - smaller companies have spent a lot of time applying for FAS, which has detracted from running their businesses. Finally, once financial assistance has been accepted, the funds are released after the business has made the purchase. For larger companies in the IOM, this is more palatable given their bandwidth to absorb the initial outlay. However, for smaller companies and start-ups who are cash poor, this doesn't adequately assist their growth and expansion activity. Other

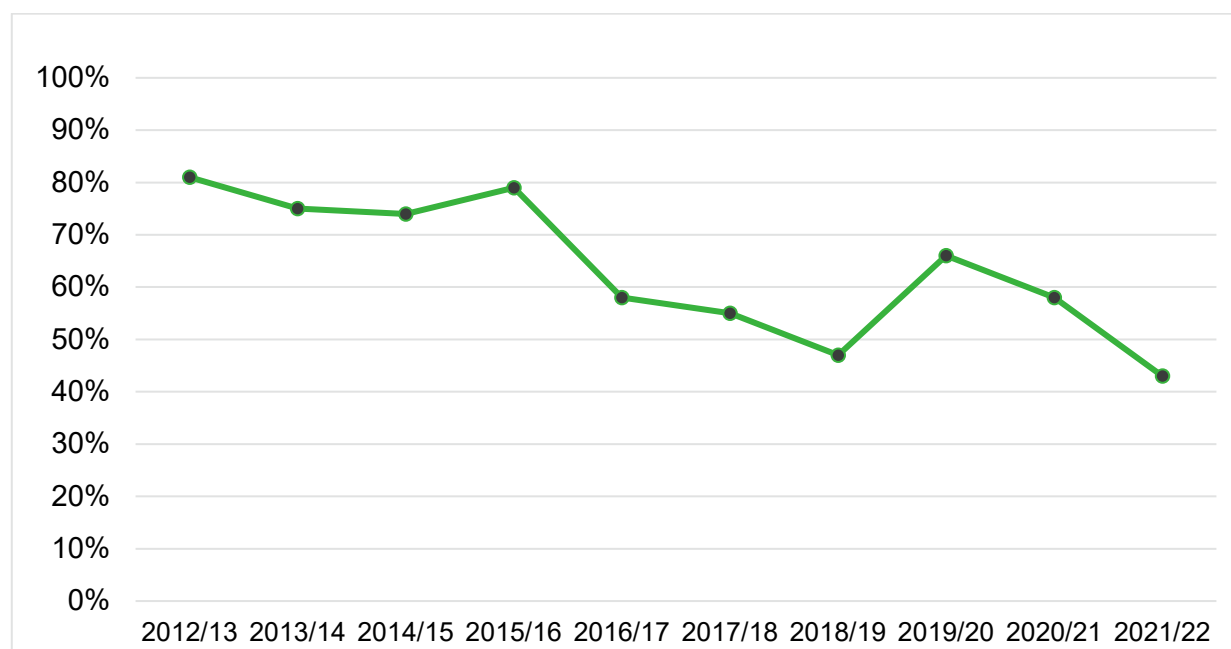


issues with the financing system that aren't related to FAS include the lack of private investment options and more tailored funding aimed at R&D or startups. During the wider stakeholder feedback, some businesses highlighted they'd like more help from government in accessing private funding via venture capital or private equity firms. Access to an investor network was seen as a key pull for the startups and smaller businesses on the Island. In terms of R&D funding, limited amounts are available on the Island with IOM businesses unable to access Innovate UK schemes. This further reduces the businesses' capacities to generate new knowledge which can be turned into new products and services.

### The length of time to acquire new facilities or expand existing facilities

While issues with planning permission and delays are common globally, the IOM scores significantly lower than competitor regions such as the Isle of Wight, Torbay and Mid-Lancashire on the % of planning decisions made on time.<sup>150</sup> This situation has got progressively worse over years. **Figure 20** illustrates that in 2012/13, over 80% of applications were approved within 8 weeks in the IOM. However, by 2021/22, that % dropped to a record low of 43%.

**Figure 20: % of applications determined with 8 weeks in the Isle of Man**



During the analysis, there was some divergence on the importance of facilities. The most acute frustration regarding planning permission and access to facilities emerged from microbusinesses and “failed landings” who were initially exploring growing their presence in the IOM. Many felt decisions took too long, taking years rather than weeks or months for relatively small pieces of land or facilities. These experiences have turned the initial positivity in growing companies in the IOM into a frustration with central government. The consequence of delay has resulted in the initial R&D and manufacturing bases of these companies landing elsewhere.

In addition to issues with finding new facilities for startups and new companies, existing companies on the Island also expressed issues with facilities. One SME who owns multiple properties in the IOM recently tried to consolidate their operation into one facility. This experience was frustrating for the business owner as there was inflexibility regarding

<sup>150</sup> Though, it is important to note that for IOM, “on time” is defined as 8 weeks, whereas the data for the UK regions includes 8-week and 13-week timescales. Refer to section 3.3 Comparator analysis results for further details, and Innovation, skills and knowledge metrics in the appendix for data sources.



the leasehold on a new facility. In the end, the owner gave up on finding new premises which would have streamlined their operations and reduced the travel between two sites. Larger companies on the Island cited facility expansion as an issue, but it was a lower order priority than access to finance or finding the right people and skills.

Another related issue with access to facilities is the competing uses for land. Given the housing crisis and more affluent society, the two most profitable forms of property investments and building types are residential property and storage units. Developing industrial facilities and land tends to be more expert with a limited pool of specialists, typically drawing on UK based companies, which commands a price premium.

### **Greater logistics challenges narrow the scope of products that could be manufactured on the Island**

One of the inherent weaknesses of the IOM is the greater logistic costs versus mainland UK due to it being highly reliant on shipping goods to the UK first. As discussed earlier, this limits the nature and type of manufacturing that can occur on the Island and tends to rule out high-volume manufacturing of large or heavy products that require multiple containers. Typically, the Island is also more suited to products that can tolerate longer lead times versus customers that operate continuous production lines employing just in time principles<sup>151</sup>. In cases where end customers require just-in-time manufacturing, many of the businesses on the Island rely on UK based storage facilities to meet stringent next day delivery targets.

Another issue that was highlighted is if transporting products (or by-products) has a unique element to it. For example, given the logistics infrastructure many companies remarked it's difficult to transport products that have specific requirements such as products classed as hazardous for international shipping or those that require inert environments. Another logistical challenge is the scope for setting up manufacturing that involves using exotic or hazardous by-products. Some stakeholders highlighted that the Island's waste disposal capabilities are limited meaning it can take longer to find solutions for bespoke manufacturing processes.

### **Cultivating and attracting the right talent to work on the Island and in the E&M sector**

A key challenge for the Isle of Man is to attract and retain people. The vision for the Island is to grow the population from just over 84,000 in 2023 to 100,000 by 2037<sup>152</sup>. On current growth trajectories, analysis from the most recent population survey forecasts a population of around 92,500 by 2037<sup>153</sup>. To achieve the 100,000-population target by 2037, it's expected that net migration will have to double to around 1,400 each year onwards from 2023. In addition to attracting people, the IOM also has talent retention issues. The recent population survey suggested that on average, 30% of the population leaves the IOM after 5 years, with 50% leaving the Island after 10 years. Nevertheless, despite this dynamic, the IOM does have some positive elements. For example, in the regional analysis, other locations such as the Scottish Highlands and Islands, Isle of Wight and Torbay have lower proportions of their populations under 40. Moreover, the migration statistics also show that the average age of inward migrants is lower than the average age of the general population, with over 50% of migrants under 40.

Placed in this context, the E&M sector is contending with an Island-wide problem of attracting and retaining talent. In fact, one of the main inhibitors to growth identified by the individual company diagnostic reports was finding the right

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<sup>151</sup> Although it should be noted several manufacturers millions of components a year on the island but as these are smaller sub-components that can easily be transported the Isle of Man logistics network can deal with it.

<sup>152</sup> Isle of Man Government (2022). Our Island, Our Future: Isle of Man Economic Strategy. Available at: [https://www.gov.im/media/1377113/iom-gov-economic-strategy-22-32\\_web.pdf](https://www.gov.im/media/1377113/iom-gov-economic-strategy-22-32_web.pdf)

<sup>153</sup> Cabinet Office (2023). Isle of Man Population Report 2023. Available at: <https://www.gov.im/media/1380987/isle-of-man-population-report-2023-updated-061123.pdf>



skill sets. In terms of entry level skills, there were mixed views on the ability to find talent. For the more traditional engineering companies on the Island, finding the right skills was deemed easier as the engineering courses had been geared towards their skillsets. However, for the more niche and specialised engineering firms, they felt it harder to tap into a pool of talented entry level engineers. This suggests that tailoring the curriculum too closely to the needs of a select few engineering firms on the Island has impacted their educational journey. A common theme across all businesses however was finding middle management talent on the Island. During the stakeholder feedback it was apparent trying to attract 25–45-year-olds into the businesses was difficult. Many interviewees highlighted that given the high employment rates in the Isle of Man, new mid-level job creation within engineering firms often result in taking employees from another company. Therefore job displacement within the IOM both hampers the growth of existing firms and risks the closure of smaller firms as they struggle to either transition their capabilities to colleagues or retain workers.

### **Lack of university or innovation centre hinders ability to spin out innovations and anchor talent**

A fundamental weakness of the Isle of Man compared to comparator regions is the lack of university to generate knowledge, spin out businesses and attract talent to the Island. Compared to the UK, a spin-out culture is being actively promoted which is generating jobs and investment. According to Beauhurst, there are 1,166 active spinouts from UK academic institutions since 2011. These account for 2.5% of the UK's high-growth company ecosystem, securing 9.11% of all equity finance raised by private UK companies in 2022<sup>154</sup>. This fundamental source of growth is missing in the IOM and despite a strong entrepreneurial spirit, is a key weakness compared to other comparator regions. Even in areas where academic institutions aren't strong such as the Scottish Highlands and Islands or Torbay, innovation institutions and clusters have been formed with industry to replicate a strong knowledge generation capacity of a university. In fact, the education presence on the Island is solely geared towards entry level training. Furthermore, the lack of university, or even satellite campus, not only makes it harder to attract young talent but incentivises those who want to pursue higher education off the Island. Anecdotal insight from the interviews suggests that once students leave the Island, a significant proportion remain in the UK to embark on professional careers.

### **The fundamental costs in the IOM are higher vs the UK which is putting a strain on profitability**

Stakeholder engagement has suggested the fundamental costs of doing business on the Island are significantly higher versus the UK, with an indication of this also seen in the regional analysis. The average industrial land values in the Isle of Man vs all UK comparator regions are significantly higher and broadly consistent with Cyprus but significantly lower than Malta and Singapore. Though this doesn't necessarily follow through to rent prices, some stakeholders mentioned high rents when comparing the IOM to other competitor regions. In terms of energy costs, rising prices have significantly impacted engineering and manufacturing operations globally. However, a review of industrial electricity prices shows slightly higher rates in the IOM versus the UK and much higher rates compared to Malta, Cyprus and Singapore. In some cases, the larger engineering and manufacturing companies are supported via differentiated tariffs for high energy users and high load users. However, many of the manufacturers on the Island are smaller or use energy infrequently meaning that the standing charges and unit energy costs are comparatively more expensive. These costs ultimately impact on profitability, increasing the likelihood of consolidation or relocation to other areas where fundamental costs are lower. It is important however to consider the savings to IOM businesses caused by the absence of corporation tax and low business rates compared to other jurisdictions.

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<sup>154</sup> Beauhurst. 2023. Spotlight on Spinouts: UK academic spinout trends. Available at: <https://www.beauhurst.com/wp-content/uploads/2023/05/Beauhurst-Spotlight-on-Spinouts-2023.pdf>



### 6.1.3. Opportunities



**DfE should consider pursuing a portfolio approach to supporting the sector, utilising its strengths in government critical services, digital technologies and building on existing, or potential, capabilities in the cleantech supply chain.**

**Enhance and explore opportunities in government-influenced industries like defence, energy and health**

**Capitalise on the growing cleantech sector by enabling E&M businesses to become suppliers in that transition**

**Understand how digitalisation, data and AI could enhance the performance of E&M and create new opportunities**

**Stimulate further intra-Island collaboration between the E&M sector and the wider IOM economy**

#### **Enhance and explore opportunities in government-influenced industries like defence, energy and health**

Via the engagement with industry, it has emerged the E&M sector has capabilities that could position itself to explore opportunities in government-aligned industries. These include a range of defence markets, new energy vectors and building on emerging capability in medical devices and instrumentation. The first market to focus on is the defence sector. Encouragingly, many of the larger companies and smaller precision engineering companies already supply into multiple defence markets so accelerating growth in these sectors would be easier than pursuing other market segments. Moreover, the nature of the defence sector suits the make-up of businesses in the IOM. Only low to medium volume production is required, there is a sharper focus on quality vs price and there are often longer lead times involved in sourcing components. Moreover, the diversity of requirements from the military could also present opportunities for optics companies on the Island for enhanced sensing and monitoring systems needed in the future.

Another area that is also worth exploring is new energy sources. Through desk research and company engagement, it was identified some of the companies on the Island have capabilities that could be relevant for the hydrogen sector. The most notable is *Swagelok* who possess multiple different product lines and capabilities in the hydrogen sector. Their IOM base is a centre for engineering innovation and is well placed to take advantage of the growth opportunities. Moreover, other smaller companies like *Manalytical* and *Henson Ceramics* have products and services that are applicable to the hydrogen sector. It should also be noted that larger companies operating in the oil and gas sector will also be transitioning to hydrogen. This could provide a further opportunity for the network of precision engineering companies to incrementally innovate and start commercialising products for the hydrogen market. Another relevant potential energy market that could be of interest due to the IOM's optics capability is nuclear fission. Given the importance of energy security to national governments and concerns around supply chains, nuclear fission could be an area that's protected and having UK or western supply chains for these components could be an advantage.

A final area that's emerged as a nascent opportunity is the Island's capability in supporting the health sector. A key company that's active on the Island is *Bodystat* who manufacture medical devices. While electronic assembly is done in Northern Ireland, the R&D, digital services, some final assembly, and quality assurance is done in the IOM. Another company is *Astrea Bioseparations* who are manufacturing purification products used in the production of biopharmaceuticals. Moreover during the COVID-19 crisis, several of the manufacturing companies responded



positively by making components for ventilators and helping production of face masks. Many of the precision engineering companies also conduct some work in the medical sector, despite it not being their largest market. Finally, SATS also manufacture hyperbaric instrumentation and gas analysis equipment used in the diving industry. Their capabilities could be leveraged to work closer in the medical sector. During Phase Two these opportunities across defence, energy and medical should be tested with industry but have emerged as potential options to explore in more detail.

### **Capitalise on the growing cleantech sector by enabling E&M businesses to become suppliers in that transition**

A key growth area for the manufacturing sector is expanding into low carbon technology markets, or cleantech as defined by the Department for Enterprise. Cleantech encompasses a wide variety of different engineering disciplines from electrical engineering for batteries, motors and power electronics, sustainable chemicals, recyclable materials as well as lower carbon fuels such as hydrogen and sustainable fuels. This provides multiple entry points for the existing E&M supply chain to enter. In fact, cleantech supply chains rely on similar skills, manufacturing processes and materials as many other established industries. For example, technologies like batteries, fuel cells, hydrogen production, heat pumps and power electronics all require precision machined parts for sub-components such as metal housings, busbars, valves, shafts and compressors. What's most promising is that many of the existing markets that the IOM already services such as automotive, aerospace, defence, maritime, and oil and gas are at the heart of the low carbon transition. As these industries make the transition, the Island's E&M sector could capitalise on the window of opportunity to innovate and expand their products to anticipate their customers changing business models and technologies.

Similarly, another option the IOM could explore is focusing on sustainable and recyclable materials. IOM headquartered company, *Exo Technologies*, is developing a next generation sustainable composite material they claim has enhanced mechanical and technical properties. Designed in the IOM, this material has a wide variety of uses including replacing carbon fibre on wind turbines and defence applications. Another company identified is *BioCycle* which is commercialising a 100% biodegradable tree cover with the material having applications across multiple sectors. While *BioCycle's* initial manufacturing site was established in Wales, the IP and design was in part generated by the founders who live in the IOM.

Another related point that was raised during some interviews was the UNESCO Biosphere status is an opportunity that hasn't been leveraged enough. Some interviewees felt that while the status was being used to promote living in the IOM, it could be more strategically leveraged to attract ESG-minded businesses. Specific examples of relevant industries active in the IOM that align with the UNESCO Biosphere status include those producing sustainable or recyclable materials, plant-based food and drink or biotechnology.

### **Understand how digitalisation, data and AI could enhance the performance of E&M and create new opportunities**

The strength the IOM's digital sector presents is a massive growth area for the E&M sector. There are two distinct opportunities that have emerged during the Phase One study. The first immediate opportunity is using existing digital manufacturing technologies and tools to enhance the productivity and profitability of E&M businesses. A second longer term opportunity is to foster closer links between the digital and E&M sectors to create new market opportunities that utilise both skillsets.

Across the world globally there is a massive opportunity to enhance productivity through digital technologies. This was identified by the World Economic Forum as one of the five grand challenges. However, despite the opportunity, the



engineering sector has been slow to implement digitalisation. A report by the UK's Manufacturing Technology Centre highlighted that 96% of UK businesses and 91% of US businesses have underinvested in digital technologies<sup>155</sup>. This demonstrates that countries around the world are not capitalising on the shift and provides an opportunity for the IOM to leverage its strong digital skillset. In fact, the strong digital sector should be seen as a comparative advantage versus other regions identified who don't possess the same digital cluster that the IOM does.

One immediate way to implement digital technologies across businesses is by implementing "digital manufacturing on a shoestring". This principle developed by IfM as part of an Engineering and Physical Sciences Research Council (EPSRC) research project identifies low-cost, low-risk methods to quickly implement digital technologies using affordable off-the-shelf kit<sup>156</sup>. Through the stakeholder feedback it was evident companies were at various stages of maturity in adopting digital tools, with some thinking of implementing more sophisticated elements but unsure how to approach it. Therefore, supporting the E&M sector to implement digital technologies and tools is an immediate opportunity.

A longer-term opportunity is to look for synergies in challenges, skillsets, and markets to understand if additional opportunities and new markets could be pursued. Many of the E&M companies use digital tools and technologies either as part of their design processes or as a service offering to customers. Examples of collaborations could be the link between e-gaming and the gamification of production lines. This is where the reward systems seen in gaming are applied to manufacturing settings to improve productivity and employee engagement. Other synergies could be in digital twin environments to test and validate products before physical testing. In those engineering firms that used digital design tools, it could be using artificial intelligence and machine learning to augment the designs and try various iterations to come up with improved designs. A medium-term goal should be for Digital Isle of Man and Business Isle of Man to develop a joint strategy for the E&M and digital sectors.

#### **Stimulate further intra-Island collaboration between the E&M sector and with the wider IOM economy**

Evidence emerged from Phase One research that more collaboration between the E&M sector could be done between the individual businesses and with the wider economy. While intra-collaboration between the firms happens in an informal manner via business conferences and committees, companies could look at adding mutual value to each other's products or services. Some evidence emerged that certain components or services needed by one manufacturer could be provided by another on Island that is typically sourced off-Island. Fully understanding the extent of this opportunity would require mapping the value chains of the current and potential products, identifying opportunities to leverage on-Island capabilities. Non commercially sensitive versions of these maps could be made publicly available amongst the E&M sector to raise awareness of the full extent of the Island's capabilities. Collaboration in future product offerings could also be further incentivised by DfE hosting an intra-Island innovation exchange portal. Companies in the E&M sector, alongside other sectors, could post their innovation challenges and have other companies pitch solutions. The DfE-led annual Innovation Challenge has cultivated a strong foundation and community, which can be harnessed for enhancing collaboration among cleantech businesses on the Island. A similar service called Innovation Exchange exists in the UK and fast-tracks industrial knowledge transfer by matching industry challenges with trailblazing companies across different sectors<sup>157</sup>. The IOM may consider joining this platform. One

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<sup>155</sup> Manufacturing Technology Centre. (2022). Digital Manufacturing Productivity report. Available at: [https://info.ibaset.com/hubfs/ibase\\_PDM\\_090522.pdf?hsCtaTracking=557496de-d8s57-404b-bf99-3f9882aeec7f%7C04801f78-de6e-4d9f-9afc-d550b228dff1](https://info.ibaset.com/hubfs/ibase_PDM_090522.pdf?hsCtaTracking=557496de-d8s57-404b-bf99-3f9882aeec7f%7C04801f78-de6e-4d9f-9afc-d550b228dff1)

<sup>156</sup> IfM Engage (2024). About Digital Manufacturing on a Shoestring. Available at: <https://www.ifm.eng.cam.ac.uk/research/dial/research-projects/digital-manufacturing-on-a-shoestring/#:~:text=Shoestring%20offers%20a%20step%2Dby,benefits%20without%20disrupting%20core%20operations.>

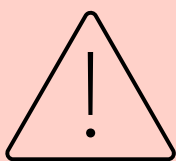
<sup>157</sup> Innovate UK. 2024. Innovation Exchange. Available at: <https://iuk.ktn-uk.org/programme/innovation-exchange/>





example of further intra-Island collaboration across the economy includes understanding whether waste products from the manufacturing industry could be an input material to adjacent industries or manufacturers, or vice versa. Another example could be exploring how the E&M sector interacts with the energy system, either using waste heat to power district heating systems or setting up localised renewable power that can service their energy needs and other residents. This could have the dual effect of reducing energy costs for the E&M sector but also derisk the cost of financing new energy sources for Manx Utilities. There is also potential for the E&M sector to be Tier N suppliers in Ørsted's or Manx Utilities' supply chain, providing components for wind turbines, electrical cables and other energy assets.

#### 6.1.4. Threats



**The biggest threat to the E&M sector is an irreversible trajectory of managed decline. Existing businesses could gradually exit the Island via consolidation or lack of transition plan, with no new pipeline of innovative E&M companies coming through.**

**Consolidation of operations from multinational firms away from the IOM**

**Specialised businesses with a reliance on one or two individuals fade away due to a lack of transition planning**

**Growth opportunities being missed due to delays and lack of unified direction vs competitor regions**

**Inability to create or leverage institutions that exploit and diffuse innovation to create new businesses / products / services**

**Existing engineering skills provision is cut back as there isn't the critical mass to justify the facilities**

##### **Consolidation of operations from multinational firms away from the IOM**

The larger businesses on the Island like *Swagelok*, *Strix*, *Triumph* and *Ronaldsway* have multiple locations across the world. As some parts of the globe are entering a recession period, including the UK, this makes the risk of consolidation even greater. Supply chain, logistics and labour costs are all increasing which is forcing companies to reevaluate their footprints and protect the most profitable elements of their business. As IOM has one of the highest wages of the competitor regions combined with higher logistics costs vs the rest of mainland UK, the threat of consolidation is particularly acute. Another insight that is reinforced by meetings of the STEM Committee is the Island's over reliance on a strong aerospace sector, having to go into "survival" mode during the 2020-2021 period. Despite the aerospace sector rebounding since the COVID-19 period, it's likely any future shocks to the aerospace sector could present a serious risk to several companies. In fact, during the COVID-19 period the E&M sector was one of the highest recipients of government support underlining the precarious nature of some of the companies. In short, a threat with the largest impact on the IOM E&M sector is businesses failing to diversify their products and end markets into growth sectors and waiting for consolidation to happen.

##### **Specialised businesses with a reliance on one or two individuals fade away due to a lack of transition planning**

A key threat that emerged during the individual diagnostics and the wider stakeholder engagement was a strong reliance on one or two individuals in a business. The entrepreneurial spirit on the Island is a key strength and something that should be nurtured. However, the core competencies that make-up many of the companies' value propositions reside in one or two people. These are often found in the entrepreneurs who started the business with





their clients trusting them personally. While this makes for loyal customers, it also makes the micro and small businesses vulnerable to sudden changes in management. With some businesses in the IOM, it is likely the business could ramp down significantly or even close if a key person were to leave. Interestingly, this insight didn't just emerge for the smaller businesses on the Island. The individual diagnostic and stakeholder feedback also revealed that larger companies on the Island were reliant on a select few senior managers. These findings perhaps link to a key challenge identified earlier that the IOM struggles to attract middle management to the Island, and these people are likely to be future leaders.

### **Growth opportunities being missed due to delays and lack of unified direction vs competitor regions**

Strong evidence emerged that some of the fundamentals identified for growing and attracting businesses such as industrial land values, access to facilities, energy connections, ease of travel and ease of accessing grants are deep issues. The main risk is that addressing these challenges sit outside the direct remit of the Department for Enterprise (DfE). For example, ensuring planning permission and access to premises are completed in a reasonable timeframe will require close collaboration with the Department of Environment, Food and Agriculture (DEFA), the Department of Infrastructure (DOI) and the specific department that owns the premises. Equally, energy connections and generation will have interactions with both Manx Utilities, Isle of Man Energy, and the DOI. While planning issues aren't unique to the IOM, the severity of delays compared to other regions combined with more competitive grant offers from Wales, the Midlands and North-West will be a constant threat.

Another perception that stakeholders felt contributed to delays was an impression the IOM Government Departments are misaligned and not actively engaging with each other thus creating a silo affect. For example, as part of the Climate Change Act, climate impact assessments are now required for every funding request. Given the high energy usage of sectors such as E&M and medicinal cannabis, there's a risk this could create a misalignment of objectives between DEFA and DfE. DEFA are driven by emission reductions so large power users would increase emissions in the short term, making these types of facilities naturally unfavourable. However, DfE are primarily driven by economic growth and job creation. Therefore the opportunity to expand E&M capability or grow medicinal cannabis is one that is being actively championed by DfE. Unless departments find a more cohesive way to resolve and accelerate cross-departmental decisions, growth and FDI opportunities will be continuously missed.

### **Inability to create or leverage institutions that exploit and diffuse innovation to create new businesses / products / services**

As mentioned previously, the IOM is solely reliant on innovation from industry to generate new products and services. All the other competitor regions possess innovation or academic institutions that generate knowledge alongside the private sector. While it's beneficial for the IOM to explore creating an innovation centre with academia, this may take years to achieve. Furthermore, it's been established through the research that the IOM's links with UK academia are based on personal relationships rather than a formalised, long term sector plan. Therefore, while this could be a medium to long term strategy, the risk of trying to create an innovation centre is that it diverts from the immediate opportunities in the private sector. In the short term, any future strategy focusing on fostering innovation will be heavily centred around the private sector. Therefore, without creating the incubation, funding and support network to capitalise on private sector led innovation, it's likely the IOM will continue to miss opportunities for growth.

In addition to knowledge generation, the IOM has a limited number of organisations that enable the diffusion of knowledge to private sector firms. While BIOM represents the engineering and manufacturing sector, it lacks tailored network associations and support mechanisms from government that diffuses knowledge. Support that's missing



includes guidance on patenting and licensing, contract research, industry training or bespoke consulting. For example, the IOM lacks the presence of major engineering consultants, private training providers and dedicated innovation-based cluster networks like Innovate UK's Business Connect and other services. Moreover, despite being located near the UK, IOM based companies are prevented from accessing UKRI and other UK funding mechanisms. Establishing these institutions takes a concerted effort and there's a potential risk the IOM cannot create and nurture these institutions in a quick timeframe. One immediate solution could be trying to access UK based innovation networks and clusters like Business Connect, or work with the UK Government for joint funding solutions. The risk here is that the success of the innovation diffusion strategy is outside the control of the IOM and is reliant on the UK.

#### **Existing engineering skills provision is cut back as there isn't the critical mass to justify the facilities**

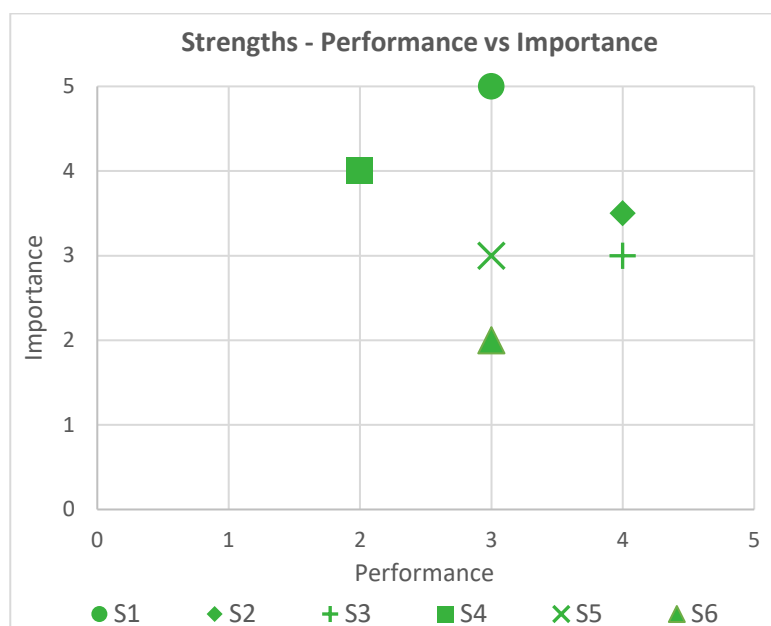
Even though the academic knowledge generation capacity isn't present, the engineering and manufacturing sector is relatively well served for training operational roles. Yet, there's a risk that the level of trainees offered by UCM for the E&M sector might change. Despite there being a record intake in the 2023/2024 academic year for engineering students, it was felt there wasn't a steady flow of students to justify the level of equipment at the Advanced Manufacturing Training Centre. Interviewees also highlighted that the CNC machinery and other equipment is aging with the building becoming increasingly expensive to run. In response to this, UCM are combining classes across courses and teaching multiple year groups to arrive at the critical mass of students needed to generate a positive learning environment. Despite these methods being implemented, alternative ways of delivering engineering education are being explored against the traditional classroom or workshop orientated methods. Ultimately, this puts the current capital equipment and training provision, which as discussed has been tailored for local needs, at risk. Some stakeholders from industry also highlighted that recent changes to courses at UCM aren't delivering the same calibre of worker compared to previous years. Considering these challenges, an open dialogue between industry and UCM needs to be brokered to ensure that training provision is maintained to a level and quality needed for future growth.

## **6.2. PRIORITISING THE STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS**

With the SWOT conducted, the next step was to prioritise the various elements of the SWOT using a relevant scoring matrix. The following sections outline a 5x5 matrix for each SWOT element, the scoring system used, alongside a definition to help understand what the plot is articulating.



## 6.2.1. Prioritising strengths



**Performance:** The current performance of the IOM in this area vs comparator regions

**Importance:** The strategic importance of this strength to the current and future outlook of the E&M sector

ID	Strength	Performance	Importance	Priority Score
S1	A strong base of existing businesses on the Island competing globally in high value areas	3	5	15
S2	Strong capabilities in digital technologies which could help augment E&M capability	4	3.5	14
S3	A compelling location for high-net-worth individuals to relocate to	4	3	12
S4	A critical mass of entrepreneurs who would like to set up a greater IOM footprint	2	4	8
S5	Good industry-college relationship and courses suited for entry level E&M workers	3	3	9
S6	Relatively easy access to decision makers	3	2	6

### Performance

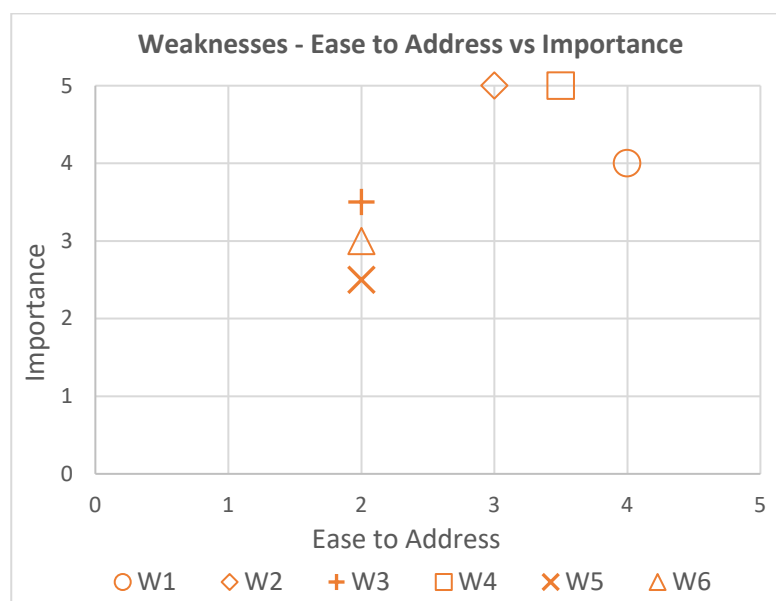
- 1 The IOM performs very weakly in this area compared to competitor regions
- 2 Limited evidence of performance in this area vs competitor regions
- 3 Some evidence of existing performance but most competitor regions are better placed
- 4 Strong evidence of good performance in this area vs the majority of competitor regions
- 5 The IOM performs over and above other regions in this strength

### Importance

- 1 No importance to the existing / current strengths of the E&M sector
- 2 Minor bearing on the current strength or potential future strengths of the E&M sector
- 3 Reasonable bearing on the current strength of the E&M sector and could be leveraged for growth
- 4 A significant strength that the E&M sector is leveraging or can leverage for growth
- 5 A fundamental strength that's vital to the existing strength of the E&M sector and is a foundational element to grow into the future



## 6.2.2. Prioritising weaknesses



**Ease to Address:** The ease of which the IOM Government could significantly address the weakness

**Importance:** The strategic importance of addressing this weakness to grow the E&M sector.

ID	Weakness	Ease to Address	Importance	Priority Score
W1	Difficulty in businesses accessing finance which is hampering growth	4	4	16
W2	The length of time to acquire new facilities or expand existing facilities	3	5	15
W3	Greater logistics challenges narrow the scope of products that could be manufactured in the IOM	2	3.5	7
W4	Cultivating & attracting the right talent to work in the IOM and in the E&M sector	3.5	5	17.5
W5	Lack of academic research community hinders ability to spin out innovations and generate new businesses	2	2.5	5
W6	The fundamental costs in the IOM are higher vs the UK which is putting a strain on profitability	2	3	6

### Ease to Address

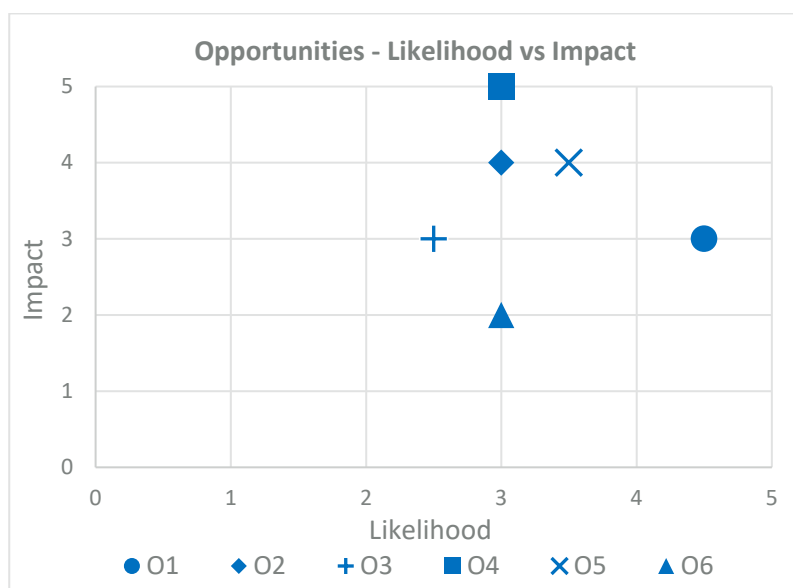
- 1 No ability to address this weakness
- 2 Limited ability to address this weakness, it would take a great amount of effort to enact change
- 3 Some ability to address this weakness but would take significant effort to enact change
- 4 Somewhat easy to address with the Government expressing early interest in addressing the weakness
- 5 Easy to address this weakness with a high degree of willingness to address this from IOM Government

### Importance

- 1 Weakness bears no importance to the existing / current growth of the E&M sector
- 2 The weakness has minor bearing on current or future growth potential of the E&M sector
- 3 The weakness has some bearing on the current strength of the E&M sector and if addressed could accelerate growth
- 4 A significant weakness that the E&M sector possesses that is an inhibitor to growth
- 5 A fundamental weakness that is vital to the future of E&M sector and is a foundational element to address



### 6.2.3. Prioritising opportunities



**Likelihood:** The likelihood the IOM realises the full potential of this opportunity

**Impact:** The impact on the E&M sector and wider economy of realising this opportunity

ID	Strength Description	Likelihood	Impact	Priority Score
O1	Enhance opportunities in government aligned services like defence	4.5	3	13.5
O2	Explore opportunities in government aligned services like energy	3	4	12
O3	Explore opportunities in government aligned services like health	2.5	3	7.5
O4	Capitalise on the growing cleantech sector by enabling E&M businesses to become suppliers in that transition	3	5	15
O5	Understand how digitalisation, data and AI could enhance the performance of E&M and create new opportunities	3.5	4	14
O6	Stimulate further intra-Island collaboration between the E&M sector and with the wider IOM economy	3	2	6

#### Likelihood

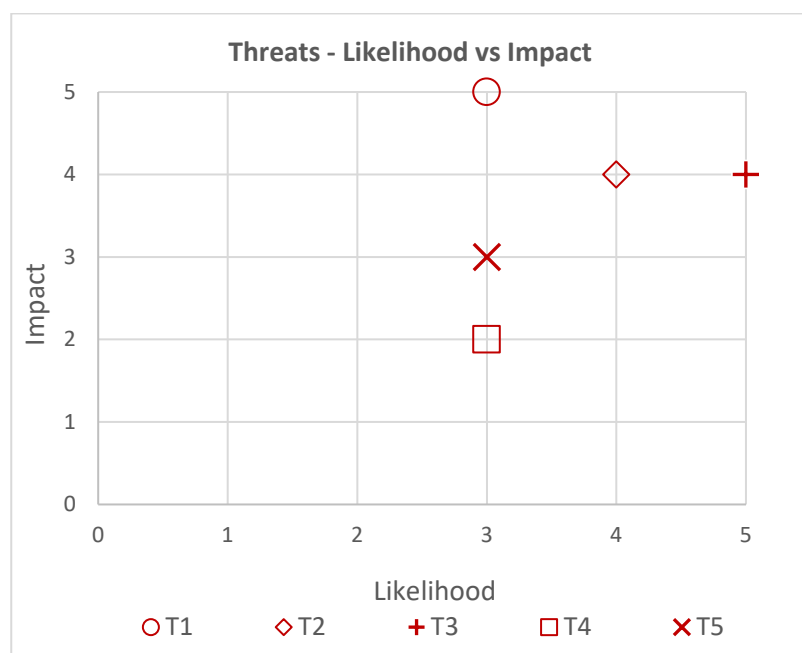
- 1 Extremely unlikely to realise this opportunity given the Island's limited capabilities
- 2 Less likely to realise this opportunity with its existing levels of capabilities unless there was a sustained, concerted government effort
- 3 A potential for several companies to realise this opportunity with a short-term, concerted government effort
- 4 A good chance for many companies to realise this opportunity with modest support from government
- 5 An extensive range of existing companies have the capabilities to pursue this opportunity with limited government support

#### Impact

- 1 Little to no impact on the E&M sector or the wider IOM economy
- 2 Minor impact on the E&M sector or the wider IOM economy
- 3 Reasonable impact on the E&M sector and wider economy, some businesses could benefit from this opportunity
- 4 Significant impact on the E&M sector and the potential to grow a number of businesses on the Island
- 5 Has the potential to reverse the trend of decline for the E&M industry and considerably benefit the IOM economy



## 6.2.4. Prioritising threats



**Likelihood:** The likelihood the IOM realises the full potential of this opportunity

**Impact:** The impact on the E&M sector and wider economy of realising this opportunity

ID	Strength Description	Likelihood	Impact	Priority Score
T1	Consolidation of operations from multinational firms away from the IOM	3	5	15
T2	Specialised businesses with a reliance on one or two individuals fade away due to a lack of transition planning	4	4	16
T3	Growth opportunities being missed due to lengthy decision-making processes vs competitor regions	5	4	20
T4	Inability to create or access institutions that exploit and diffuse innovation to create new businesses / products / services	3	2	6
T5	Existing engineering skills provision is cut back as there isn't the critical mass to justify the facilities	3	3	9

### Likelihood

- 1 Extremely unlikely this threat will materialise
- 2 Unlikely this threat will materialise but can be managed by the IOM
- 3 A potential chance this threat could materialise, needs a short term action plan to tackle it
- 4 A significant chance this threat could materialise, needs to be addressed relatively soon
- 5 Very likely this threat will materialise unless immediate government and industry action is taken

### Impact

- 1 Little to no impact on the E&M sector or the wider IOM economy
- 2 Minor impact on the E&M sector or the wider IOM economy
- 3 Reasonable impact on the E&M sector and wider economy, some businesses could be negatively affected
- 4 Significant impact on the E&M sector and the potential to negatively affect a number of businesses on the Island
- 5 Has the potential to accelerate the decline for the E&M industry and threaten the future of E&M on the Island



### 6.3. IDENTIFYING POTENTIAL INITIATIVES TO GROW

With the SWOT elements prioritised, potential growth initiatives can be identified that fall under distinct intervention types. **Figure 21** shows that by mapping the strengths and weaknesses against the opportunities and threats, four different types of growth initiatives emerge. This approach has been adapted from IfM Engage's strategic SWOT analysis and been amended to include enabling and cross-cutting themes. These cross-cutting interventions suggest operational and strategic improvements to Business Isle of Man / the Department for Enterprise. These have been formed based on discussions with government departments, industry and other business stakeholders operating on the Island. With each SWOT element scored, this ensures that the potential growth initiatives put forward address the most pressing issues that emerged from the evidence base.

**Figure 21: Defining the five different potential growth initiatives**

	Opportunities	Threats
Strengths	<b>Offensive Initiatives</b> How to leverage strengths to pursue opportunities	<b>Defensive Initiatives</b> How to leverage strengths to guard against potential threats
Weaknesses	<b>Strengthening Initiatives</b> How to improve upon weaknesses to pursue opportunities	<b>Survival Initiatives</b> How to improve upon weaknesses to guard against potential threats
Enabling / cross-cutting initiatives to improve general E&M sector performance		



## 6.4. POTENTIAL OFFENSIVE INITIATIVES

		Opportunities					
		Capitalise on the growing cleantech sector by enabling E&M businesses to become suppliers in that transition <b>(15)</b>	Understand how digitalisation, data and AI could enhance the performance of E&M and create new opportunities <b>(14)</b>	Enhance opportunities in government aligned services like defence <b>(13.5)</b>	Explore opportunities in government aligned services like energy <b>(12)</b>	Explore opportunities in government aligned services like health <b>(7.5)</b>	Stimulate further intra-Island collaboration between the E&M sector and with the wider Isle of Man economy <b>(6)</b>
Strengths	A strong base of existing businesses on the Island competing globally in high value areas <b>(15)</b>	<b>Offensive Initiatives</b> <ul style="list-style-type: none"> <li>Conduct an extensive value chain mapping exercise of E&amp;M firms to understand which manufacturing processes and products could transition to new markets (e.g. defence, energy, health and cleantech)</li> <li>Initial mentorship support that identifies low-cost, low-risk methods to quickly implement digital technologies using affordable off-the-shelf kit.</li> <li>Establish an IoM version of the UK's Clean Growth Fund which crowds in private sector, investor and government capital to accelerate businesses capabilities in the cleantech supply chain.</li> <li>Develop a joint strategy with Digital Isle of Man to identify future growth areas that cut across digital and E&amp;M.</li> <li>Establish a technology licensing and IP advisory within Business Isle of Man to accelerate growth of companies and capture the value of IP generated on the Island.</li> <li>Aggressively market the UN Biosphere status to clean tech start-ups and certain business owners as a reason to relocate to the Isle of Man. Potentially even starting a UN Biosphere grant competition to attract FDI into the Island.</li> <li>Explore synergies between medicinal cannabis and sustainable construction materials, potentially using industrial hemp as insulation material for on Island and export.</li> </ul>					
	Strong capabilities in digital technologies and sectors which could help augment E&M capability <b>(14)</b>						
	A compelling location for high-net-worth individuals to relocate to <b>(12)</b>						
	Good industry-college relationship with courses suited for entry level E&M workers <b>(9)</b>						
	A critical mass of entrepreneurs who would like to set up a greater E&M footprint on the IoM <b>(8)</b>						
	Relatively easy access to decision makers <b>(6)</b>						





## 6.5. POTENTIAL STRENGTHENING INITIATIVES

		Opportunities					
		Capitalise on the growing cleantech sector by enabling E&M businesses to become suppliers in that transition <b>(15)</b>	Understand how digitalisation, data and AI could enhance the performance of E&M and create new opportunities <b>(14)</b>	Enhance opportunities in government aligned services like defence <b>(13.5)</b>	Explore opportunities in government aligned services like energy <b>(12)</b>	Explore opportunities in government aligned services like health <b>(7.5)</b>	Stimulate further intra-Island collaboration between the E&M sector and with the wider Isle of Man economy <b>(6)</b>
Weaknesses	Cultivating & attracting the right talent to work on the Island and in the E&M sector <b>(17.5)</b>	<b>Strengthening Initiatives</b> <ul style="list-style-type: none"> <li>Establish stronger relationships with UK E&amp;M educational institutions, exploring options to have PhD funded students working within E&amp;M businesses for a year.</li> <li>Redesign the grant system to focus on higher risk, higher reward investments that accelerate the IoM's E&amp;M capability in core growth sectors.</li> <li>Give E&amp;M start-ups and smaller business dedicated grants and mentorship from experts to anchor R&amp;D or manufacturing capability on the Island in key opportunity areas (defence, energy, health and cleantech)</li> <li>Establish an intra-Island innovation exchange where companies can pose innovation challenges and other companies can provide solutions.</li> <li>Identify opportunities where E&amp;M businesses could contribute towards the IoM's net zero strategy (i.e. supply components for wind turbines / solar arrays).</li> <li>IoM Government to create an equivalent of the UK Infrastructure Bank or British Business Bank to help crowd in private sector finance into E&amp;M businesses and support critical industry led infrastructure projects like industrial facilities, energy generation and waste management.</li> </ul>					
	Difficulty accessing finance which is hampering growth <b>(16)</b>						
	The length of time to acquire new facilities or expand existing facilities <b>(15)</b>						
	Greater logistics challenges narrow the scope of products that could be manufactured on the Island <b>(7)</b>						
	The fundamental costs on the Isle of Man are higher vs the UK which is putting a strain on profitability <b>(6)</b>						
	Lack of university or innovation centre hinders ability to spin out innovations and anchor talent <b>(5)</b>						



## 6.6. POTENTIAL DEFENSIVE INITIATIVES

		Threats				
		Growth opportunities being missed due to delays and lack of unified direction vs competitor regions (20)	Specialised businesses with a reliance on 1 or 2 individuals fade away due to a lack of transition planning (16)	Consolidation of operations from multinational firms away from the IoM (15)	Existing engineering skills provision is cut back as there isn't the critical mass to justify the facilities (9)	Inability to create or leverage institutions that exploit and diffuse innovation to create new businesses / products / services (6)
Strengths	A strong base of existing businesses on the Island competing globally in high value areas (15)	<b>Defensive Initiatives</b> <ul style="list-style-type: none"> <li>Regularly engage with representatives of the E&amp;M parent companies to understand their growth plans, strategy and how government can protect existing assets.</li> <li>Explore new models of financing and delivering E&amp;M training that leverages both public and private sector investment.</li> <li>Leverage digital technologies to accelerate the planning and application processes to enable businesses to access facilities.</li> <li>Actively target FDI opportunities in luxury / bespoke products, with relatively simplistic logistics that are owned by high-net-worth individuals.</li> <li>government owned innovation campus that acts as an R&amp;D cluster for existing E&amp;M businesses and as a landing pad for key target companies to anchor initial E&amp;M footprints. This could be in or located next to the AMTC to provide students with access to advanced manufacturing equipment / processes.</li> <li>Better promote and campaign on the range of tax incentives on the Island clearly demonstrating the tax savings vs establishing on the UK</li> <li>Establish an interactive, online map for businesses to see available facilities on the Island that provides key data points such as costs, energy connections, proximity to amenities and other businesses etc*.</li> </ul>				
	Strong capabilities in digital technologies and sectors which could help augment E&M capability (14)					
	A compelling location for high-net-worth individuals to relocate to (12)					
	Good industry-college relationship with courses suited for entry level E&M workers (9)					
	A critical mass of entrepreneurs who would like to set up a greater E&M footprint on the IoM (8)					
	Relatively easy access to decision makers (6)					

\* BIOM recently ran a campaign like this but had little engagement from the sector.



## 6.7. POTENTIAL SURVIVAL INITIATIVES

		Threats				
		Growth opportunities being missed due to delays and lack of unified direction vs competitor regions <b>(20)</b>	Specialised businesses with a reliance on 1 or 2 individuals fade away due to a lack of transition planning <b>(16)</b>	Consolidation of operations from multinational firms away from the IoM <b>(15)</b>	Existing engineering skills provision is cut back as there isn't the critical mass to justify the facilities <b>(9)</b>	Inability to create or leverage institutions that exploit and diffuse innovation to create new businesses / products / services <b>(6)</b>
Weaknesses	Cultivating & attracting the right talent to work on the Island and in the E&M sector <b>(17.5)</b>	<b>Survival Initiatives</b> <ul style="list-style-type: none"> <li>Dedicated Locate Isle of Man campaign aimed at attracting young professionals in E&amp;M highlighting the safety, quality of life, improving childcare provision, and tax benefits*.</li> <li>Offer the E&amp;M sector easy to access, low / zero interest loans for new capital equipment and facility expansion.</li> <li>Ensure the future Scale-Up programme is part of a wider, joined-up funding network that can support SMEs and existing businesses throughout the product commercialisation journey.</li> <li>Joint DfE-Innovate UK events or funding programmes that connects UK and IoM organisations to strengthen collaboration and promote new products / services.</li> <li>Foster a relationship with a UK university with the goal of establish a subsidiary location / innovation centre, potentially within the Isle of Man Freeport.</li> <li>Exploring innovative energy generation and financing models that reduce the costs and emissions of energy for businesses and residents.</li> <li>Detailed modelling of the energy requirements for the E&amp;M sector to understand the baseload and spikes to negotiate a tariff that works for the sector.</li> <li>Establish a small, cross-departmental taskforce between DfE, Dol and DEFA that accelerates decisions on issues such as access to facilities and energy planning and connections.</li> </ul>				
	Difficulty accessing finance which is hampering growth <b>(16)</b>					
	The length of time to acquire new facilities or expand existing facilities <b>(15)</b>					
	Greater logistics challenges narrow the scope of products that could be manufactured on the Island <b>(7)</b>					
	The fundamental costs on the Isle of Man are higher vs the UK which is putting a strain on profitability <b>(6)</b>					
	Lack of university or innovation centre hinders ability to spin out innovations and anchor talent <b>(5)</b>					

\* BIOM recently ran a campaign like this but had little engagement from the sector.



## 6.8. ENABLING / CROSS-CUTTING INITIATIVES TO IMPROVE E&M SECTOR PERFORMANCE

In addition to initiatives that directly address elements identified in the SWOT, there were cross-cutting suggestions that could support the E&M sector. Many of these suggestions either relate to how the IOM Government monitors activity and organises its interactions with the E&M sector.

### Start tracking more data points that indicate the health of the E&M sector and wider economy

Through the regional analysis it emerged that several key indicators to measure the health of the E&M sector and wider economy were missing. A key metric not assessed by the IOM Government is GVA (gross value added – see definition provided in Section 2.3) which IfM Engage captured at a company level for the various firms during the individual diagnostics. However, the IOM could benefit from capturing a broad range of other metrics. Data gaps highlighted in this report include levels of FDI, private sector investment in R&D, % of employees in R&D positions, education level of population (NVQ equivalent) and measures assessing the strength of logistics. **Table 24** highlights a list of resources and comparison studies that can be used to form a literature review on assessing E&M related metrics.

**Table 24: List of useful resources to start tracking key performance metrics**

Data Source	Description
Automotive Council Supply Chain Index <sup>158</sup>	Developed by the Automotive Council to compare the competitiveness of the UK vs comparator regions across a range of metrics relevant for the automotive sector.
BEIS / Nesta R&D spatial data tool <sup>159</sup>	An innovation and R&D database that compares various regions in the UK on the levels of R&D and innovation. While not updated since 2018, it provides a useful list of metrics to potentially start tracking.
Global Innovation Index <sup>160</sup>	An annual international comparison study that tracks and ranks the innovation performance of various countries.
Sustainable Development Report <sup>161</sup>	An annual report that measures each nations progress towards hitting the Sustainable Development Goals. With some metrics relevant for the E&M sector, this is more relevant for tracking the wider economy.
World Bank Logistics Index <sup>162</sup>	An annual international comparison study collated by the World Bank that tracks and ranks the logistics performance of various countries.
Eurostat <sup>163</sup>	The European Union's central database that provides regional and national comparisons of key EU members. Includes metrics on a range of elements such as innovation, skills, wider economy, and the E&M sector.

<sup>158</sup> Automotive Council (2022). UK International Competitiveness - full index of competitiveness drivers. Available at:

<https://www.automotivecouncil.co.uk/wp-content/uploads/2022/09/KPIs-populated-with-auto-ranking-2022-report.pdf>

<sup>159</sup> BEIS (2018). BEIS/Nesta Research & Development spatial data tool. Available at: <https://access-research-development-spatial-data.beis.gov.uk/>

<sup>160</sup> WIPO (2023). Global Innovation Index 2023 Innovation in the face of uncertainty. Available at: <https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023-en-main-report-global-innovation-index-2023-16th-edition.pdf>

<sup>161</sup> SDS Network (2023). Sustainable Development Report 2023. Implementing the SDG Stimulus. Available at:

<https://s3.amazonaws.com/sustainabledevelopment.report/2023/sustainable-development-report-2023.pdf>

<sup>162</sup> World Bank (2023). Connecting to Compete 2023: Trade Logistics in an Uncertain Global Economy. Available at:

[https://lpi.worldbank.org/sites/default/files/2023-04/LPI\\_2023\\_report\\_with\\_layout.pdf](https://lpi.worldbank.org/sites/default/files/2023-04/LPI_2023_report_with_layout.pdf)

<sup>163</sup> Eurostat (2024). Welcome to Eurostat. Available at: <https://ec.europa.eu/eurostat>



### **Align the classification of E&M sector more closely with UK SIC codes**

It emerged during the stakeholder feedback that there is a conflation of the E&M sector with the precision engineering and aerospace companies on the Island. While this is an important sub-sector, the boundaries of the E&M sector are much wider. Many of the elements identified via the SWOT and potential growth initiatives would equally apply to sectors such as: food and drink production, cleantech, medicinal cannabis, consumer goods and medical technologies. If the IOM aligned its definition of the E&M sector more closely with the UK SIC codes, not only would it allow for a clearer comparison with the UK, but it could also incorporate a broader remit of activities and boost job / national income figures which would improve the perception of the E&M sector.

### **Consider separating E&M and other sectors out of the Business Isle of Man structure to form “Producers Isle of Man” to ensure the group better reflects common challenges**

Business Isle of Man is a broad executive agency that represents a cross section of different industries from retail and hospitality right through to construction and agriculture. It emerged during the stakeholder feedback that the breadth of activity can often dilute focus with many topics and discussions not relevant to the E&M sector. To align closer with the key sectors outlined in the Economic Strategy, a “Producers Isle of Man” group could be formed whose challenges and opportunities are more aligned. These would include primary and secondary industries that produce physical products or commodities. The group could include: the existing E&M sector, cleantech, food and drink, agriculture, medicinal cannabis, construction, mining and quarrying. As mentioned above, the findings from this E&M review are likely to raise challenges and opportunities relevant for the sub-sectors identified. This group could be a useful forum to understand and build upon synergies between the groups with regards manufacturing process decarbonisation, the use of digital technologies, strengthening logistics chain and waste management.

### **Enable DfE’s E&M team to become more proactive in its business development approach**

In terms of the Department for Enterprise’s business development approach, two observations emerged during the wider stakeholder engagement and literature review. The first sentiment expressed by smaller businesses was that more attention is given to the larger E&M businesses on the Island. It was felt this resulted in more allowances and incentives being created for them at the expense of enabling growth opportunities for smaller businesses. On reflection, some businesses did praise individuals within the Business Isle of Man team. When explored further, many believe there is a lack of resource and bandwidth of the Department for Enterprise to dedicate to the smaller businesses.

The second related observation, based on reviewing how Digital Isle of Man operates, is that Business Isle of Man’s approach to the E&M sector tends to be more reactive. While addressing the concerns of existing businesses should be a core focus, the time dedicated to FDI opportunities and SME growth is severely limited. The Business Isle of Man’s reactive stance, rather than a proactive one, may stem from a deficiency in articulating a compelling value proposition and establishing effective mechanisms for engaging with both new and existing businesses. When comparing this situation to the Digital Isle of Man approach, who publicly state a 60/40 split in focus between supporting existing companies and FDI, it’s clear a rebalance for E&M needs to occur. It should be noted that many of the historic success stories and successful companies on the Island have either relocated from the UK (FDI), or been a spin-out from a larger company and supported by government. Yet despite this, no new E&M business has set up a significant R&D or manufacturing base on the Island for around a decade. This highlights the critical importance of generating a steady flow of SMEs in the sector who could potentially grow into more established and larger companies. A potential solution to this would be to have a dedicated E&M resource looking after established businesses on the Island and another



dedicated resource focusing on FDI and E&M SME development. Both resources could then work collaboratively to regularly review policies that would be beneficial to both established businesses and potential new businesses.



## 7. CONCLUDING REMARKS AND NEXT STEPS

This Phase One review has provided a comprehensive, baseline assessment of the IOM's E&M sector. Regardless of the numerous challenges confronting the sector over the years, the E&M sector has remained resilient. In fact, companies within the general manufacturing sub-sector are performing better than adjacent sectors in the broader producing category and perform in a similar manner to elements of the digital, insurance and finance sector. This is largely down to a core base of established, larger companies who have carved out profitable niches and can innovate to meet rigorous demands of their customers. As identified by IfM Engage, the key order winning criteria for many of the E&M businesses is unique value and quality, highlighting the importance of specialised, niche markets for the Island. The IOM is also an attractive place for people to relocate to, offering some attractive personal financial incentives, very low corporate taxation rates, combined with an overall better quality of life in terms of safety and scenery. These factors have attracted a range of entrepreneurs to the Island which is a real asset.

Yet despite these core strengths, a range of deep-rooted and structural challenges are present which results in significant growth opportunities being missed. Access to skills, especially in middle management roles, is severely hampering growth as key people struggle to pass on knowledge so they can focus on growth opportunities. Another key challenge is difficulty in accessing and growing facilities. First it prevents established IOM companies from rationalising, improving, or expanding their current facilities to improve productivity. Second, the length of time to source and approve facilities for new E&M businesses is preventing investment and leading to businesses establishing R&D and manufacturing sites elsewhere. The final core issue identified is lack of access to finance, both from government and other sources such as private investors. While some businesses were generally happy with support, FAS was consistently highlighted as not being adequate for the E&M sector. Key issues cited include the overwhelming priority given to job creation, the fact funds are realised after investments happen and that funding is not joined up to support companies across various stages of a products maturity. Compared to competitor regions, this is a fundamental structural weakness and may explain why FDI opportunities are being missed out on.

However, these challenges are not insurmountable. Evidence from the comparator analysis shows that policies can be enacted to build upon the Island's strength and mitigate the weaknesses. A series of emerging opportunities and growth initiatives have been identified that offers the Island a way to grow the E&M sector. These range from accelerating the activities in government aligned services such as energy, defence, and health alongside a reorientation of E&M activity to support the global opportunity presented by the growing cleantech market. In addition, evidence suggests that the full potential of digital manufacturing hasn't been fully grasped by many nations. Given the strong digital sector across multiple disciplines, this provides the Island with a unique opportunity to leapfrog many regions and position itself as a hub of activity at the intersection of digital and E&M sector.

While Phase One has provided an evidence base for a 10-year E&M growth strategy, it requires extensive engagement with industry to ensure it's enacted. An E&M roadmap is only viable if it is created by the stakeholders who are responsible for delivery. Therefore, Phase Two is crucial not only for gaining feedback on the Phase One outputs, but to actively generate a 10-year strategy that all E&M stakeholders can take ownership of.



# APPENDIX 1: DATA SOURCES FOR THE SCORING MATRIX

## GENERAL METHODOLOGY NOTES

Where source data was in other currencies, exchange rates for the relevant period of data were used to convert to GBP. Where data is from a different period, values have been converted to 2023 equivalent prices using UK inflation rates, using UK annual data ([gov.uk](https://www.gov.uk)) and UK monthly/quarterly data ([ONS](https://www.ons.gov.uk)) where applicable.

## GENERAL METRICS

Metric	Country	Source	Description
Population	Isle of Man	<a href="#">IOM Cabinet</a>	2023 data
	Isle of Wight	<a href="#">ONS</a>	2021 data
	Scottish Highlands & Islands	<a href="#">ONS</a>	2021 data
	Mid-Lancashire	<a href="#">ONS</a>	2021 data
	Flintshire & Wrexham	<a href="#">ONS</a>	2021 data
	Torbay	<a href="#">ONS</a>	2021 data
	Malta	<a href="#">UNCTADstat</a>	2023 data
	Cyprus	<a href="#">UNCTADstat</a>	2023 data
	Singapore	<a href="#">UNCTADstat</a>	2023 data
Gross Domestic Product (GDP)	Isle of Man	<a href="#">IOM Cabinet</a>	2021/22 data
	Isle of Wight	<a href="#">ONS</a>	2021 data
	Scottish Highlands & Islands	<a href="#">ONS</a>	2021 data
	Mid-Lancashire	<a href="#">ONS</a>	2021 data
	Flintshire & Wrexham	<a href="#">ONS</a>	2021 data
	Torbay	<a href="#">ONS</a>	2021 data
	Malta	<a href="#">UNCTADstat</a>	2023 data
	Cyprus	<a href="#">UNCTADstat</a>	2023 data
	Singapore	<a href="#">UNCTADstat</a>	2023 data
Manufacturing GVA	Isle of Man	No data	Only GDP available - GVA not measured
	Isle of Wight	<a href="#">ONS</a>	2021 data
	Scottish Highlands & Islands	<a href="#">ONS</a>	2021 data
	Mid-Lancashire	<a href="#">ONS</a>	2021 data
	Flintshire & Wrexham	<a href="#">ONS</a>	2021 data
	Torbay	<a href="#">ONS</a>	2021 data
	Malta	<a href="#">NSO Malta</a>	2022 data
	Cyprus	<a href="#">Trading Economics</a>	2023 data
	Singapore	<a href="#">SingStat</a>	Conversion from total 2022 GVA using 2022 manufacturing GVA % as in below metric.





<b>Manufacturing % of total GVA / GDP</b>	Isle of Man	<a href="#">IOM Cabinet</a>	Taken national income for engineering and general manufacturing to arrive at GDP figure. 2021/22 data.
	Isle of Wight	<a href="#">ONS</a>	2021 data (GVA)
	Scottish Highlands & Islands	<a href="#">ONS</a>	2021 data (GVA)
	Mid-Lancashire	<a href="#">ONS</a>	2021 data (GVA)
	Flintshire & Wrexham	<a href="#">ONS</a>	2021 data (GVA)
	Torbay	<a href="#">ONS</a>	2021 data (GVA)
	Malta	<a href="#">NSO Malta</a>	2022 data (GVA)
	Cyprus	<a href="#">Trading Economics</a>	2023 data (GVA)
	Singapore	<a href="#">Statista</a>	2022 data (GVA)
<b>% of total FDI in the manufacturing sector</b>	Isle of Man	No data	
	Isle of Wight	<a href="#">ONS</a>	2021 data
	Scottish Highlands & Islands	<a href="#">ONS</a>	2021 data
	Mid-Lancashire	<a href="#">ONS</a>	2021 data
	Flintshire & Wrexham	<a href="#">ONS</a>	2021 data
	Torbay	<a href="#">ONS</a>	2021 data
	Malta	<a href="#">NSO Malta</a>	2023 data
	Cyprus	No data	
	Singapore	<a href="#">SingStat</a>	2021 data

## BUSINESS METRICS

Metric	Country	Source	Description/notes
<b>Annual average wages (£)</b>	Isle of Man	<a href="#">gov.im</a>	Mean, 2020/21 data
	Isle of Wight	<a href="#">ONS</a>	Mean, 2024 data
	Scottish Highlands & Islands	<a href="#">ONS</a>	Mean, 2024 data
	Mid-Lancashire	<a href="#">ONS</a>	Mean, 2024 data
	Flintshire & Wrexham	<a href="#">ONS</a>	Mean, 2024 data
	Torbay	<a href="#">ONS</a>	Mean, 2024 data
	Malta	<a href="#">NSO Malta</a>	"Average", 2023 data
	Cyprus	<a href="#">cystat.gov.cy</a>	Median, 2022 data
	Singapore	<a href="#">SingStat</a>	Median, 2023 data
<b>Industry Electricity Prices - Median (p/kWh)</b>	Isle of Man	<a href="#">Manx Utilities</a>	2024 data
	Isle of Wight	<a href="#">DESNZ</a>	2023 data
	Scottish Highlands & Islands	<a href="#">DESNZ</a>	2023 data
	Mid-Lancashire	<a href="#">DESNZ</a>	2023 data
	Flintshire & Wrexham	<a href="#">DESNZ</a>	2023 data
	Torbay	<a href="#">DESNZ</a>	2023 data
	Malta	<a href="#">Eurostat</a>	2023 data
	Cyprus	<a href="#">Eurostat</a>	2023 data
	Singapore	<a href="#">SingStat</a>	Median of the non-domestic tariffs based on cents/kWh, 2023 data



Industrial Land (£/ha)	Isle of Man	DOI Source	Average from a range provided, 2024 data
	Isle of Wight	<a href="#">UK Housing Department</a>	2020 data
	Scottish Highlands & Islands	<a href="#">UK Housing Department, MHCLG, landcommission.gov.scot</a>	Average taken of value for closest proxy England local authority (Northumberland), and agricultural Highlands and Islands land value scaled to industrial equivalent according to factor for North East England, 2020, 2022 and 2023 data respectively
	Mid-Lancashire	<a href="#">UK Housing Department</a>	2020 data
	Flintshire & Wrexham	<a href="#">VOA</a>	2023 data
	Torbay	<a href="#">VOA</a>	2023 data
	Malta	<a href="#">Djar</a>	Average commercial storage facility sale price, 2021 data
	Cyprus	<a href="#">dom.com.cy</a>	Based on example case of industrial land price, 2024 data
	Singapore	<a href="#">knightfrank.com</a>	Freehold multiple-user factory space price, 2021 data
Main Corporation Tax Rate	Isle of Man	<a href="#">Isle of Man Government</a>	2024 data
	Isle of Wight	<a href="#">HMRC</a>	2023 data
	Scottish Highlands & Islands	<a href="#">HMRC</a>	2023 data
	Mid-Lancashire	<a href="#">HMRC</a>	2023 data
	Flintshire & Wrexham	<a href="#">HMRC</a>	2023 data
	Torbay	<a href="#">HMRC</a>	2023 data
	Malta	<a href="#">KPMG</a>	2020 data
	Cyprus	<a href="#">KPMG</a>	2020 data
	Singapore	<a href="#">KPMG</a>	2020 data
Planning applications on time (%)	Isle of Man	IOM Government	Includes only 8-week timescales, whereas data for UK regions includes 8 and 13-week timescales. 2022 data
	Isle of Wight	<a href="#">DLUHC</a>	2023 data
	Scottish Highlands & Islands	<a href="#">Scottish Government</a>	2023 data
	Mid-Lancashire	<a href="#">DLUHC</a>	2023 data
	Flintshire & Wrexham	<a href="#">DLUHC</a>	2023 data
	Torbay	<a href="#">DLUHC</a>	2023 data
	Malta	N/A	Not relevant for comparison with other regions
	Cyprus	N/A	Not relevant for comparison with other regions
	Singapore	N/A	Not relevant for comparison with other regions



Logistics rating	Isle of Man	<a href="#">ONS</a>	Assumed to be the same as Isle of Wight based on qualitative insight
	Isle of Wight	<a href="#">ONS</a>	1 to 5 rating designed according to the range of % of business units for logistics in the areas analysed
	Scottish Highlands & Islands	<a href="#">ONS</a>	1 to 5 rating designed according to the range of % of business units for logistics in the areas analysed
	Mid-Lancashire	<a href="#">ONS</a>	1 to 5 rating designed according to the range of % of business units for logistics in the areas analysed
	Flintshire & Wrexham	<a href="#">ONS</a>	1 to 5 rating designed according to the range of % of business units for logistics in the areas analysed
	Torbay	<a href="#">ONS</a>	1 to 5 rating designed according to the range of % of business units for logistics in the areas analysed
	Malta	N/A	Not relevant for comparison with other regions
	Cyprus	N/A	Not relevant for comparison with other regions
	Singapore	N/A	Not relevant for comparison with other regions
Business rates	Isle of Man	IOM Treasury	2024 data for %, 2024 data for rateable values (average taken of rateable values provided – good alignment to a sample of known businesses)
	Isle of Wight	<a href="#">GOV.UK</a> , <a href="#">gov.uk</a>	2024 data for %, 2024 data for rateable values (average calculated for region using engineering and manufacturing business types)
	Scottish Highlands & Islands	<a href="#">mygov.scot</a> , property sites	2024 data for %, 2024 data for rateable value estimate, based on examples from property sites
	Mid-Lancashire	<a href="#">GOV.UK</a> , <a href="#">gov.uk</a>	2024 data for %, 2024 data for rateable values (average calculated for region using engineering and manufacturing business types)
	Flintshire & Wrexham	<a href="#">gov.wales</a> , <a href="#">gov.uk</a>	2024 data for %, 2024 data for rateable values (average calculated for region using engineering and manufacturing business types)
	Torbay	<a href="#">GOV.UK</a> , <a href="#">gov.uk</a>	2024 data for %, 2024 data for rateable values (average calculated for region using engineering and manufacturing business types)
	Malta	<a href="#">oecd.org</a>	2024 data – value of 0
	Cyprus	<a href="#">mof.gov.cy</a>	2024 data – value of 0
	Singapore	<a href="#">IRAS</a> , <a href="#">knightfrank.com</a>	2024 data for %, 2021 data for rateable values, based on rents



<b>Annual rent (£/sqft)</b>	Isle of Man	Property sites	2024 data (average taken of example rents – good alignment to a sample of known businesses)
	Isle of Wight	<a href="https://gov.uk">gov.uk</a> , <a href="https://ons.gov.uk">ONS</a>	2021 rateable value data, adjusted to current estimate using rent inflation
	Scottish Highlands & Islands	Property sites	2024 data for rent estimates, based on examples from property sites
	Mid-Lancashire	<a href="https://gov.uk">gov.uk</a> , <a href="https://ons.gov.uk">ONS</a>	2021 rateable value data, adjusted to current estimate using rent inflation
	Flintshire & Wrexham	<a href="https://gov.uk">gov.uk</a> , <a href="https://ons.gov.uk">ONS</a>	2021 rateable value data, adjusted to current estimate using rent inflation
	Torbay	<a href="https://gov.uk">gov.uk</a> , <a href="https://ons.gov.uk">ONS</a>	2021 rateable value data, adjusted to current estimate using rent inflation
	Malta	<a href="https://djar.gov.mt">Djar</a>	2021 data
	Cyprus	<a href="https://dom.com.cy">dom.com.cy</a>	2024 data for rent estimates, based on examples from property sites
	Singapore	<a href="https://knightfrank.com">knightfrank.com</a>	2021 data

## INNOVATION, SKILLS AND KNOWLEDGE METRICS

Metric	Country	Source	Description/notes
<b>Total annual government-led R&amp;D funding in E&amp;M (£)</b>	Isle of Man	<a href="https://iomdfenterprise.im">iomdfenterprise.im</a>	Incorporates financial assistance to manufacturing and engineering businesses via FAS Appendix 13, and additional R&D-categorised E&M funding from FAS (separate to Appendix 13). Additional grant data provided by DfE. Includes the value committed by government and (estimated) matched investment. Average taken over 5 years, 2017/18 – 2021/22, due to fluctuations. Note that some additional E&M FAS funding may be R&D-related, but values have been selected according to current categories.
	Isle of Wight	<a href="https://innovateuk.gov.uk">Innovate UK</a>	Average annual UKRI funding for manufacturing-related projects started in 2019-2023
	Scottish Highlands & Islands	<a href="https://innovateuk.gov.uk">Innovate UK</a>	Average annual UKRI funding for manufacturing-related projects started in 2019-2023
	Mid-Lancashire	<a href="https://innovateuk.gov.uk">Innovate UK</a>	Average annual UKRI funding for manufacturing-related projects started in 2019-2023
	Flintshire & Wrexham	<a href="https://innovateuk.gov.uk">Innovate UK</a>	Average annual UKRI funding for manufacturing-related projects started in 2019-2023
	Torbay	<a href="https://innovateuk.gov.uk">Innovate UK</a>	Average annual UKRI funding for manufacturing-related projects started in 2019-2023
	Malta	No data	Equivalent to above not available in data
	Cyprus	No data	Equivalent to above not available in data
	Singapore	No data	Equivalent to above not available in data



<b>Total annual private and public R&amp;D funding in E&amp;M (£)</b>	Isle of Man	No data	Equivalent to below not available in data
	Isle of Wight	No data	Equivalent to below not available in data
	Scottish Highlands & Islands	No data	Equivalent to below not available in data
	Mid-Lancashire	No data	Equivalent to below not available in data
	Flintshire & Wrexham	No data	Equivalent to below not available in data
	Torbay	No data	Equivalent to below not available in data
	Malta	<a href="#">NSO Malta</a>	R&D expenditure in engineering and technology, 2021 data
	Cyprus	<a href="#">cystat.gov.cy</a>	R&D expenditure in engineering and technology, 2023 data
	Singapore	<a href="#">SingStat</a>	R&D expenditure in engineering and technology, 2020 data
<b>Gross domestic expenditure on research and development (% GDP)</b>	Isle of Man	<a href="#">iomdfenterprise.im</a>	Total R&D expenditure assumed to be covered by FAS, including matched funding (though this value doesn't capture all private investment). Average taken over 5 years, 2017/18 – 2021/22, due to fluctuations.
	Isle of Wight	<a href="#">ONS</a>	Calculated at ITL2 area level, 2022 data
	Scottish Highlands & Islands	<a href="#">ONS</a>	Calculated at ITL2 area level, 2022 data
	Mid-Lancashire	<a href="#">ONS</a>	Calculated at ITL2 area level, 2022 data
	Flintshire & Wrexham	<a href="#">ONS</a>	Calculated at ITL2 area level, 2022 data
	Torbay	<a href="#">ONS</a>	Calculated at ITL2 area level, 2022 data
	Malta	<a href="#">Eurostat</a>	2022 data
	Cyprus	<a href="#">Eurostat</a>	2022 data
	Singapore	<a href="#">SingStat</a> , <a href="#">UNCTADstat</a>	Calculated from 2020 R&D expenditure data and 2023 total GDP data.
<b>Total employees in R&amp;D (%)</b>	Isle of Man	No data	
	Isle of Wight	<a href="#">Eurostat</a>	Value for NUTS 2 region, 2018 data
	Scottish Highlands & Islands	<a href="#">Eurostat</a>	Value for NUTS 2 region, 2018 data
	Mid-Lancashire	<a href="#">Eurostat</a>	Value for NUTS 2 region, 2018 data
	Flintshire & Wrexham	<a href="#">Eurostat</a>	Value for NUTS 2 region, 2018 data
	Torbay	<a href="#">Eurostat</a>	Value for NUTS 2 region, 2018 data
	Malta	<a href="#">Eurostat</a>	2021 data
	Cyprus	<a href="#">Eurostat</a>	2021 data
	Singapore	<a href="#">SingStat</a>	Includes post-graduate students and employees, 2020 data



Estimated % of workforce with post-secondary qualifications	Isle of Man	IOM census	% workers NVQ4+, 2021 data
	Isle of Wight	<a href="#">Annual Population Survey</a>	% workers NVQ4+, 2023 data
	Scottish Highlands & Islands	<a href="#">Annual Population Survey</a>	% workers NVQ4+ (Highlands), 2023 data
	Mid-Lancashire	<a href="#">Annual Population Survey</a>	% workers NVQ4+, 2023 data
	Flintshire & Wrexham	<a href="#">Annual Population Survey</a>	% workers NVQ4+, 2023 data
	Torbay	<a href="#">Annual Population Survey</a>	% workers NVQ4+, 2023 data
	Malta	<a href="#">Eurostat</a>	% of the population aged 25-64 who have successfully completed tertiary studies, 2022 data
	Cyprus	<a href="#">Eurostat</a>	% of the population aged 25-64 who have successfully completed tertiary studies, 2022 data
	Singapore	<a href="#">SingStat</a>	% with post-secondary qualifications among residents aged 25 years & over, 2022 data
% of population under 40	Isle of Man	<a href="#">gov.im</a>	2022 data
	Isle of Wight	<a href="#">ONS</a>	2023 data
	Scottish Highlands & Islands	<a href="#">ONS</a>	2023 data
	Mid-Lancashire	<a href="#">ONS</a>	2023 data
	Flintshire & Wrexham	<a href="#">ONS</a>	2023 data
	Torbay	<a href="#">ONS</a>	2023 data
	Malta	<a href="#">NSO Malta</a>	2023 data
	Cyprus	<a href="#">Eurostat</a>	Scaled down from "49 and under" category, 2022 data
	Singapore	<a href="#">SingStat</a>	2023 data



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