



Construction Equipment Association

THE UK'S CONSTRUCTION EQUIPMENT SECTOR REPORT 2023

2022 FACTS AND FIGURES



TOTAL REVENUE
>£15bn 2022
>£13bn 2018
>£11bn 2013



GVA
>£2.5bn 2022
>£2.3bn 2018



TOTAL EMPLOYMENT
>44,000



EXPORT SHARE OF PRODUCTION
>60%



INVESTMENT IN R&D
>£250m pa



NUMBER OF COMPANIES
>1,500



UK MACHINE PRODUCTION
>68,500 units 2022
>60,000 units 2018



WORLD RANKING (MACHINES)
5th Globally
1st Europe



Construction Equipment Association



30 Years



The Construction Equipment Association

CEA About

The Construction Equipment Association (CEA) is the trade association that represents the UK construction equipment sector – and is recognised by HM Government as the voice of our industry.

Mission: “To represent the interests of our members within the UK construction equipment industry, in a globally changing competitive environment.”

Vision: “To be the ‘Voice of the Construction Equipment Sector’ delivering added value to our members, be a positive influencing factor on government policy and directly contributing to the sustainability and growth of the sector.”

We are represented in Brussels – as active members of the Committee for European Construction Equipment (CECE) – and our influence is felt worldwide through our technical, regulatory and international trade work.

Categories of membership include:

- Original Equipment Manufacturers (OEMs) with UK production facilities.
- Overseas OEMs with UK offices.
- Component and accessory suppliers.
- Trade publishers.
- Specialist service providers.
- Equipment distributors.

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Introduction

We are pleased to present the 4th Sector Report on the UK construction equipment industry, which serves as the first update since our 2019 report. This update takes into account significant events such as the UK's departure from the EU and the challenges posed by the COVID-19 pandemic. Our industry has demonstrated resilience in navigating these challenges, while also addressing energy, labour, and supply-related issues. Concurrently, the implementation of Stage V emission standards has been a key focus.

Despite these challenges, the industry has maintained robust growth throughout the last full reporting period in 2021 and into 2022. Furthermore, based on the growth in sales volumes, we anticipate that 2023 will continue to showcase record-breaking revenues, unit sales, and exports for the industry.

We are excited to share these positive developments and insights regarding the UK construction equipment sector, highlighting its ability to adapt and thrive in the face of adversity.



Suneeta Johal

Chief Executive

The Construction Equipment Association

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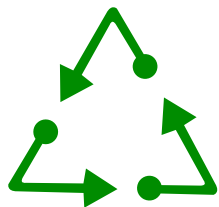
Key Issues 2023

The construction industry is currently being influenced by three key factors: sustainability, digitalisation, and skills. These factors are expected to bring about significant transformations within the industry throughout the next decade. However, it is important to note that other factors, such as safety, security, competitiveness, and the formation of strategic partnerships, will also have an impact on all stakeholders. As a result, the business environment in the construction industry is becoming increasingly complex, requiring careful consideration and proactive measures to address these various issues effectively.



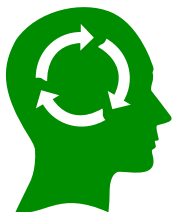
Sustainability (Net Zero)

In order to achieve productivity and sustainability goals, it is crucial to view equipment as an integral component of a larger system. The adoption of near zero and zero tailpipe emissions equipment, as well as the utilisation of alternative fuels, will contribute to the expansion of product ranges. Decarbonisation efforts will play a significant role in certain segments as companies strive to meet corporate social responsibility (CSR) standards and low-emission zone (LEZ) requirements. By embracing these initiatives, the industry can make substantial progress towards creating a greener and more environmentally friendly construction equipment sector.



Digitalisation

Achieving productivity improvements in the construction industry will require close collaboration among original equipment manufacturers (OEMs), customers, and other stakeholders. Digitalisation will serve as a foundational element in driving these improvements, enabling streamlined processes and enhanced efficiency. However, ensuring the competitiveness of the construction sector will also be crucial in this endeavour. By fostering strong partnerships, embracing innovative technologies, and continuously improving operational practices, the industry can thrive in an increasingly competitive landscape and deliver sustainable productivity gains.



Skills

Skills development in the construction industry must broaden its focus to encompass a wider range of capabilities. The rise of digitalisation, servicification, autonomy, and electric machines necessitates the acquisition of IT skills alongside traditional mechanical skills. As technology continues to advance, the industry will increasingly rely on professionals who can effectively navigate and leverage digital tools and systems. This expanded skill set will empower individuals to embrace the evolving landscape of construction, ensuring they can contribute to the successful implementation and operation of digital, service-oriented, autonomous, and alternative fuel solutions. However this creates a risk of competing with other digital industries for talent.

**Servicification (sometimes referred to as servitisation), is the shift away from product centred sales to product-centric services - which deliver 'value in use'.*

Key Issues - The Industry in Numbers

Since the release of the 2019 report, based on 2018 data, the UK Construction Equipment Sector has demonstrated remarkable resilience and growth. Despite facing challenges such as Brexit, the COVID-19 pandemic, and supply chain constraints, the sector has shown strong progress. Record-breaking revenues, production volumes, and employment figures are a testament to the industry's robustness and adaptability. These achievements highlight the dedication and perseverance of all stakeholders involved in the UK Construction Equipment Sector.



01 The Industry in Numbers

The UK industry is globally ranked 5th, and 1st in Europe, for the machines covered in this report, by unit sales. Over 1500 companies make up the sector from OEMs, suppliers, dealers, and other stakeholders.



02 Major OEMs & Plant Locations

Fifteen OEMs in the UK are spread across 20 main plants throughout the country. These plants are primarily clustered in the Midlands, North East, and Northern Ireland.



03 Revenue, Employment and GVA

Total revenue has increased to over £14bn in 2021/22 up from £13bn in 2018. Employment increased 10% from 40,000 to over 44,000 and GVA £2.5bn up from £2.3bn.



04 2022 Production

Unit production in 2022 increased to over 68,500 machines, up 14% from 60,000 in 2018.

The Industry in Numbers

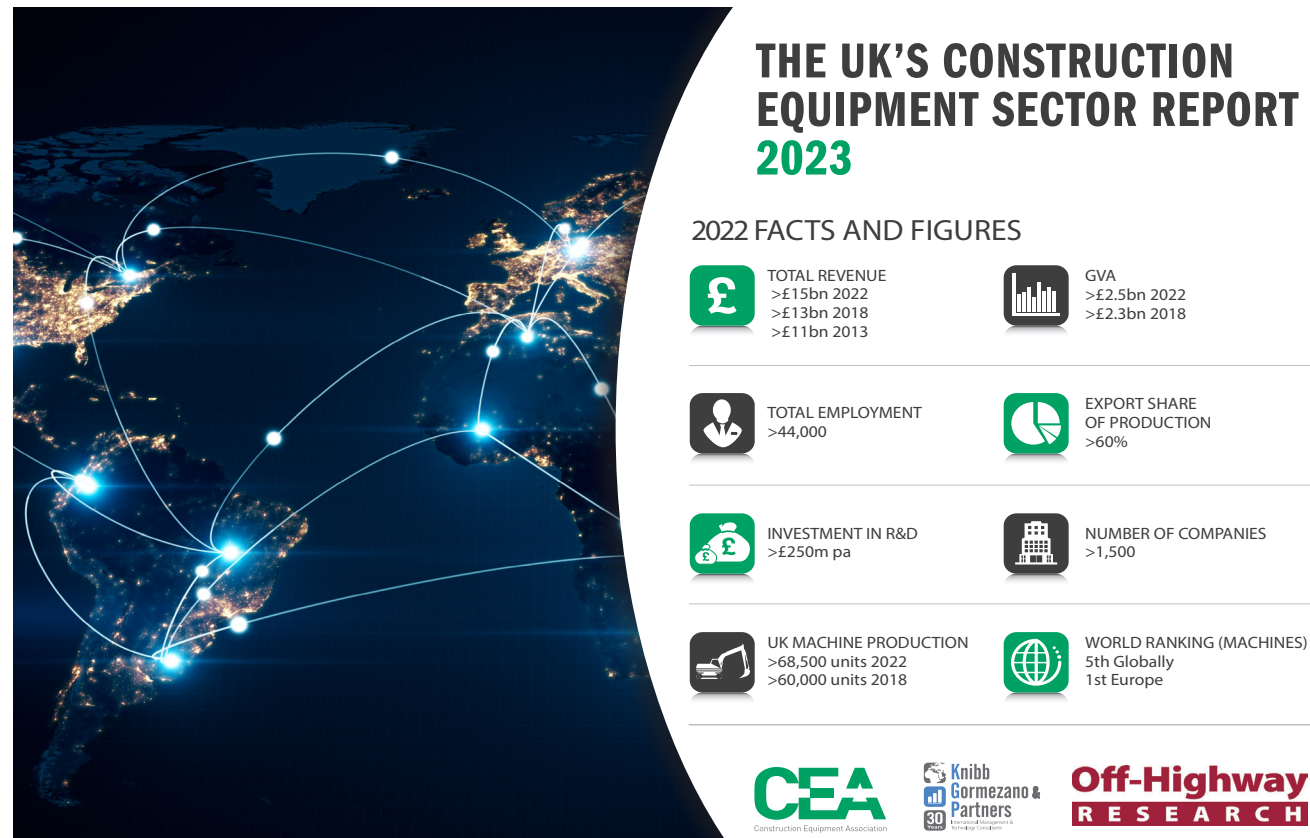
Despite the challenging circumstances brought about by the COVID-19 pandemic, BREXIT and the implementation of Stage V machines, the UK construction equipment industry has continued to thrive since the 2019 report. The global markets have shown resilience, supporting both domestic and export volumes, thereby boosting production and employment within the sector.

The industry's commitment to decarbonisation in construction has prompted increased investment in new products across the UK's original equipment manufacturer (OEM) and component supply chains. This commitment has further solidified the UK's position as the leading construction equipment sector in Europe and the fifth-largest globally.

Analysis suggest that the industry's revenue has grown to £14 billion in the 2021/22 period, and the gross value added (GVA) has reached £2.5 billion. Employment in the sector stands at approximately 44,000, with exports continuing to account for over 60% of the sector's output.

These positive indicators reflect the industry's resilience and ability to adapt to changing circumstances while remaining a key player in the global construction equipment market.

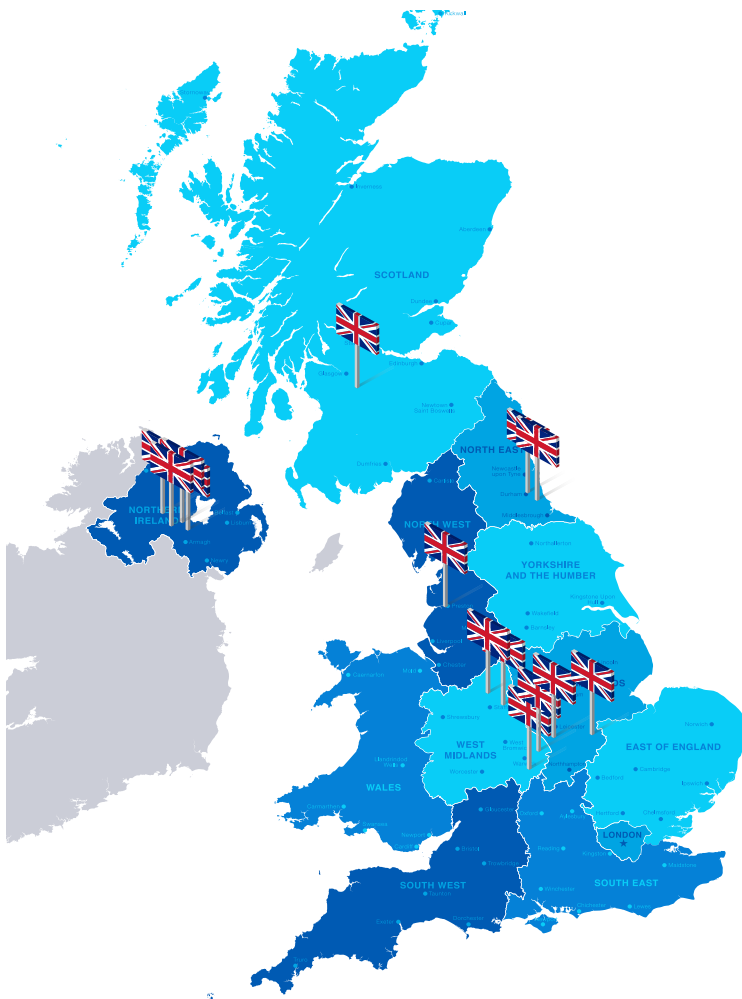
FIGURE 1 - THE UK INDUSTRY IN NUMBERS



UK Plant Locations

Production by major OEMs is concentrated in the West Midlands, North East and Northern Ireland. Four in the UK reported turnover of more than £100m in 2021/22's financial reports.

FIGURE 2 - UK OEM LOCATIONS



Source: KGP analysis

FIGURE 3 - UK OEM LOCATIONS AND PRODUCTS

| Company | Main Locations | Products |
|---------------------|---------------------------------|---|
| BG Pavers | Preston | Asphalt Finishers |
| Caterpillar | Desford, Peterborough, Peterlee | Articulated Dump Trucks, Backhoe Loaders, Engines, Compact Wheel Loaders |
| Hewitt Robins | Swadlincote | Crushers, Screens |
| JCB | Cheadle, Foston, Rocester | Articulated Dump Trucks, Backhoe Loaders, Crawler Excavators, Engines, Mini Excavators, Telehandlers, Wheeled Excavators, Wheeled Loaders |
| Komatsu | Chester-le-Street | Crawler Excavators, Wheeled Excavators |
| McCloskey | Dungannon | Crushers, Screens |
| Mecalac | Coventry | Compaction Equipment, Site Dumpers |
| NC Engineering | Richill (Armagh) | Site Dumpers, Telehandlers |
| Phoenix Engineering | Chard | Asphalt Finishers, Spreaders |
| Red Rhino Crushers | Grantham | Mini Crushers, Screens |
| Sandvik | Ballygawley | Crushers, Screens |
| Telestack | Omagh | Screens, Feeders and Conveyors |
| Terex | Dungannon, Omagh | Crushers, Screens |
| Thwaites | Leamington Spa | Site Dumpers |
| Volvo | Motherwell | Articulated Dump Trucks, Rigid Dump Trucks |

Note: Mecalac ended production of backhoe loaders in the UK since the last update of this report.

Revenue and Employment

Revenue is spread across companies of all sizes, but dominated by the OEMs

FIGURE 4 - UK CE STAKEHOLDERS SPLIT BY TYPE OF BUSINESS - 2021

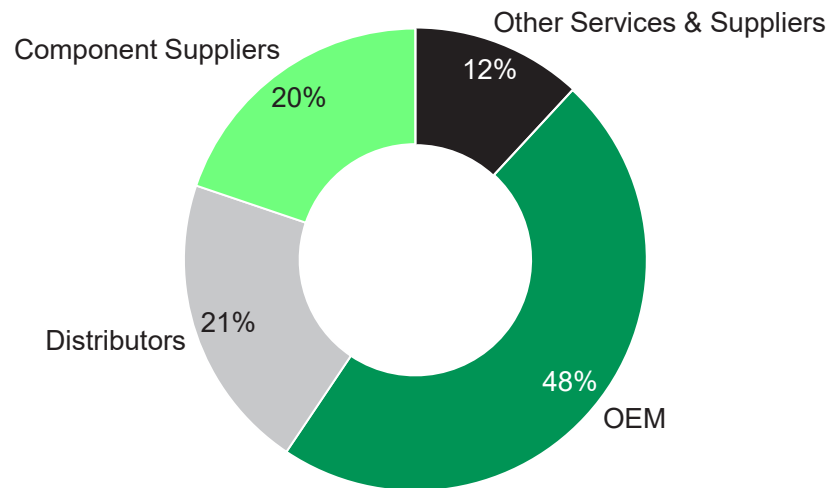
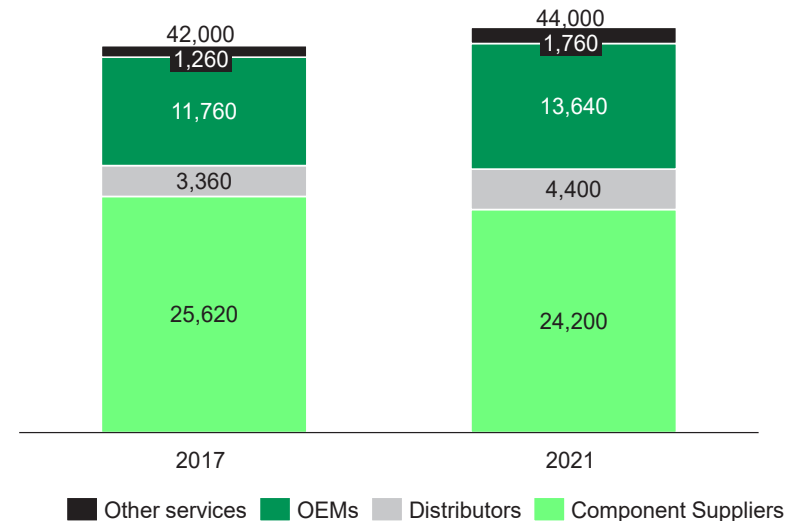


FIGURE 5 - UK EMPLOYMENT ESTIMATES 2017 VS 2021 BY TYPE OF BUSINESS



KGP analysis

Revenue distribution within the UK construction equipment industry is relatively diverse across companies of different sizes. However, it is important to note that reporting requirements may lead to some smaller companies (with turnover below £6 million) and certain subsidiaries of larger companies not disclosing their revenue in their returns to Companies House.

In order to conduct a thorough evaluation, the revenue data for companies has been adjusted, taking into account their estimated market share in the construction equipment segment. Although this sector encompasses companies of various sizes, the top 10 companies, most of which are OEMs, hold a dominant position. The report uses 2021 figures as a reference point, as the annual figures for 2022 are not yet available and are expected to be released later in 2023. Considering the production data for 2023 and the growth experienced in Q1 2023, it is anticipated that the revenues for 2023 will surpass those of 2022 by a significant margin. However, it is important to note that profitability may continue to be affected by cost pressures and impact GVA.

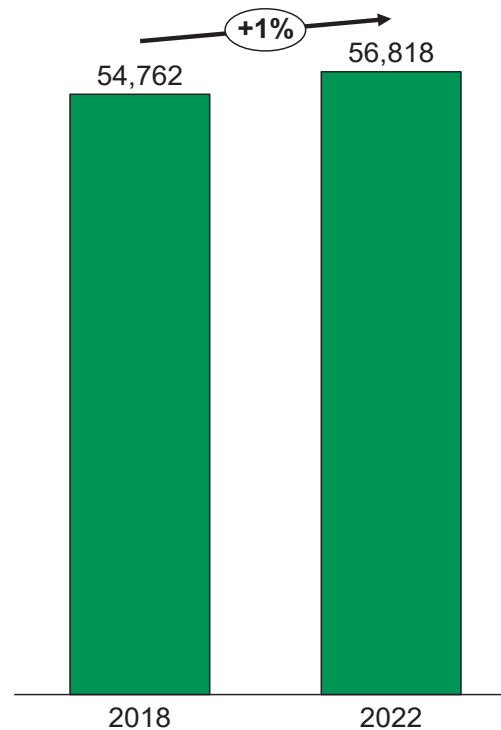
GVA - Gross Value Added

The Gross Value Added (GVA) in the UK construction equipment sector witnessed improvement, driven by increased revenue and employment in the majority of OEMs and supply chain companies. However, the sector faced constraints due to higher costs, supply shortages, and the impact of the COVID-19 pandemic. Despite these challenges, the overall performance of the sector demonstrated positive growth in terms of GVA, reflecting the resilience and adaptability of the industry players in navigating through difficult circumstances.

FIGURE 6 - GVA (£BN) 2018-2022



FIGURE 7 - GVA (£) PER CAPITA 2018 - 2022



The Gross Value Added (GVA) generated by the UK construction equipment sector has experienced an estimated annual growth rate of around 2% from 2018 to 2022, reaching a cumulative total of £2.5 billion. However, this growth has been somewhat limited by higher input costs and distribution expenses, which have offset the gains from favorable exchange rates.

Despite the overall growth in GVA, the per capita GVA in the construction equipment sector has only increased by approximately 2% per year since 2014 (1% from 2018). This is due to a rise in employment within the sector. In response to the 2009 recession and the 2015 Chinese market crash, which had a negative impact on the global market, some large enterprises in the industry implemented cost-cutting measures through employment consolidation.

Nevertheless, this trend has been partially offset by increased investments in expertise from the supply chain and niche product suppliers. These companies have capitalised on the demand for advanced and readily available technological solutions, contributing to the overall growth of the sector and its ability to adapt to evolving market needs.

Source: KGP analysis (2022 based on preliminary estimates)

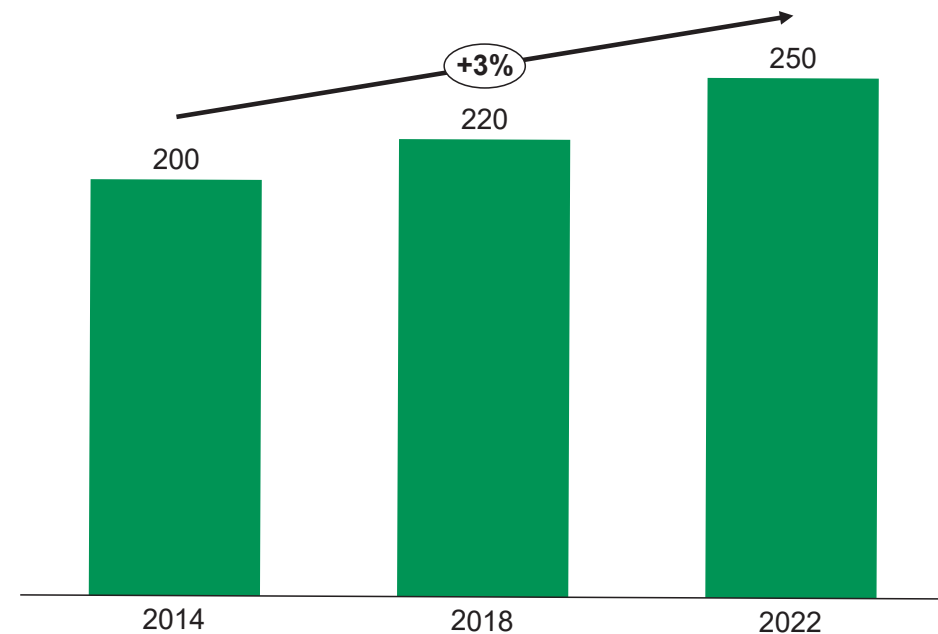
R&D Expenditure

With the successful implementation of Stage V emissions standards, the construction equipment industry has displayed a steadfast commitment to innovation, investment, and the development of new products and services. A key focus of these efforts has been on improving fuel economy and promoting decarbonisation within the sector. By prioritising sustainability and environmental responsibility, the industry is driving advancements to reduce its carbon footprint and contribute to a greener future.

Despite the challenges posed by the COVID-19 pandemic, OEMs in the construction equipment industry have strived to maintain R&D budgets at historic levels. With a significant portion of stimulus spending directed towards decarbonisation efforts, OEMs have actively explored zero-emission technologies. These include full electric machines powered by both batteries and tethered systems, as well as the utilisation of hydrogen fuel cells and hydrogen combustion engines. Particularly, the development of hydrogen combustion engines aligns with the UK's Net Zero ambitions and presents a significant opportunity for the country. However legislation needs to be aligned to that in Europe, which considers H2 ICE a zero emission technology.

Further investment is required to bolster battery technologies, which remains a key area where the UK needs to attract additional funding. Despite this challenge, OEMs have demonstrated their commitment to driving innovation and pursuing sustainable solutions for the construction equipment industry, even amidst the disruptions caused by the pandemic.

FIGURE 8 - TOTAL R&D INVESTMENT 2014-2022 (£M)



Source: KGP analysis

2022 Sales and Production

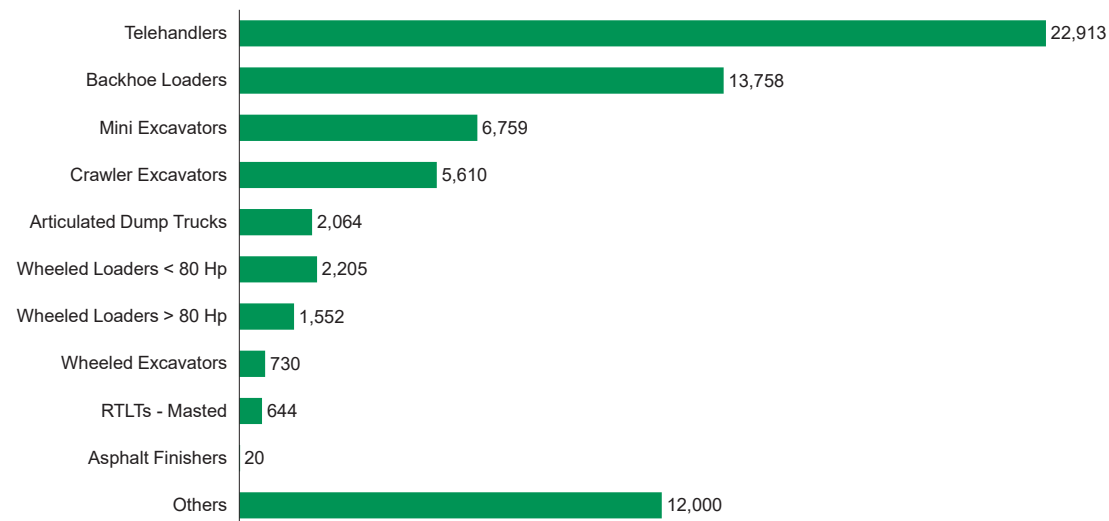
In terms of production units, the UK held the position of being the largest producer of construction equipment in Europe in 2018. On a global scale, it ranked as the fifth-largest producer, preceded by China, Japan, the US, and India. These rankings reflect the significant contribution of the UK to the construction equipment industry, solidifying its position among the leading manufacturing nations worldwide.

Inclusive of niche equipment, the total production of construction equipment in the UK surpassed 68,500 units in 2022. This marks a notable increase from 60,000 units in 2018 and 50,000 units in 2013, demonstrating the sector's continuous growth. Among the original equipment manufacturers (OEMs), JCB maintains a significant lead both in terms of revenue and unit production, followed by Caterpillar, Thwaites, and Komatsu. These industry leaders play a crucial role in shaping the UK's construction equipment landscape, contributing to its overall success and competitiveness.

The telehandler has emerged as the highest volume product in the UK construction equipment industry. Despite a declining market, backhoe loaders continue to hold significance, while mini and crawler excavators exhibit higher production levels than local demand. Production of site dumpers, although not explicitly specified in available data, account for nearly 10,000 units.

In terms of value, certain niche equipment, particularly those used for crushing and screening purposes, represent high-value items, contributing to a higher share in terms of overall value rather than sheer unit numbers. This highlights the importance of specialised equipment within the industry, which commands greater value due to its specific functionalities and capabilities.

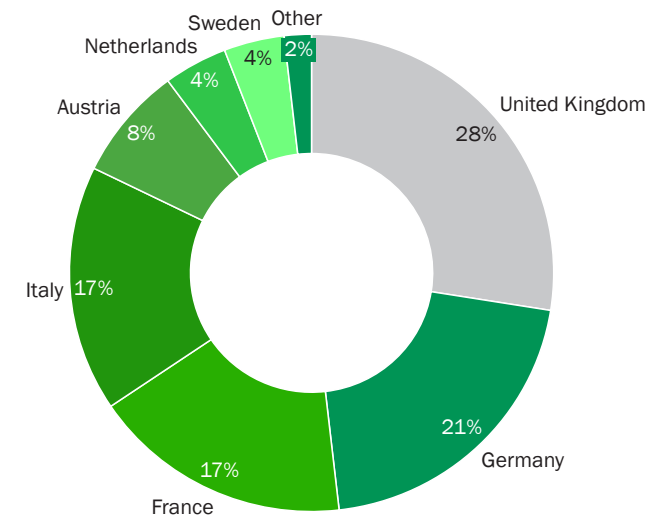
FIGURE 9 - UK PRODUCTION BY EQUIPMENT TYPE 2022



Source: Off-Highway Research¹

Others: Site dumpers, crushers, screeners etc.

FIGURE 10 - EUROPEAN PRODUCTION BY COUNTRY 2022



Source: Off-Highway Research

UK Cluster Mapping

The UK industry is fragmented but has clusters in the Midlands, North East of England and Northern Ireland

FIGURE 11 - UK CLUSTER MAP BY COMPANY TYPE

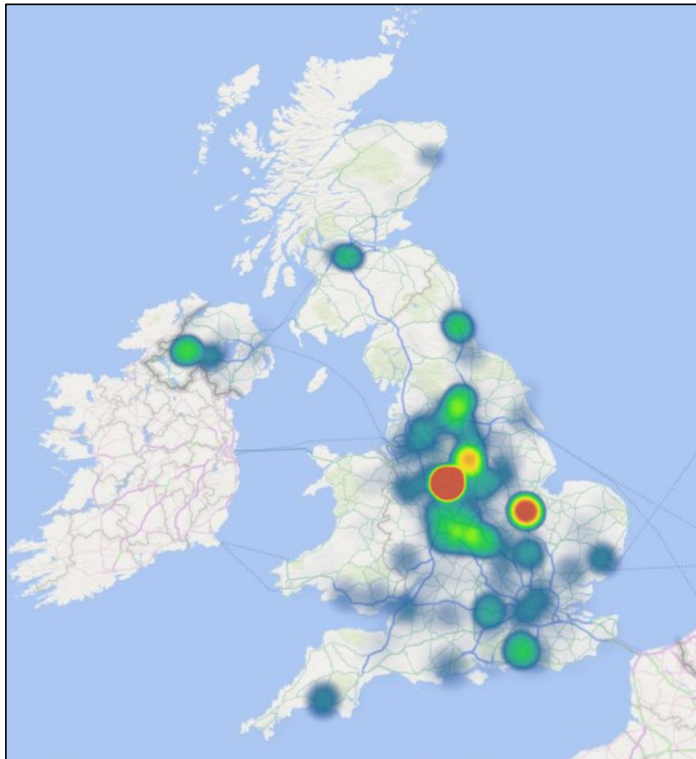
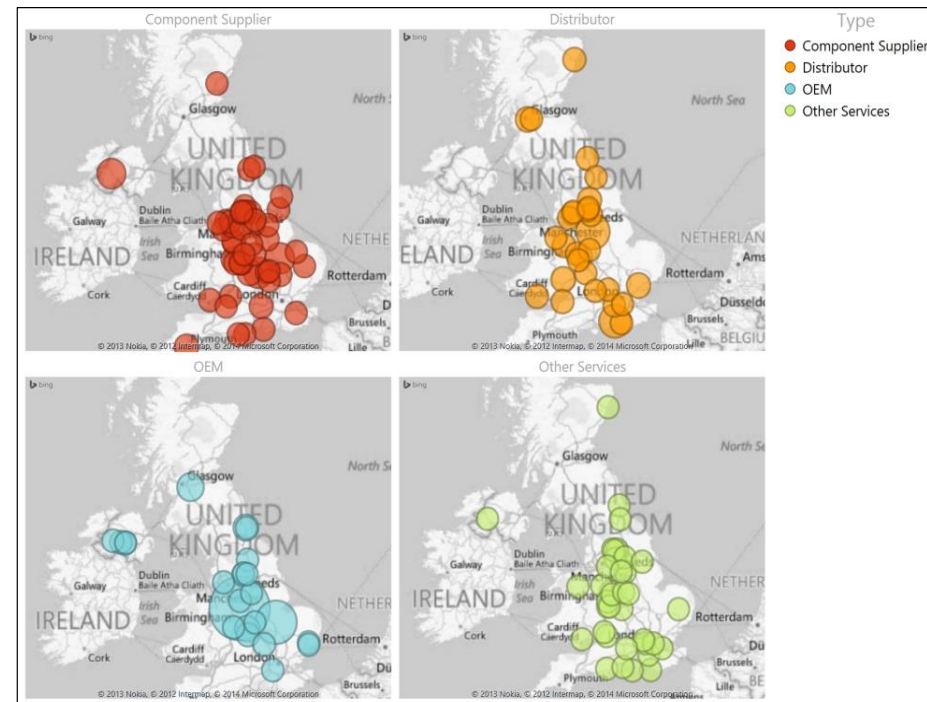


FIGURE 12 - UK CLUSTER MAP BY COMPANY TYPE



Source: KGP analysis

In terms of geographical distribution, the companies supporting the construction equipment association in the UK have maintained a relatively stable presence. The Midlands region remains a stronghold, housing prominent industry players such as JCB, Caterpillar, Mecalac, Cummins, and numerous tier one and other suppliers. Their operations in this area contribute to a strong and well-established construction equipment ecosystem.

Furthermore, significant investments and industry presence can be found in the North East and Northern Ireland regions. These areas host key original equipment manufacturers (OEMs) and suppliers, contributing to the overall diversity and strength of the construction equipment sector in their respective regions.

Construction - Major Projects

Government investment, as a share of Gross Fixed Capital Formation (GFCF), stands at approximately 18%. Despite facing austerity measures, the volume of government investment has continued to grow. However, it remains below the average for G7 nations and falls short of the UK's long-term levels, and appears to be falling short of that needed to meet the UK's Net Zero ambition. Certainty surrounding construction projects is required to allow investment in skills and decarbonising the sector.

There is a growing emphasis on projects within the private sector, and the Construction Equipment Association (CEA) collaborates with various groups, including the Construction Leadership Council (CLC), to explore potential pathways for decarbonisation. Notably, London's Low Emission Zone is anticipated to transition into a Zero Emission Zone for construction equipment by the mid-2030s. This shift is expected to drive further investments in zero-emission technologies and solutions within the industry.



HS2 & IRP

Budget has risen, but future phases are uncertain. Over £55bn in two phases to 2033. Integrated Rail Plan (IRP) also needs certainty to support construction companies.



Housing & Energy Infrastructure

162,000 new starts in 2017 valued at £45bn. Starts need to be higher to meet targets. Significant increases in investment are also needed to meet Net Zero targets.

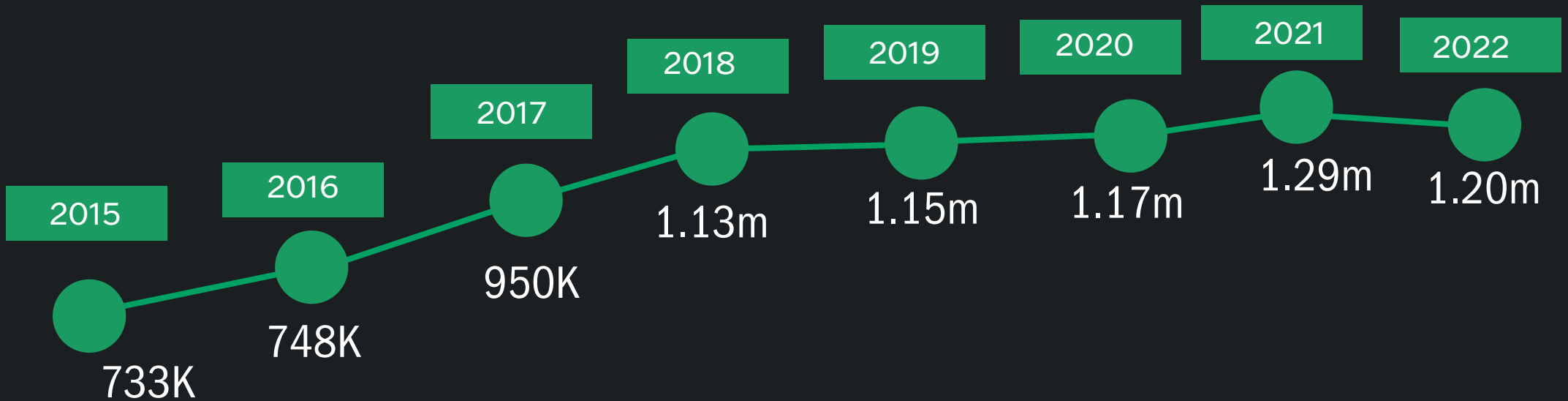


Roads

Road receives only a small share of the National Infrastructure and Construction Pipeline (NICP) at £8.2bn. The current Road Investment Strategy has been cut, and Lower Thames Crossing delayed.



Global Construction Equipment Sales



Global Sales 2015-2022

Off-Highway Research's global volume and value service quantifies 1.17m units of core equipment were sold in 2018, increasing to 1.2m units in 2022. The UK therefore had over 5% unit share of production. Europe's sales totalled 217,000 units, North America 318,000 but China fell to 237,000 having reached 297,000 units in 2018. The total market was up from 894,000 units in 2017 and 689,000 in 2015.



Global Sales Outlook

Off-Highway's projections indicate that global growth in the construction equipment sector reached its peak in 2021, with China experiencing a decline after its COVID stimulus peak. Ongoing challenges such as sluggish economic growth, inflation, and high interest rates are anticipated to restrict the industry to 1.1 million units in 2023. Further declines are expected in 2024-2026, followed by a return to 1.1 million units in 2027.

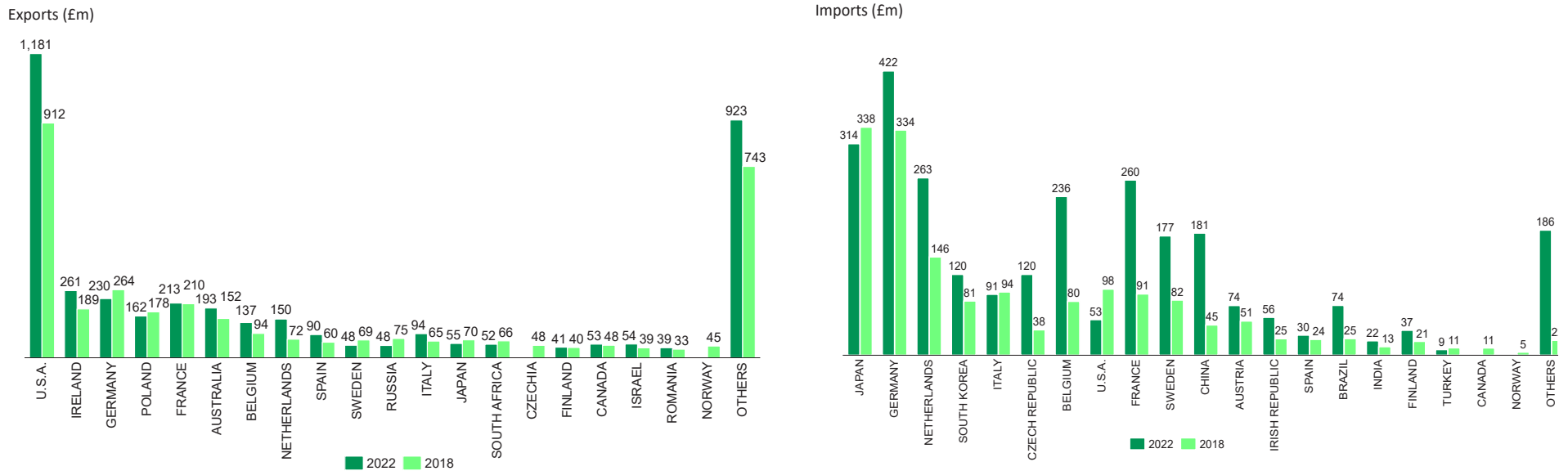
UK Imports vs Exports

The UK construction equipment sector is a significant net exporter

Import and export data play a crucial role in understanding the global position of the UK construction equipment sector. Since Brexit and the impact of COVID-19, trade balances have experienced fluctuations. In 2022, the top five export destinations accounted for approximately 51% of total exports, showing an increase from 48% in 2018. The United States, Irish Republic, Germany, France, and Australia were the top five export destinations in 2022.

The United States continues to be the most valuable export destination for UK machines, representing around 29.4% of total exports in 2022, up from 24.9% in 2018. Despite Brexit, the EU remains a significant trading partner, with £1.7 billion in exports and £1.54 billion in imports in 2022. However, currency fluctuations have had a significant impact on the trade balance, which has declined from a £0.5 billion surplus in 2018 to just £200 million in 2022.

FIGURE 13 - UK IMPORT VS EXPORT VALUE - TOP 20 COUNTRIES



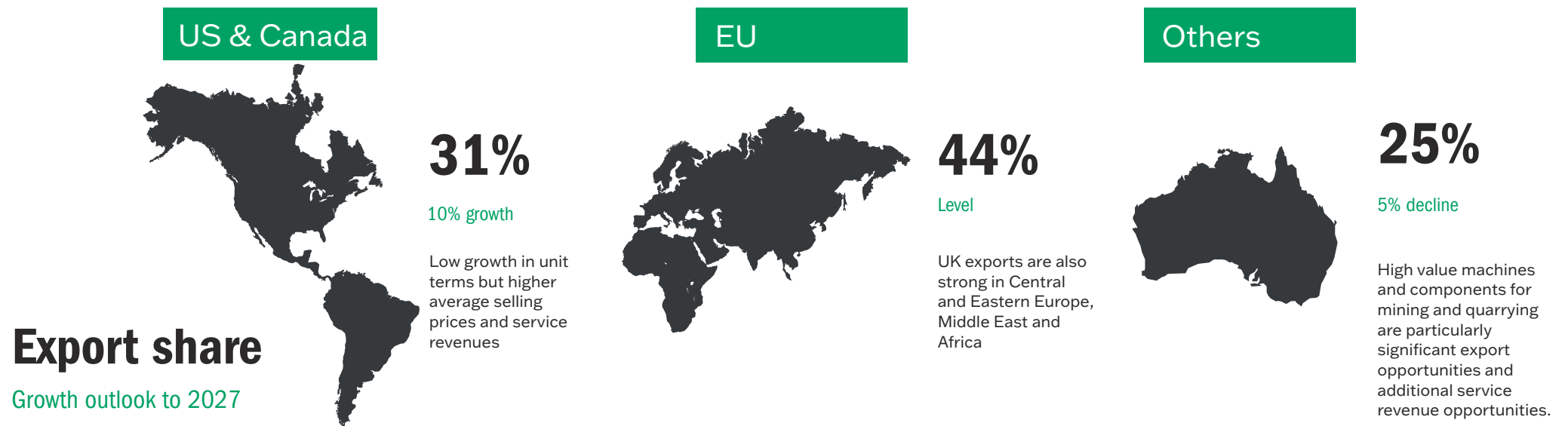
Source: CEA, Business & Trade Statistics, HMRC Customs Data

Export Markets

In 2022, approximately 55% of the UK's machine exports by value were destined for markets outside the European Union (EU), indicating a slight increase from the 50% reported in 2020. It's worth noting that this fluctuation can be attributed to disruptions caused by the COVID-19 pandemic. However, when it comes to component suppliers, their reliance on the EU remains stronger compared to machine exports.

As anticipated, the United States and Canada have shown a growth in their share of UK machine exports. Contrary to expectations, the EU's market share has not significantly declined post-Brexit, indicating a continued demand for UK machinery. Meanwhile, the rest of the world has not witnessed significant growth in terms of UK machine exports. Russia, due to the ongoing conflict, has experienced a decline in demand for UK machinery as OEMs ceased sales.

On the other hand, China, despite having a weak domestic market, is actively seeking to expand its export market. This has led to increased competition against UK exports in certain segments. China's efforts to boost exports pose a challenge to the UK's export opportunities in these particular sectors.



Export share

Growth outlook to 2027

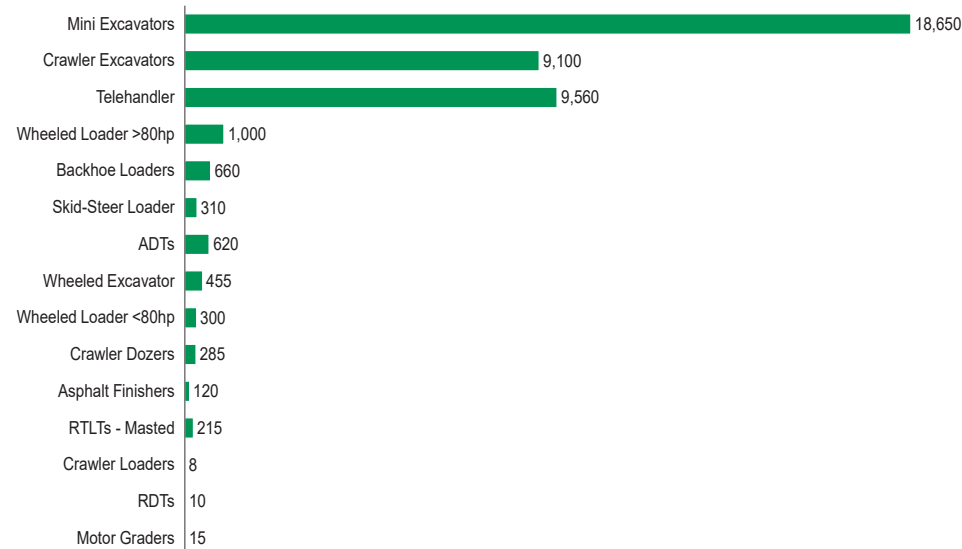
Source: Various

In summary, the EU represents a minority of the UK's export destinations, with the US serving as the primary market. Additional significant markets include Australia, Japan, South Africa, and Israel. However, it is important to acknowledge that the presence of used machines and re-exports can impact the accuracy of statistical data, making it challenging to obtain a completely precise picture of UK export trends.

Product Market Trends

Excavators are the dominant product in the UK market, with Telehandlers increasing their share.

FIGURE 14 - UK SALES BY EQUIPMENT TYPE



Source: Off-Highway Research

Excavators

Hydraulic excavators are the most produced piece of construction equipment in every major market in the world. Globally, over 614,000 crawler excavators (314,000 midi and full-size and 299,000 minis) were produced in 2022.

Excavators are one of the most diverse applications in the CE product line. Machinery exists from 5kW to over 2,000kW. Price and end use are also as diverse as power requirements: The rental industry takes a large share (around 40%) of excavator volume between 4 and 30 tonne capacity. The remaining volume is typically split between; light construction, waste management, earth moving companies, civil engineering and several other niche applications.

Mini-Excavators

Mini excavators (typically under 6t) are a high growth product, improving hydraulic functionality and efficiency means that smaller machinery can operate more effectively in a more diverse range of applications. Production is expected to fall slightly to 2026, but then grow to over 320,000 in 2027.

UK production is centred around JCB in Staffordshire and is for the domestic market. JCB increased capacity to 7,400 in 2020, to meet growing domestic demand and exceeded this volume in 2022.

Telehandlers

Another growth product, not just in the UK but also in Europe. Telehandlers are widely used across construction, agriculture and materials handling applications, making them very versatile. Production in the UK is again dominated by JCB, with significant imports from Europe and other global markets by import brands.

UK Market Segments

The dominance of rental companies in the UK market is evident, with a substantial 68% share. Contractors and agricultural customers each account for an additional 10%, while waste management represents 4% of the market. The remaining 8% is distributed among various other end users. However, the mindset of rental companies has begun to change as they recognise the necessity to decarbonise their fleets to meet the demand for low carbon and zero emission solutions from their customers. This shift is driven by factors such as rising machine costs, which have compelled the rental industry to adapt and expand its offerings.

| | |
|-----|---|
| 68% | <h2>Rental Companies</h2> <p>In the future, rental companies will be compelled to work closely with their customers, taking a holistic approach to provide an end-to-end service. This will likely involve offering on-site energy supply solutions, ensuring that the rental equipment is not only efficient but also supported by sustainable energy sources. By doing so, rental companies can contribute to reducing carbon footprints and promoting environmentally conscious practices.</p> |
| 10% | <h2>Contractors</h2> <p>While renting remains a viable option for short-term or specialised equipment needs, the decision to purchase machinery is often favored by construction contractors engaged in long-term projects. It offers them greater control, flexibility, and potential cost savings, allowing them to efficiently manage their operations and meet the unique demands of their construction projects.</p> |
| 10% | <h2>Agriculture</h2> <p>While the usage hours of construction machines in agriculture may be lower on average compared to dedicated construction projects, their adaptability and versatility make them an indispensable asset in the agricultural sector. The presence of telehandlers in this segment highlights the demand for machinery that can seamlessly transition between various tasks and contribute to improved productivity in farming operations.</p> |
| 4% | <h2>Waste Management</h2> <p>Construction equipment plays a crucial role in waste management operations, facilitating the efficient handling, transportation, and processing and recycling of waste materials.</p> |
| 8% | <h2>Others</h2> |

Source: Off-Highway Research End User Database

Key Issues - Supply Chain

Meeting future technological demands hinges on addressing several key issues. It is imperative to invest significantly in developing new capabilities, refining processes, and fostering the acquisition of essential skills within the UK.

01

Powertrain

The UK construction equipment industry is supported by domestic powertrain suppliers, including JCB Power Systems, Perkins Engines, and Cummins, who play a vital role in engine manufacturing and invest in hydrogen combustion technology. The country also has niche specialists in powertrain electrification. However, additional investment in battery technology is necessary to meet the increasing demand for electric vehicles and maintain competitiveness in the global market. In addition to engine manufacturing, the UK boasts a number of niche specialists focusing on the electrification of powertrains.

02

Hydraulics

Managed flow technologies are driving the evolution of hydraulics, with load sensing hydraulics becoming more accessible and cost-effective. These advanced systems are now being integrated into less expensive and lower powered machinery, leading to significant improvements in performance and efficiency. In the UK, there are multiple component suppliers specialising in hydraulic systems. These suppliers cater to both domestic and EU markets, providing a range of hydraulic solutions and services. However, while the UK has a strong presence in hydraulic component manufacturing, there is a reliance on imported components to meet the industry's requirements.

03

Telematics & Human Machine Interface

Over the past decade, the construction equipment sector has witnessed a notable shift in embracing telematics and HMI technologies. Although these technologies have been available for some time, their widespread adoption in construction equipment applications is a relatively new phenomenon. The industry has recognised the potential for significant efficiency improvements through the integration of telematics, which enable real-time monitoring, tracking, and analysis of equipment performance and usage data. Additionally, HMI advancements enhance the interaction and communication between operators and machines, leading to increased productivity and improved user experience.

04

Materials & Other Parts

The construction machinery industry, along with other industrial sectors in the UK, relies heavily on steel components. Therefore, ensuring a robust steel production, processing, and fabrication ecosystem is crucial. Looking ahead, prioritising investment in green steel production will be imperative, necessitating substantial increases in renewable electricity and hydrogen production.

Supply Chain

The UK serves as a hub for numerous leading component suppliers, as well as emerging new entrants in the industry.

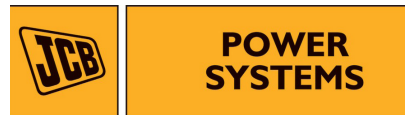
The construction equipment segment in the UK benefits from a robust domestic supply chain. One of its key strengths lies in powertrain technology, as all OEMs have upgraded their products to meet the Stage V emission standards in recent years. Ongoing investments are being made in new technologies such as hydrogen combustion and hybridisation, reflecting a commitment to innovation.

While some production has shifted to lower-cost markets, a significant portion of equipment purchasing still occurs within the UK. However, the process of decarbonisation presents its own set of challenges and necessitates supply chain investments in new technologies. The UK's supply chain is already witnessing early developments in these technologies, showcasing its adaptability and readiness to embrace sustainable solutions.

Nevertheless, the journey towards decarbonisation will also require consolidation and restructuring for both established technology providers and new entrants in the industry. Adapting to the changing landscape will be crucial to meet the evolving demands of a greener construction equipment sector.



Perkins Engines



JCB Power Systems



Cummins



Johnson Matthey

Kawasaki

Hydraforce

Bosch Rexroth

Denso Marston

BorgWarner



Turntide Technologies

Danfoss Digital Displacement

WAE Advanced Engineering

Eminox



Useful Links

Off-Highway Research European Service W: <https://offhighwayresearch.com/Geographic-Coverage/Europe>

CEA Bulletin: UK imports and exports of construction equipment - Q4 2022 <https://thecea.org.uk/market-information-portal/>

KGP Global Non-Road Powertrain Forecast: W: <https://www.kgpauto.com>

Companies House Filings: W: <https://www.companieshouse.gov>

ConstructionWorx W: <https://thecea.org.uk/construction-worx/>

Definitions

- ADT/RDT – Articulated/Rigid Dump Truck
- AG – Agricultural machinery
- BEV – Battery Electric Vehicle
- BHL – Backhoe Loader
- BIM – Building Information Model
- CAGR – Compound Annual Growth Rate
- CECE – European Construction Manufacturers Association
- CEMA – European Agricultural Equipment Manufacturers Associations
- CON – Construction Equipment
- CREX – Crawler Excavator
- CSR – Corporate Social Responsibility
- CV – Commercial Vehicle
- DOC – Diesel Oxidation Catalyst
- DPF – Diesel Particulate Filter
- EGR – Exhaust Gas Recirculation
- FCEV – Fuel Cell Electric Vehicle
- GHG – Green House Gases
- GHG – Greenhouse Gas (CO₂, CH₄ etc.)
- HCCI – Homogenous Charge Compression Ignition
- ISC/ISM – In-service Compliance/Monitoring
- LEZ – Low Emission Zone
- MEX – Mini Excavator
- MH – Materials Handling Equipment
- NRMM – Non-Road Mobile Machinery
- OBD – Onboard Diagnostics
- PHEV – Plug-in Hybrid Electric Vehicle
- RCCI – Reactivity Control Compression Ignition
- SCR – Selective Catalytic Reduction
- SSL/CTL – Skid-Steer Loader/Compact Track Loader
- TCO – Total Cost of Ownership
- TIV – Total Industry Volume
- TOE – Tonnes of Oil Equivalent
- TTW – Tank to Wheel
- V2V – Vehicle to Vehicle Communication
- VECTO – Vehicle Energy Consumption Calculation Tool
- WHL – Wheeled Loader
- WTW – Well to Wheel
- ZEZ – Zero Emission Zone

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