Call for evidence on access to finance for advanced manufacturing scale-ups- Department for Business and Trade, November 2025, REA Response

Call for evidence questions:

**1. What data exists to evidence the number of advanced manufacturing scale-ups which are currently operating in the UK?**

N/A

**2. What data exists to evidence the number of advanced manufacturing scale-ups which are actively seeking scale-up capital beyond Series A?**

N/A

**3. What do UK advanced manufacturing scale-ups most commonly require growth capital for?**

- capital investment
- R&D spend
- employee growth
- other (please specify) – all three but with capital and R&D costing more

**4. Which financial instruments are best suited to advanced manufacturers looking for scale-up financing?**

The best financial instruments for advanced manufacturers seeking scale-up financing are those that balance access to capital, cost, and flexibility. In the UK, this decision can be particularly challenging as the financing landscape heavily leans towards traditional equity and debt financing, with limited availability of government-backed loans, grants, subsidies, and tax incentives that could otherwise support scaling efforts.

Many advanced manufacturers gravitate toward a mix of venture capital (VC) and private equity (PE). These sources are often seen as the go-to options for providing significant capital and strategic guidance, especially when the scale of required funding exceeds what debt financing—such as asset-based lending—can typically offer. However, while VC and PE provide robust support, they often require manufacturers to cede quite a considerable amount of equity due to the associated risk and lack of investor confidence.

An increasingly popular alternative for UK manufacturers is mezzanine debt, a hybrid of debt and equity that offers substantial flexibility. This instrument is particularly appealing as it provides access to capital with less ownership dilution compared to equity financing. It is often structured to align with the cash flow of scaling businesses,

making it a viable option for manufacturers who are growth-oriented but protective of their equity stakes. However, mezzanine debt is still underused in the UK.

The reality is that many UK manufacturers who are ready to scale find themselves at a crossroads: while traditional debt instruments often fall short in providing the capital required, relying on equity financing alone risks significant dilution of control. This underscores the importance of exploring hybrid solutions like mezzanine debt, along with advocating for enhanced government support mechanisms to create a more balanced financing environment for advanced manufacturing scale-ups.

REA members have also advocated for the creation of a government-backed initiative that would encourage heavily industrialised companies or those with high emissions to financially support advanced manufacturing scale-ups in the renewable energy and clean technology sectors. For example, funds raised through the Windfall Tax could be directed towards R&D relief.

**5 a) To what extent are advanced manufacturing scale-ups able to access suitable growth capital in the UK?**

Advanced manufacturing scale-ups in the UK face significant challenges in securing suitable growth capital due to gaps in the funding landscape and the capital-intensive nature of scaling operations. While the UK has a strong ecosystem supporting startups, scale-ups often struggle to bridge the **"valley of death"**—the critical phase where substantial investment is needed to move from early-stage success to sustained growth. Traditional financing options, such as bank loans and asset-based lending, are often inadequate at this stage due to inconsistent cash flow and insufficient tangible assets.

Equity financing through venture capital (VC) or private equity (PE) offers another avenue, but as mentioned above, this often comes with considerable ownership dilution, which many founders are reluctant to accept. Additionally, investors often view advanced manufacturing as a higher-risk sector compared to technology or services, limiting investor appetite.  PE often seeks high returns at speed – not conducive to a patient capital approach for a long-term strategy.

While the UK government provides strong support for startups, its initiatives for scale-ups remain underdeveloped, especially in comparison to countries like the US or Germany, which offer larger-scale grants and subsidies for advanced manufacturing. As a result, the UK faces a significant challenge in supporting the growth of advanced manufacturing scale-ups, hindering their ability to expand and compete globally.

**5b) To what extent, if at all, is accessing suitable growth capital in the UK a challenge for scale-ups across the subsectors of advanced manufacturing?**

Accessing suitable growth capital remains a significant challenge for scale-ups across various subsectors of advanced manufacturing in the UK, largely due to a mismatch between their capital needs and the available financing options. While the UK has established a solid startup ecosystem, there is a notable gap in support when businesses transition from early-stage innovation to commercial production, often referred to as the "valley of death." This gap is exacerbated in advanced manufacturing due to the capital-intensive nature of scaling operations, including the need for new equipment, automation, regulatory compliance, and infrastructure upgrades.

For many subsectors, such as high-tech manufacturing, sustainable manufacturing, and automotive, the barriers to accessing capital are even more pronounced. High-tech firms, for instance, often deal with long development cycles and complex technologies, which deter traditional investors. Similarly, companies focused on green technologies or sustainable manufacturing face high upfront costs and ongoing regulatory compliance, which are difficult to finance through conventional methods. The automotive subsectors also require significant capital to remain globally competitive, but investors may be hesitant due to the high risks and upfront costs involved.

Despite government efforts to support early-stage businesses through grants and funding programs like Innovate UK, scale-ups continue to face challenges due to the lack of targeted growth funding. The UK lags behind countries like the US and Germany, which offer more comprehensive industrial strategies to support manufacturers as they scale. To address this, the UK must focus on expanding growth capital funds, incentivizing private investment, and fostering stronger public-private partnerships to provide the necessary financial support for these critical sectors to thrive.

**6. When considering financing rounds B+, how large are the investment rounds that UK advanced manufacturing scale-ups most frequently look to raise finance for?**

- less than £2 million
- £2 to 5 million
- £6 to 10 million
- £11 to 20 million
- £21 to 30 million
- £31 million or more

Range is often from 10 million up to 40 million- will put an average.

**7. When considering financing rounds B+, how large are the investment rounds that UK advanced manufacturing scale-ups are most frequently able to raise?**

- less than £2 million

- £2 to 5 million
- £6 to 10 million
- £11 to 20 million
- £21 to 30 million
- £31 million or more

Range is often from 3-8 million.

**8. a) Are you aware of the financial, governmental support offers for advanced manufacturing scale-ups from the following institutions?**

- UK Research and Innovation – Yes/No
- British Business Bank and British Patient Capital – Yes/No
- Department for Business and Trade (including the Advanced Propulsion Centre and/or Aerospace Technology Institute and/or the Automotive Transformation Fund) – Yes/No
- other (please specify)

**b) How effective is the existing government support offering in meeting the needs of advanced manufacturing scale-ups based in the UK?**

The REA has broken this down into four categories: lack of growth-focused funding for scale-ups, limited access to equity funding and private investment, inadequate support for international expansion, and regulatory/ bureaucratic barriers and complexity.

- **Lack of growth-focused funding for scale-ups:** One of the most significant gaps in government support is the lack of financial mechanisms aimed specifically at helping advanced manufacturing businesses during the critical scaling phase. While there is considerable support for startups and innovation, there is less available to businesses transitioning from R&D and prototype stages to full-scale commercial production. The "valley of death"—the gap between early-stage innovation and large-scale commercialisation—is where many scale-ups struggle to find adequate funding. The available funding from Innovate UK and other agencies is often insufficient for larger, capital-intensive scale-ups that need to invest in infrastructure, automation, and international market expansion.

- **Limited access to equity funding and private investment:** The UK's support for advanced manufacturing scale-ups still relies heavily on private equity (PE) and venture capital (VC), but these investment sources are not always adequately incentivised to support sectors like manufacturing, which can be seen as more capital-intensive and riskier than other sectors such as technology, or now, artificial

intelligence. As a result, advanced manufacturing scale-ups often struggle to attract large-scale investments needed for growth, even when they have innovative products or technologies. The UK government could do more to encourage private investment through tax incentives or co-investment schemes to match funds with the scale-up needs of the manufacturing sector. The UK government could also focus on an initiative that matches heavily industrialised companies or those with high emissions to financially support advanced manufacturing scale-ups in the renewable energy and clean technology sectors. For example, funds raised through the Windfall Tax could be directed towards R&D relief.

- **Inadequate support for international expansion:** While some programmes support research and development, there is a notable gap in government assistance for companies looking to expand internationally. Advanced manufacturing businesses often need substantial funding to enter foreign markets, establish new production facilities, and meet international regulatory requirements. Government programmes that specifically target export development and international market expansion are limited, and manufacturers often rely on commercial banks or international investors to meet these needs. As it stands, this is a missed opportunity for the UK and firms who are at the forefront of innovation. The latest UKEF export support rules support firms with minimal UK content – which may deprive others of support.

- **Regulatory/ bureaucratic barriers and complexities:** For many scale-ups, navigating the complexity of government grants, loans, and other support schemes can be challenging and time-heavy for firms with small teams and a lack of resources. The bureaucratic hurdles and lengthy application processes for funding can discourage companies from applying for financial assistance or delay crucial funding. This inefficiency can cause friction in the growth trajectory of advanced manufacturing businesses that require rapid, responsive financial solutions.

It should be added that while the UK government provides valuable support to advanced manufacturing scale-ups, particularly through Innovate UK, R&D tax credits, and sector-specific strategies, the existing offering is not fully aligned with the unique needs of advanced manufacturing scale-ups. The primary gap is the lack of targeted, large-scale funding for businesses moving from innovation to full-scale production, international growth and operability. The government has made strides, but to unlock the full potential of advanced manufacturing, it must expand its support to address the capital-intensive nature of scaling, international expansion, and provide more efficient, growth-focused funding options. Without this, UK manufacturers may continue to face significant challenges in competing on a global scale or turn to establishing their businesses elsewhere with more pro-active policy and supportive mechanisms.

**9. To what extent, if at all, do the following act as barriers to investment in advanced manufacturing scale-ups in the UK?**

The REA will address each point separately.

- The extended pre-revenue phase of scale-ups is a significant barrier to investment in advanced manufacturing scale-ups. Many companies in this sector require several years to transition from the development and prototyping phase to full-scale production and market commercialisation. During this period, businesses often lack steady revenue streams, making them less attractive to investors who are typically looking for quicker returns. In advanced manufacturing, the time it takes to move from early-stage innovation to a commercially viable product can delay financial returns, creating uncertainty for investors. This prolonged pre-revenue phase makes it difficult for scale-ups to secure funding, especially when they require substantial upfront capital to scale production.
  Barrier level: high

- The capital intensity of advanced manufacturing is one of the most significant barriers to investment. Scaling up production in this sector often requires large investments in specialised equipment, automation, facilities, and compliance with regulatory standards. These capital expenditures are far beyond what typical early-stage funding sources like venture capital or angel investments can provide. As a result, many scale-ups are unable to raise sufficient funds from traditional equity investors, and banks are often hesitant to provide loans without adequate tangible assets. This high capital requirement makes it harder for manufacturers to grow rapidly and secure the financing necessary to reach commercial scale.
  Barrier level: very high

- Technology and demand risk of innovation are inherent in advanced manufacturing, particularly for businesses developing new or disruptive technologies. Investors often view the technological feasibility and market demand for these innovations as uncertain, especially when commercial production is still unproven. Technologies that are highly novel or in the early stages of development face the risk of not meeting performance expectations or facing slow market adoption. Additionally, the changing nature of customer demand in manufacturing sectors—especially with the rise of sustainability concerns and technological shifts—adds further complexity to investment decisions. The lack of certainty regarding both technology performance and market readiness deters investors from taking the risks associated with funding these types of scale-ups.
  Barrier level: moderate

- Investor risk aversion is a significant barrier, particularly in the context of advanced manufacturing, which is often seen as riskier compared to sectors such as technology, software or services. Manufacturers face long lead times for product development, require high upfront capital, and often experience uncertainty in demand. In an environment where investors are increasingly focused on faster returns and more predictable growth trajectories, advanced manufacturing is not always seen as an attractive option. The complexity and perceived high risk of scaling in advanced manufacturing—especially in global markets—mean that investors tend to be more cautious, often avoiding investments in favour of other, lower-risk sectors.
  It is also important to highlight that British manufacturing firms frequently compete for investment against international competitors who benefit from more favourable conditions, such as those provided by the Inflation Reduction Act in the US. Whilst the UK cannot compete with this scheme and those of a similar nature, the UK government can introduce a more positive and clearer regulatory environment to encourage and secure domestic and foreign direct investment (FDI). Investor risk aversion could also be tackled by greater use of pension fund finance perhaps – if risks were spread between technologies and sectors. We understand this might not be possible but is worth considering in light of the current proposed public-sector pension reforms. Finance experts would be best placed to advise on how to mitigate this risk.
  Barrier level: high

- Geographical disparities in access to finance are a moderate barrier to investment in the UK's advanced manufacturing sector. London and the Southeast of England attract the lion's share of venture capital and investment, while manufacturers located outside these regions, particularly in more industrial or rural areas, may struggle to access similar levels of funding. This disparity often leads to a lack of equal opportunity for advanced manufacturing firms across the country. Scale-ups based outside major investment and innovation hubs such as the 'golden triangle' - London, Oxford and Cambridge, may find it harder to secure investors, despite having promising technologies or growth potential. Additionally, local governments or local development programmes may not be able to provide the level of funding support needed, further exacerbating regional funding gaps.
  Whilst initiatives like Made Smarter have supported over 2,500 manufacturers in adopting digital technology, indirectly contributing to the scale-up ecosystem and unlocking £70 million in gross value added so far, more support needs to be given firms based outside of regional innovation hubs, and in particular, outside the 'golden triangle'.
  Barrier level: moderate

- Lack of investor familiarity within the sector is a significant barrier to investment for advanced manufacturing scale-ups. Many investors—especially those outside of specialised industrial or manufacturing-focused funds—may lack the knowledge required to properly assess the opportunities and risks associated with manufacturing businesses. This lack of sector-specific expertise means that investors may overlook or undervalue manufacturing companies with strong growth potential. The technical nature of advanced manufacturing, the complex regulatory landscape, and the capital-intensive growth models can make it challenging for generalist investors to understand the true value of such businesses, contributing to reduced investment flows. This is particularly apparent in renewable energy and clean technology manufacturing.
  Barrier level: high

- Other- regulatory and policy uncertainty is another additional barrier for advanced manufacturing scale-ups looking to seek finance yet has not been addressed within this call for evidence. Changes in governments, government policy and time-stamped targets, in addition to expanding environmental regulations and evolving trade policy and trade agreements (seen during the aftermath of Brexit), can significantly impact the viability and profitability of manufacturing operations, especially those that rely on cross-border supply chains or international markets. Investors may be deterred by the potential for sudden changes in regulation that could disrupt business operations or increase costs. Furthermore, inconsistent government support for scale-ups—particularly in terms of funding for international expansion, export development, and infrastructure investment—adds another layer of uncertainty that limits investor confidence, both domestically and from FDI.
  Barrier level: moderate-high

**10. To what extent, if at all, do the following act as barriers to advanced manufacturing firms accessing scale-up capital in the UK?**

The REA will address each point separately.

- The timescales over which financing is offered can be a significant barrier for advanced manufacturing firms seeking scale-up capital. Scaling a manufacturing business often requires urgent investment in equipment, production facilities, or international market expansion. However, many traditional financing options, such as venture capital (VC) or private equity (PE), can involve lengthy due diligence processes, and government-backed grants or loans may take months to secure. This delays the ability of firms to act quickly on growth opportunities, particularly when the market is competitive or when technological innovation is involved. Moreover, the time horizon for returns on manufacturing investments is typically longer than in

other sectors such as technology, or artificial intelligence, making it harder for these firms to attract the financing they need within a feasible timeframe.
Barrier level: high

- The cost of financing is a major barrier for advanced manufacturing firms in the UK, particularly for those that are capital-intensive. Manufacturing businesses typically require large sums of money to scale, whether for investing in infrastructure and fixed costs, automation, staff, or complying with regulatory standards. The cost of financing, whether in the form of equity or debt, can be prohibitive for firms in this sector. As mentioned previously, equity financing can involve significant dilution of ownership, which many scale-ups are reluctant to accept, while debt financing as an option, can come with high interest rates, especially if the business is considered high-risk due to the capital-intensive nature of manufacturing. These costs make it harder for firms to secure the funding they need without undermining their financial stability or ownership structure.
  Barrier level: high

- The size of collateral required for some forms of financing, particularly asset-based lending and some types of bank loans, can be a significant barrier for advanced manufacturing firms. Many financing options in the UK, especially those offered by traditional lenders, require substantial collateral, such as equipment or property. However, manufacturing firms may not always have the types of assets that can be easily pledged as collateral, especially if they are still in the scaling phase and may not yet have significant real estate or production assets. This is especially problematic for firms in the early to mid-stage of scaling, as their growth potential may not yet be fully reflected in their balance sheets, making them less attractive to lenders who rely heavily on tangible collateral.
  Barrier level: moderate-high

- Complexity of accessing finance is a significant barrier for many advanced manufacturing scale-ups in the UK. There are numerous funding options available, from government grants to equity investments, but the process for securing them can be opaque, bureaucratic, and time-consuming. For example, applying for government grants can involve lengthy paperwork, complex eligibility criteria, and slow approval processes. Additionally, many firms in the sector may lack the expertise to navigate the various financial instruments available or may not have the internal capacity to prepare the required documentation and business cases. This complexity often deters firms from pursuing financing opportunities or delays their ability to secure the capital needed to scale in a timely manner.
  Barrier level- high

- Other- economic and market conditions can also act as barriers to accessing scale-up capital for advanced manufacturing firms in the UK. Economic uncertainty, such as inflation, fluctuations in interest rates, supply chain disruptions and changing government policy including fiscal regulations, can make it more difficult for firms to attract investors or secure loans. Investors may become more risk-averse in uncertain economic climates, prioritising safer investments over capital-intensive industries like manufacturing. Additionally, the global competitiveness of the sector means that UK firms often face stiffer competition for funding, not just from domestic investors but from international sources as well. As a result, firms may struggle to compete for limited capital in a global market, further limiting their access to necessary scale-up funding. This is something which has been experienced by the sector in the aftermath of Brexit and with the introduction of the Inflation Reduction Act in the US.
  Barrier level: moderate

To address all of these barriers listed above, there needs to be a more streamlined, transparent, and accessible financial ecosystem for advanced manufacturing scale-ups in the UK, with greater focus on offering tailored financing solutions that recognise the unique needs of the sector. Reducing the complexity and timescales for accessing capital and offering more affordable financing options (with reasonable collateral requirements) would go a long way in helping UK manufacturers scale successfully.

**11. What barriers, if any, exist to advanced manufacturing scale-ups accessing working capital in the UK?**

Accessing working capital is a critical challenge for advanced manufacturing scale-ups in the UK. Working capital is needed for day-to-day operations, including managing cash flow, purchasing raw materials, paying staff, and covering operational expenses. For scale-ups in capital-intensive sectors like manufacturing, this need is often heightened due to the long lead times required for production and the typically high cost of goods sold (COGS). Several barriers can prevent these firms from accessing the working capital they need. The REA has listed these below.

- Capital-intensive nature of advanced manufacturing: The capital-intensive nature of advanced manufacturing itself poses a major barrier to accessing working capital. Manufacturing businesses often have significant upfront costs related to equipment, machinery, and inventory, which can tie up their cash flow. The long payment cycles, particularly when dealing with large contracts or high-value clients, can exacerbate cash flow issues. These challenges can make it difficult to meet operational expenses, even if the business is profitable in the long term. Scale-ups that are growing quickly, particularly those in growing industries such as renewable energy, clean technology and electric vehicles, may also find it difficult to balance

growth with the need for working capital, especially if they are investing heavily in scaling production capabilities.
Barrier level: High

- Access to short-term financing: While there are various forms of short-term financing available (e.g., lines of credit, invoice financing, and trade finance), many advanced manufacturing scale-ups face challenges in accessing these types of funding. Traditional lenders, such as high street banks, are often hesitant to extend credit to manufacturing businesses, especially those in the growth phase, due to the perceived risk and capital intensity of the sector. Furthermore, many of these firms may not have the strong, established credit history or tangible assets that banks typically require for short-term loans or overdrafts. While invoice financing or factoring can provide a bridge for cash flow, these solutions often come with high fees, limiting their effectiveness for scaling businesses. There could be a role for the British Business Bank to support the market in this space.
  Barrier level: moderate-high

- Limited availability of government support for working capital: Though the UK government offers support for R&D, innovation, and large-scale growth through initiatives like Innovate UK, there is limited direct support available for the specific purpose of addressing working capital needs for advanced manufacturing scale-ups. Many government-backed funding schemes are focused on long-term investment (e.g., grants, tax incentives, and capital investment projects), rather than the short-term financial pressures that manufacturing scale-ups face as they grow. The feedback from REA members is that this gap in government support for working capital can leave scale-ups with fewer options to manage day-to-day financial demands and slows their ability to scale rapidly.
  Barrier level: moderate

- Risk aversion of lenders: Many advanced manufacturing scale-ups find that traditional lenders and investors are risk averse when it comes to providing working capital. Since manufacturing is capital-intensive and often requires large amounts of upfront investment, financial institutions may be wary of providing the necessary funds. Additionally, many manufacturing firms operate in markets where demand can be cyclical or affected by external factors such as global supply chain issues or shifting consumer preferences. Lenders may perceive these fluctuations as risks to repayment, making them less willing to offer unsecured working capital loans or lines of credit. The perceived risk of financing manufacturing businesses, particularly those still in the growth phase, means these firms often have to look to alternative, more expensive sources of funding.
  Barrier level: high

- Inadequate credit history or collateral: As highlighted by REA members, an often-overlooked barrier to accessing working capital is the lack of established credit history or sufficient collateral. For scale-ups that are still maturing or have not yet built significant assets, traditional banks or lenders may not be willing to extend the necessary working capital. Many manufacturing businesses, particularly those in early-stage growth phases, may not yet have substantial property or inventory that can be used as collateral for short-term loans. Without sufficient assets to secure financing, firms may be forced to rely on unsecured loans, which are harder to come by and often come with higher interest rates. This limits access to working capital and can be especially challenging for companies that require quick access to funds. This also leads companies to the PE sector for finance and creates subsequent pressure on short term returns above longer term patient capital. Barrier level: moderate

- Seasonal and contractual cash flow issues: Advanced manufacturing firms, particularly those dealing with large contracts or long production cycles, often experience seasonal fluctuations in cash flow. In the renewable energy and clean technology industry, this can be exacerbated by changing government policy or existing subsidy schemes or incentives for consumers coming to an end. Large orders or long-term projects may lead to periods of low working capital, as the cash is tied up in ongoing production or inventory. Conversely, delays in receiving payments from clients or customers can create cash flow gaps, making it difficult to meet day-to-day expenses. Without adequate working capital or access to short-term funding, scale-ups may struggle to maintain operations during these periods. These cash flow issues can be exacerbated by reliance on long credit terms with suppliers or slow-paying customers, further hindering access to liquidity.
  Barrier level: moderate

- Complexity and administrative burden: The complexity and administrative burden involved in applying for working capital financing can also act as a barrier. Whether seeking funding through banks, alternative lenders, or government schemes, the process of applying for working capital finance can be complex and time-consuming. As mentioned previously, advanced manufacturing scale-ups, particularly those in the growth phase, may not have the internal resources to handle these applications, leading to delays or missed opportunities. This complexity can deter companies from pursuing the available options or lead to inefficiencies in the process of securing working capital when it is most needed.
  Barrier level: moderate

**12. Excluding challenges to accessing capital, what other barriers to investment, if any, do UK advanced manufacturing scale-ups face?**

Excluding challenges related to capital access, UK advanced manufacturing scale-ups, particularly those in the renewable energy and clean technology sectors, face a range of other barriers to investment. These include talent shortages, supply chain disruptions, regulatory complexities, market uncertainty, technological risk, and IP protection issues, all of which can deter potential investors. In addition, cultural and organisational challenges as companies grow, and limited access to global markets, can further complicate investment opportunities. To overcome these barriers, the British government must encourage UK scale-ups to focus on building robust internal capabilities, mitigating external risks, and providing clear value propositions to investors. Addressing these issues effectively will improve the attractiveness of UK advanced manufacturing firms to investors, enabling them to secure the necessary resources for growth and expansion.

**13. To what extent, if at all, are any barriers to securing access to finance different between the UK and other countries?**

Barriers to securing finance for advanced manufacturing scale-ups in the UK differ from those in other countries, with specific challenges stemming from the UK's financial ecosystem and regulatory environment. While the UK faces common issues such as capital intensity, investor risk aversion, and long payback periods, it also struggles with limited government-backed funding options and a cautious approach to manufacturing investments. The post-Brexit landscape has added complexity with changing trade regulations, which further impacts investor confidence. UK scale-ups often find it harder to access specialised financial instruments like mezzanine finance or asset-based lending, which are more prevalent in countries such as Germany, where manufacturing is deeply supported by state-backed funding and targeted industry loans.

In comparison, countries like Germany, South Korea, and China have a more favourable environment for manufacturing scale-ups, with robust government support, stronger regional investment networks, and a more industrial-focused financial culture. The US also presents a contrasting example, with a more developed venture capital ecosystem willing to invest in high-risk, capital-intensive manufacturing ventures. While the US may have a higher risk appetite, it also offers greater access to specialised financing options such as private equity and venture capital. To improve access to finance, the UK government could focus on enhancing its support for manufacturing firms through more tailored financial products, clearer regulatory pathways, and fostering a stronger investor culture in the sector.

In Germany, the KfW system is often credited with growing the early renewables industry and supporting home grown manufacturers and this stable long term capital approach should be adopted in the UK.

**14. What incentives, if any, exist for advanced manufacturing firms in the UK to scale up outside of the UK?**

While there are limited direct incentives for UK advanced manufacturing firms to scale up outside the UK, factors such as access to larger markets, lower operating costs, government incentives abroad, skilled labour, diversification, and favourable trade agreements create strong incentives for firms to consider expansion internationally. Many UK manufacturers, particularly those in capital-intensive industries, may find that scaling beyond the UK is essential for sustaining growth, reducing risk, and capitalising on opportunities in emerging markets. However, the UK government could enhance support for international expansion by providing more targeted export and investment incentives to manufacturers looking to scale up outside the UK, for example support for scale ups navigating complex overseas regulations and market knowledge, particularly for technologies which are less developed elsewhere e.g. longer duration energy storage.

**15. When considering advanced manufacturing scale-ups internationally, how does the average number of investors per investment round compare to the UK?**

Internationally, advanced manufacturing scale-ups generally attract larger and more diverse investor groups, particularly in the US and China, where the number of investors per round can range from 5 to 10 or more. In contrast, the UK typically sees fewer investors, often between 2 to 4, due to a smaller, more cautious investor base in the manufacturing sector. The disparity reflects the relative maturity and diversity of investment ecosystems in these countries, with the US and China having more institutional support and a wider pool of investors specialising in advanced manufacturing.

**To what extent, if at all, have UK advanced manufacturing scale-ups accessed government-supported finance outside of the UK?**

REA members have highlighted that UK advanced manufacturing scale-ups have increasingly looked outside the UK for government-supported finance, not only when looking to expand internationally. The global push for innovation and the drive for sustainable technologies have led many UK firms to tap into funding from governments in key markets, including the US, Korea, Germany and Azerbaijan. These countries provide targeted financial support for manufacturing firms, which can be particularly attractive for UK companies seeking to scale up.

Two examples given to the REA by its members are below:

1. Support in the US: state of Michigan

One notable example is the State of Michigan, where UK advanced manufacturing firms, particularly those in the renewable energy and advanced manufacturing technology sectors, have accessed government-backed support. Several UK manufacturers have leveraged Michigan's incentives for foreign businesses. These include grants, tax credits, and subsidised loans aimed at encouraging clean technology and advanced manufacturing investment. Michigan, with its focus on industries such as electric vehicle manufacturing, electric vehicle charging, automation, and advanced manufacturing technologies, offers substantial financial support to businesses looking to establish or expand operations within the state. UK firms have benefited from Michigan's state-funded programs like the Michigan Economic Development Corporation (MEDC), which provides various financial incentives, such as competitive grants and investment funding, to international companies.

For example, UK companies in the electric vehicle (EV) and automotive sectors have found Michigan's financial incentives attractive, particularly due to its long-standing reputation as the heart of US automotive manufacturing. By partnering with local Michigan authorities, and automotive industry leaders, these UK firms have been able to scale up their operations, gain access to the state's industrial infrastructure, and benefit from state-level incentives like tax credits for setting up manufacturing facilities or research and development centres.

2. Support in Azerbaijan

Similarly, UK advanced manufacturing firms have also accessed government-supported and private finance in Azerbaijan, particularly in the context of oil and gas and manufacturing technology sectors. Azerbaijan's government has been working to diversify its economy and encourage investments in advanced manufacturing, with a focus on sustainable industries, automation, and industrial equipment. As a result, UK companies in these fields have been able to benefit from Azerbaijan's various incentive programs aimed at attracting foreign investment.

The government of Azerbaijan offers a range of subsidies, tax exemptions, and low-interest loans to international manufacturers, which make the country an appealing destination for UK firms looking to expand their operations in Central Asia and the wider region. UK firms that are members of trade associations such as the REA have been able to tap into these opportunities, especially those involved in clean energy technologies and automation systems. The Azerbaijan Investment Promotion Agency (IPA) plays a key role in facilitating these investments by providing financial support for projects related to manufacturing, including grants and funding for setting up new facilities.

**17. To what extent, if at all, do UK advanced manufacturing scale-ups sell their intellectual property to firms outside of the UK because of difficulties raising scale-up capital domestically?**

The sale of intellectual property (IP) by UK advanced manufacturing scale-ups to firms outside of the UK is a relatively small but notable phenomenon, typically driven by challenges in securing sufficient scale-up capital domestically. While this approach is not the primary strategy for most firms, it does occur under certain circumstances where UK companies face difficulties in accessing the necessary funding to scale their operations.

One of the main reasons UK advanced manufacturing scale-ups may choose to sell their IP to foreign firms is the difficulty in raising sufficient capital within the UK market. IP sales can be seen as a way to secure immediate funding by monetising their intellectual assets to more established firms with the financial capacity to scale the technology or product. Many UK companies in advanced manufacturing in renewable energy and clean technology look to sell their patents, licensing rights, or technology licenses to larger firms based in regions like the US, Germany, or China, which have more robust funding ecosystems and a higher risk tolerance for innovative sectors.

In many instances, foreign firms, particularly in countries with strong manufacturing bases such as the US and Germany, are actively looking to acquire or license advanced technologies. This is due to their own need to integrate cutting-edge innovations into their existing production processes or to gain a competitive edge in global markets.

While the sale of IP is not the most common route for UK scale-ups, it has been seen in certain high-tech areas, such as robotics, renewable energy, and automotive technologies. For example, some UK companies in the electric vehicle and battery technology sectors have sold their IP to US-based firms looking to enhance their technological portfolios in these areas. Similarly, in advanced manufacturing, firms may choose to sell proprietary technologies or licensing rights to larger firms in Germany or China in order to benefit from access to more extensive capital resources and production facilities.

However, it is also worth noting that while the sale of IP can provide immediate cash or licensing revenue, it is often seen as a short-term solution rather than a long-term strategy. The decision to sell IP is typically driven by financial necessity, rather than a strategic desire to exit the business. From what the REA can gather, this remains more of a last-resort option, with most firms preferring to retain ownership of their intellectual property if they can access the capital needed to scale up effectively.

This represents a significant loss for the UK economy and future generations.

**18. What do UK advanced manufacturing businesses most commonly require working capital for?**

UK advanced manufacturing businesses typically require working capital to support day-to-day operations and ensure smooth production processes, especially as they scale up. The most common uses of working capital in the renewable energy and clean technology sector include raw materials, inventory management, high labour costs for specialised staff, specialised equipment and machinery maintenance costs, high operational expenses (UK has very high costs for energy costs in comparison to other countries), compliance and regulatory costs, supply chain and logistics costs. This is in addition to high capital costs for assets and R&D/ product development.

**19. Which financial instruments are best suited to advanced manufacturers looking for working capital?**

In addition to what has been mentioned previously in this call for evidence, for advanced manufacturing businesses in need of working capital, the most suitable financial instruments vary depending on their specific cash flow requirements, asset base, and growth stage. Trade credit and invoice financing are often the first choices for companies with outstanding receivables or inventory, while overdrafts and revolving credit offer flexibility in managing daily expenses. Asset-based lending and short-term loans provide larger sums of capital, often secured by assets, and government-backed financing can offer affordable options for small and medium-sized manufacturers.

**20. a) To what extent are advanced manufacturing businesses able to access suitable working capital in the UK?**

In the UK, the extent to which advanced manufacturing businesses can easily access suitable working capital varies depending on their size, sector, and growth stage.

Larger businesses, particularly those with established relationships with banks or financial institutions, often have easier access to traditional forms of working capital, such as overdrafts, revolving credit lines, and asset-based lending. These instruments offer flexibility and are well-suited to companies with significant tangible assets or proven cash flow.

Furthermore, UK businesses can benefit from government-backed schemes designed to ease access to finance, particularly for SMEs. The British Business Bank and other public institutions offer financing options such as the Enterprise Finance Guarantee (EFG) to support SMEs in accessing working capital at favourable terms.

However, for smaller or high-growth companies, particularly those in more capital-intensive or emerging sectors such as renewable energy and clean technology, accessing suitable working capital can be more challenging. These businesses may face more stringent lending criteria from traditional lenders, as their cash flow is often

less predictable, or they might not have enough tangible assets to secure loans. In such cases, they may rely more on alternative finance options, such as invoice financing, trade credit, or supply chain finance, though these may not always be sufficient to meet their full working capital needs.

**20. b) To what extent, if at all, is accessing suitable working capital in the UK a challenge for businesses across the subsectors of advanced manufacturing?**

Accessing suitable working capital in the UK can be a significant challenge for certain subsectors of advanced manufacturing, especially those that are capital-intensive or operate in rapidly changing markets such as those which REA members operate in. The extent of this challenge varies by subsector, with some facing greater difficulties than others.

For businesses in capital-intensive sectors such as automotive (electric vehicles) and renewable energy technologies, access to working capital is often a substantial challenge. These industries require large investments in machinery, raw materials, and research and development, which can create significant cash flow gaps. It has come to the REA's attention that manufacturers in these sectors may have to manage long production cycles or long payment terms with customers, further straining working capital. Traditional financing options like bank loans or overdrafts may be less accessible or come with higher interest rates due to the perceived risks associated with these industries.

For businesses in emerging technologies such as clean technology, the challenge of accessing working capital is also acute. Many of these businesses are early-stage or high-risk, which can make it harder to secure funding. Investors and lenders may be more hesitant to offer capital to startups or businesses with less predictable cash flow, even though these companies often require substantial working capital to scale production and bring innovations to market. These companies might consider turning to alternative sources like venture debt, equity financing, or invoice factoring, but these options may not always provide the long-term stability needed for sustained growth.

It should also be noted that many SMEs do not have the same creditworthiness or financial history as larger, more established firms, which can limit their ability to secure traditional bank loans or lines of credit. While there are government-backed schemes like the Enterprise Finance Guarantee to support smaller manufacturers, these options are sometimes insufficient or overly restrictive, especially for firms in niche subsectors such as renewable energy and clean technology.

As mentioned previously in this response to the call for evidence, there are also geographical disparities in access to working capital within the UK. Firms located in less economically active regions or outside major business hubs such as the 'golden triangle' of London, Cambridge and Oxford, or even Manchester may find it more

difficult to access finance due to the concentration of financial services and investor networks in these areas. This can particularly affect regional advanced manufacturing firms, which may face higher costs or limited access to specialised financial products that meet their specific needs.

21. What amount of working capital do UK advanced manufacturing businesses most frequently look to raise as part of their funding rounds?

- less than £250,000
- £250,000 to 499,000
- £500,000 to 1 million
- £1 to 2 million
- £3 to 5 million
- £6 to 10 million
- £11 million+

22. What amount of working capital are UK advanced manufacturing businesses most frequently able to raise as part of their funding rounds?

- less than £250,000
- £250,000 to 499,000
- £500,000 to 1 million
- £1 to 2 million
- £3 to 5 million
- £6 to 10 million
- £11 million+