UK Steel Strategy Demand Assessment

Part I. Long-Term Steel Demand Outlook

13 February 2026

Prepared for the Department of Business and Trade

Department for Business & Trade

HATCH

Notice to Reader

This report was prepared by Hatch Associates Limited (“Hatch”, or “the Consultant”) for the sole and exclusive use of the UK Department of Business and Trade (“DBT” or the “Client”) for the development of its UK steel strategy demand assessment. The use of this report is intended to inform DBT in its development of its steel strategy for the UK by identifying potential gaps and opportunities for domestic production along the UK’s broader steel supply chain. The report is based on British Steel’s previously published plans to transition from blast furnaces to electric arc furnaces (EAFs). However, no final decisions have been taken on the transformation and the strategy, and timings are therefore liable to change. This report contains forward looking information including but not limited to: long term steel demand forecasts, steel production capacities and limitation, and investments in emerging sectors among others. Words such as “anticipate”, “believe”, “plan”, “expect”, “estimate”, “intend”, “budget”, “scheduled”, “forecast”, “project” and similar expressions are often (but not necessarily always) used to identify forward-looking information. This information reflects the author’s current beliefs and is based on information currently available to the author. Forward-looking information involves significant risks and uncertainties. A number of events or circumstances could cause actual results to differ materially from the long-term forecasts discussed in this report, including changes to trends in end-use sectors, demand drivers discussed in the report, technology developments and material substitution, population growth and immigration, macroeconomic factors, currency exchange, global capacities, and government policy and regulations.

Forward-looking information is based upon Hatch’s beliefs, estimates and opinions at the time they are made. There can be no assurance that forward-looking information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements or information. Accordingly, readers should not place undue reliance on forward-looking information. Forward-looking information is made as of the date of this report, and Hatch does not assume any obligation to update or revise it to reflect new events or circumstances. Where Hatch has based its opinions on information provided by the Client, obtained from third parties, or available publicly, Hatch has not verified the accuracy, completeness or validity of such information and does not accept any liability in connection with such information.

Hatch shall not be responsible for any errors or omissions in this report or in any information contained herein regardless of any fault or negligence of the Consultants or others. This report is to be read in the context of and subject to the terms of the agreement between Hatch and the Principal (the “Hatch Agreement”) as set forth in the accepted proposal dated 04 March 2025 including any methodologies, procedures, techniques, assumptions and other relevant terms or conditions specified in the Hatch Agreement;

This report is meant to be read as a whole, and sections of the report must not be read or relied upon out of context; and

Unless expressly stated otherwise in this report, Hatch has not verified the accuracy, completeness or validity of any information provided to Hatch by or on behalf of the Client and Hatch does not accept any liability in connection with such information.

This report shall not be distributed to, used nor relied upon by any other party nor for any other purpose without Hatch’s prior written consent. The Consultant accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. This report is not to be referred to or quoted, in whole or in part, in any registration statement, prospectus, public filing, loan agreement, or other agreement or document without Hatch's written consent.

This disclaimer must accompany every copy of this Report (including any modifications to, derivatives of or subsequent versions of it).

Acronyms

AHS	Advanced High Strength
API	American Petroleum Institute
BF	Blast Furnace
BOF	Basic Oxygen Furnace
CAGR	Compound Annual Growth Rate
CAPEX	Capital Expenditure
CCC	Committee on Climate Change
CCUS	Carbon Capture Utilisation and Storage
CfD	Contracts for Difference
CHQ	Cold Heading Quality
CO_2	Carbon Dioxide
CRC	Cold Rolled Coil
DBT	Department of Business and Trade
DRI	Direct Reduced Iron
E&M	Engineering and Machinery
EA	Equal Angles
EAF	Electric Arc Furnace
ESF	Electric Smelting Furnace
EU	European Union
EVs	Electric Vehicles
GDP	Gross Domestic Product
GOES	Grain Oriented Electrical Steel
GW	Gigawatt
H_2	Hydrogen
HBI	Hot Briquetted Iron
HDG	Hot Dipped Galvanised
HFI	High Frequency Induction
HRC	Hot Rolled Coil
HSM	Hot Strip Mill
HS2	High Speed 2
ICE	Internal Combustion Engine
LF	Ladle Furnace
NGOES	Non-Grain Oriented Electrical Steel
O&G	Oil and Gas
OBM	Ore Based Metallic
OEM	Original Equipment Manufacturer
PC	Pre-Stressed Concrete
PFC	Parallel Flange Channel
PLTCM	Pickling Line and Tandem Cold Mill
PPGI	Pre-painted Galvanised Iron
RPM	Reversing Plate Mill
SMR	Small Modular Reactor
SSC	Steel Service Centre
T&D	Transmission and Distribution
TAM	Total Addressable Market
TSCR	Thin Slab Casting and Rolling
UHS	Ultra High Strength
UK	United Kingdom
ZEV	Zero Emission Vehicle

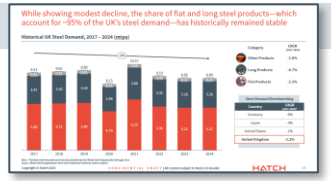
Contents

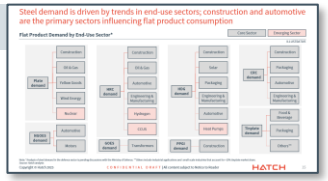
Part I of this report is structured into four core sections, each with a specific set of objectives informing key aspects of the UK's long-term steel demand outlook

Part I. **Long-Term Steel Demand Outlook Report Structure**

1.1 **Introduction and Context**

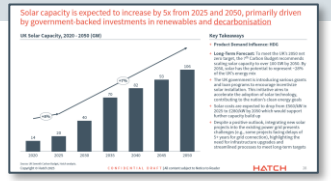
+ Overview of engagement context, objectives of this work package, and demand forecast methodology
+ Background on steel products, UK historical steel demand, and key end-use sectors

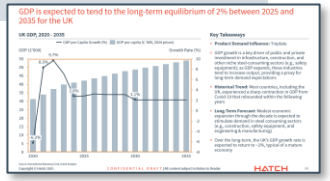




1.2 **Demand Driver Analysis**

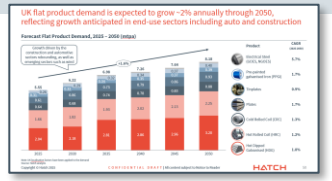
+ Analysis of key steel-consuming sectors based on associated growth metrics
+ Sector-specific analysis on headwinds and tailwinds through 2050 to inform long-term demand for associated steel products

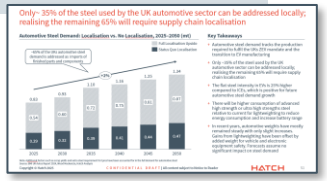




1.3 **Long-Term Steel Demand Forecast**

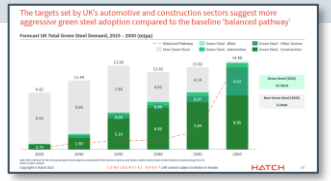
+ Output of demand driver analysis on a product group basis
+ Insights on future UK steel demand based on core and emerging industries
+ Analysis of demand upside potential attributed to demand localisation, specifically in the wind and automotive sectors

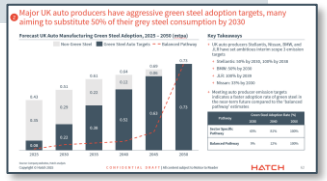




1.4 **Long-Term Green Steel Demand Forecast**

+ Analysis of green steel adoption by end-use sector based on sector-specific and government decarbonisation targets
+ Incorporation of localisation considerations for the wind and automotive sectors to demonstrate further green steel upside potential





Source: Hatch analysis.

This report provides an evidence base for the UK's future steel strategy; the focus is on identifying & providing options addressing production & supply chain gaps

Report Context

The government has launched a multi-sector effort to revitalise the nation's steel industry and **develop an actionable Steel Strategy** that will detail the core elements of a development plan alongside an implementation roadmap

This engagement seeks to provide an **evidence base for the UK's steel strategy** and guide HMG's development of the sector by identifying gaps and opportunities for domestic production alongside the UK's broader steel supply chain

Focus Areas	Key Questions Answered
Part I	
Long-Term Steel Demand Outlook	What is the **projected long-term demand** for steel in the UK? How much of this demand will be generated from **investments in emerging sectors** related to energy transition and decarbonisation?
Part II	
Current Steel Production Capacities and limitations	How **capable** is the UK of meeting this long-term demand, and **what challenges** does it face?
Supply Chain Gap Analysis	Which parts of the supply chain have **identified gaps**?
Domestic Capabilities to Address Long-Term Demand	What **options are available** to address gaps in the UK steel sector?

Contents

WP1 of this study takes a comprehensive approach to determine long-term steel demand by assessing end-use sectors and the steel product landscape

Steel Products

Long Products

- Engineering Steel
- Sections
- Wire Rods
- Rebars
- Special Profiles
- Rails

Flat Products

- HRC
- CRC
- HDG
- PPGI
- Tinplates
- Plates
- GOES/NGOES

Other Products

- Stainless Steel
- Seamless Tubes
- Forged Products

End-Use Sectors

Core Sectors

- Construction
- Automotive
- E&M
- Yellow Goods
- Oil & Gas
- Wind Power
- Transformers
- Defence & Aerospace[1]
- Solar Power
- Packaging
- Non-Auto Motors
- Rail
- Steel Plants[2]
- Power (Gas & Coal)[2]
- Shipbuilding[2]

Emerging Sectors

- Nuclear
- Hydrogen
- CCUS
- Heat Pumps
- Transmission & Distribution

Geography Focus & Timeline

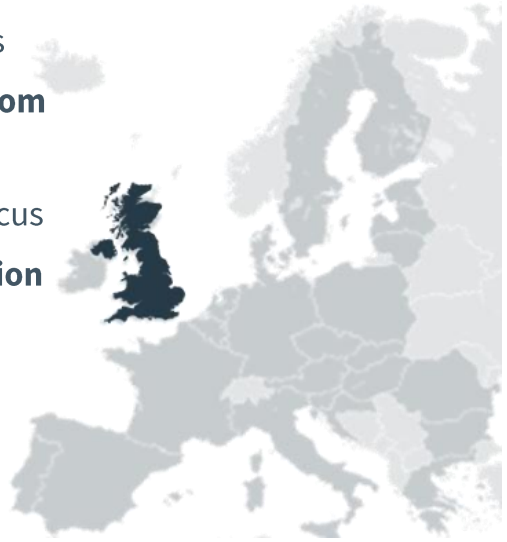
Primary Focus

United Kingdom

Secondary Focus

European Union

See Appendix 1



2025 – 2050

Scope Timeline

Note: 1. Defence & aerospace have been addressed at a high-level as a strategic imperative for the UK steel sector and is not reflected in the demand analysis due to the sensitivity of the sector and marginal share of overall demand. 2. These sectors contribute to other products but due to only accounting for a small portion of overall steel demand, these demand drivers have not been included as part of the report.

Hatch's methodology for forecasting long-term steel demand uses established best practices, external insights, and in-house subject-matter expertise

Long-Term Demand Forecast Methodology

Product Driver Identification

Scope Definition

+ Define scope by identifying clear boundaries for the product scope, ensuring that insights were delivered in the most impactful areas

Industry Identification

+ Establish key industries that utilise each product

Demand Driver Identification

+ Establish a key driver for each industry as a proxy for steel demand growth trends

Baseline Data

Data Gathering and Baseline Establishment

+ Utilise Hatch analysis to forecast the baseline data between 2017 and 2024 to showcase current demand for selected products

Industry Allocation

+ Split and allocate overall product demand data based on demand of each industry

Forecasting

Secondary Data Collection

+ Conduct secondary research to investigate to provide an evidence-backed forecast through 2050
+ Sources can include policies as well as planned projects and third-party market analyses

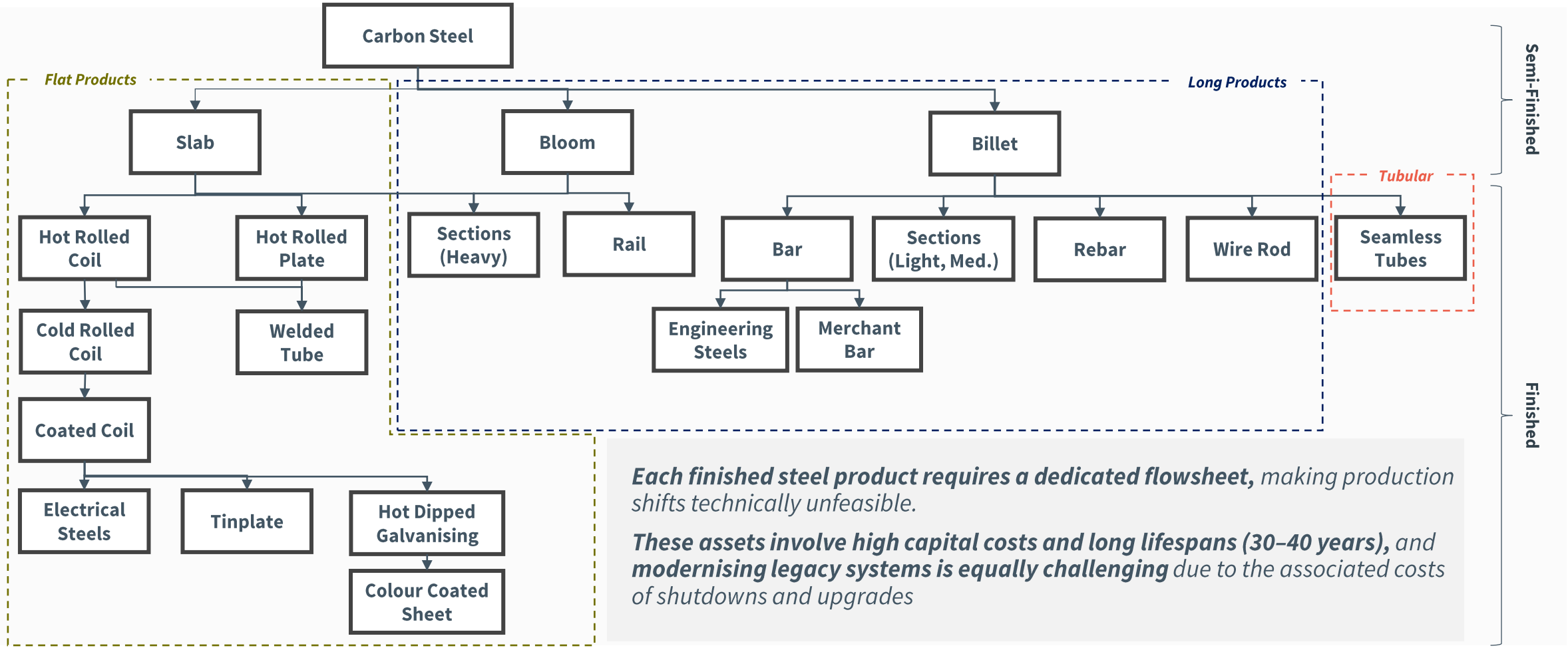
Demand Forecast

+ Apply growth rates from demand drivers in addition to further Hatch analysis to project these product demand

The flowsheet of each product is distinct and requires a dedicated process; in effect, it is not technically feasible to switch production routes

Steel Production Flowsheet

ILLUSTRATIVE



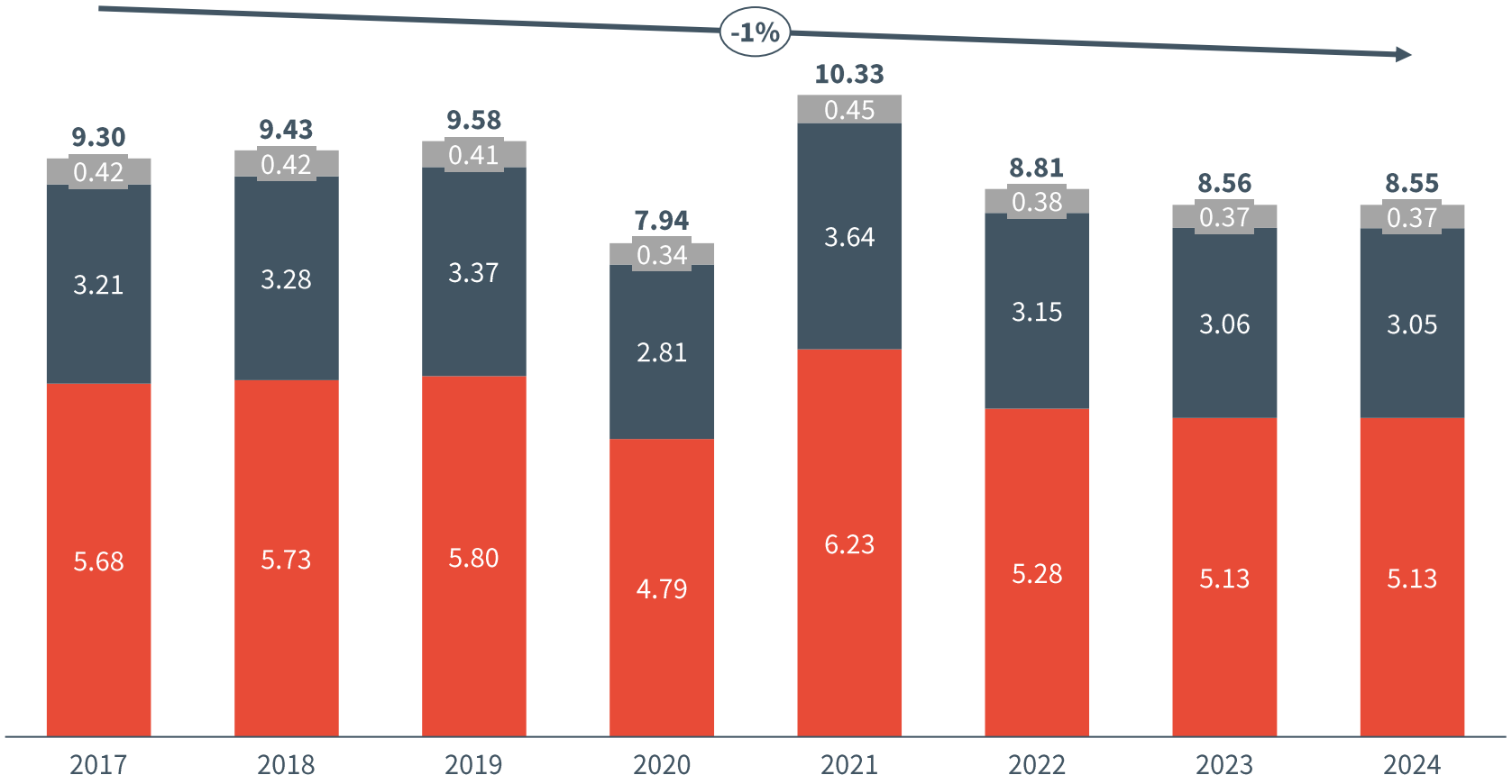
Each finished steel product requires a dedicated flowsheet, *making production shifts technically unfeasible.*

These assets involve high capital costs and long lifespans (30–40 years), *and* ***modernising legacy systems is equally challenging*** *due to the associated costs of shutdowns and upgrades*

Note: Flowsheet limited to carbon steel; stainless steel not depicted
Source: Hatch analysis.

Steel demand in the UK has been on a modest decline, albeit much lower than Germany or Japan. The product share has been stable through the review period

Historical UK Steel Demand, 2017 – 2024 (mtpa)



Category	CAGR (2017-2024)
Other Products	-1.6%
Long Products	-0.7%
Flat Products	-1.2%

Steel Demand Benchmarking

Country	CAGR (2017-2023)*
Germany	-6%
Japan	-3%
United States	-1%
United Kingdom	**-1%**

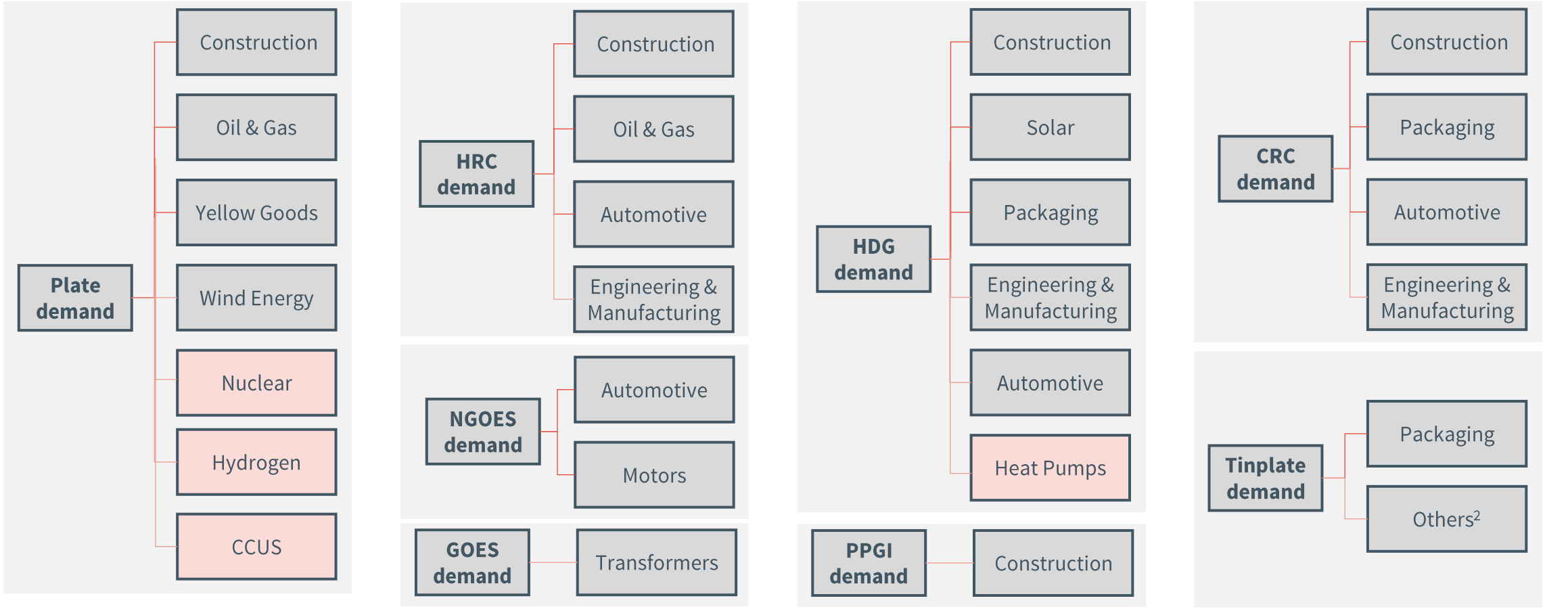
Note: Finished steel demand based on data provided by the World Steel Organization through 2023.
Source: World Steel Organization 2024 Steel Statistical Yearbook, Hatch analysis, Stakeholder meetings.

Steel demand is driven by trends in end-use sectors; construction and automotive are the primary sectors influencing flat product consumption

Flat Product Demand by End-Use Sector[1]

Core Sector | Emerging Sector

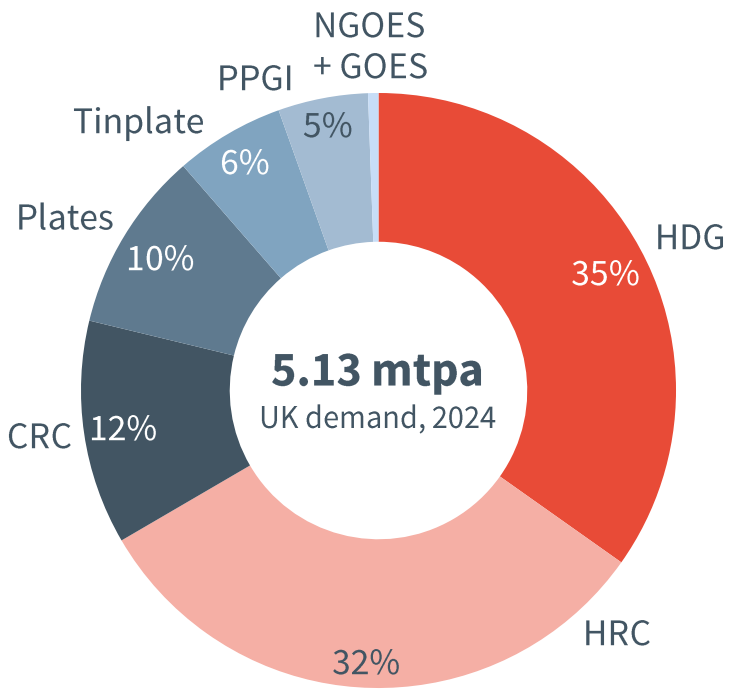
ILLUSTRATIVE



Note: 1. Defence has been addressed at a high level and not included in the overall demand figures due to the sensitivity of the sector and the demand being marginal 2. Others include industrial applications and small-scale industries that account for <10% tinplate market share.
Source: Hatch analysis, Stakeholder meetings.

There are eight main products within the flat product segment; currently HRC and HDG account for over two-thirds of the UK's demand volumes

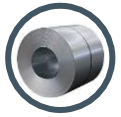
UK Flat Product Demand by Product Type



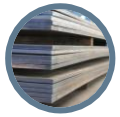
Product Description

Hot Dipped Galvanised (HDG) is cold rolled steel coated with zinc to significantly enhance steel's resistance to corrosion

Hot Rolled Coil (HRC) steel is produced by preheating slabs and rolled through a series of rolling passes before it reaches desired dimensions and properties

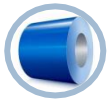


Cold Rolled Coil (CRC) is hot rolled steelrolled at room temperature which increases the strength, ductility and surface finish of the steel

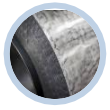


Plates are flat but heavy gauge steel products that have high strength and durability

Tinplates are cold rolled steel coated with a layer of tin, enhancing steel resistance and corrosion



Pre-painted galvanised iron (PPGI) is steel that is galvanised and then coated with a layer of paint to increase corrosion resistance and durability



Grain-oriented electrical steel (GOES) and non-grain-oriented (NGOES) are specialized for electrical applications with certain magnetic properties

End-Use Applications

Construction, Automotive

Construction, Oil and Gas, E&M, Automotive

Construction, Automotive, Packaging

Construction, Defence, Wind, Oil and Gas

Food and Packaging

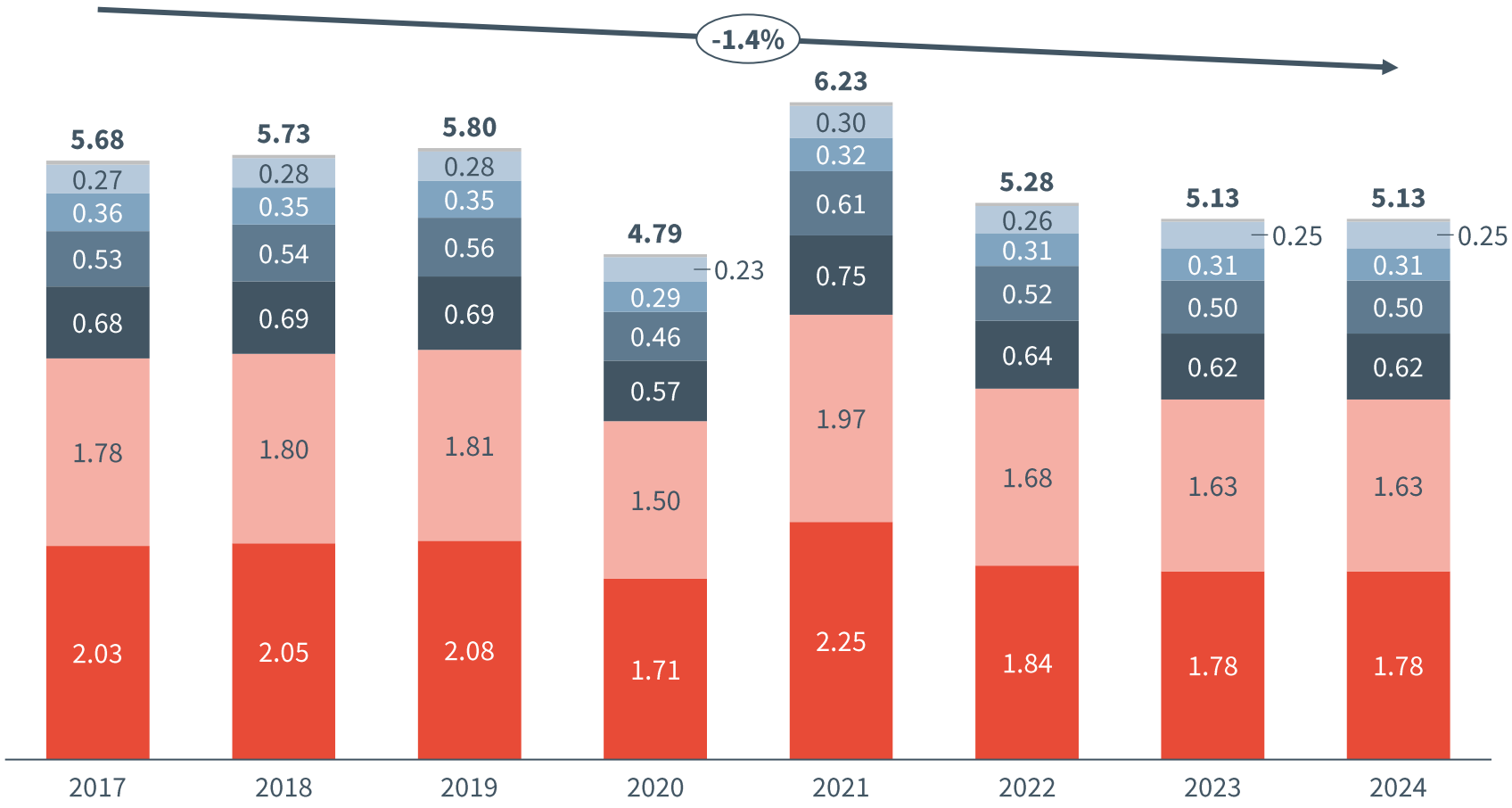
Construction

Motors, Transformers

Source: Hatch analysis

HDG and HRC products are critical for numerous sectors including construction, automotive and account for 65% to 70% of total flat steel demand

Historical UK Flat Product Demand, 2017 – 2024 (mtpa)



Product	CAGR (2017-2024)
Electrical Steel (GOES, NGOES)	-5.3%
Pre-painted galvanised Iron (PPGI)	-1.2%
Tinplates	-2.2%
Plates	-0.6%
Cold Rolled Coil (CRC)	-1.3%
Hot Rolled Coil (HRC)	-1.2%
Hot Dipped Galvanised (HDG)	-1.9%

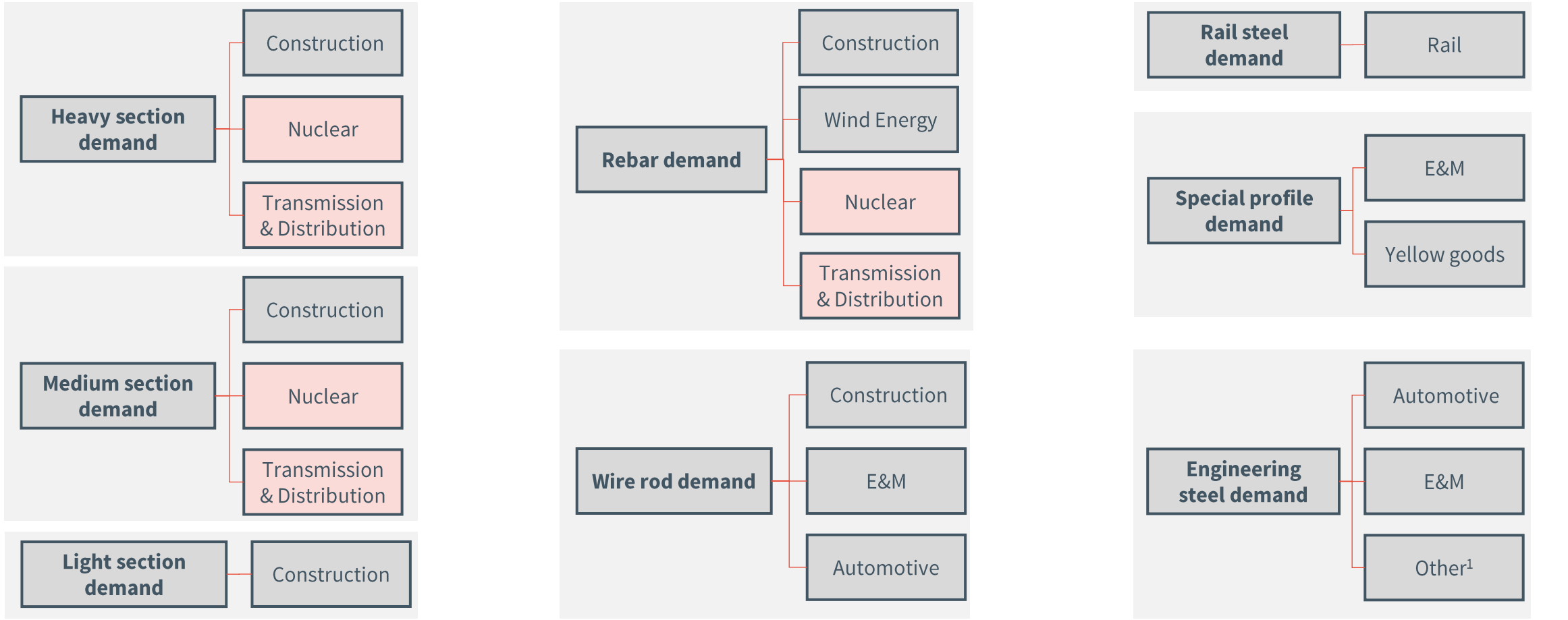
Source: Hatch analysis, Stakeholder meetings.

Steel demand is driven by trends in end-use sectors; construction is the primary sector influencing long product demand

Long Product Demand by End-Use Sector

Core Sector | Emerging Sector

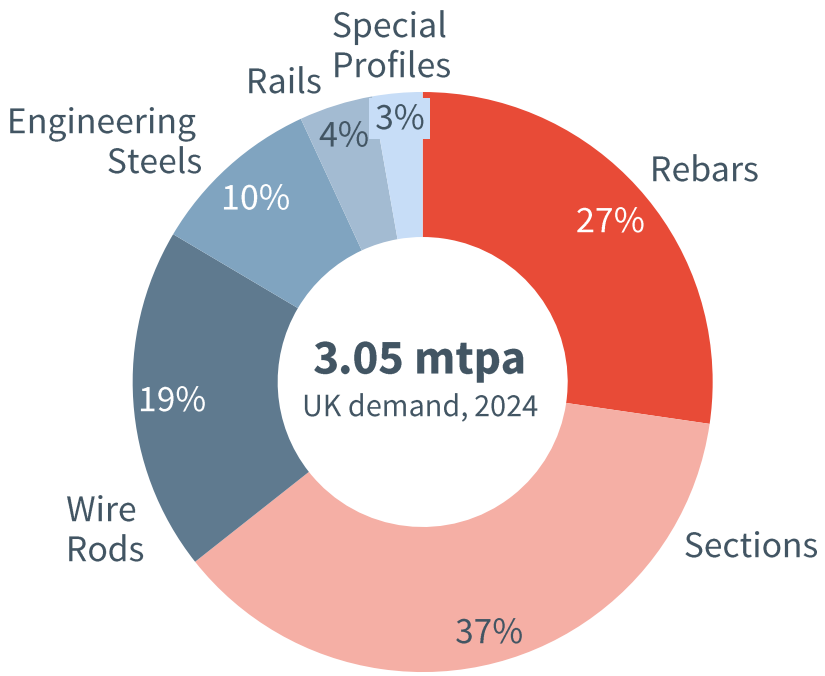
ILLUSTRATIVE



Note: 1. Includes sectors such as aerospace, O&G and safety equipment
Source: Hatch analysis, Stakeholder meetings.

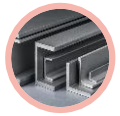
There are six main products within the long product segment; rebars and sections account for over two-thirds of the market driven by construction

UK Long Product Demand by Product Type



Product Description

Rebars are very standard, undifferentiated product, rolled in diameter of 10-28 mm (16 mm most common)



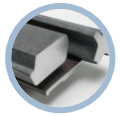
Sections (light, medium and heavy) are produced in variety of shapes (i.e., H-beams, columns, C- and U-channels, angles, parallel, taper, and wide flange) and are used exclusively for construction applications

Wire rods have a variety of uses:

- Mesh quality: construction
- Drawing quality: automotive, construction, engineering, tyre cord, springs, fasteners

Engineering steels have enhanced mechanical properties to take a load and withstand fatigue. They are usually alloyed grades and produced as bar or bar in coil. It requires extensive processing before final use such as heat treatment, forging, machining and surface preparation

Rails have a wide range of application such as high-speed rail, metro, cargo rail, etc.



Special profiles are custom made sections for specific applications across multiple industries like yellow goods, forklifts, machinery etc. Profiles can be rolled up to 260 kg/meter

End-Use Applications

Construction, Wind Energy, Nuclear

Construction, Nuclear, Transmission & Distribution

Construction, E&M, Automotive

E&M, Automotive, Safety Equipment

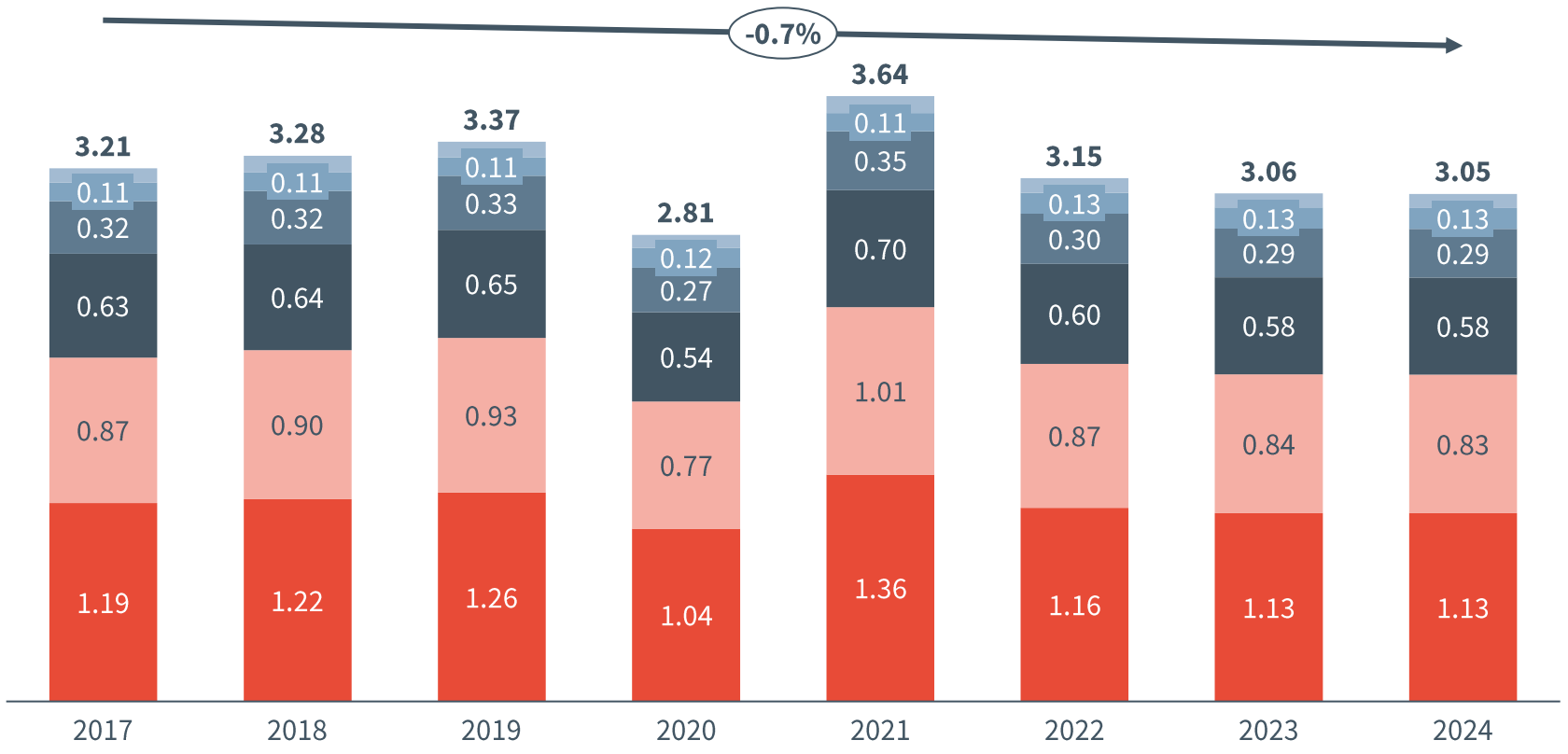
Rail

E&M, Yellow Goods

Source: Hatch analysis, Stakeholder meetings.

Demand for engineering steel, wire rods, and special profiles saw a drop, largely due to reliance on the UK's auto sector—which saw a one-third reduction in production

Historical UK Long Product Demand, 2017 – 2024 (mtpa)



Product	CAGR (2017-2024)
Special Profiles	-1.7%
Rails	2.4%
Engineering Steels	-1.4%
Wire Rods	-1.2%
Rebars	-0.7%
Sections	-0.8%

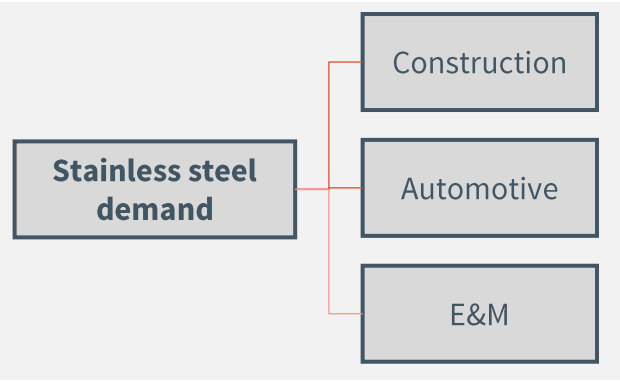
Source: Hatch analysis

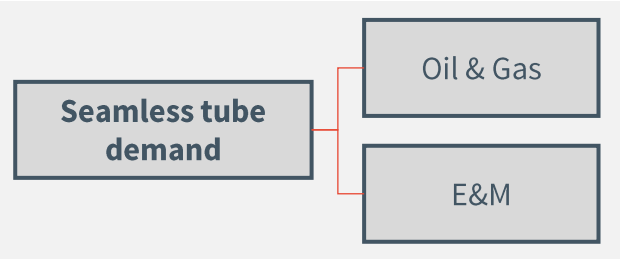
The oil & gas and engineering & machinery sectors have the largest influence on stainless, seamless tube, and forged products

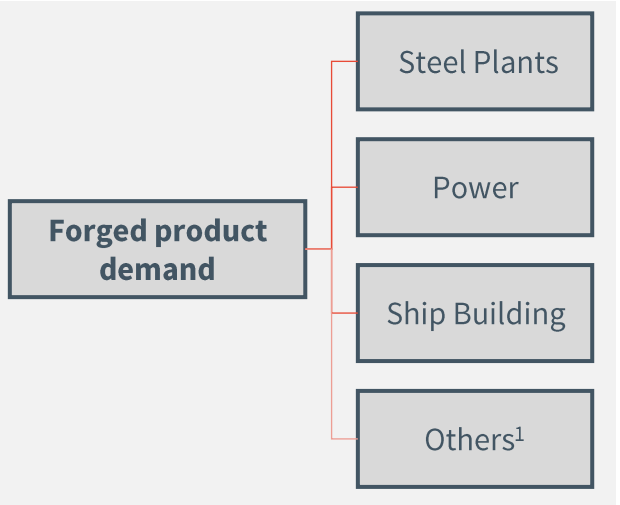
Other Steel Product Demand by End-Use Sector

Core Sector | Emerging Sector

ILLUSTRATIVE



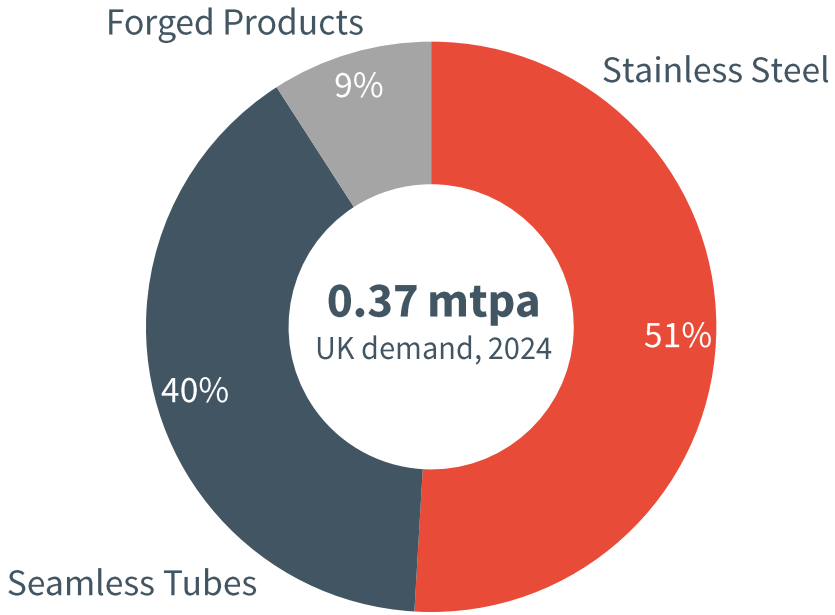




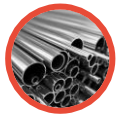
Note: 1. Other use cases include Automotive, Aerospace and heavy machinery industries
Source: Hatch analysis

Other steel products—which includes stainless, seamless, and forged steel—account for less than 5% of overall steel demand

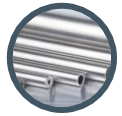
UK Other Products Demand by Product Type



Product Description



Stainless Steel is a corrosion-resistant alloy and is known for its durability, resistance to rusting and staining and ability to withstand high temperatures



Seamless Tubes are pipes without welded seams or joints allowing higher strength and resistance to pressure making them ideal for the oil and gas industry. They are produced from pre-heated round billets

Forged Products are typically engineered products created in the forging process, involving shaping using compressive forces enhancing strength and durability of the metal. Production of the forged products are different from rolling, typically small batches and piece work

End-Use Applications

Construction, Automotive, E&M

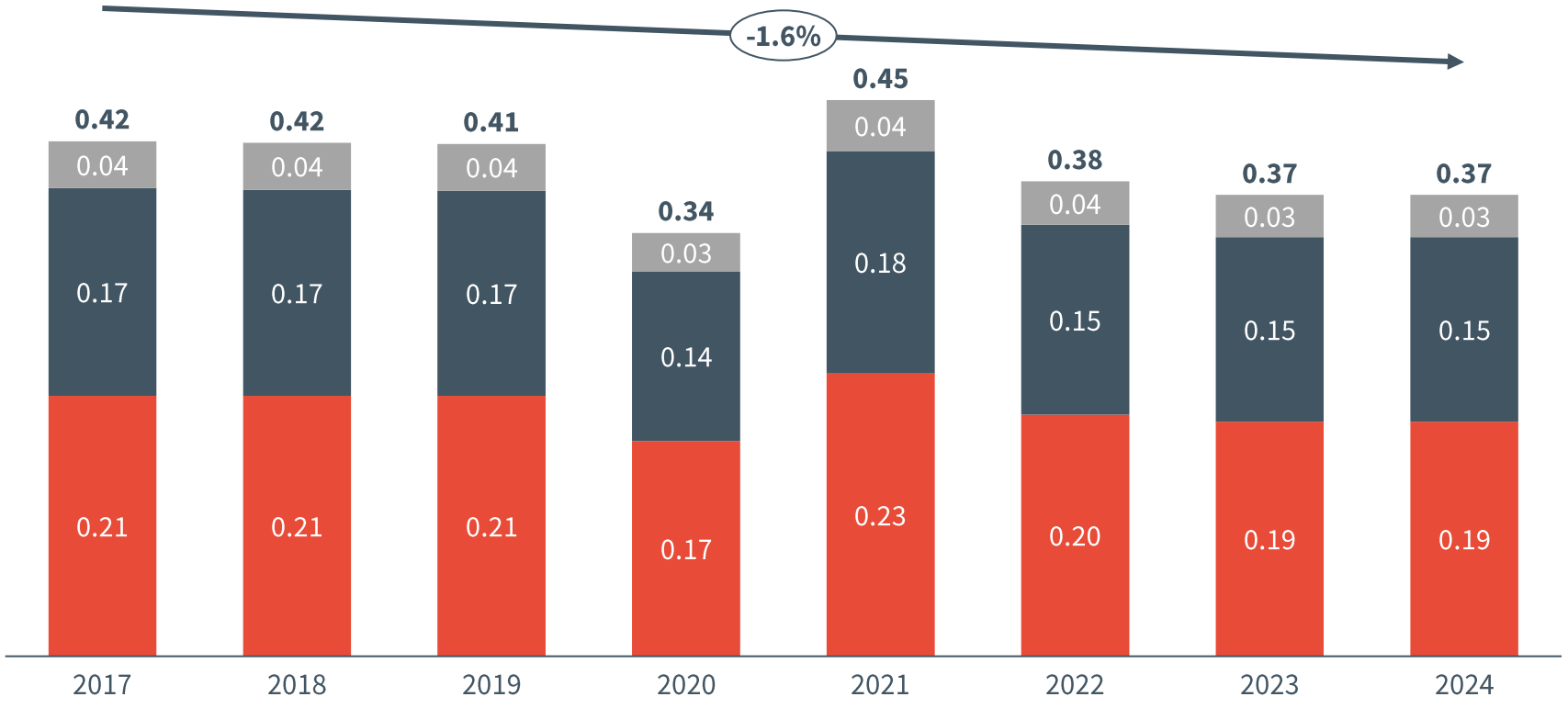
Oil & Gas, E&M

Steel Plants, Power (Gas and Coal fired Plants), Oil and Gas, Defence

Source: Hatch analysis

Stainless, seamless, and forged steel products are typically used in specialty applications, the decline in demand aligns with flat and long products

Historical UK Other Product Demand, 2017 – 2024 (mtpa)

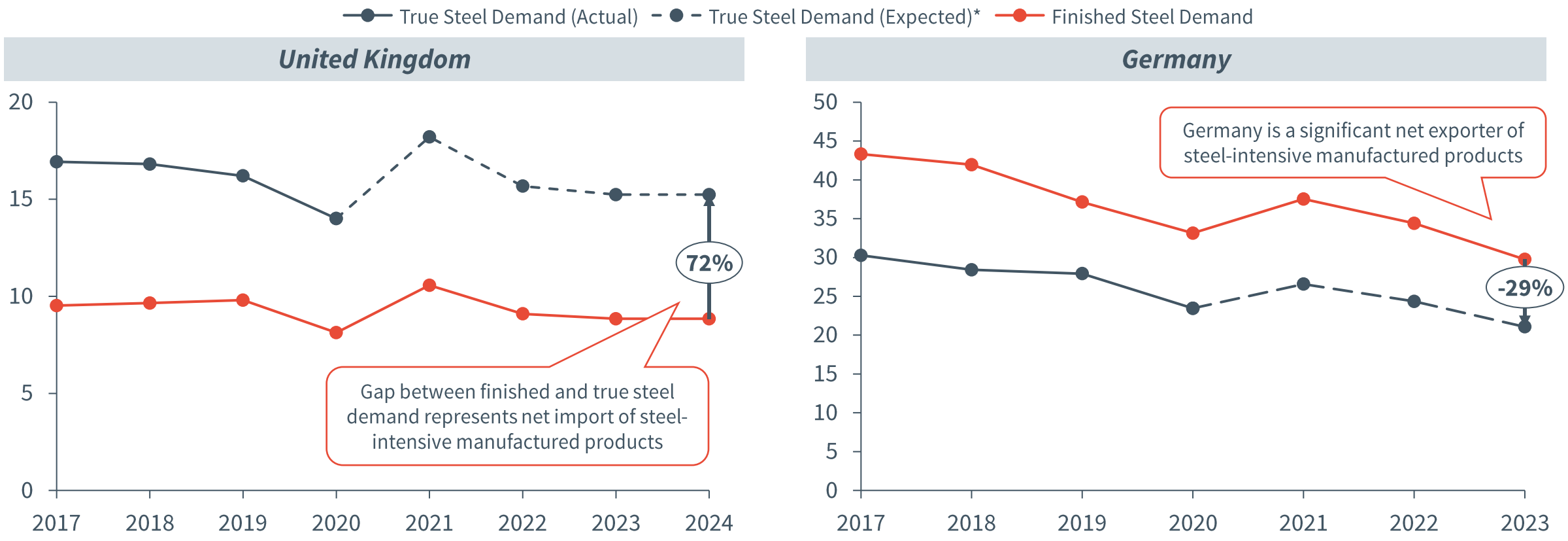


Product	CAGR (2017-2024)
Forged Products	-4.0%
Seamless Tubes	-1.8%
Stainless Steel	-1.4%

Source: Hatch analysis

Closing the gap between finished and true demand presents a significant opportunity for the UK steel industry

Historical True vs Finished Steel Demand of the UK and Germany, 2019 - 2023 (mtpa)



The UK's true steel demand exceeds finished steel demand due to high imports of steel-containing goods; in contrast, Germany represents a net export balance

Note: True steel demand represents the steel consumed in-country, addition of steel in imported goods and deducting the steel in exported goods True demand based on data provided by the World Steel Organization through 2019. the ratio of true to finished demand over 2017 – 2019 was used to estimate true steel demand for 2020 – 2024.
Source: World Steel Organization 2024 Steel Statistical Yearbook, Hatch analysis.

Contents

Core Sectors

Key demand drivers are used to forecast end-use sector outlooks; wind, solar, and transformers are expected to outpace growth in other sectors

Demand Driver Analysis Summary for Core Sectors

Sector	Product Demand Influence	Demand Driver	CAGR ('25 – '50)	Key Factors
Solar Power	**Flat** (HDG)	Solar power capacity additions (GW)	**7%**	To meet the UK's 2050 net zero target, the latest CCC UK carbon budget projects solar capacity to exceed 100 GW by 2050, representing a 5x increase from 2025 levels
Wind Power	**Long** (Rebars) **Flat** (Plates)	Wind power capacity additions (GW)	**6%**	Driven by government ambitions and investments in renewable energy, UK wind capacity has the potential to increase by up to 5x from 2025 to 2050
Defence	Various*	Defence spending (£ Bn)	**5%**	While share of steel consumption by the defence sector is relatively low, it is considered a strategic imperative with tailwinds from increased defence spending
Transformers	**Flat** (GOES)	Transformer market growth (%)	**4%**	Global transformer capacity is expected to increase 4% per year from 2025 to 2050, driven by increases in T&D capacities to integrate with renewable power generation
Yellow Goods	**Long** (Special Profiles) **Flat** (Plates)	Global mining CAPEX (£ Bn)	**3%**	Global Mining CAPEX is expecting strong growth rates and to double by 2050, primarily due to demand for critical minerals to enable energy transition and decarbonisation
Construction	**Long** (Rebars, Wire Rods and Sections) **Flat** (Plates, HRC, HDG, CRC and PPGI) **Other** (Stainless Steel)	Construction spend (£ Bn)	**1.8%**	Construction spend is expected to rebound and see steady, modest growth through 2050, driven by green industrial and digital infrastructure (e.g., data centre) projects
Automotive	**Long** (Wire Rods, Engineering Steels) **Flat** (HRC, HDG, CRC and NGOES) **Other** (Stainless Steel)	Vehicle production (million units)	**1.6%**	Vehicle production is expected to rebound and increase at a 2% rate through 2050 primarily due to increased investment in EV production, recognising efforts to address recent bottlenecks and attract investments
Packaging	**Flat** (Tinplate, CRC and HDG)	GDP (£ '000)	**2%**	Despite near-term macroeconomic uncertainty, long-term GDP growth is expected to average at ~2%, driven by steady productivity gains, population growth, and high-value service sector expansion typical of a mature economy
E&M	**Long** (Wire Rods, Special Profiles & Engineering Steel) **Flat** (HRC, CRC and HDG) **Other** (Seamless Tubes, Stainless Steel)	Industrial production Index (%)	**0.2%**	The UK's industrial production rate is expected to stabilise at 0.2% annual growth through 2035, mirroring the averages seen between 2000 and 2023
Non-Auto Motors	**Flat** (NGOES)			
Rail	**Long** (Rails)	New rail length (km)	**0%**	Upgrading train lines will drive continuous demand for steel, representing 98% of total steel demanded for rail in the future
Oil & Gas	**Flat** (Plates and HRC) **Other** (Seamless Tubes)	Oil & gas CAPEX (£ Bn)	**-1%**	In line with near-term energy security efforts, global O&G capital expenditure is expected to increase 4% per year through 2030; post-2030, growth is expected to fall at a -2% rate due to shift in focus on renewable energy

Note: Demand Drivers for other products have not been included due to having a small market share. Defence utilises a wide range of products, but volumes are relatively low
Source: Multiple sources that are detailed in the following individual demand driver pages

Key demand drivers are used to forecast end-use sector outlooks; wind, solar, and transformers are expected to outpace growth in other sectors

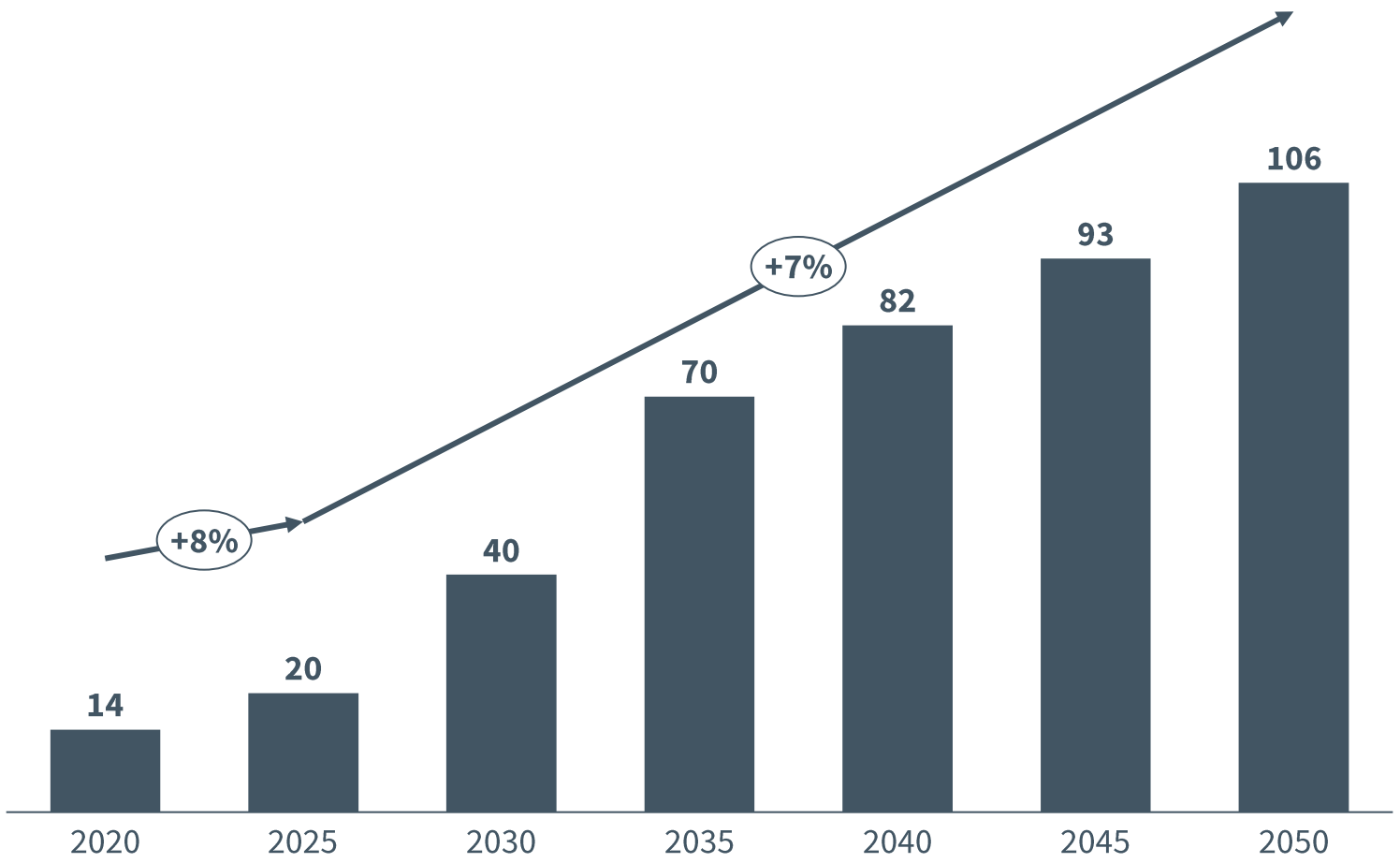
Sector-Specific Considerations for Substitution and Steel Intensity for Core Sectors

Sector	Steel Intensity	Material Substitution	Steel Sector Considerations
Solar Power	↘	Unlikely	+ Technology developments will likely continue to contribute to lighter and more efficient solar panels, reducing steel intensity + While aluminium can also be used for mounting systems, steel will remain the standard in ground-mounted utility scale installations because it is less expensive
Wind Power	↘	Unlikely	+ No major threats to substitution as steel is integral to wind turbines + As turbine design continues to improve in line with historical trends, the volume of steel per tower capacity (Offshore; 209kt/ GW and Onshore 172kt/GW) will decrease but due to towers going further offshore, demand due to complex foundation arrangements is likely to keep overall steel need consistent
Transformers	→	Unlikely	+ Electrical steel (GOES) is crucial to transformer manufacturing, while there is pilot-scale exploration of substitute materials to improve performance (i.e., reduce core losses), steel will remain a key material in transformer design for the foreseeable future
Yellow Goods	→	Unlikely	+ Lightweighting focuses on reducing machinery weight to improve fuel efficiency and performance while reducing emissions, though trends will be gradual over the long-term
Construction	→	Unlikely	+ As the construction sector continues to shift towards low-carbon solutions, steel is likely to remain a key material, reducing the threat of substitution; moreover, the adoption of green steel will play a pivotal role in driving the sector's decarbonisation
Automotive	↗	Unlikely	+ Increased use of high-strength steels for lightweighting aims to reduce energy consumption and increase battery range, but this is offset by the additional weight from enhanced safety features + Significant uplift in steel intensity driven by the shift to electric vehicles EVs, which are ~25% more steel-intensive than ICE vehicles + Enhanced production efficiency in automotive manufacturing leads to progressively improved yields over time and so a reduction in steel intensity
Packaging	↘	Unlikely	+ As a highly-recyclable material (current recycling rate of 80.5%), steel is well-placed to contribute to circular economy objectives + Push for lightweighting steel cans is expected to continue, though early signs suggest limited prospect for further intensity reductions
E&M	→	Unlikely	+ No major substitution threats to steel's position as a preferred material
Non-Auto Motors	→	Unlikely	+ NGOES is the preferred material for motors, both EV and non-EV applications; while there may be some shifts towards higher grades of NGOES, this is not likely to present a material substitution threat towards steel requirements
Rail	→	Unlikely	+ Steel is a core component for rail tracks and is unlikely to be substituted due to its durability and smoothness relative to other materials
Oil & Gas	→	Unlikely	+ No major substitution threats to steel's position as a preferred material for pipelines, storage tanks, rigs, and other structural components

Source: Hatch analysis, Stakeholder meetings

Solar capacity can increase by over 5x from 2025 and 2050, primarily driven by government-backed investments in renewables and decarbonisation

UK Solar Capacity, 2020 - 2050 (GW)



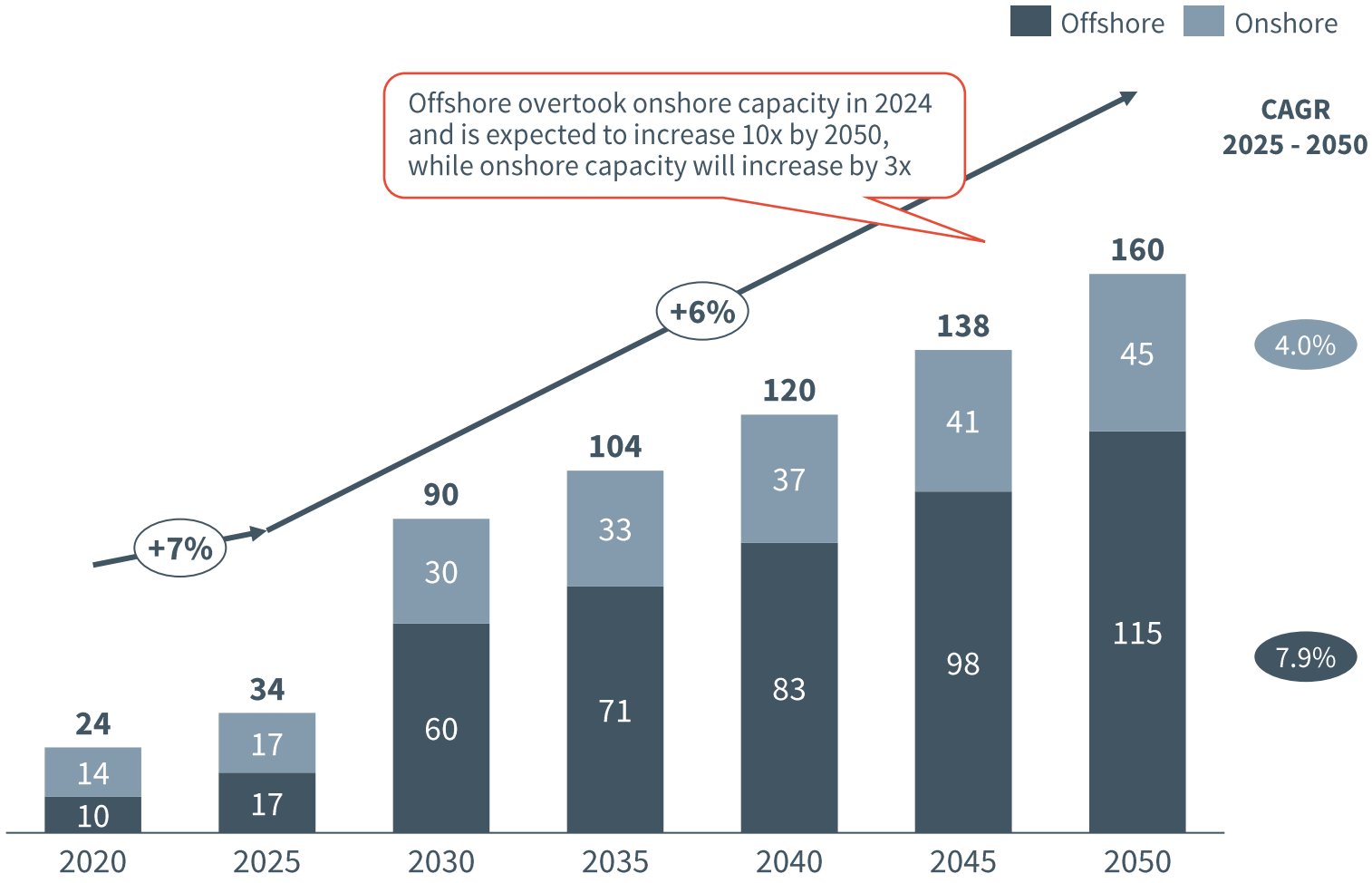
Note: Steel intensity calculation assumes 40 kt/GW of solar capacity. By 2050, nearly 60% of capacity is expected to be attributed to commercial, compared to 45% as of 2024.
Source: CCC 7th Carbon Budget, Hatch analysis.

Key Takeaways

+ **Product Demand Influence:** HDG
+ **Long-Term Forecast:** To meet the UK's 2050 net zero target, the CCC's 7th Carbon Budget recommends scaling solar capacity to over 100 GW by 2050. By 2050, solar has the potential to represent ~28% of the UK's energy mix
+ The UK government is introducing various grants and loan programs to encourage and incentivise solar installation. This initiative aims to accelerate the adoption of solar technology, contributing to the nation's clean energy goals
+ Solar costs are expected to drop from £560/kW in 2025 to £280/kW by 2050 which would support further capacity build up
+ Despite a positive outlook, integrating new solar projects into the existing power grid presents challenges (e.g., some projects facing delays of 5+ years for grid connection), highlighting the need for infrastructure upgrades and streamlined processes to meet long-term targets

UK renewable energy targets can drive a nearly 5x wind capacity increase to 160 GW by 2050, with offshore representing over 70% of this capacity

UK Wind Cumulative Capacity, 2020 - 2050 (GW)



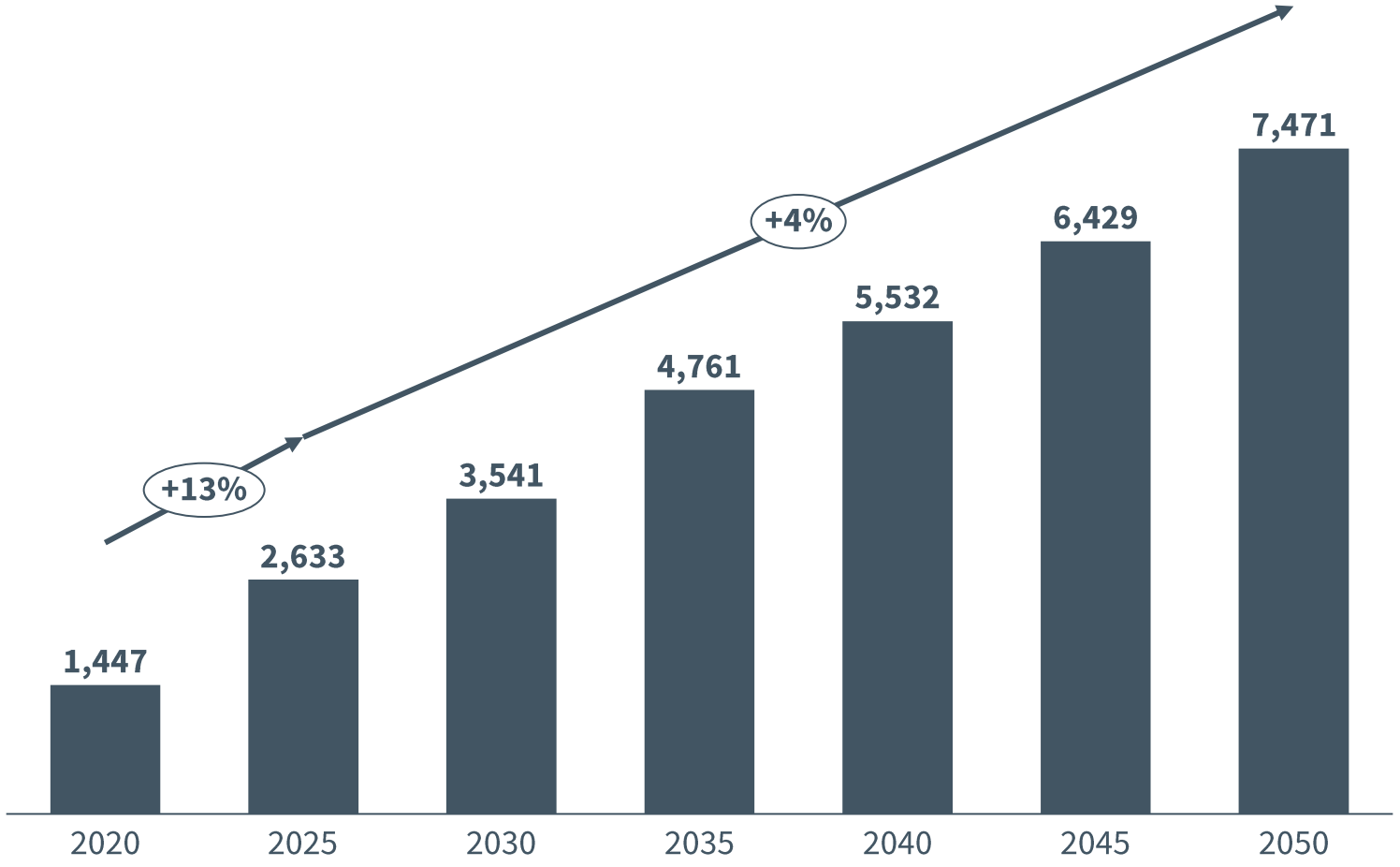
Key Takeaways

+ **Product Demand Influence:** Plates, Rebars
+ **Historical Trend:** The government is committed to rapidly scaling up clean energy generation, aiming to 4x offshore wind capacity by 2030. This has been bolstered by: (1) technology advancements (e.g., ~50% boost in power generation efficiency) and (2) a ~30% reduction in operational costs. In effect, the UK's installed capacity has grown over 40% since 2020
+ **Long-Term Forecast:** By 2050, The UK government aspires to achieve 115 GW* and 45 GW** for offshore and onshore wind, respectively, representing over 40% of the UK's energy mix. Increased adoption will continue to be fuelled by government support (e.g., grants, subsidies, regulatory streamlining efforts, and other mechanisms)
+ The current project pipeline consists of 77 GW in capacity across 80 offshore projects in various development stages, with additional projects expected to meet wind sector growth targets

Note: Repowering primarily affects onshore wind demand which has been considered in this forecast, Projection provided by a 2024 Floating Wind report. Projection in the top quartile of the range 15 – 60 GW by the modelling 2050 electricity report
Source: GOV.UK (DUKES), GOV.UK (Climate change and energy), Modelling 2050 – electricity system analysis - GOV.UK, Energy Pulse, Hatch analysis.

Global power transformer capacity is expected to grow 4% annually through 2050, driven by the grid and T&D network electrification

Global Power Transformer Market Capacity, 2020 - 2050 (GVA)



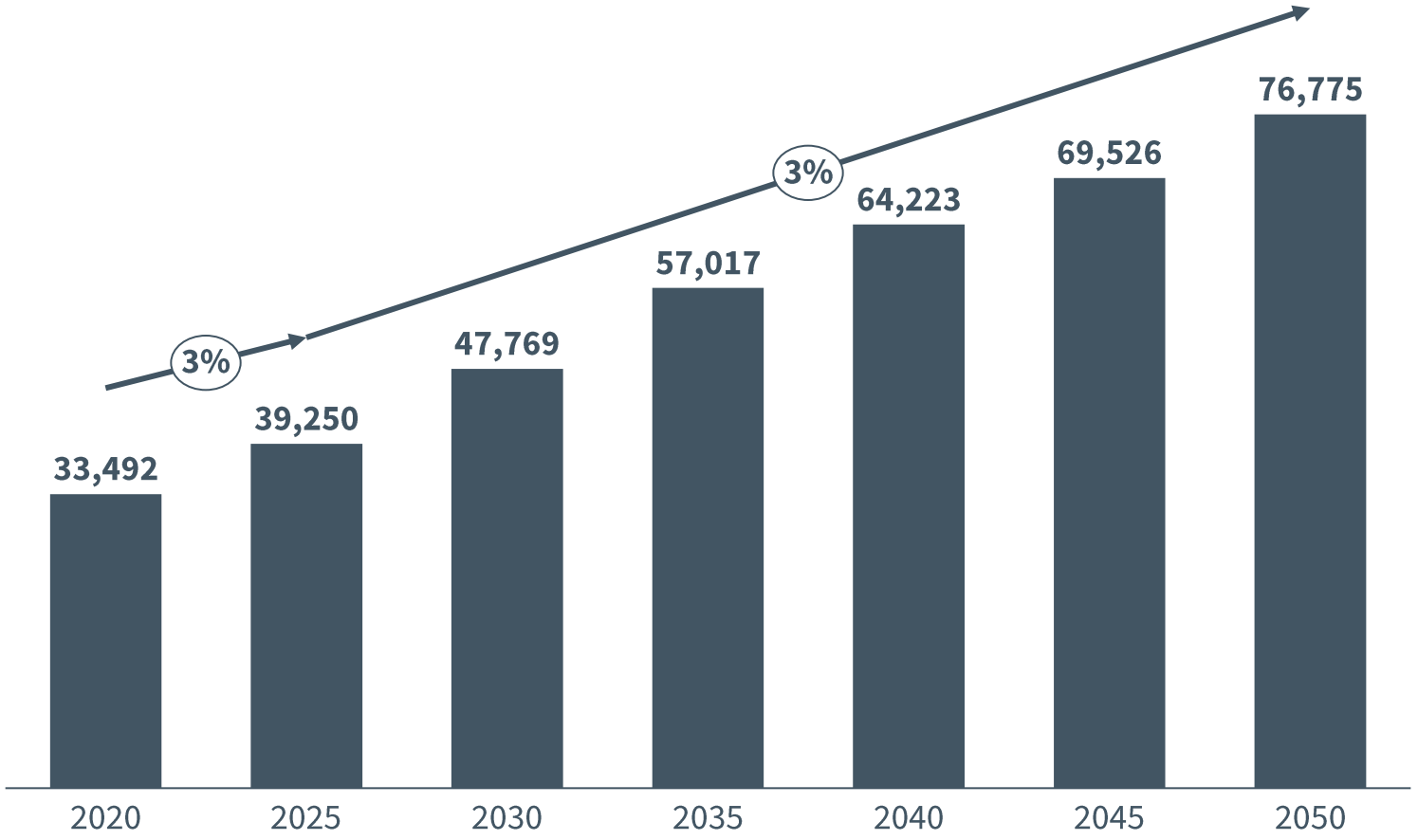
Source: Global Data, Rystad Energy, Hatch analysis.

Key Takeaways

+ **Product Demand Influence:** GOES
+ **Historical Trend:** Investments in the transformer supply chain have lagged demand, creating a severe supply crunch. The power transformer market is now on the cusp of multi-decade growth due to rising electricity demand from urbanisation, renewable energy integration, and grid modernisation
+ **Long-Term Forecast:** Power transformers will see a steady expansion in capacities globally to meet the demand growth. Power transformers are critical, there will be continued reliance on western supply chains established in Europe as opposed to sourcing from Asia. Some of the world's largest OEMs are located in the UK and Europe (e.g., Siemens, Schneider, R Baker)
+ While growth is expected to taper off after 2035 in line with key electrification targets, the sector is still positioned for steady growth over the long-term for project maintenance and grid expansion projects

Global Mining CAPEX is expected to increase by nearly 2x between 2025 and 2050, primarily due to the energy transition and increased demand for critical minerals

Global Mining CAPEX, 2020 - 2050 (£ bn)



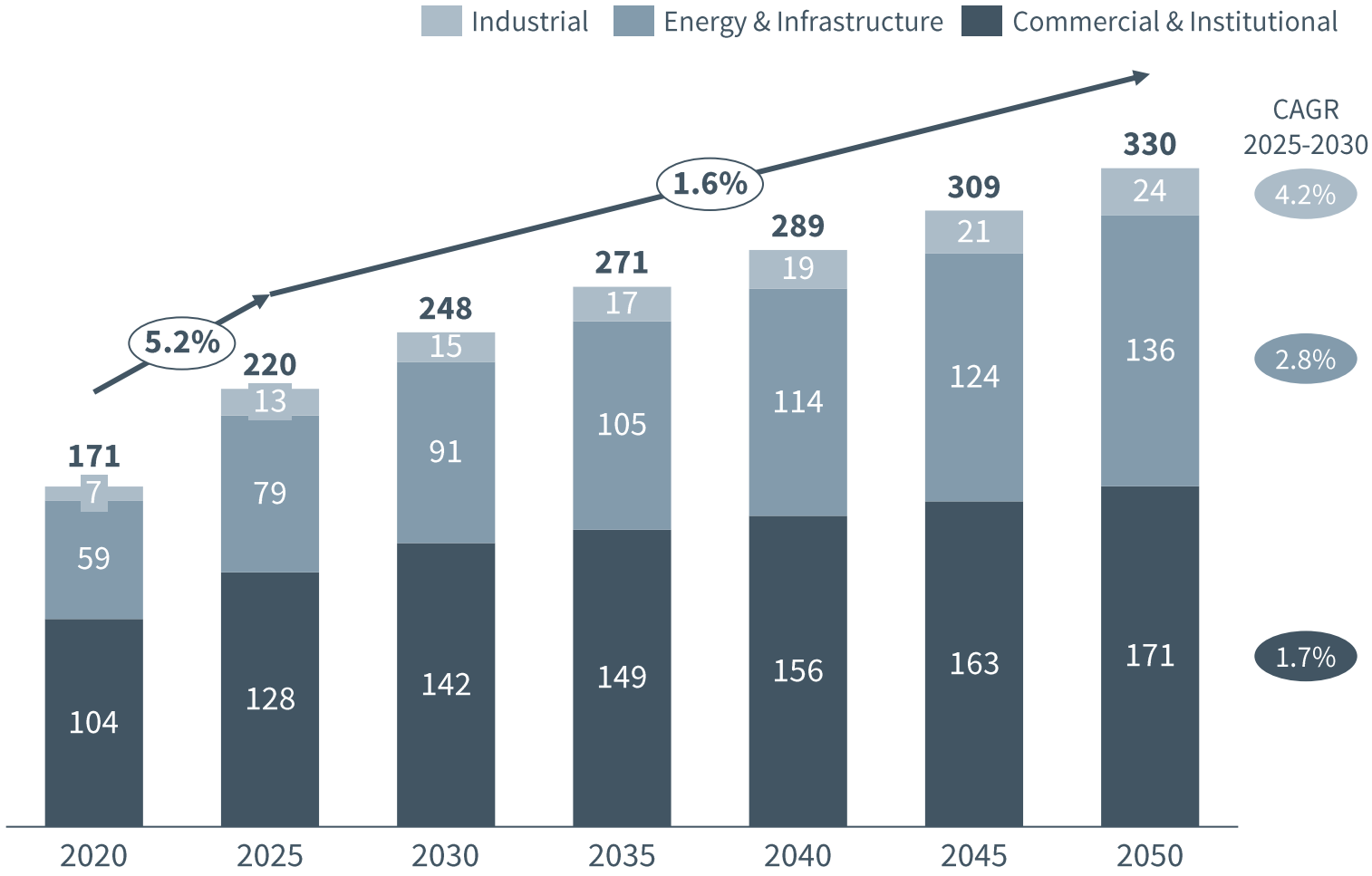
Key Takeaways

+ **Product Demand Influence:** Plates, Special Profiles
+ Manufacturers (Caterpillar, JCB) serve multiple industries, but mining is a key driver due to its reliance on heavy machinery for core operations
+ **Historical Trend:** Mining expenditure grew steadily as companies worked through a backlog of delayed capital projects and responded to a surge in mineral demand post-COVID-19
+ **Long-Term Forecast:** Momentum is expected to be sustained by a broader structural shift toward mineral-intensive net-zero technologies
+ The demand for critical minerals—particularly those essential to battery manufacturing, renewable energy, T&D, defence and electronics — will drive sustained investment in mining

Source: S&P Global, Hatch analysis

Construction spend growth is expected to see modest growth through 2050 driven by green industrial and digital infrastructure projects

UK Construction Spend, 2020 - 2050 (£ bn)



Note: Construction spend does not include residential, which typically has a low steel-intensity compared to other large-scale construction applications.
Source: GlobalData (Construction in the UK: Key Trends and Opportunities), Fitch Solutions, Hatch analysis.

Key Takeaways

+ **Product Demand Influence:** Plates, HRC, HDG, CRC, PPGI, Rebars, Wire Rods, Sections, Stainless Steel
+ **Historical Trend:** Construction spending was fuelled largely by post-COVID-19 stimulus measures, such as the £5bn 'Infrastructure New Deal,' which accelerated investment in public infrastructure and large-scale development projects
+ **Long-Term Forecast:** Construction spending is expected to grow at a more moderate pace, with investment shifting toward sectors such as data centres and green industrial projects

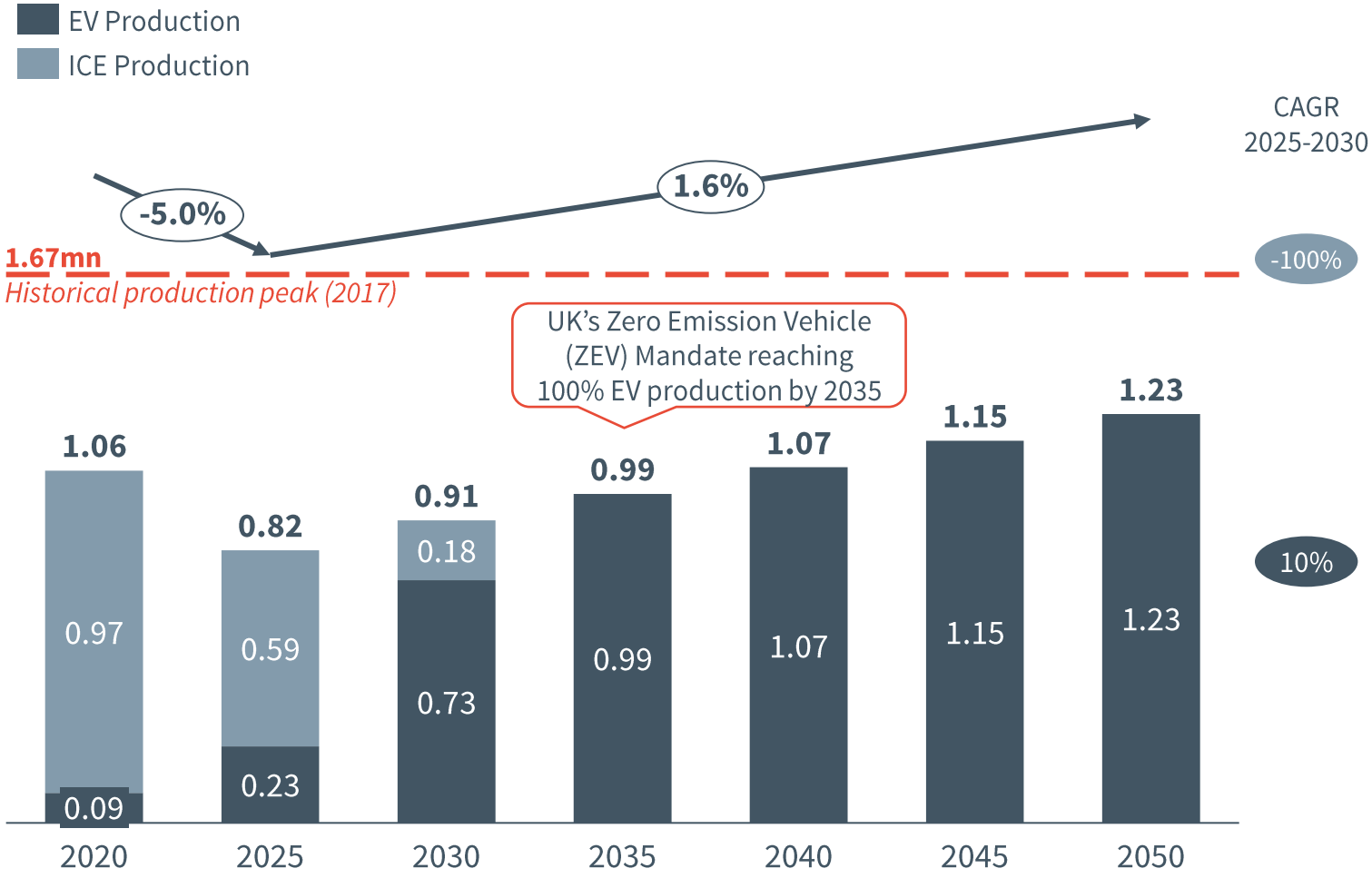
Major Construction Projects

NOT EXHAUSTIVE

Project	Expected Cost
Heathrow Airport Expansion	~£18bn
Sellafield Plutonium Recycling Plant	~£15bn
Cambois Data Centre	~£13bn

Vehicle production is expected to increase at a 2% rate through 2050 primarily due to expected investment in electric vehicles

UK Vehicle Production, 2020 - 2050 (million units)



Note: 1. In Feb 2025, BMW announced pausing it's £600mn investment but remains committed to its investment in the UK
Source: BMI UK Autos Report 2024, GOV.UK (Press Release, News Story), SMMT, Hatch analysis, stakeholder meetings

Key Takeaways

+ **Product Demand Influence:** HRC, CRC, Wire Rods, Engineering Steels, NGOES, HDG and Stainless Steel
+ **Historical Trend:** Vehicle production has steadily declined since a 2017 peak due to macroeconomic uncertainties and bottlenecks, chip shortages, factory closures (e.g., Honda facility closure in 2021) and retooling requirements for EV production
+ **Long-Term Forecast:** Near-term production will likely continue to face downward pressure from these challenges, slowly picking up towards previous levels. Over the long-term, production is anticipated to maintain modest growth, driven by investments for EVs and gigafactories, in 2023 a total of £24bn was pledged

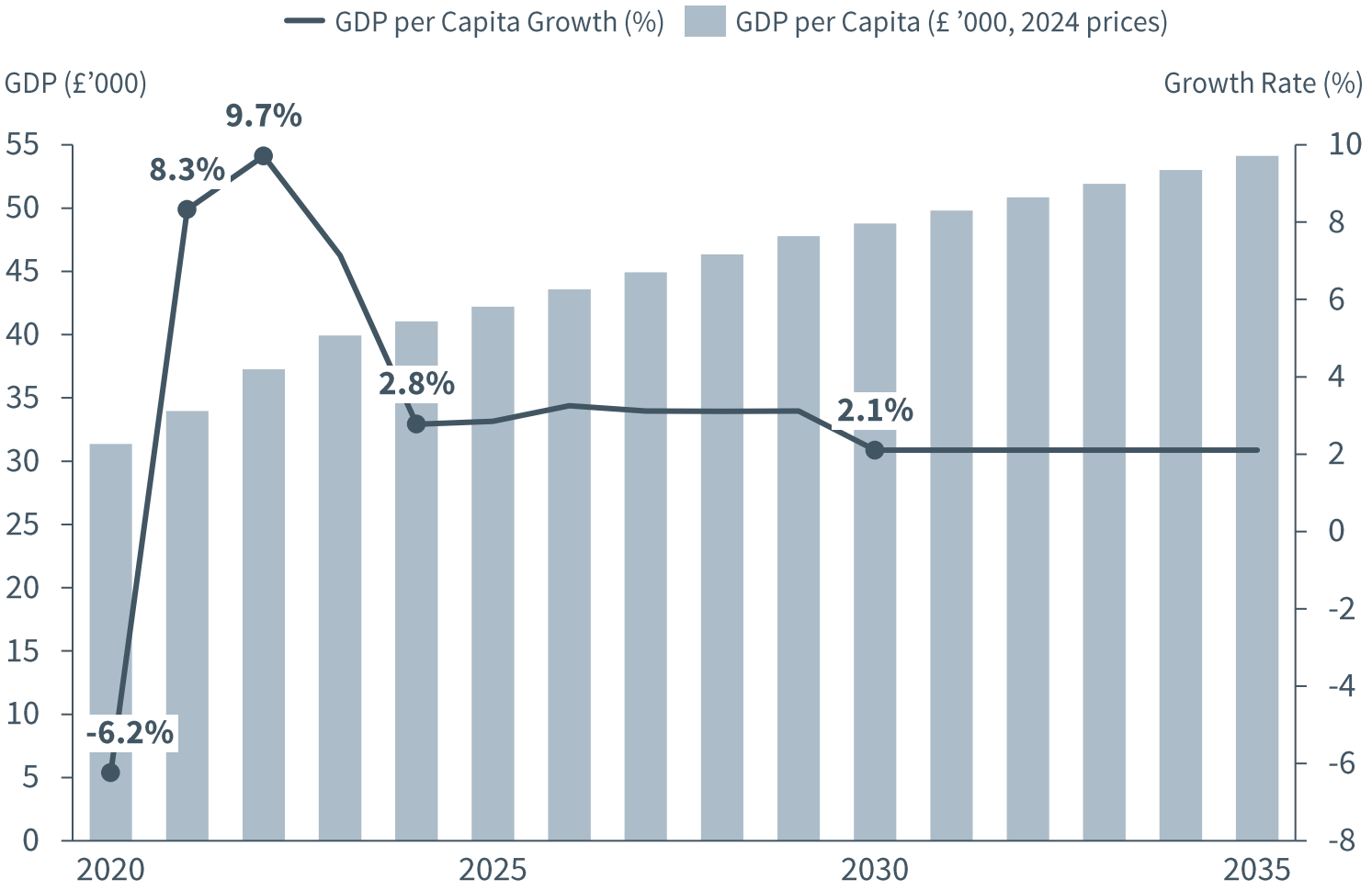
Key Automotive Investments

NOT EXHAUSTIVE

Stakeholder	Cost	Description
Nissan	£2bn	Produce 2 new EV models
BMW[1]	Multi-mn	Oxford plant investment
UK Government	£2.5bn	Automotive industry

GDP is expected to tend to the long-term equilibrium of 2% between 2025 and 2035 for the UK

UK GDP, 2020 - 2035



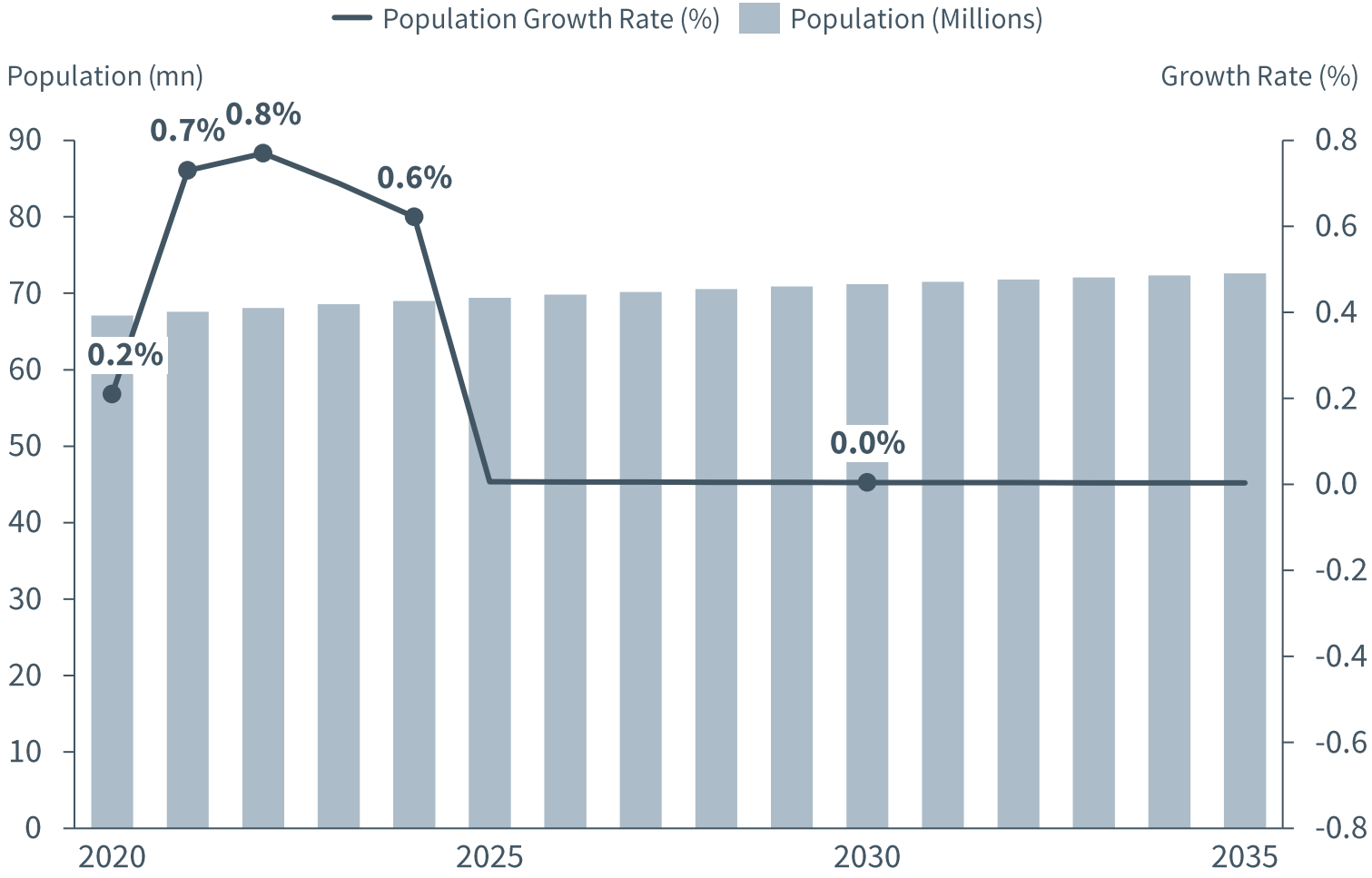
Source: International Monetary Fund, KPMG UK, House of Commons Library, Hatch analysis

Key Takeaways

+ **Product Demand Influence:** Tinplate
+ GDP growth is a key driver of public and private investment in infrastructure, construction, and other niche steel-consuming sectors; as GDP expands, these industries tend to increase output, providing a proxy for long-term demand expectations
+ **Historical Trend:** Most countries, including the UK, experienced a sharp contraction in GDP from Covid-19 that rebounded within the following years
+ **Long-Term Forecast:** Modest economic expansion through the decade is expected to stimulate demand in steel consuming sectors (e.g., construction, safety equipment, and engineering & manufacturing)
+ Over the long-term, the UK's GDP growth rate is expected to return to ~2%, typical of a mature economy

Population is expected to tend to a long-term equilibrium due to an aging population and declining birth rates in the UK

UK Population Growth Rate, 2020 - 2050



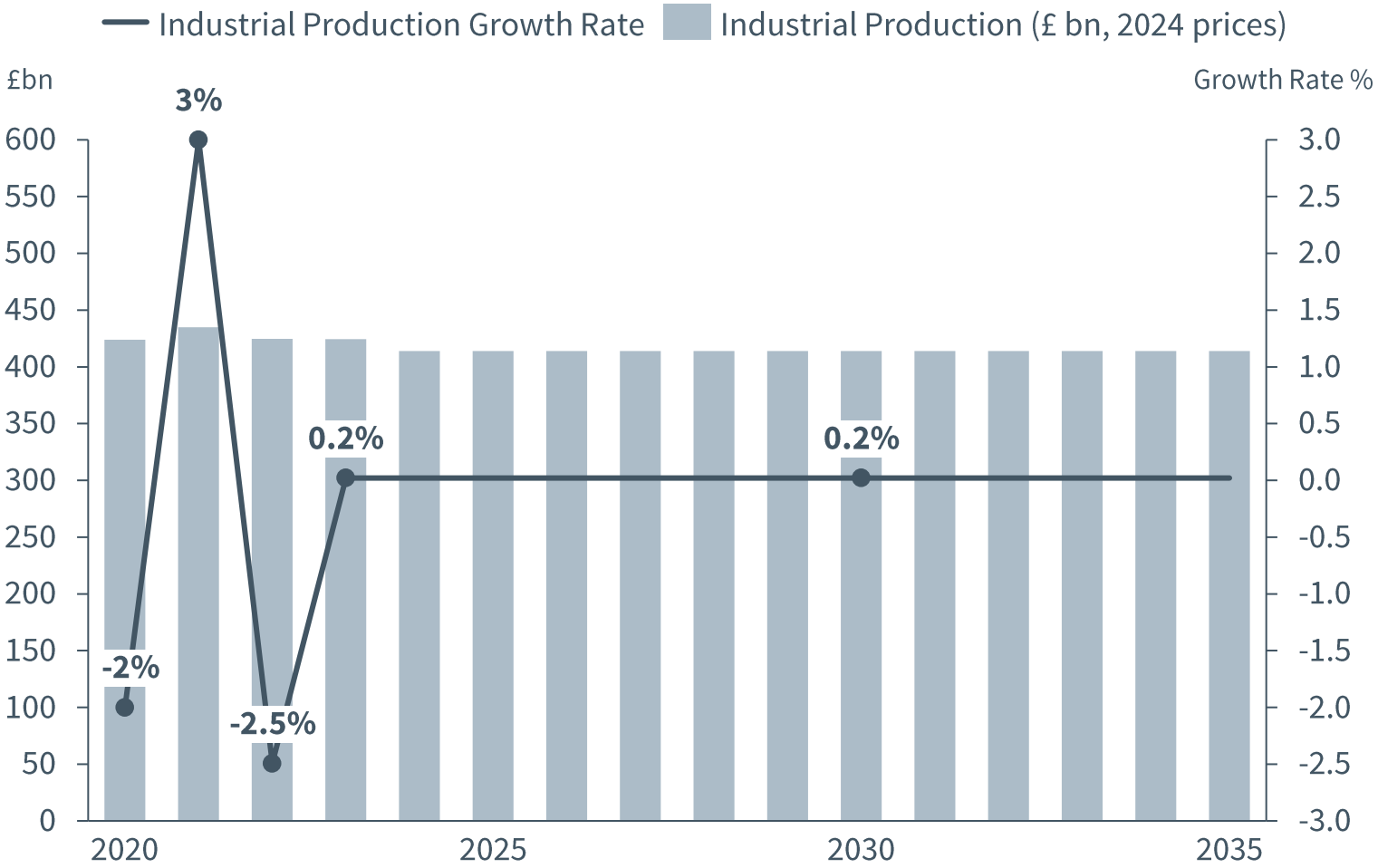
Key Takeaways

+ **Product Demand Influence:** Tinplate
+ Population growth rate is a key driver relative to packaging, and food and beverage as these commodities are dependent on the population. If the population expands, the demand for packaging and food will also increase
+ **Long-Term Forecast:** Population growth is expected to flatline due to declining birth rates, aging populations, and improved healthcare. Lower birth rates are driven by higher education and improved healthcare, rising living costs, and the reduced need for large families

Source: ONS, Macrotrends, population.un.org, Hatch analysis

The UK's industrial production rate is expected to stabilize at 0.2% growth during 2025 and 2035 in line with historical averages of 0.2% growth

UK Industrial Production Rate, 2020 - 2035



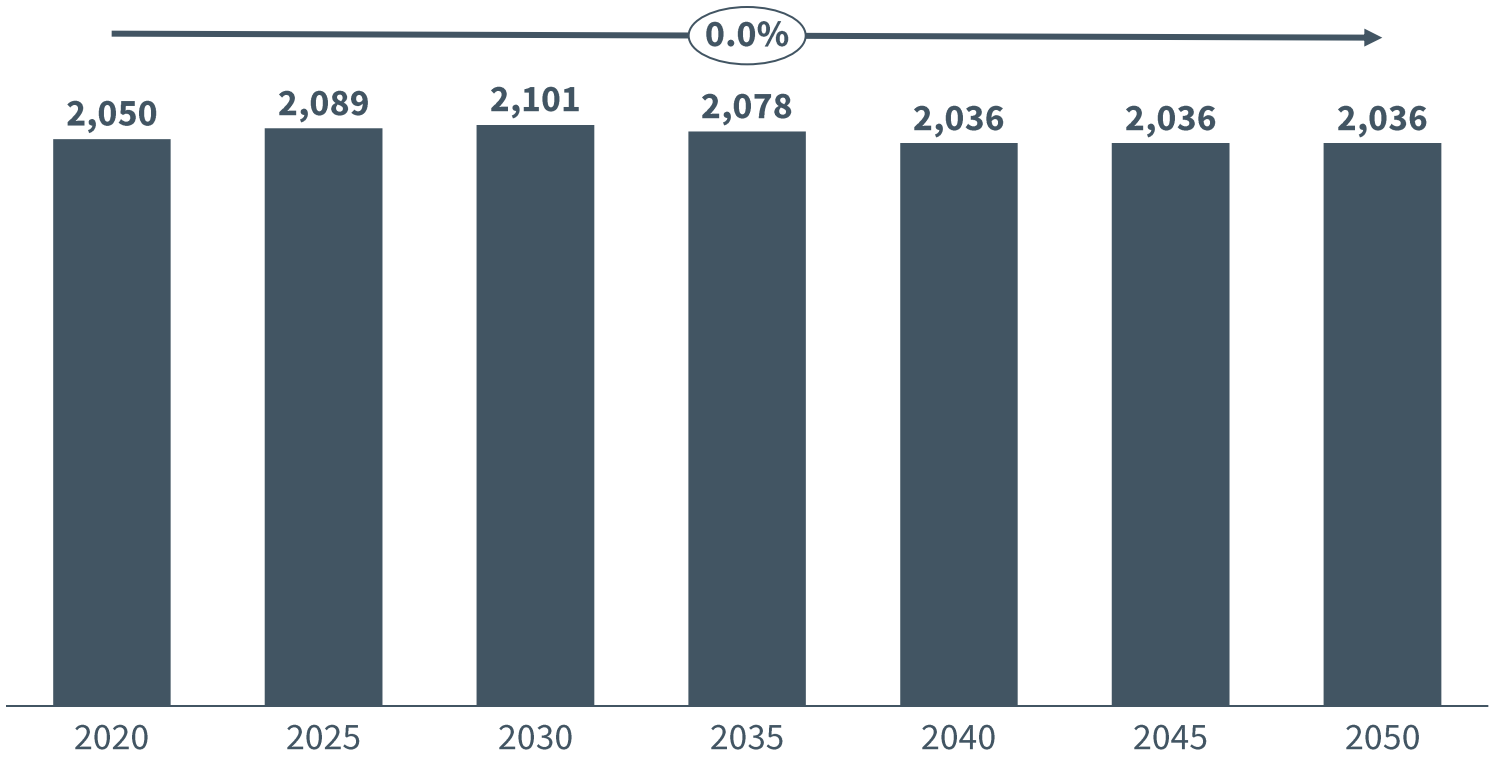
Key Takeaways

+ **Product Demand Influence:** Special Profiles, Wire Rods, Engineering Steels, Seamless Tubes, HRC, HDG, CRC, Forged Products and NGOES
+ **Historical Trend:** The industrial production rate contracted as COVID-19 severely disrupted global supply chains, leading to factory shutdowns, material shortages, and reduced manufacturing output
+ **Long-Term Forecast:** Industrial production is expected to stabilise, in line with its 20-year historical average
+ Despite increased investment in industrial sectors, historically prevalent challenges such as high energy costs and inflation can hinder further growth
+ The UK's reliance on imported energy may constrain industrial competitiveness, making it difficult to achieve a sustained breakout from historical performance levels

Source: World Bank, Hatch analysis

Maintenance and upgrade of rail networks will drive long-term demand for rails, representing over 98% of cumulative demand through 2025

UK New Rail Length, 2020 - 2050 (km)

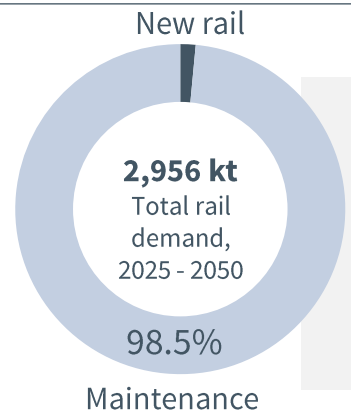


Source: Hatch analysis, Network Rail Annual Reports, HS2, EastWestRail, Institution of civil engineers, TFL, Expert Interviews

Key Takeaways

+ **Product Demand Influence:** Rail
+ **Historical Trend:** Despite significant rail projects, such as HS2, the Dublin-Belfast High-Speed line, East-West Rail, and Northern Powerhouse Rail that collectively add 1,275 km of new railway, the majority of steel demand comes from the routine maintenance and updating of the existing rail network
+ **Long-Term Forecast:** Long-term steady state demand is mainly driven by rail network maintenance (~2,000 km per year)

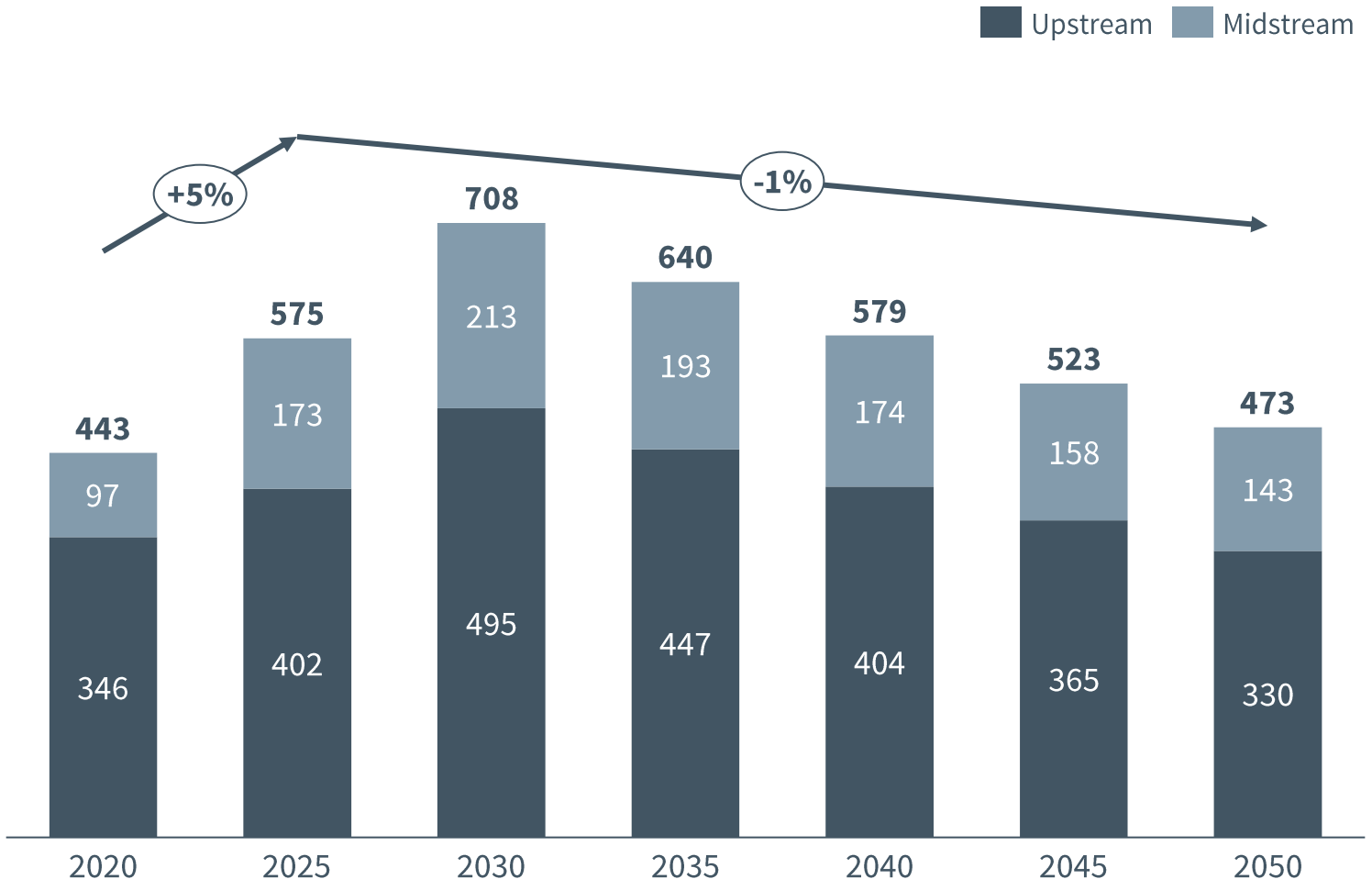
Steel Demand, New vs. Maintenance (kt)



Cumulative new rail demand from 2025 through 2050 for steel is projected to reach ~44 kt, representing <2% pf total rail steel demand (over 2,900 kt)

Driven by near-term energy security efforts, global oil & gas capex is expected to increase by 4% through 2030, before a steady structural decline to 2050

Global O&G Capital Expenditure – Upstream & Midstream, 2020 - 2050 (£ bn)



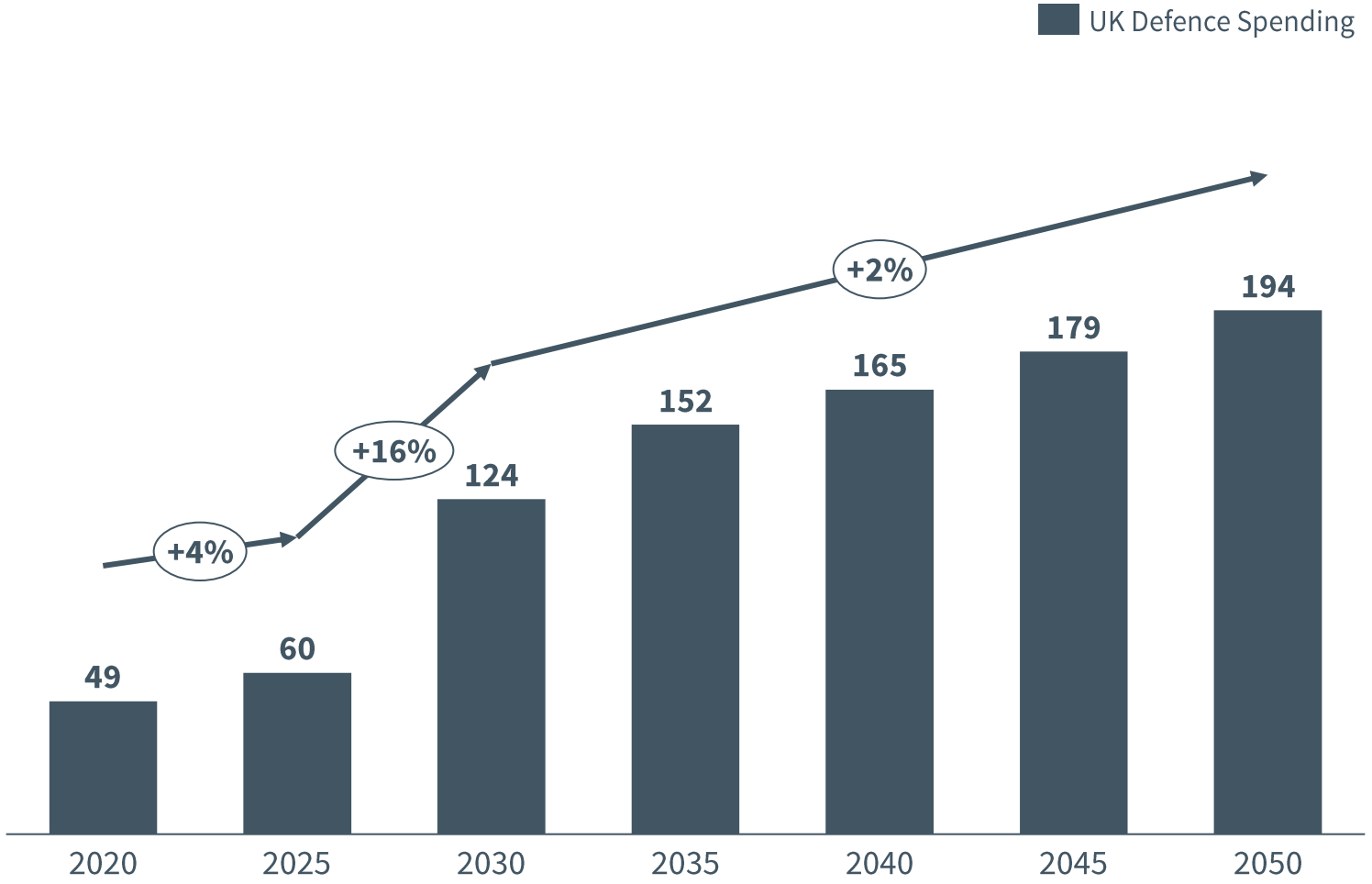
Key Takeaways

+ **Product Demand Influence:** Plates, Seamless Tubes and HRC
+ **Historical Trend:** Despite the global shift towards renewables, O&G majors have increased investments in upstream and midstream due to rising oil prices, supply chain stability and an increase in capital projects post-COVID, and advancements in shale extraction technologies
+ **Long-Term Forecast:** To support the shift towards renewables and biofuels, CAPEX growth is expected to average 2.1% to 2050
+ However, in the near-term (next 5 years), investments will be higher to create a secure energy foundation before the full transition
+ For example, BP plans to increase upstream and downstream investments and scale back on renewable projects until 2030

Source: GlobalData O&G CAPEX Spend, Deloitte Oil and Gas CAPEX Insights, IEF Upstream Oil and Gas CAPEX outlook, A reset BP, Mordor Intelligence

UK defence spending is expected to increase by 4x due to wider geopolitical tensions and resulting policy mandates before tending to long-term GDP growth

UK Forecasted Defence Spending (£ bn)



Key Takeaways

+ **Product Demand Influence:** N/A[1]
+ **Historical Trend:** Due to recent geopolitical tensions and increased focus on national security imperatives, investments in the defence industry have increased sharply in the UK as well as wider Europe
+ **Forecast:** Over the near-term, defence spending is set to increase with policy outlining that 2.75% of GDP would be allocated to defence spending by 2027, which would increase to 5% by 2035
+ Paired with projected GDP growth, defence spending may double by 2030 based on a 2025 baseline
+ After 2030, defence spending is expected to grow at a ~2% rate, mirroring long-term UK GDP

Note: 1. The steel products that defence is expected to utilise is based on a project-by-project basis – which is highly sensitive
Source: House of Commons Library, GOV.UK (Press Release), International Monetary Fund, Hatch analysis

Emerging Sectors

Of the emerging sectors, transmission and distribution, heat pumps, and nuclear are expected to see strong growth through to 2050

Demand Driver Analysis Summary for Emerging Sectors

Sector	Product Demand Influence	Demand Driver	CAGR ('25 – '50)	Key Factors
Heat Pumps	**Long** (Engineering Steels) **Flat** (HDG) **Other** (Stainless Steel)	Heat pump installations (Units)	9%	New heat pump installations in the UK is expected to grow by 9% CAGR between 2025 and 2050, driven by energy efficiency
Nuclear	**Long** (Sections and Rebars) **Flat** (Plates) **Other** (Stainless Steel)	Nuclear capacity additions (GW)	5%	The UK's nuclear capacity is expected to increase by 3x by 2050, driven by government's aspiration to address energy security, affordability, and sustainability and developing both large-scale GW power plants and SMRs
Transmission & Distribution	**Long** (Sections and Rebars)	Transmission and Distribution capacity (GW)	4%	Transmission and distribution capacity is expected to increase by 3x from 2025 to 2050, with rapid near-term growth driven by the Clean Power 2030 Action Plan
CCUS	**Flat** (Plate)	Carbon capture network pipeline additions (km)	N/A*	Driven by government emission reduction targets, CCUS network pipeline growth is expected to ramp-up in 2028, growing to nearly 8,000 km by 2050
Hydrogen	**Flat** (Plate)	Hydrogen pipeline additions (km)	N/A*	New hydrogen pipelines in the UK are expected to exceed 2,500 km by 2050, to enable decarbonisation of heavy industries

The CCUS and hydrogen sectors are driven by large-scale projects through 2035, though there is potential for continued upside as the project pipeline develops over this period

Note: *Due to these metrics usually being forecasted based on projects, therefore a CAGR is not a representative metric in these instances
Source: Multiple sources that are detailed in the following individual demand driver pages

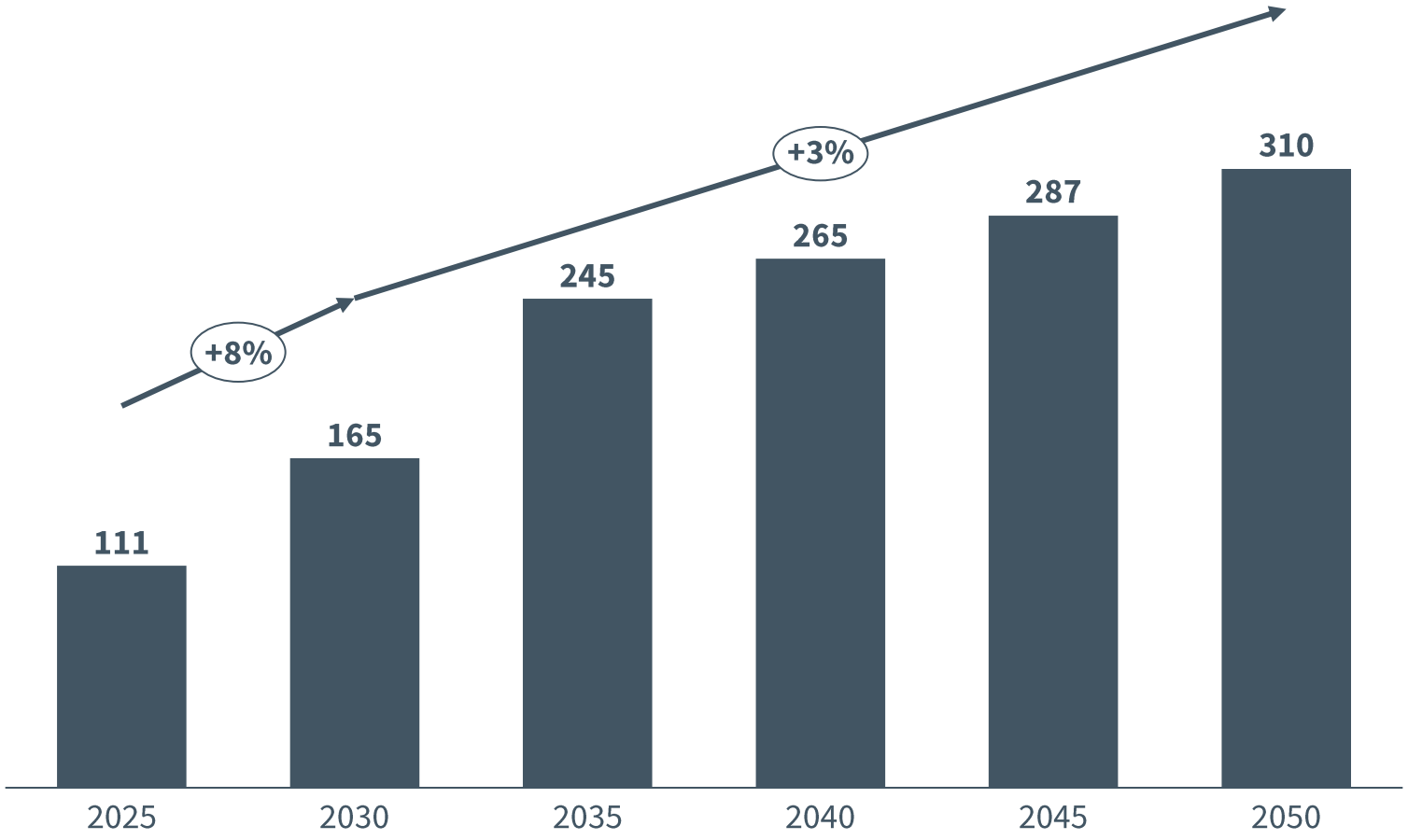
Steel is unlikely to be replaced in emerging sectors, with lightweighting advancements indicating minimal impact on overall steel intensity requirements

Sector-Specific Considerations for Substitution and Steel Intensity for Emerging Sectors

Sector	Steel Intensity	Material Substitution	Steel Sector Considerations
Transmission & Distribution	→	Unlikely	+ Steel is unlikely to be substituted due to its high strength and durability. This making it a key material for infrastructure in transmission and distribution due to its ability to withstand various weather conditions and require minimal maintenance at a cost-effective price
Heat Pumps	→	Possible	+ While there is growing potential for aluminum and advanced polymers in heat exchangers and casings, this is not yet commonly commercialised and is not expected to be adopted in the near to medium-term
Nuclear	→	Unlikely	+ Nuclear reactors require steels for containment, structures, piping, ducting and cable trays. The designs for nuclear reactors are heavily regulated due to extreme conditions. The likelihood of steel substitution is negligible
CCUS	→	Unlikely	+ The CCUS value chain is steel intensive, namely for pipeline and storage tank applications + While high-performance alloys and composites are being explored, steel is unlikely to be lightweighted or substituted in pipeline and storage applications, which account for most of the sector's steel requirements
Hydrogen	→	Unlikely	+ The hydrogen value chain is highly steel intensive, namely for pipeline applications as well as storage tanks, and electrolyzers + While high-performance alloys and composites are being explored, steel is unlikely to be lightweighted or substituted in pipeline and storage applications, which account for most of the sector's steel requirements

Transmission and distribution capacity is expected to increase by over 3x from 2025 to 2050, with near-term growth driven by the Clean Power 2030 Action Plan

UK Transmission and Distribution Total Capacity, 2025 - 2050 (GW)



Source: NationalGrid, World Energy Outlook, Hatch analysis, GOV.UK (Department for Energy Security and Net Zero)

Key Takeaways

+ **Product Demand Influence:** Heavy Sections, Medium Sections, and Rebars
+ **Near-Term Forecast:** An 8% ramp-up is targeted between 2025 and 2030 due to the Clean Power 2030 Action Plan to fulfil the governments target to connect at least 50 GW of renewable energy to the grid by 2030
+ **Long-Term Forecast:** The National Grid's 'Great Grid upgrade' comprises of 17 major infrastructure projects worth £35bn to modernise the existing network and scale up the grid to keep up with the rapid uptake in cleaner energy sources and the additional electrification for heat pumps

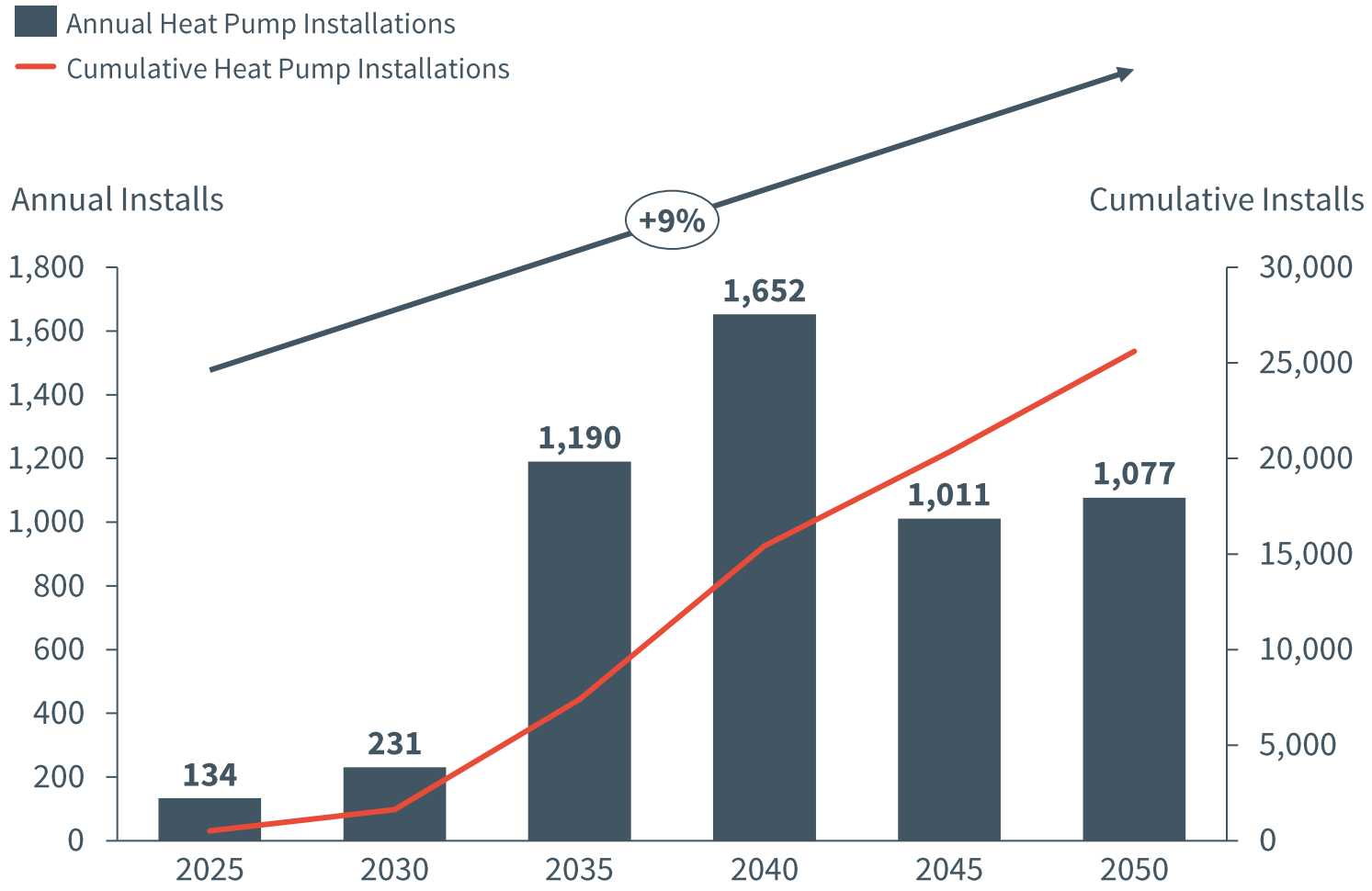
Major T&D Projects

NOT EXHAUSTIVE

Key Projects	
Eastern Green Link 3 and 4	Eastern Green Link 1
Bramford to Twinstead	Grimsby to Walpole
Yorkshire Green	Brinsworth to High Marnham

The proposed 7th Carbon Budget aims for 80% of UK homes to have heat pumps by 2050; installations are expected to accelerate between 2030 and 2040

UK New Heat Pump Installations, 2020 - 2050 ('000 units)



Key Takeaways

+ **Product Demand Influence:** HDG
+ **Long-Term Forecast:** The CCC's 7th Carbon Budget recommends for 80% of UK homes to have a heat pumps by 2050
+ Most UK homes need one-off modifications to switch from gas heating, making early adoption costly without strong policy support; efforts to reduce upfront costs like the Heat Pump Ready programme and Boiler Upgrade Scheme have helped to kick start some initial uptake
+ Annual installations can be expected to accelerate between 2030 and 2040, with costs expected to drop over 30% by 2050

Source: CCC 7th Carbon Budget, Hatch analysis

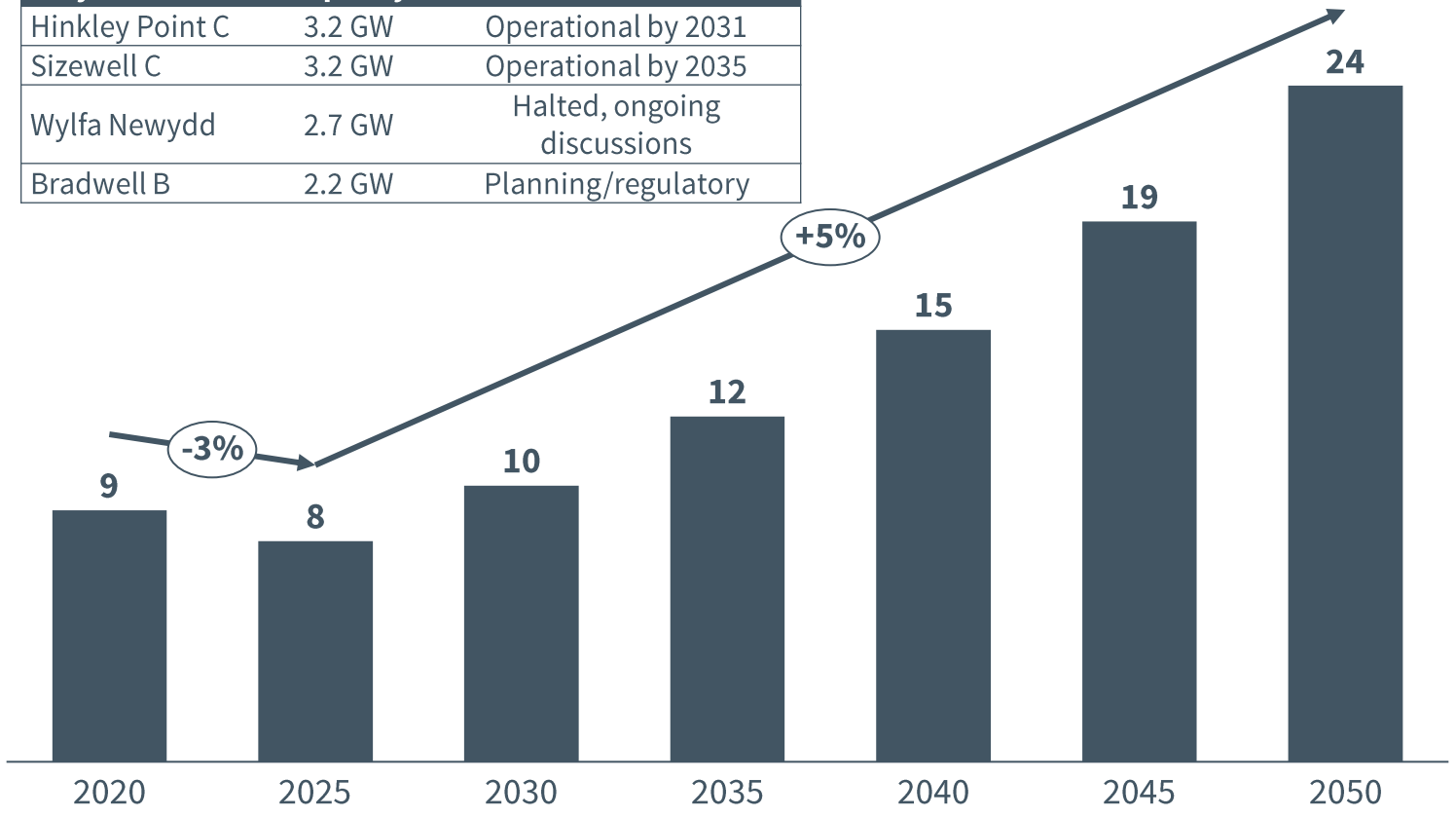
The UK's nuclear capacity is expected to increase by 3x by 2050, driven by government efforts to address energy security, affordability, and sustainability

UK Nuclear Capacity, 2020 - 2050 (GW)

Key Nuclear Projects

NOT EXHAUSTIVE

Project	Capacity	Status
Hinkley Point C	3.2 GW	Operational by 2031
Sizewell C	3.2 GW	Operational by 2035
Wylfa Newydd	2.7 GW	Halted, ongoing discussions
Bradwell B	2.2 GW	Planning/regulatory



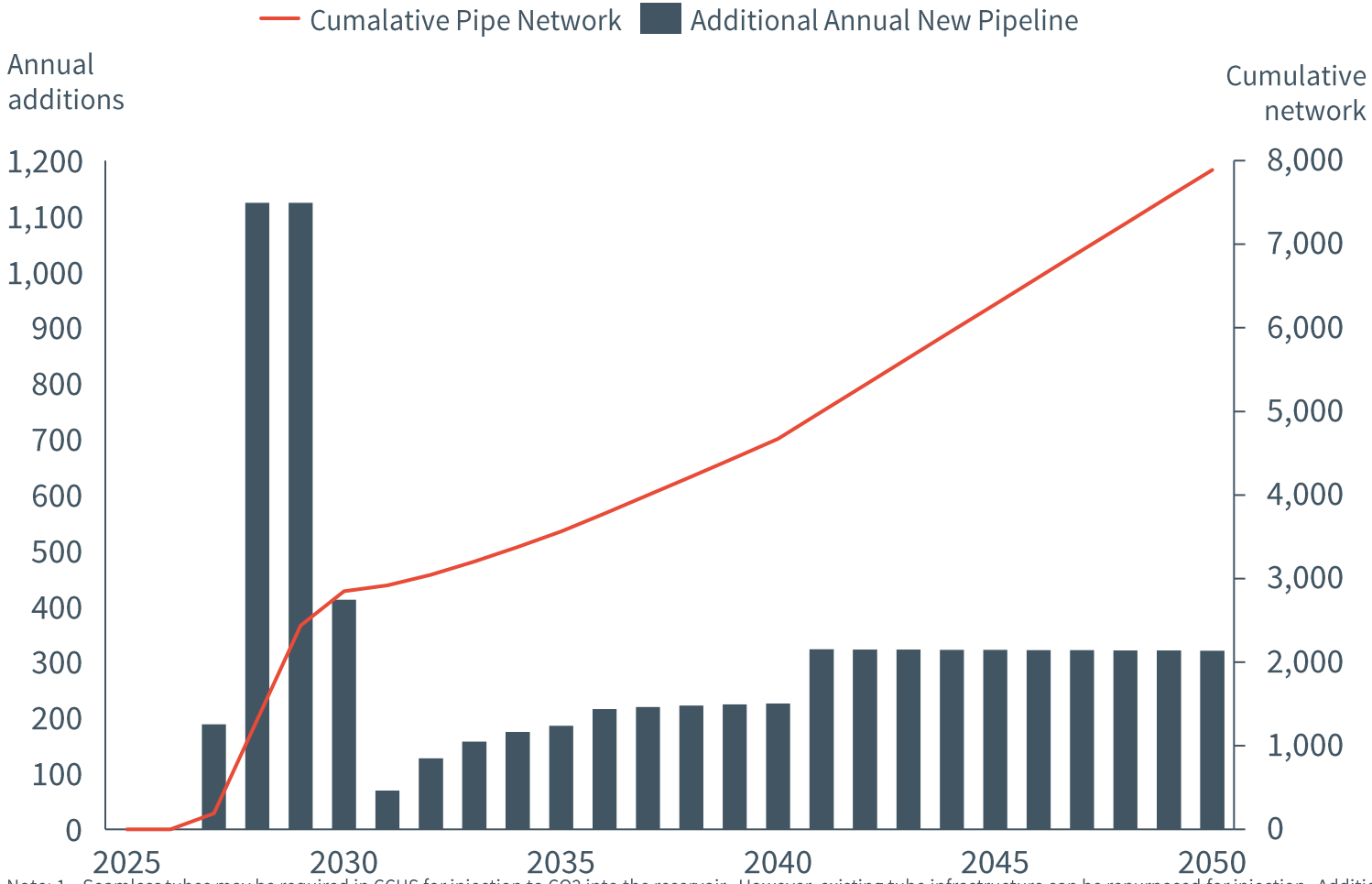
Key Takeaways

+ **Product Demand Influence:** Plates, Sections, Stainless Steel
+ **Historical Trend:** The UK's nuclear capacity declined by 3% as aging plants were decommissioned and no new projects were initiated due to historic sector underinvestment
+ **Long-Term Forecast:** The UK's nuclear capacity is expected to increase by 3x by 2050, driven by government's aspiration to address energy security, affordability, and sustainability and developing both large-scale GW power plants and SMRs
+ There are at least 4 large-scale projects under consideration in the pipeline. Additionally, there is ongoing government planning, including support for small modular reactors (SMRs),which are expected to help the government reach the projected capacity goal

Source: GOV.UK (DUKES), GOV.UK (Climate change and energy), Hatch analysis, NESO, EDF Energy, BBC

Driven by government emission reduction targets, CCUS network pipeline growth is expected to ramp-up in 2028, growing to nearly 8,000 km by 2050

UK Carbon Capture Network Pipeline, 2020 - 2050 (km)



Key Takeaways

+ **Product Demand Influence[1]:** Plate
+ **Long-Term Forecast:** The UK has the potential to be one of Europe's largest carbon storage adopters, positioning it as a key player in CCUS deployment and associated CO_2 transport infrastructure
+ The CCC's 7th Carbon Budget recommends that CCUS should make up ~4% of total abatement (490 mt CO_2) by 2050
+ While there are several CCUS projects in advanced stages globally, few are commercially operational, highlighting the need for rapid scaling
+ The UK is advancing CCUS projects in major industrial regions (e.g., Scotland, Teesside, Yorkshire and Humber, the North-West, and South Wales), with projects expected to be operational by the end of the decade

Note: 1 - Seamless tubes may be required in CCUS for injection to CO2 into the reservoir. However, existing tube infrastructure can be repurposed for injection. Additional demand from seamless tubes is expected to be marginal and has not been accounted for in this analysis.

Source: CCC 7th Carbon Budget, GOV.UK, Hatch analysis, Stakeholder meetings.

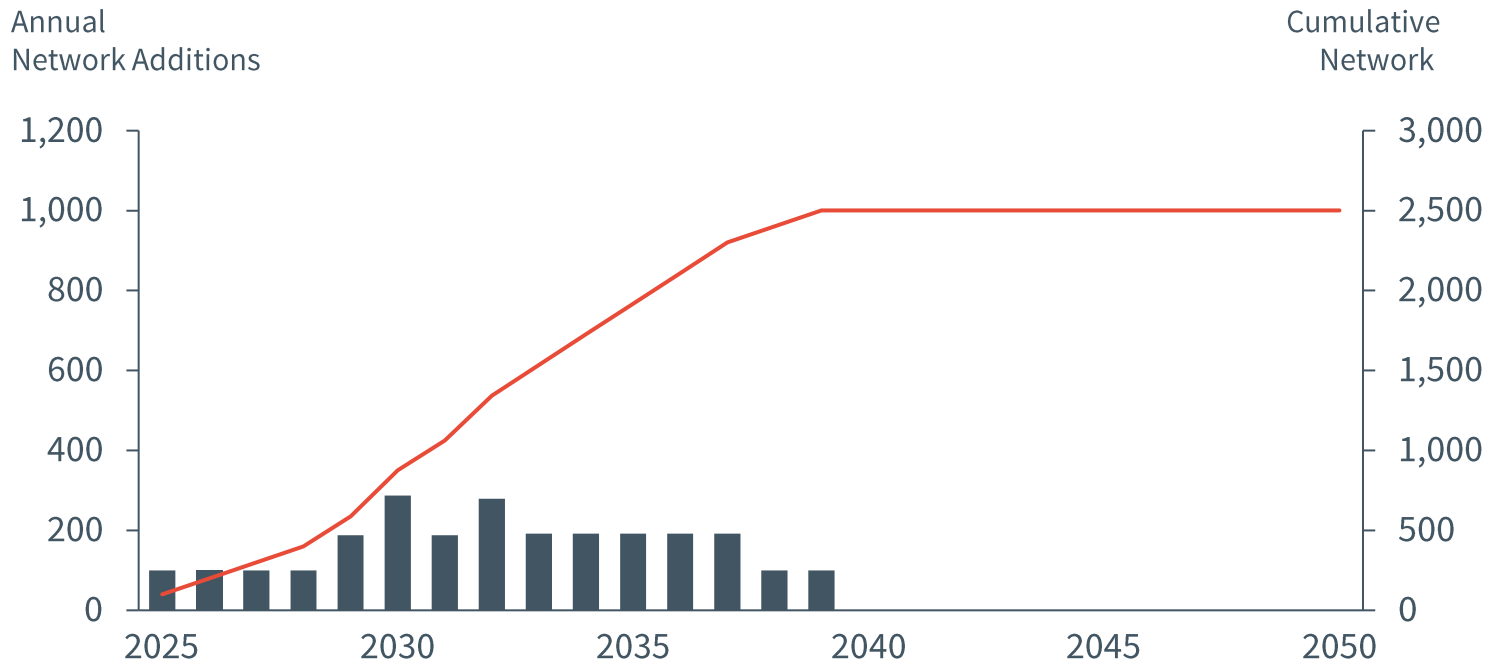
New hydrogen pipelines in the UK are expected to exceed 2,500 km by 2050 for fuel blending with natural gas and decarbonisation of heavy industries

UK New Hydrogen Pipeline, 2020 - 2050 (km)

Key Hydrogen Projects

NOT EXHAUSTIVE

Project	Km	Status
HyNet North West	350	Feasibility
UK Project Union	1500	Concept
H2 Link Teeside-Humberside	100	Concept
UK-Germany North Sea Pipeline	650	Feasibility



Key Takeaways

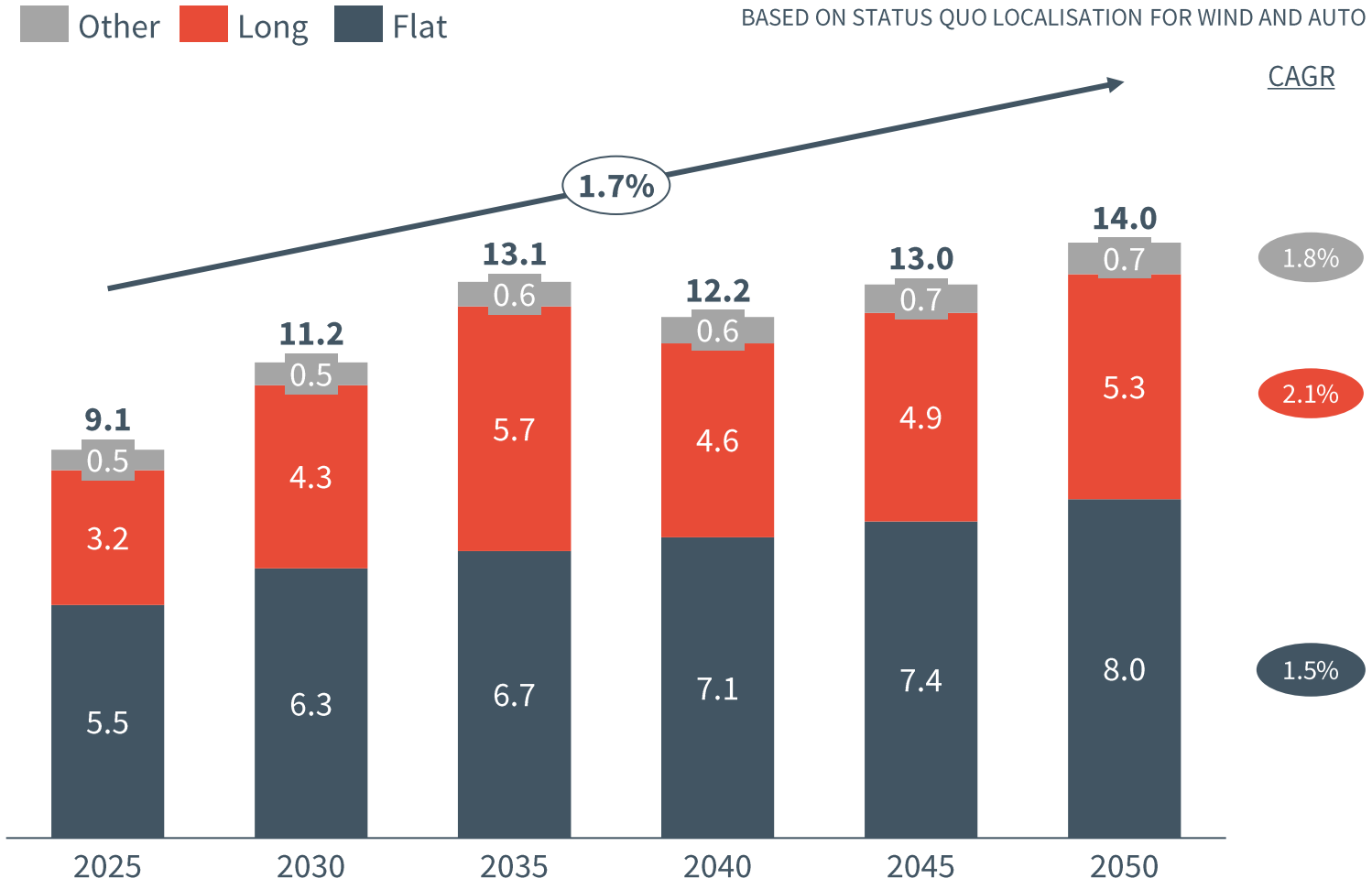
+ **Product Demand Influence:** Plate
+ **Long-Term Forecast:** Hydrogen exports are strategically important for the UK, which can leverage offshore wind to produce hydrogen for European markets
+ The **HyNet North-West Hydrogen Pipeline—** anticipated to be operational by 2030— is the UK's first large-scale hydrogen network which will be used for fuel blending with natural gas
+ **Project Union** will repurpose a portion of the UK's gas network for hydrogen along with +1,000 km of new pipeline to link industrial clusters across Britain and integrate with the European Hydrogen Backbone
+ In line with its energy security objectives, Germany is exploring a ~**400-mile pipeline under the North Sea** to import UK hydrogen

Source: IEA, Project Union, drivinghydrogen.com, National Gas, Hynet hydrogen pipeline, Stakeholder meetings, Hatch analysis

Contents

Total steel demand is expected to grow by over 50% by 2050; this is largely attributed to long product growth, with T&D having the most significant impact

Forecast Total UK Steel Demand, 2025 – 2050 (mtpa)



Note: UK localisation factors have been applied to the demand
Source: Hatch analysis, Stakeholder meetings

Key Takeaways

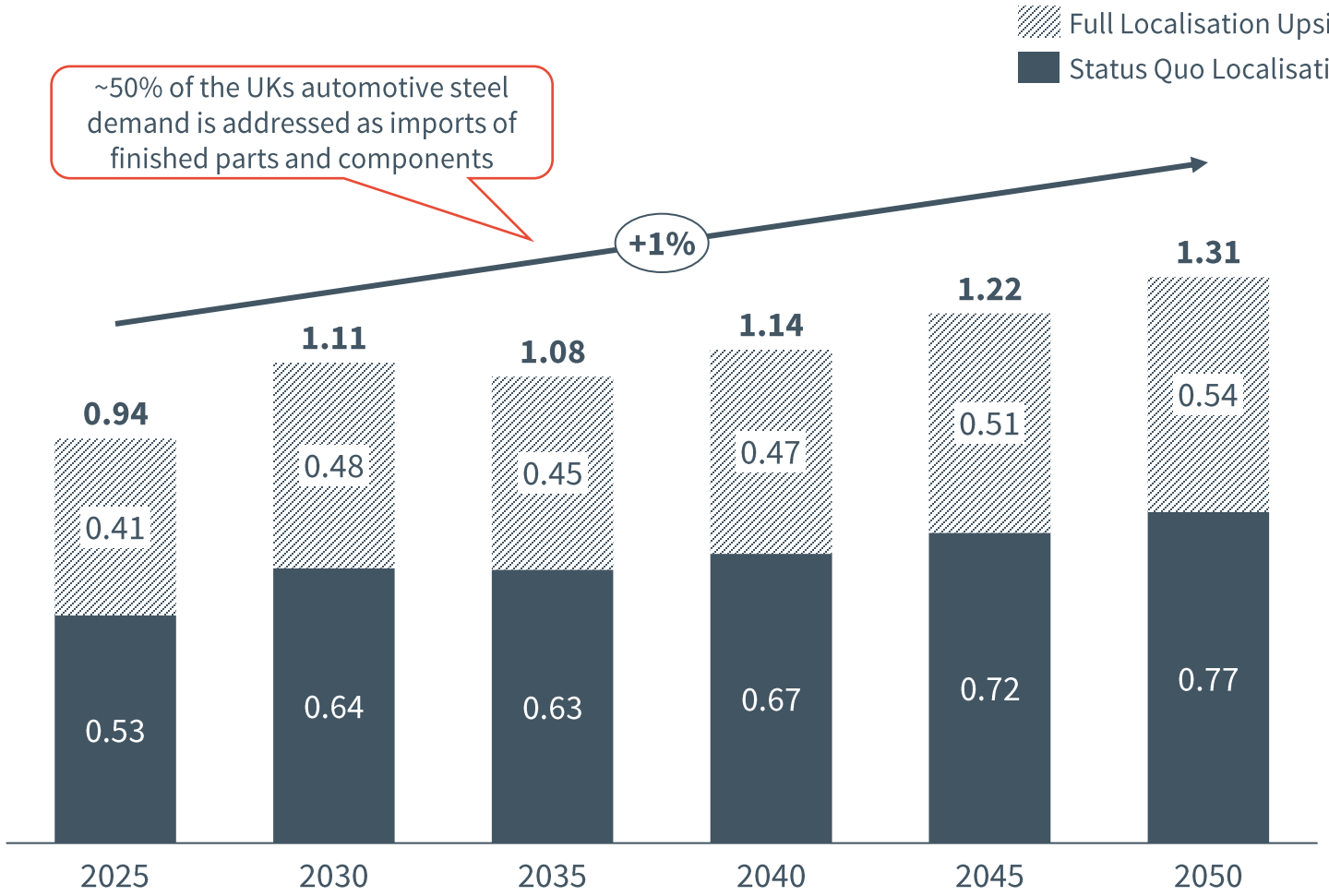
+ **Near-Term Forecast:** In the near-term, long product demand growth is driven by T&D policy aspirations alongside growth in flat products due to plate demand in the wind sector
+ **Long-Term Forecast:** Steel demand is set to steadily increase through 2050 due to investments in the renewable sector and upgrades in the T&D sector. These are driven from government-based projection and policies to achieve net zero and expand the grid to handle electrification of heat and transport

Demand Share Change

Product Category	% Share in 2025	% Share in 2050
Long	34.7%	37.8%
Flat	60.0%	56.9%
Other	5.3%	5.3%

Only ~50% of the steel used by the UK automotive sector can be addressed locally; realising the remaining 50% will require supply chain localisation

Automotive Steel Demand: Localisation vs. No Localisation, 2025–2050 (mtpa)



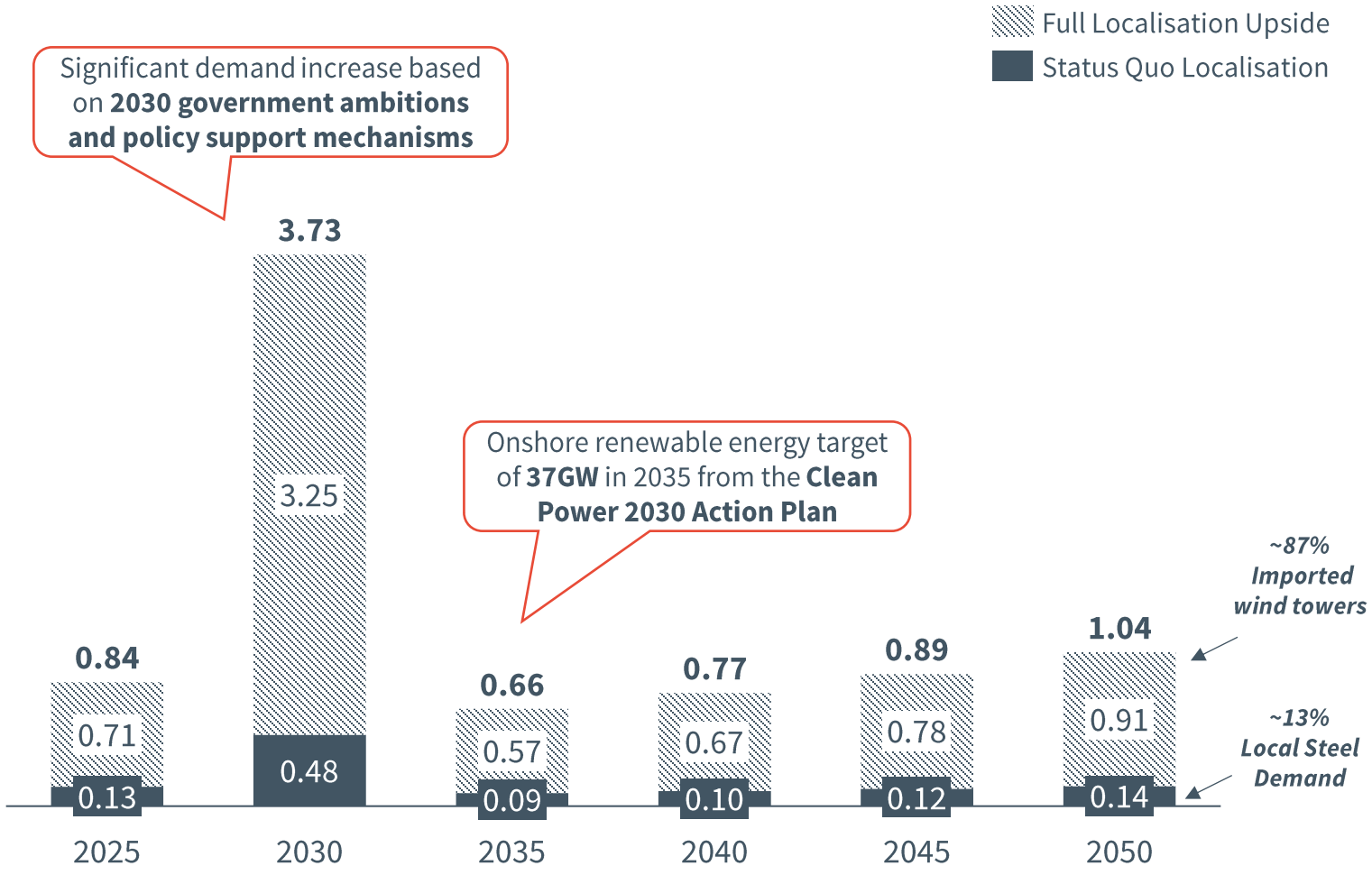
Note: Additional factors such as scrap yields and extra steel requirement for tyres have been accounted for in the full demand for automotive steel
Source: BMI UK Autos Report 2024, Hatch analysis

Key Takeaways

+ Automotive steel demand tracks the production required to fulfil the UKs ZEV mandate and the transition to EV manufacturing
+ Only ~50% of the steel used by the UK automotive sector can be addressed locally; realising the remaining 50% will require supply chain localisation
+ The flat steel intensity in EVs is 25% higher compared to ICEs, which is positive for future automotive steel demand growth
+ There will be higher consumption of advanced high strength or ultra high strengths steel relative to current for lightweighting to reduce energy consumption and increase battery range
+ In recent years, automotive weights have mostly remained steady with only slight increases. Gains from lightweighting have been offset by added weight for vehicle and electronic equipment safety. Forecasts assume no significant impact on steel intensity

Increasing steel demand for wind towers will require the supply chain localisation to be accelerated rapidly, currently only 10% of the supply in the UK is localised

Wind Steel Demand: Localisation vs. No Localisation, 2025–2050 (mtpa)



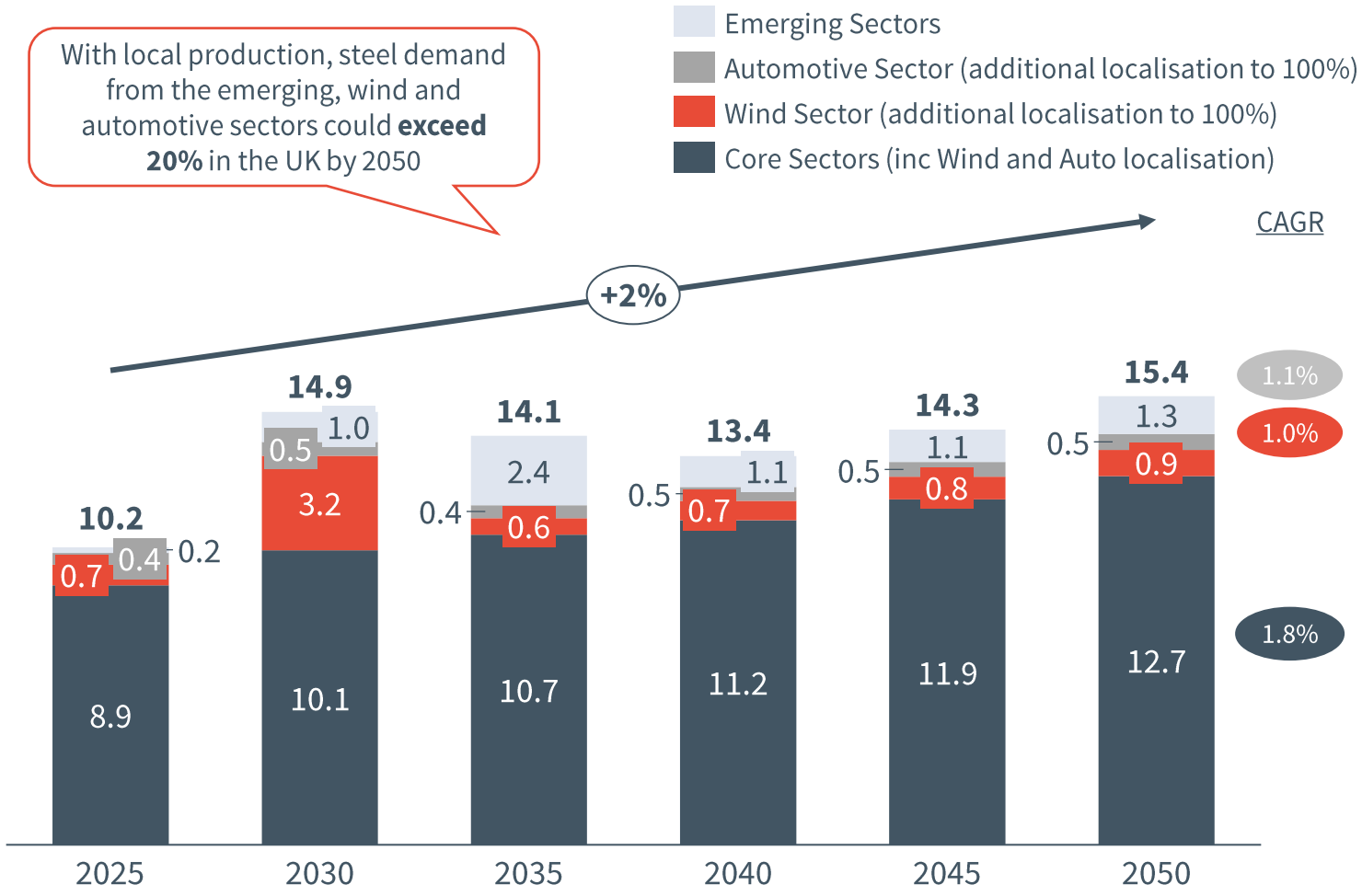
Note: Wind and automotive steel demand are presented in the instance that all steel demand was fulfilled by the UK.
Source: GOV.UK (DUKES), GOV.UK (Climate change and energy), Modelling 2050 – electricity system analysis - GOV.UK, Hatch analysis

Key Takeaways

+ Driven by government renewable energy ambitions in both the near- and long-term, annual heavy plate steel demand for wind turbines is expected to increase; implementation is supported by various policy mechanisms in place (e.g., Contracts for Difference scheme, Clean Power 2030 Action Plan, net zero by 2050)
+ Currently, only 2% steel in offshore wind towers and other components and 30% of steel contained in onshore wind tower and other components is manufactured domestically. Towers and other components used in UK wind projects are mostly imported for from EU-based OEMs (e.g., Siemens Gamesa, Vestas, Haizea Bilbao)
+ SeAH is constructing a XXXL monopile manufacturing facility at Teesport and is expected to be commissioned in 2025. This presents an increase in offshore wind localisation (2% → 10%) which has been factored in the demand forecasts
+ Heavy plate demand in wind sector represents the most compelling market opportunity for the UK Steel industry if localisation of wind turbine manufacturing can be accelerated rapidly

Theoretical upside potential from wind and auto localisation suggesting a peak uplift of up to a third of steel demand in 2030

Forecast Steel Demand (100% Localisation*), 2025 – 2050 (mtpa)



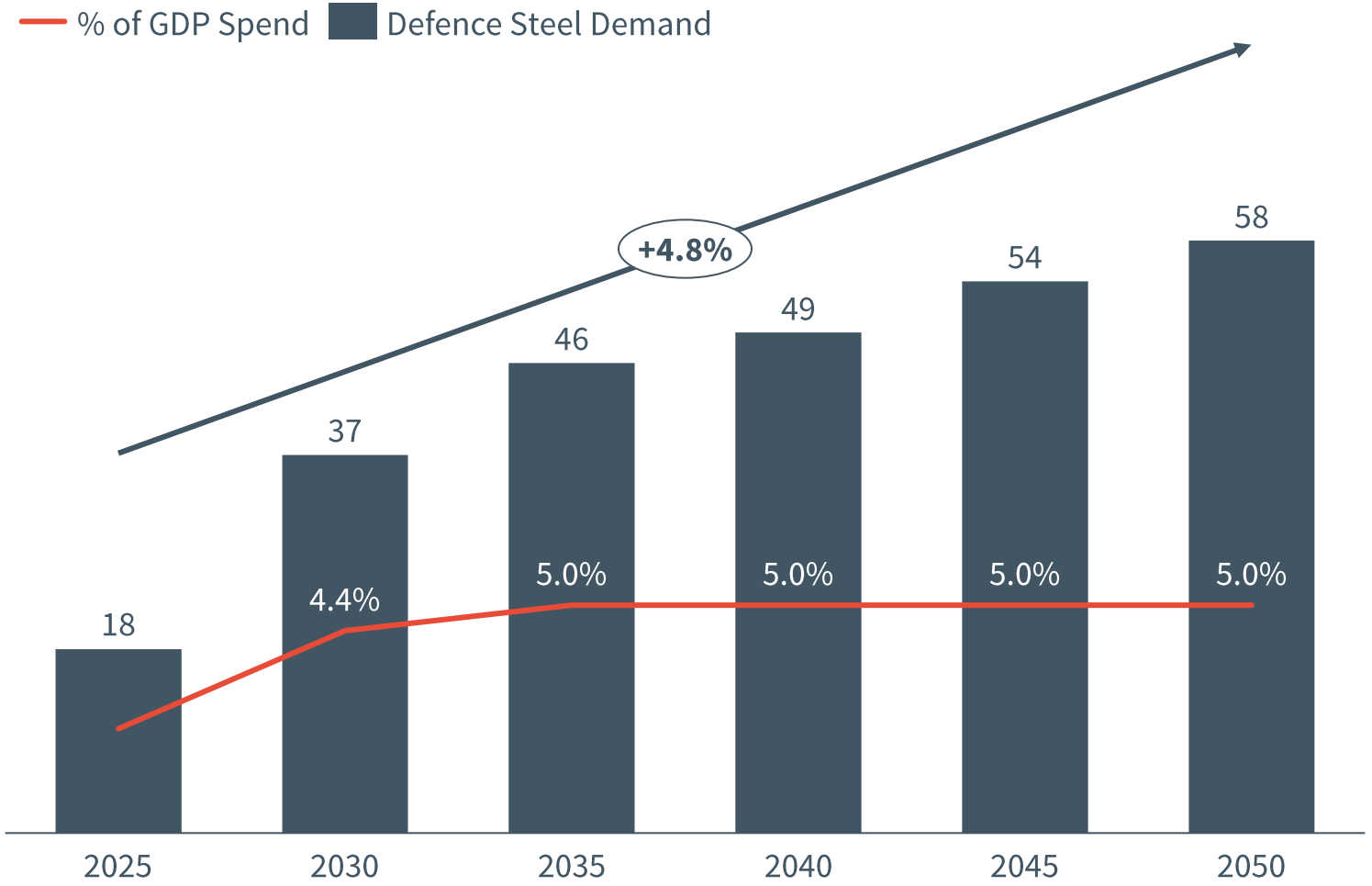
Note: *Wind and automotive steel demand are presented in the instance that all steel demand was fulfilled by the UK.
Source: Hatch analysis

Key Takeaways

+ **Near-Term Forecast:** Demand in the next 5 years has the potential to have a large upside from steel demand with the Contracts for Difference (CfD) scheme and UKs ZEV mandate driven in the wind and automotive sectors
+ **Long-Term Forecast:** Growth in the core sectors—mainly construction—is expected to return, driving a modest level of growth in the long-term
+ The biggest upside for demand is likely to come from Automotive and Wind sector. By 2050, the two sectors have the potential for 10% of uplift to steel demand. This would require a fundamental re-think on the UK supply chain and how they could be reshored and developed competitively in-country

Defence demand is projected to see significant growth by 2050; for the purposes of this review, associated demand is excluded to its highly speculative nature

Forecast Defence Steel Demand, 2025 - 2050 (mtpa)



Key Takeaways

+ **Near-Term Forecast:** UK defence spending is expected to rise in the near term as the UK works towards the 2.75% of GDP commitment
+ **Long-Term Forecast:** Defence spending will mirror the growth in GDP, which is expected to increase at a 2% CAGR

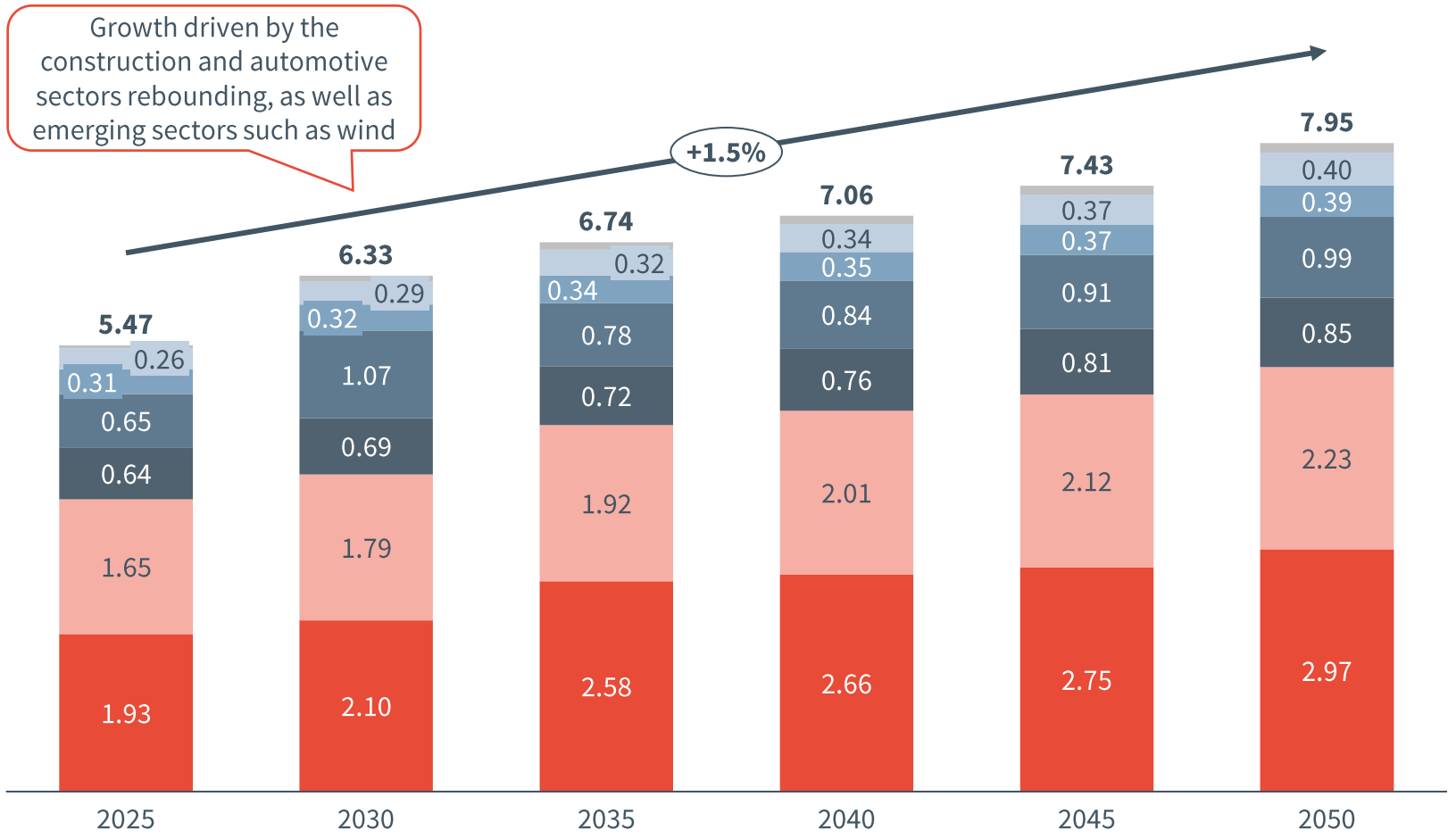
Challenges

+ **Spending Details:** UK defence spending is under review, the spend by individual sectors is not known and sensitive in nature
+ **Sub-product Breakdown:** Breakdown of products is unavailable due the highly sensitive nature of UK defence projects
+ **Supply Chains:** Defence supply chains have varying degrees of localization, many of these remain offshore, the plans to localize them are not clear

Note: Defence demand growth has been estimated using a combination of UK defence spending and forecasted GDP growth. Defence steel demand is not included in total demand due to forecasts likely being inaccurate as detailed in the demand driver slide.
Source: Hatch analysis

UK flat product demand is expected to grow ~1.5% annually through 2050, reflecting growth anticipated in end-use sectors including auto and construction

Forecast Flat Product Demand, 2025 – 2050 (mtpa)



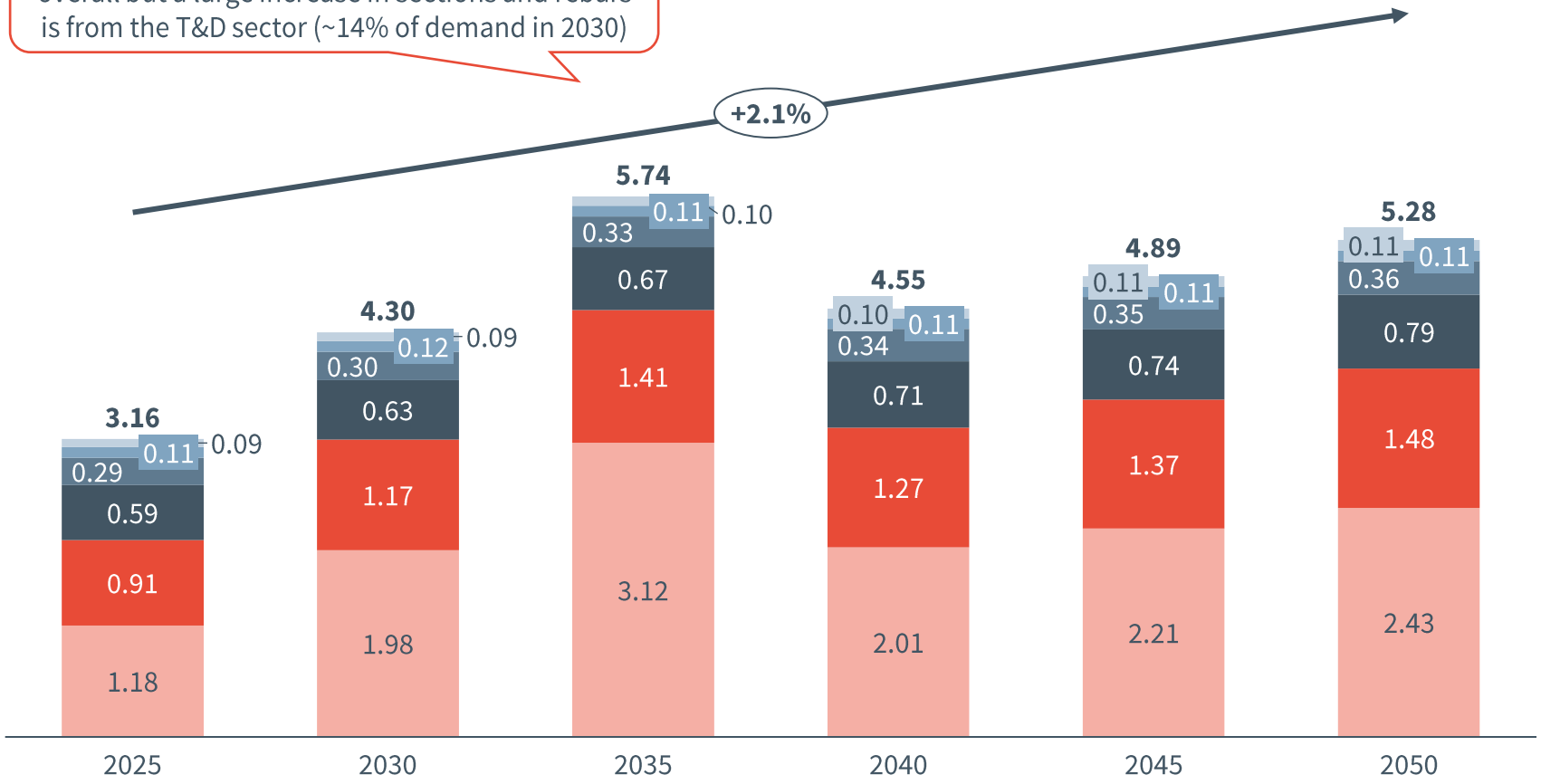
Product	CAGR (2025-2050)
Electrical Steel (GOES, NGOES)	5.7%
Pre-painted galvanised Iron (PPGI)	1.8%
Tinplates	0.9%
Plates	1.7%
Cold Rolled Coil (CRC)	1.3%
Hot Rolled Coil (HRC)	1.2%
Hot Dipped Galvanised (HDG)	1.7%

Note: UK localisation factors have been applied to the demand
Source: Hatch analysis

UK Long product demand is expected to grow ~2% annually through 2050, with a large proportion of that growth attributed to emerging sector – T&D

Forecast Long Product Steel Demand, 2025 – 2050 (mtpa)

Growth is driven by the construction sector overall but a large increase in sections and rebars is from the T&D sector (~14% of demand in 2030)

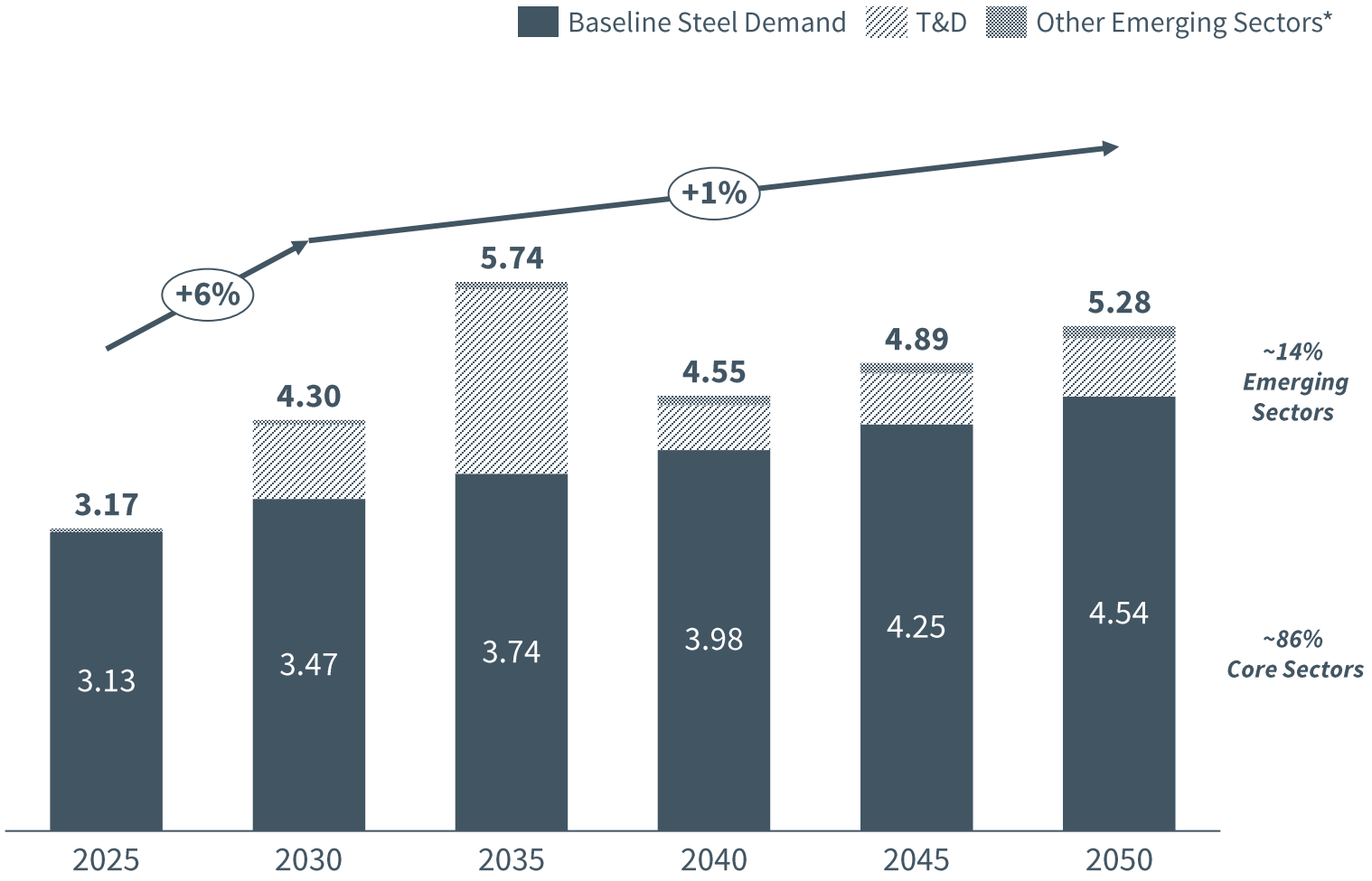


Product	CAGR (2025-2050)
Special Profiles	1.1%
Rails	0%
Engineering Steels	0.8%
Wire Rods	1.2%
Rebars	2.0%
Sections	2.9%

Note: UK localisation factors have been applied to the demand
Source: Hatch analysis

Transmission and distribution expansion—fuelled by the Clean Power 2030 Action Plan—is a key emerging sector driving the increase in demand for sections

Forecast Long Product Steel Demand, 2025 - 2050 (mtpa)



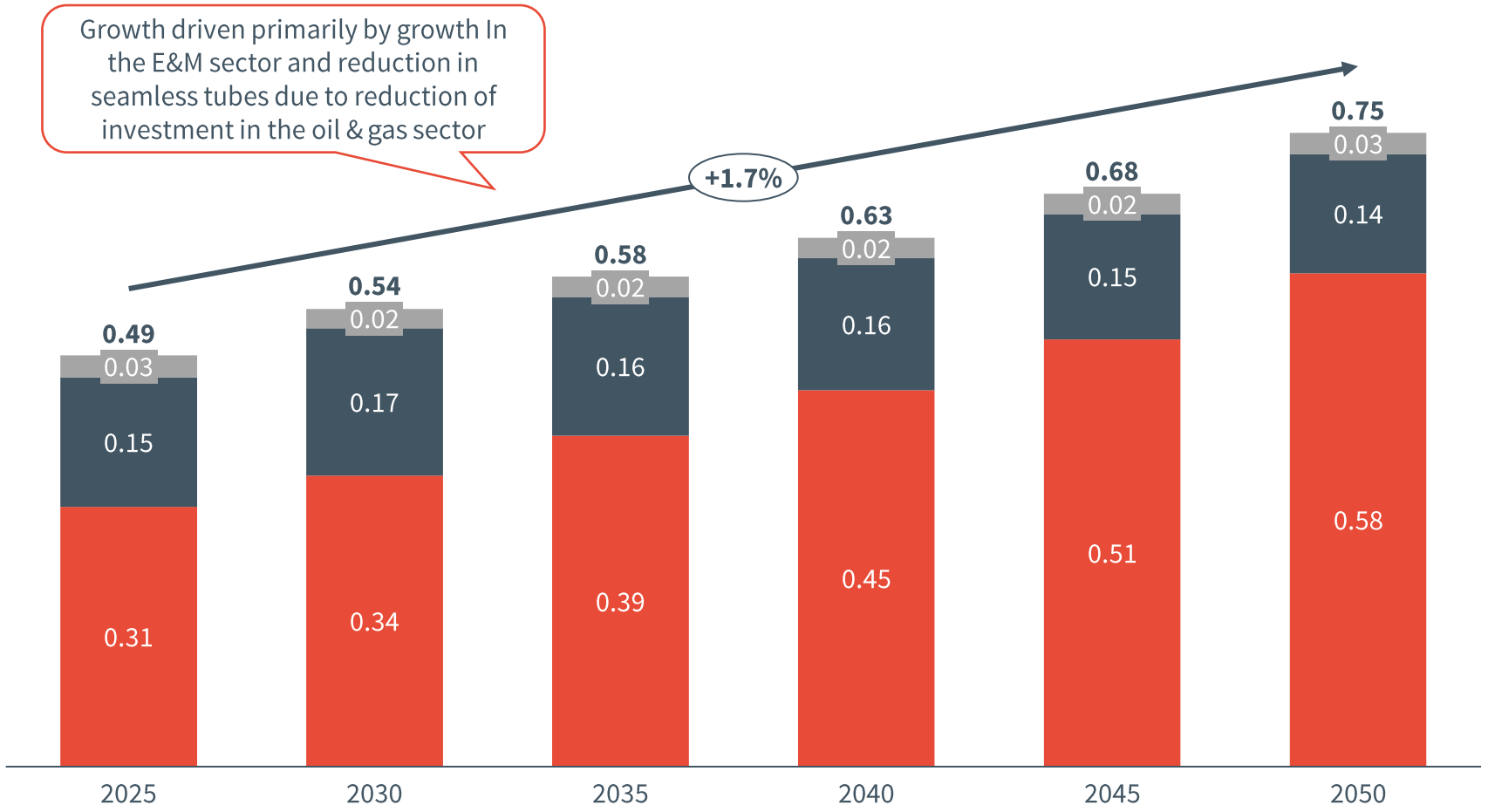
Note: Wind and automotive steel demand are presented in the instance that all steel demand was fulfilled by the UK. * Other emerging sectors include Nuclear and Heat Pumps
Source: Hatch analysis

Key Takeaways

+ **Near-Term Forecast:** In the emerging markets, T&D represents the largest upside for long product demand, bolstered by the ambitious targets (~55 GW expansion by 2030) set forth in the Clean Power 2030 Action Plan
+ **Long-Term Forecast:** By 2050, key emerging sectors have the potential to account for nearly 20% of total long product demand compared to in 2025 where the emerging sectors represent ~7% of demand

Other steel product demand is expected to grow ~1.7% p.a through 2050, reflecting growth anticipated in E&M, partially offset by Oil & Gas capex reduction

Forecast Other Steel Products Demand, 2025 – 2050 (mtpa)



Product	CAGR (2025-2050)
Forged Products	0.0%
Seamless Tubes	-0.3%
Stainless Steel	2.5%

Note: UK localisation factors have been applied to the demand
Source: Hatch analysis

Contents

While there is currently no universal definition for green steel, it generally includes the DRI-EAF or scrap-EAF routes

Defining Green Steel

+ Still in the developmental stage, green steel definition criteria lacks industry-wide consensus. Definition development is mostly driven on the regional level by steel producers, consumers, or financiers; in effect, each varies in complexity and scope
+ While common frameworks (e.g., ResponsibleSteel, the International Energy Agency, the Science Based Target Initiative) have been identified such as a proportional sliding scale of emissions based on scrap utilization, the lack of industry consensus limits the feasibility of identifying common criteria
+ Across all definitions assessed, green steel is generally categorised as steel processed through the DRI-EAF or scrap-EAF routes, resulting in a reduced carbon intensity compared to the BF-BOF route

Steel Label	Carbon Intensity (t CO2/t crude steel)	Process Route	Reductant
Non-Green	1.6 – 2.2	BF-BOF	Coking coal
Green		DRI-EAF Scrap-EAF	H_2 + natural gas N/A

Implications

+ Agreement on green steel standards will take time and collaboration among industry stakeholders. As green steel definitions mature and consensus emerges, revisions every few years can be expected as decarbonisation technologies evolve and new technical limits for emissions reduction become feasible
+ The risk of green steel standards becoming more stringent is unlikely to occur over the medium-term
+ Through this transition period, steel producers should closely work with customers to understand their product needs and expectations in line with their emissions reduction objectives

Source: Hatch analysis

Green steel adoption builds on the base case of total steel demand; consistent with the UK's net zero target, full green steel adoption is assumed by 2050

Green Steel Methodology Overview

+ **Consistent with the UK's net zero target,** full green steel adoption by 2050 is assumed
+ A two-level approach was used to model the ramp-up to 2050: (1) sector-specific targets were considered as a primary driver; (2) the UK's 'balanced pathway' case demonstrated in the UK Climate Change Committee Recommendation for the Seventh Carbon Budget[1] was leveraged as a benchmark for sectors that do not have specific targets

1 Sector-Specific Targets (Primary Driver)

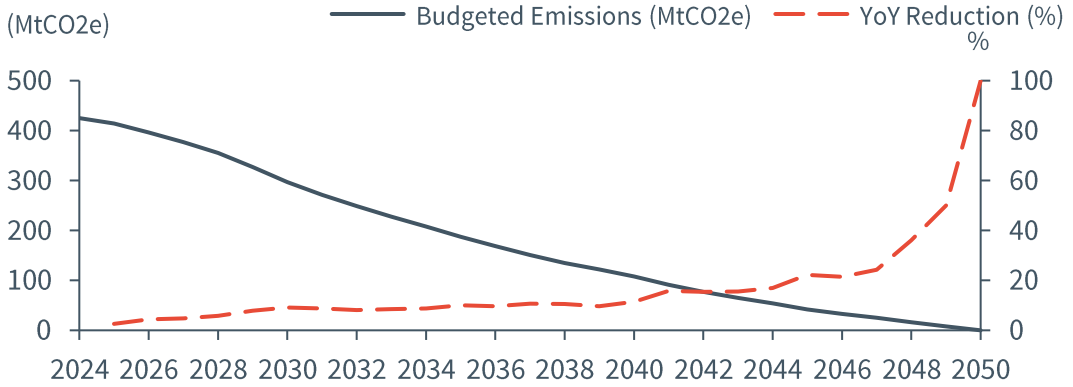
+ Green steel adoption is based on sector-specific net zero commitments and decarbonisation targets
+ Sectors with established decarbonisation mandates suggest an earlier and steeper ramp-up

	Sector	Driver	Green Steel Adoption Rate (%) 2030	2040	2050
1	**Construction**	Non-residential balanced pathway	29%	87%	97%
2	**Automotive**	Auto OEM-weighted average scope 3 targets	43%	81%	100%
3	**Wind**	Wind Turbine OEM-weighted average scope 3 targets*	34%	60%	100%
	Others	Balanced Pathway	9%	12%	100%

2 Balanced Decarbonisation Pathway (Benchmark)

+ For sectors without established pathways or key stakeholder targets, green steel adoption is consistent with the 'balanced pathway' for meeting net zero by 2050, with the trajectory following the annual decarbonisation rate

Balanced Decarbonisation Pathway, UK 7TH Carbon Budget (MtCO2e) vs. YoY Change (%)

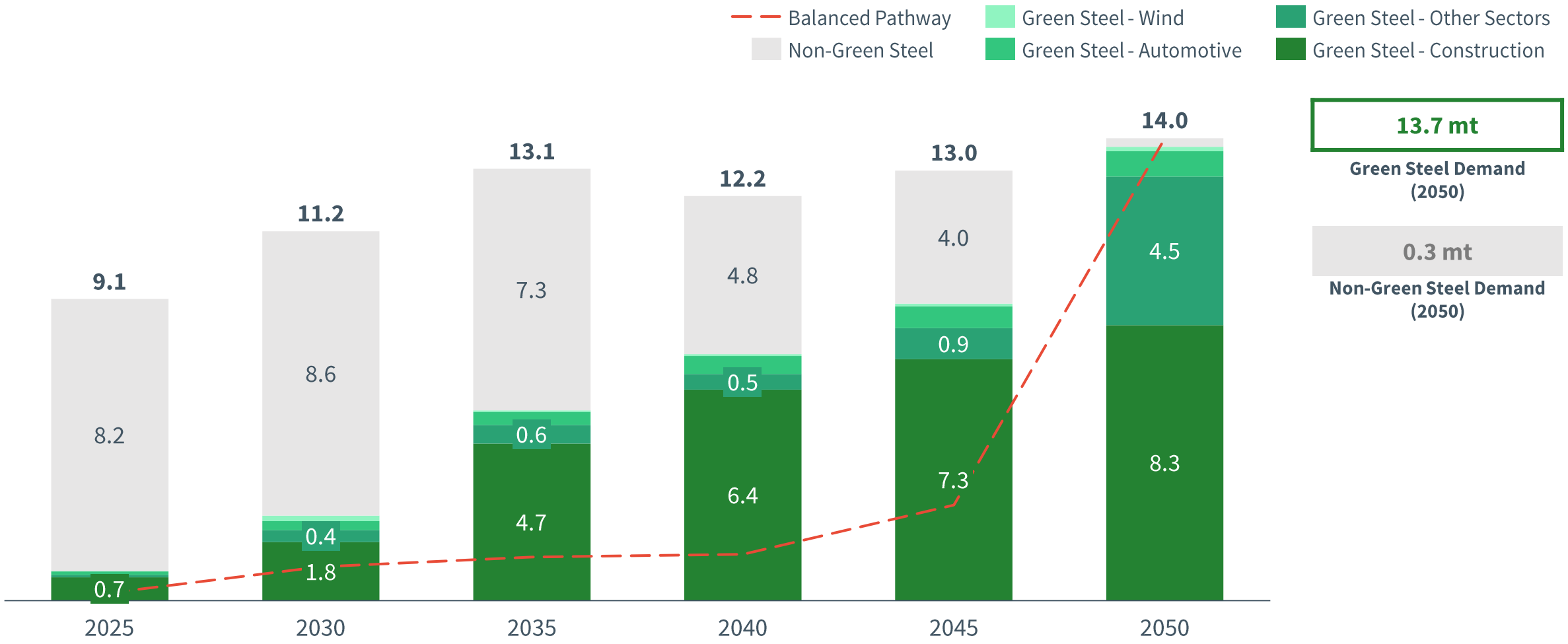


Note: 1. At the time of the completion of the analysis, the "Carbon budget and growth delivery plan" had not been released by the HMG - therefore, the data from the UK Climate Change committee was leveraged as a benchmark. Wind capacity assumes 100% localised capacity 2030 onwards, green steel adoption extrapolates from Siemens Gamesa and Vestas relative market share of wind turbine manufacturing in the EU

Source: UK Climate Change Committee Recommendation on 7th Carbon Budget, Hatch analysis

The targets set by UK's automotive and construction sectors suggest more aggressive green steel adoption compared to the baseline 'balanced pathway'

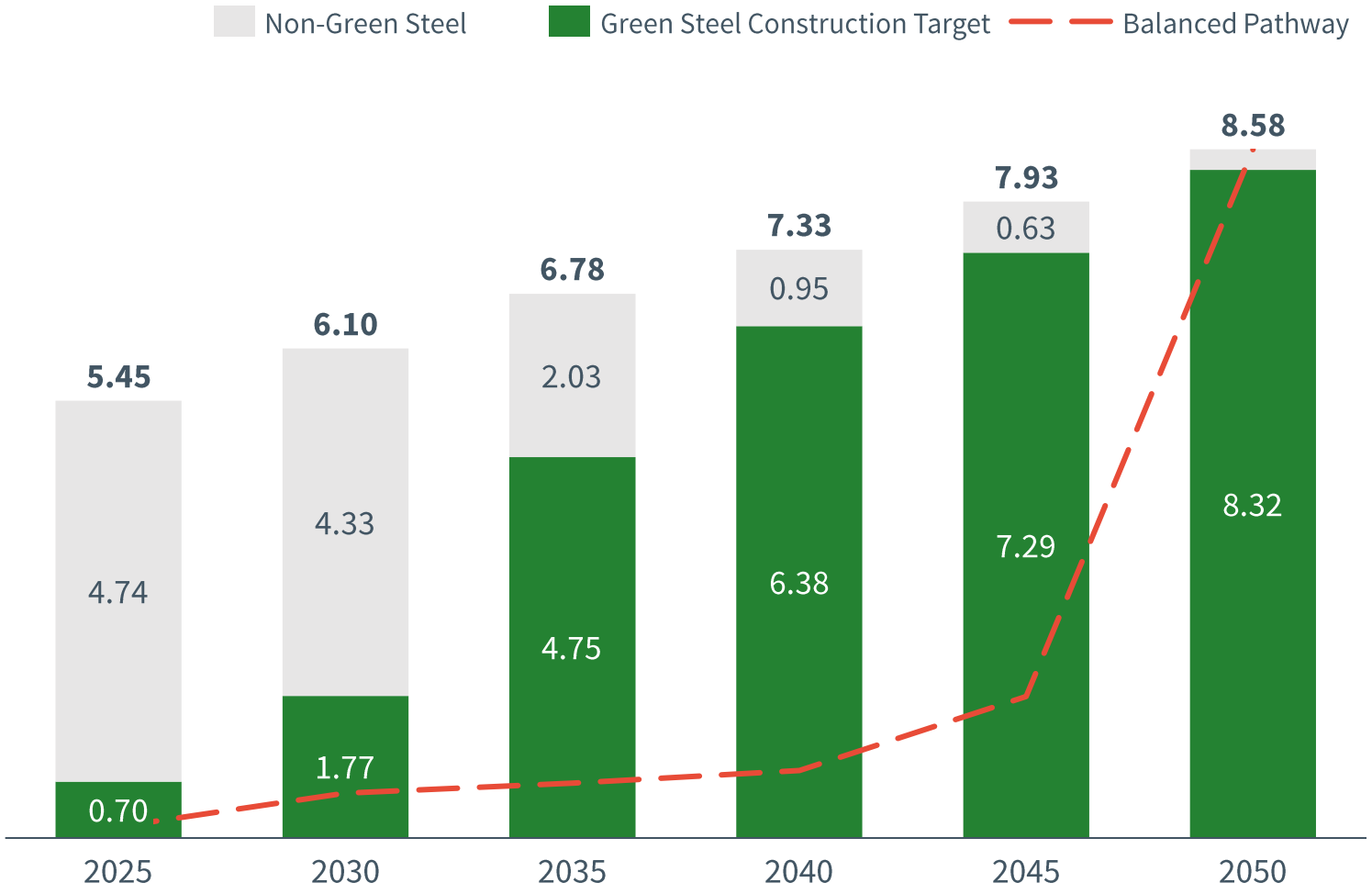
Forecast UK Total Green Steel Demand, 2025 – 2050 (mtpa)



Note: Wind turbines for the UK assumes green steel adoption extrapolated from Siemens Gamesa and Vestas relative market share of wind turbine manufacturing in the EU.
Source: Hatch analysis

1 The construction decarbonisation pathway is in line with the broader 'balanced pathway' though suggests a more significant uptake in the near-term

Forecast UK Construction Green Steel Demand, 2025 – 2050 (mtpa)



Key Takeaways

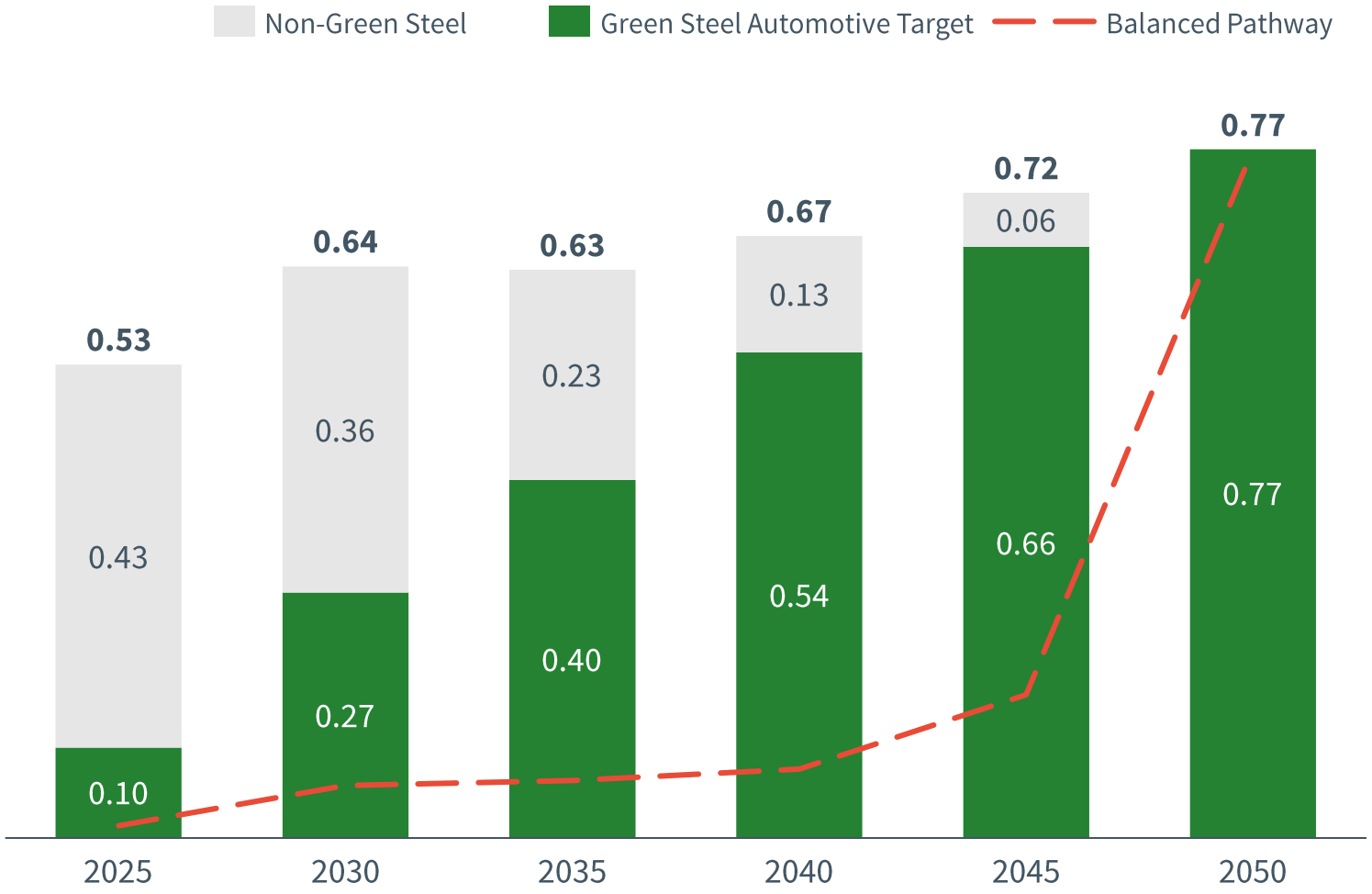
+ Construction green-steel targets are based on the non-residential emissions-reduction levels advised by the CCC's 7th Carbon Budget
+ Compared to the 'balanced pathway,' the non-residential pathway has a higher adoption rate over the next 10 years but only achieves 97% green steel adoption by 2050

Pathway	Green Steel Adoption Rate (%)		
	2030	2040	2050
Sector-Specific Pathway	29%	87%	97%
Balanced Pathway	9%	12%	100%

Source: Company websites (Balfour Beatty, Kier Group, Morgan Sindall, AMEY, Barratt Development, Taylor Wimpey Plc), UK Climate Change Committee Recommendation on 7th Carbon Budget, Climate Group – SteelZero, Hatch analysis

2 Major UK auto producers have aggressive green steel adoption targets, many aiming to substitute 50% of their grey steel consumption by 2030

Forecast UK Auto Manufacturing Green Steel Adoption, 2025 – 2050 (mtpa)



Note: This includes status-quo localisaiton
Source: Company websites, Hatch analysis

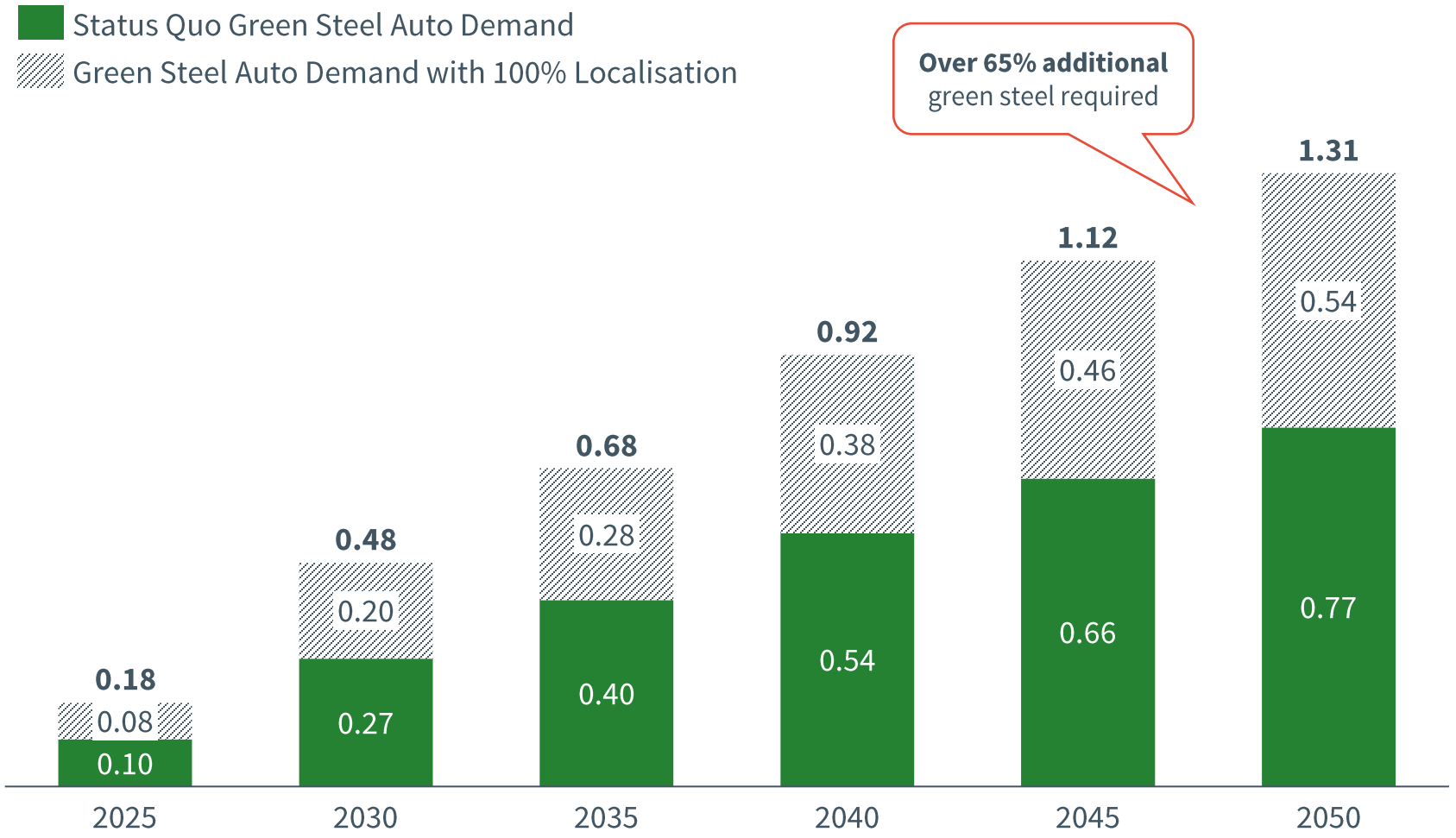
Key Takeaways

- UK auto producers Stellantis, Nissan, BMW, and JLR have set ambitious interim scope 3 emission targets
  - Stellantis: 50% by 2030, 100% by 2038
  - BMW: 50% by 2030
  - JLR: 100% by 2039
  - Nissan: 33% by 2030
- Meeting auto producer emission targets indicates a faster adoption rate of green steel in the near-term future compared to the 'balanced pathway' estimates

Pathway	Green Steel Adoption Rate (%)		
	2030	2040	2050
Sector-Specific Pathway	43%	81%	100%
Balanced Pathway	9%	12%	100%

Though 100% localisation is aspirational, increasing the share of domestic steel consumption presents the potential for a 65% uplift in green steel by 2050

Forecast UK Localised vs Status Quo Auto Green Steel Demand, 2025 – 2050 (mtpa)



Key Takeaways

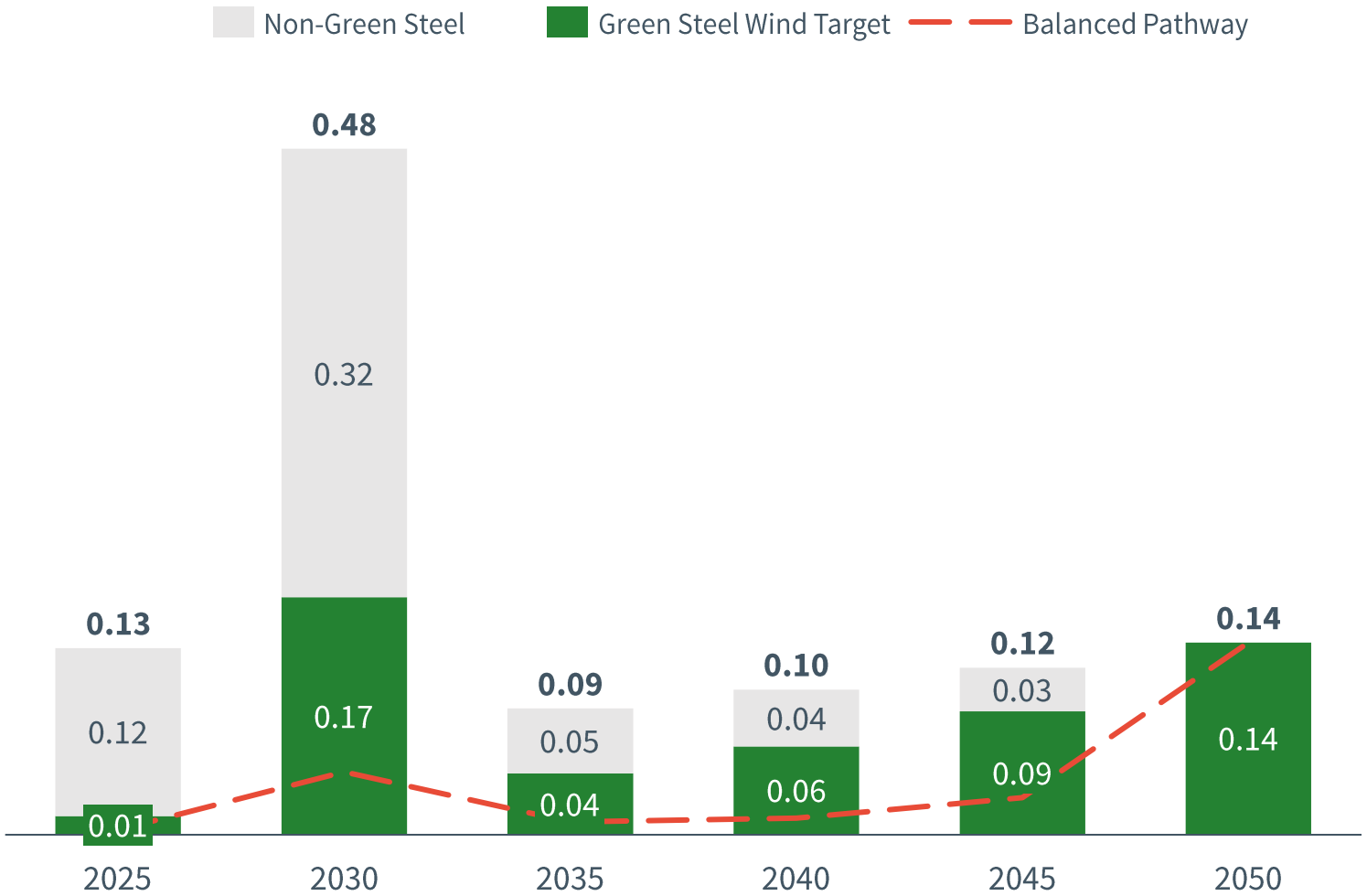
+ In a 100% localisation scenario, the annual green steel requirements for the automotive sector has the potential increase up to 65% by 2050
+ In addition to localisation, green steel demand is predicated on automotive OEMs executing stated scope 3 decarbonisation targets, of which green steel procurement will play a central role

Case	Green Steel Demand (2050)
Status Quo	0.77 mt
100% Localisation	**1.31 mt**

Source: Company websites, Hatch analysis

3 If the UK localises wind turbine manufacturing supply chain, it could see up to ~37% green steel penetration by 2030

Forecast UK Wind Green Steel Demand, 2030 – 2050 (mtpa)



Key Takeaways

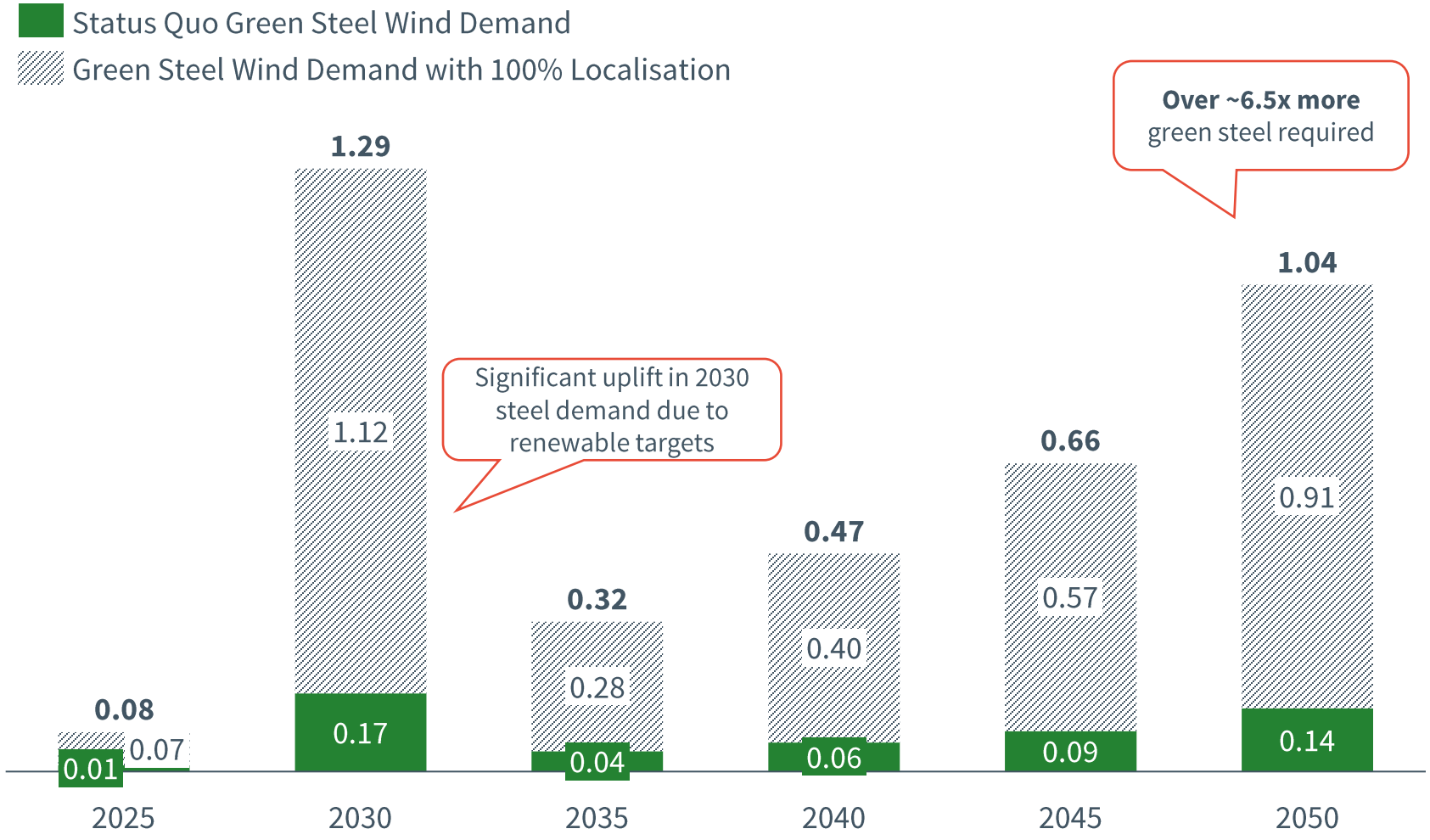
+ Steel production drives roughly 50% of scope 3 emissions for wind turbine OEMs
+ Vestas and Siemens Gamesa are major Europe-based wind tower manufacturers and the most likely candidates for localised wind turbine manufacturing
+ Vestas aims to cut scope 3 emissions by 45% by 2030 but has no commitments beyond this and Siemens Gamesa targets a 28% reduction in scope 3 emissions by 2030

Pathway	Green Steel Adoption Rate (%)		
	2030	2040	2050
Sector-Specific Pathway	37%	62%	100%
Balanced Pathway	9%	12%	100%

Note: Wind capacity assumes status quo localisation, green steel adoption extrapolates from Siemens Gamesa and Vestas relative market share of wind turbine manufacturing in the EU
Source: Company websites, Hatch analysis

Increasing the share of localised demand for green heavy plate products—which currently sits at 13%—could result in a 6.5x upside by 2050

Forecast UK Localised vs Status Quo Wind Green Steel Demand, 2025 – 2050 (mtpa)



Source: Company websites, Hatch analysis

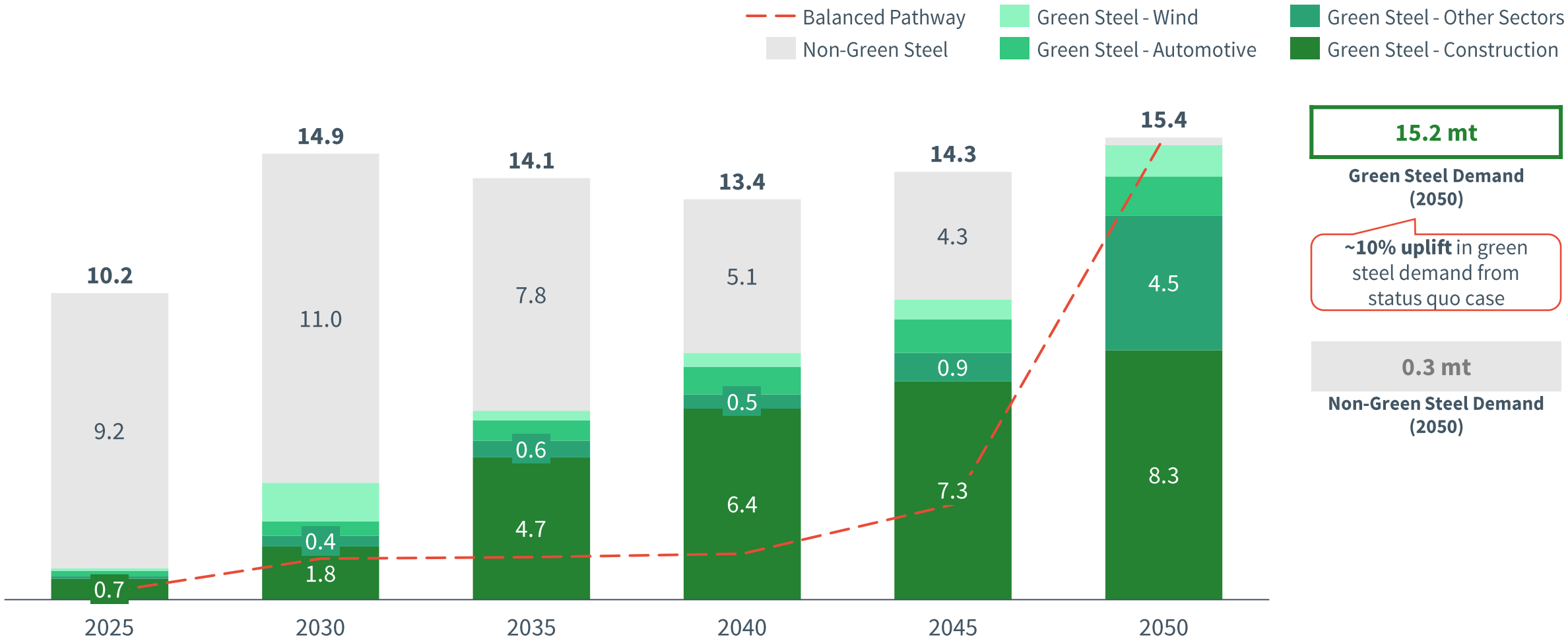
Key Takeaways

+ The highest localised market opportunity for heavy plate green steel is in 2030, driven by the UK government ambitions accelerating wind energy capacity expansion and potential OEM decarbonisation targets
+ Despite significant growth potential, status quo localisation of demand at 13% diminishes addressable demand for green steel
+ This opportunity incentivises a faster transition to green steel production, with a potential 6.5x increase in green steel demand by 2050

Case	Green Steel Demand (2050)
Status Quo	0.14 mt
100% Localisation	**1.04 mt**

Localising supply chains for the wind and automotive sectors is projected to result in a ~10% uplift in green steel penetration by 2050

Forecast UK Green Steel Demand – 100% Localisation, 2025 – 2050 (mtpa)



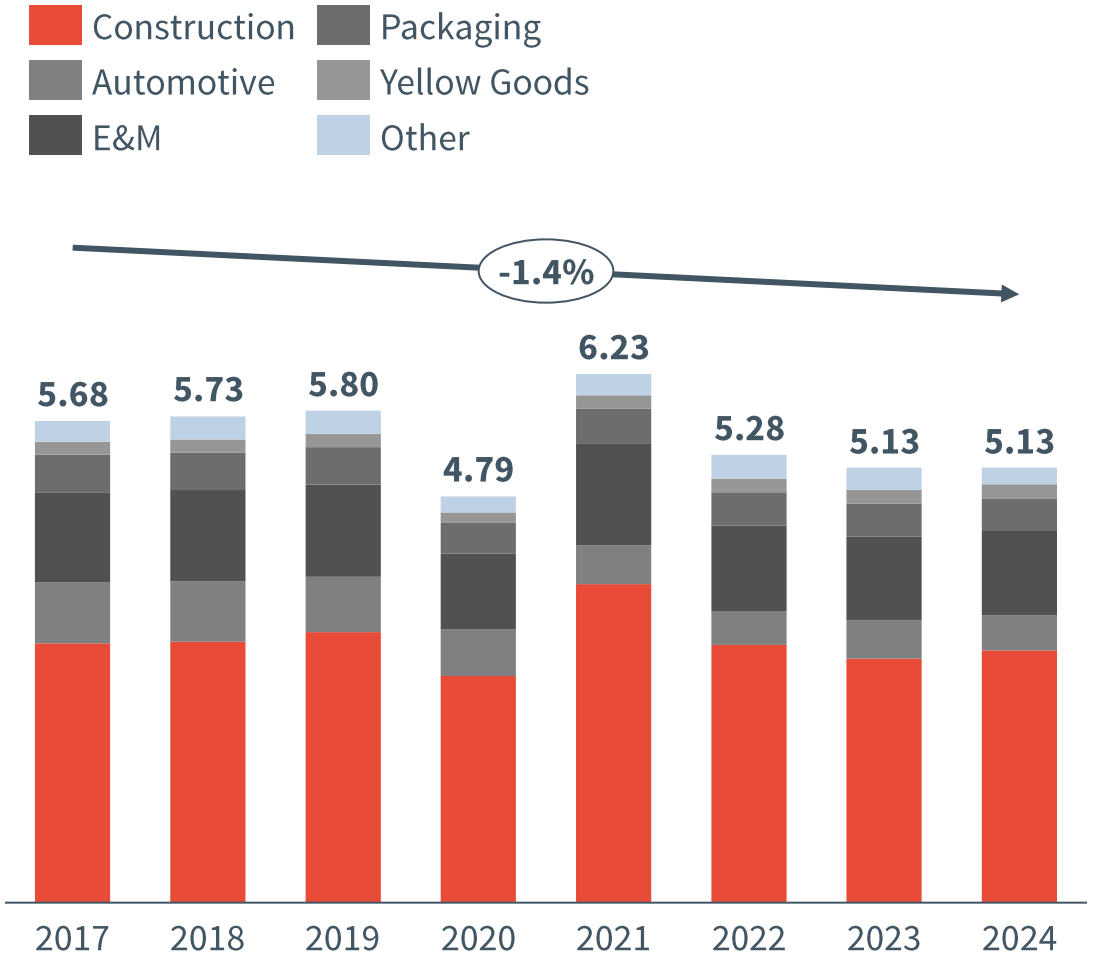
Note: This includes 100% localisation for Wind and Automotive. Wind turbines for the UK assumes green steel adoption extrapolated from Siemens Gamesa and Vestas relative market share of wind turbine manufacturing in the EU
Source: Hatch analysis

Contents

Appendix 1 – UK Historical Steel Demand Drivers

Flat product demand has declined in recent years, driven by contractions in key consumer sectors, particularly during the pandemic years

Historical UK Flat Product Demand, 2017-2024 (mtpa)



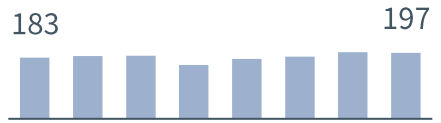
Note: Mining only influences special profiles which makes up a small proportion of the long steel demand
Source: Multiple sources detailed on the individual demand drivers

Key Growth Drivers

Construction

CAGR (2017-2024): 1%
- Demand for new hospital construction
- Demand for clean energy infrastructure (renewables, data centres)

Construction spend (£ bn)



Automotive

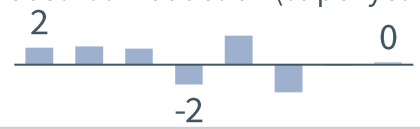
CAGR (2017-2024): -8%
- Post-BREXIT reduced exports
- COVID-19 supply disruptions
- Underdeveloped EV supply

Vehicles Produced ('000 units)

E&M

CAGR (2017-2024): -25%
- Post-Brexit uncertainty and new trade dynamics
- Covid-19 pandemic

Industrial Production (% per year)



Packaging

CAGR (2018-2024): -16%
- Packaging is expected to stay consistent and in line with population growth

GDP per capita Growth Rate (%)

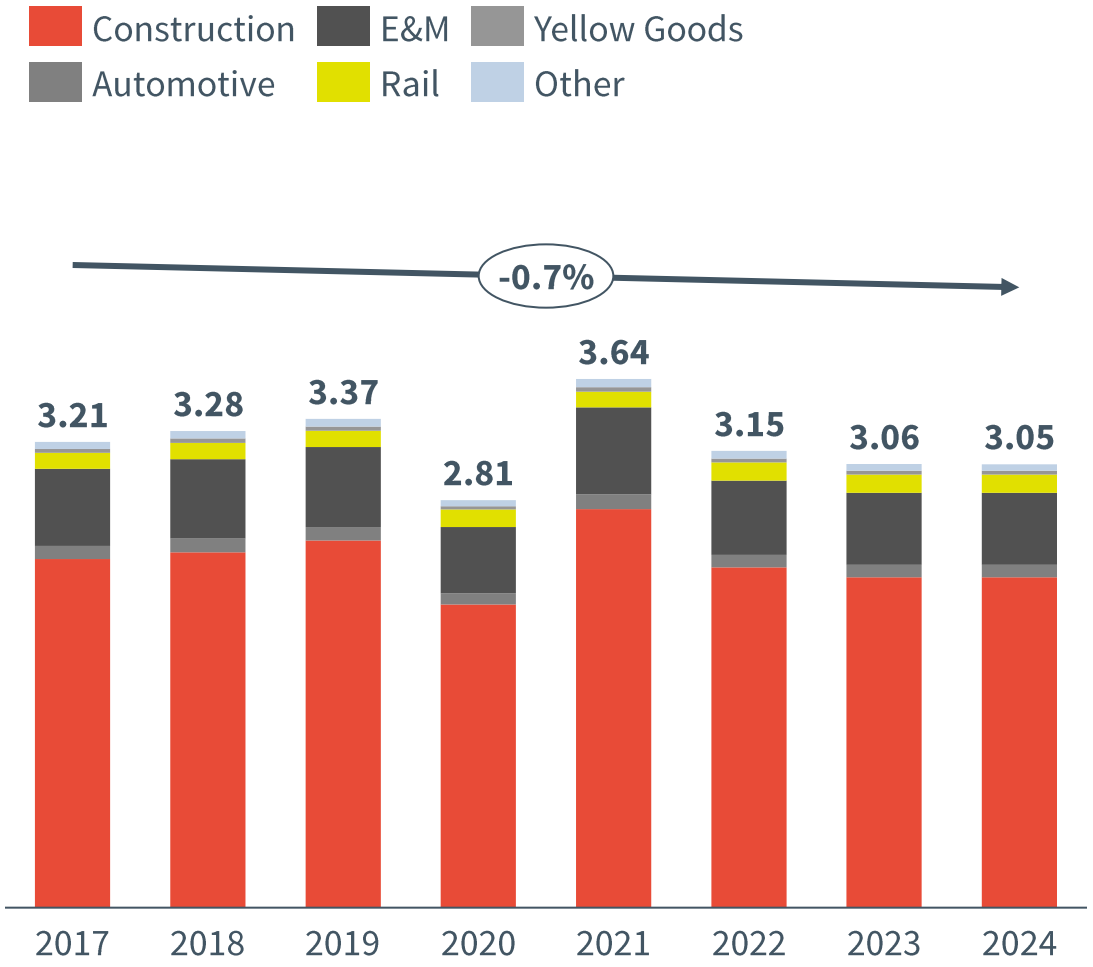
Yellow Goods

CAGR (2017-2023): 5%
- Energy transition prompted increased demand for critical mineral mining

Mining CAPEX (£ bn)

Long product demand averaged 3.2mtpa between 2017 – 2024; main drivers like construction were relatively flat and automotive production contracted by a third

Historical UK Long Product Demand, 2017-2024 (mtpa)



Note: Mining only influences special profiles which makes up a small proportion of the long steel demand
Source: Multiple sources detailed on the individual demand drivers

Key Growth Drivers

Construction

CAGR (2017-2024): 1%
- Demand for new hospital construction
- Demand for clean energy infrastructure (renewables, data centres)

Construction spend (GBP billion)

Automotive

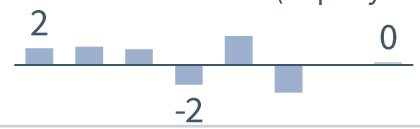
CAGR (2017-2024): -8%
- Post-Brexit reduced exports
- COVID-19 supply disruptions
- Underdeveloped EV supply

Vehicles Produced ('000 units)

E&M

CAGR (2017-2024): -25%
- Post-Brexit uncertainty and new trade dynamics
- Covid-19 pandemic

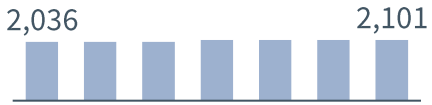
Industrial Production (% per year)



Rail

CAGR (2018-2024): 0%
- Investment often prioritised upgrading existing lines over building new ones

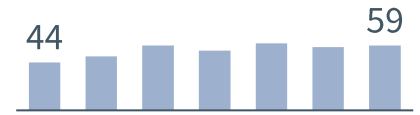
Rail Track Requiring New Steel (km)



Yellow Goods

CAGR (2017-2023): 5%
- Energy transition prompted increased demand for critical mineral mining

Mining CAPEX (GBP billion)

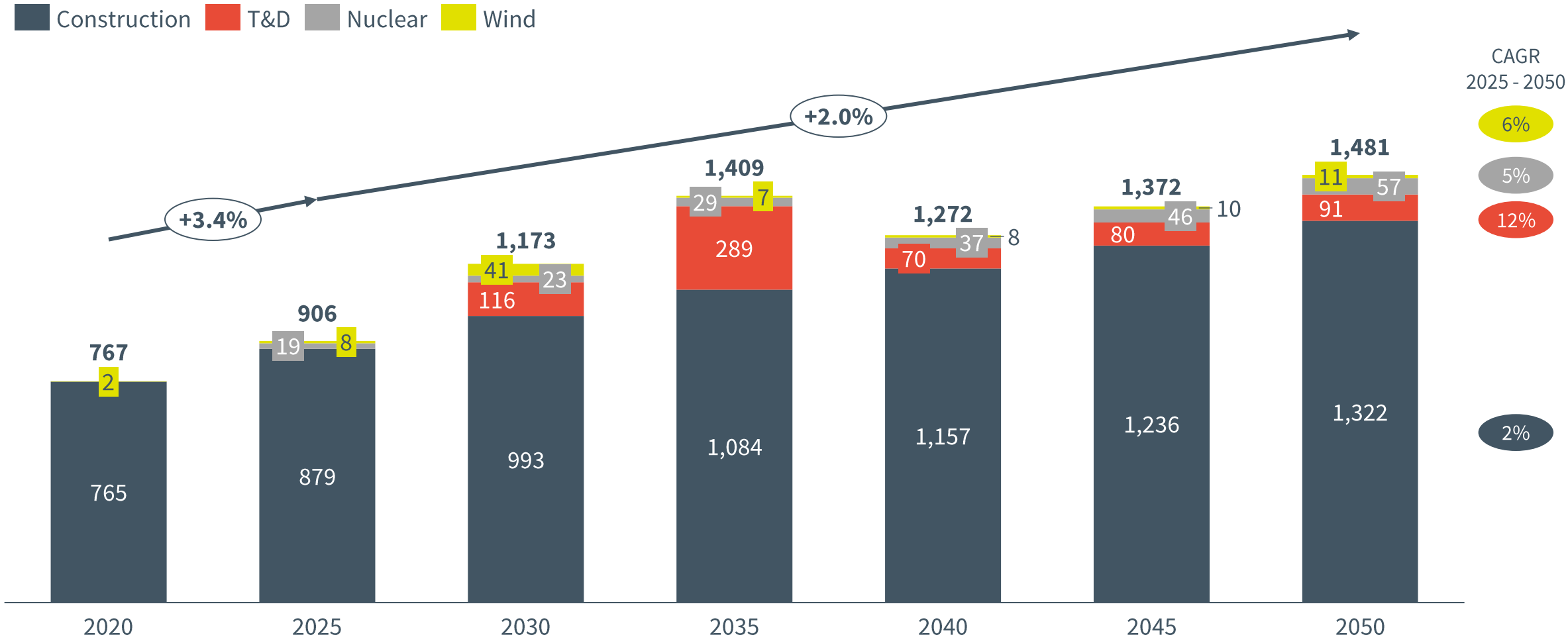


Appendix 2 – UK Steel Demand Forecasts by Product

Rebar demand is expected to grow at a 2% rate, reaching an annual demand of 1.5 mtpa; T&D is an emerging sector accounting for 20% of 2030 demand

UK Rebar Demand, 2020 – 2050 (ktpa)

Long

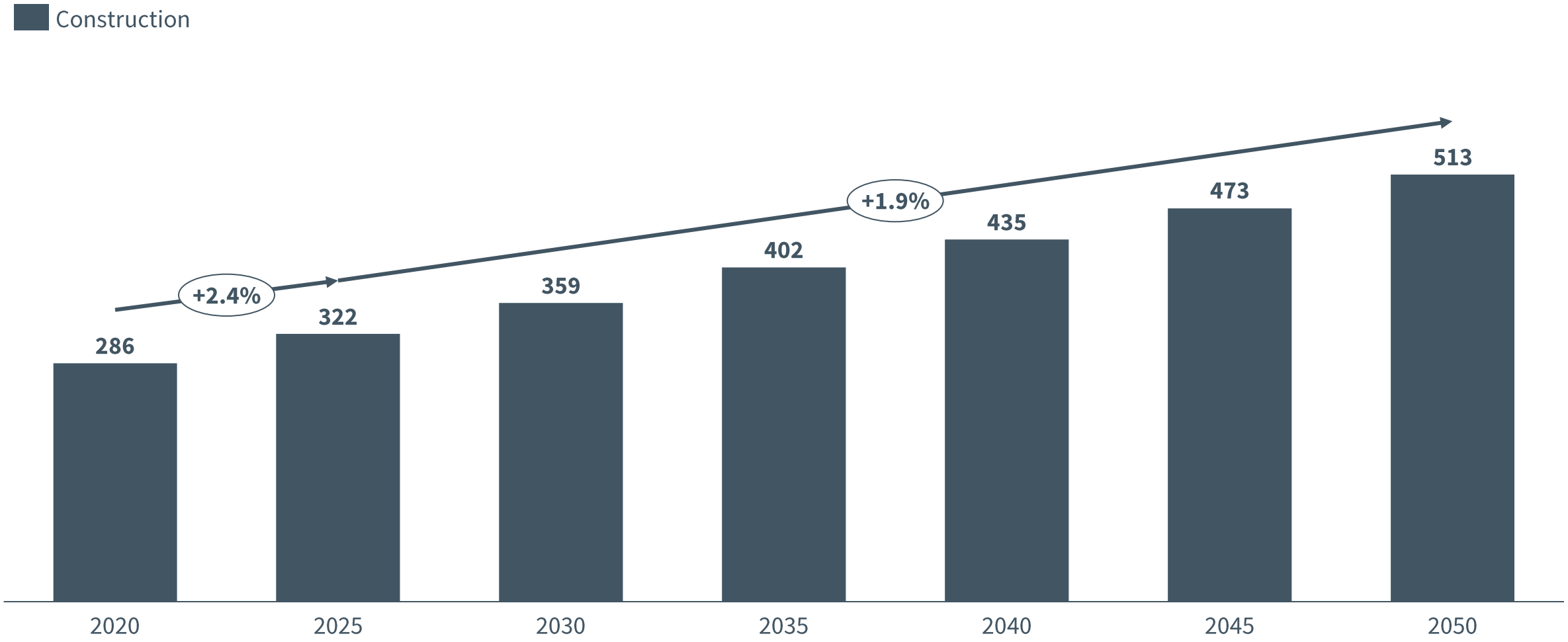


Note: Localisation Factors have been taken into account for Wind
Source: Hatch analysis

Driven by construction applications, light section demand is expected to grow at a 2% rate, reaching an annual demand of over 500 ktpa by 2050

UK Light Section Demand, 2020 – 2050 (ktpa)

Long

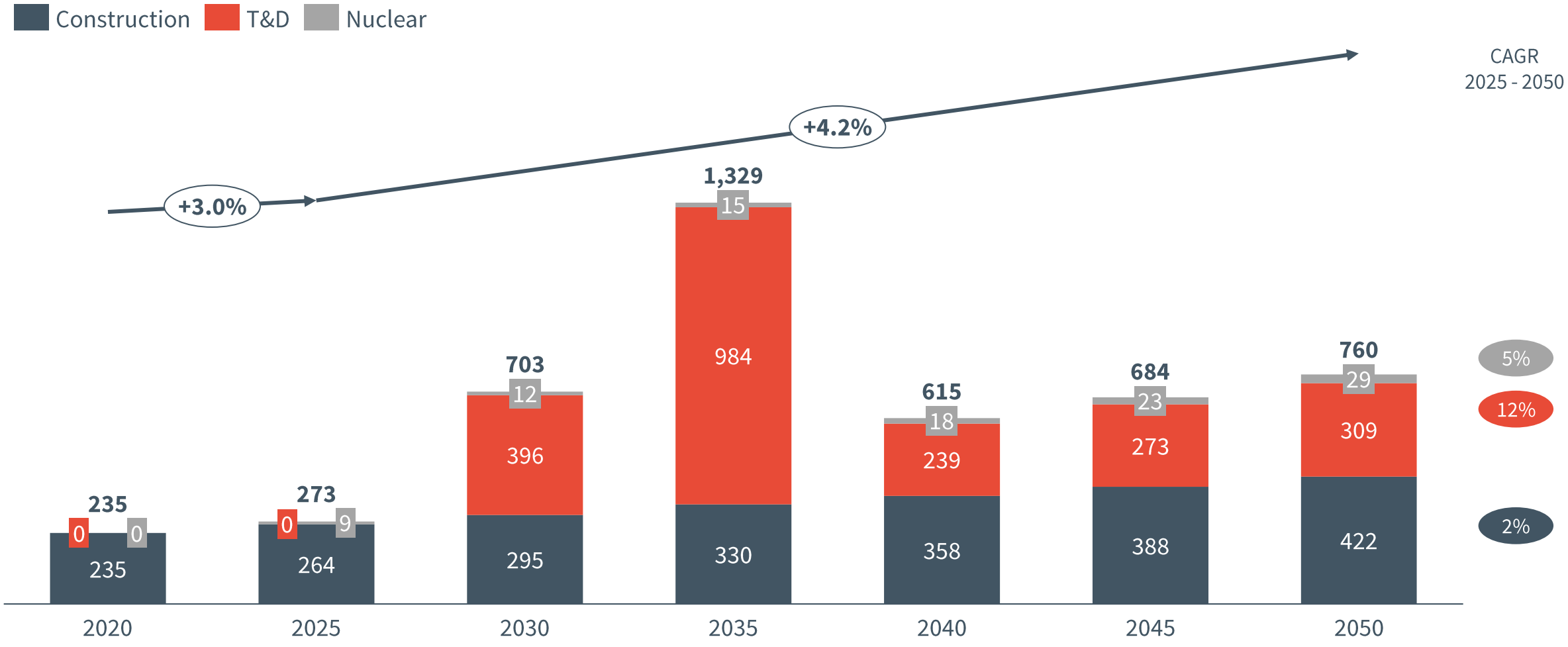


Source: Hatch analysis

Demand for medium sections is expected to grow at a 4% rate through 2050; peak demand is expected in 2035 due to T&D policy targets

UK Medium Section Demand, 2020 – 2050 (ktpa)

Long

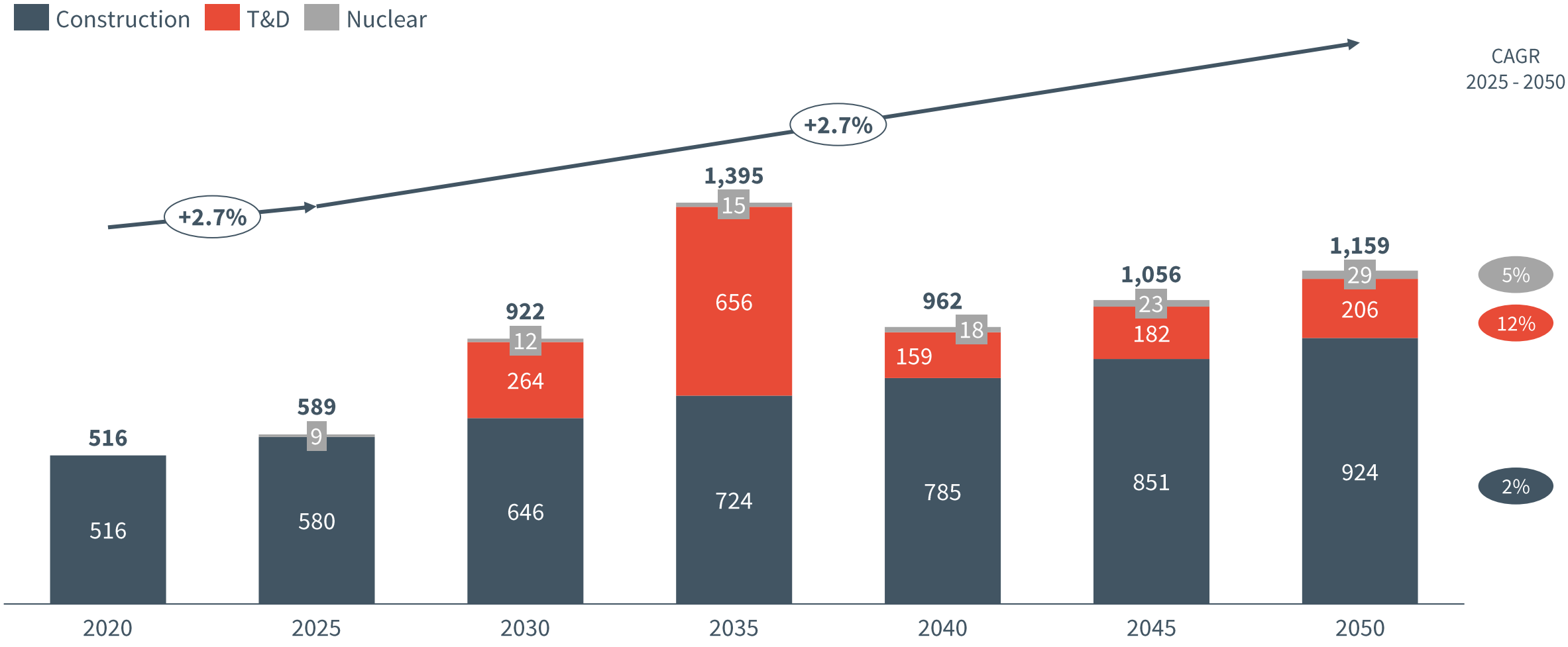


Source: Hatch analysis

Heavy section demand is expected to grow at a 3% rate, reaching 1.2 mtpa in 2050; peak demand is expected in 2035 due to T&D policy targets

UK Heavy Section Demand, 2020 – 2050 (ktpa)

Long

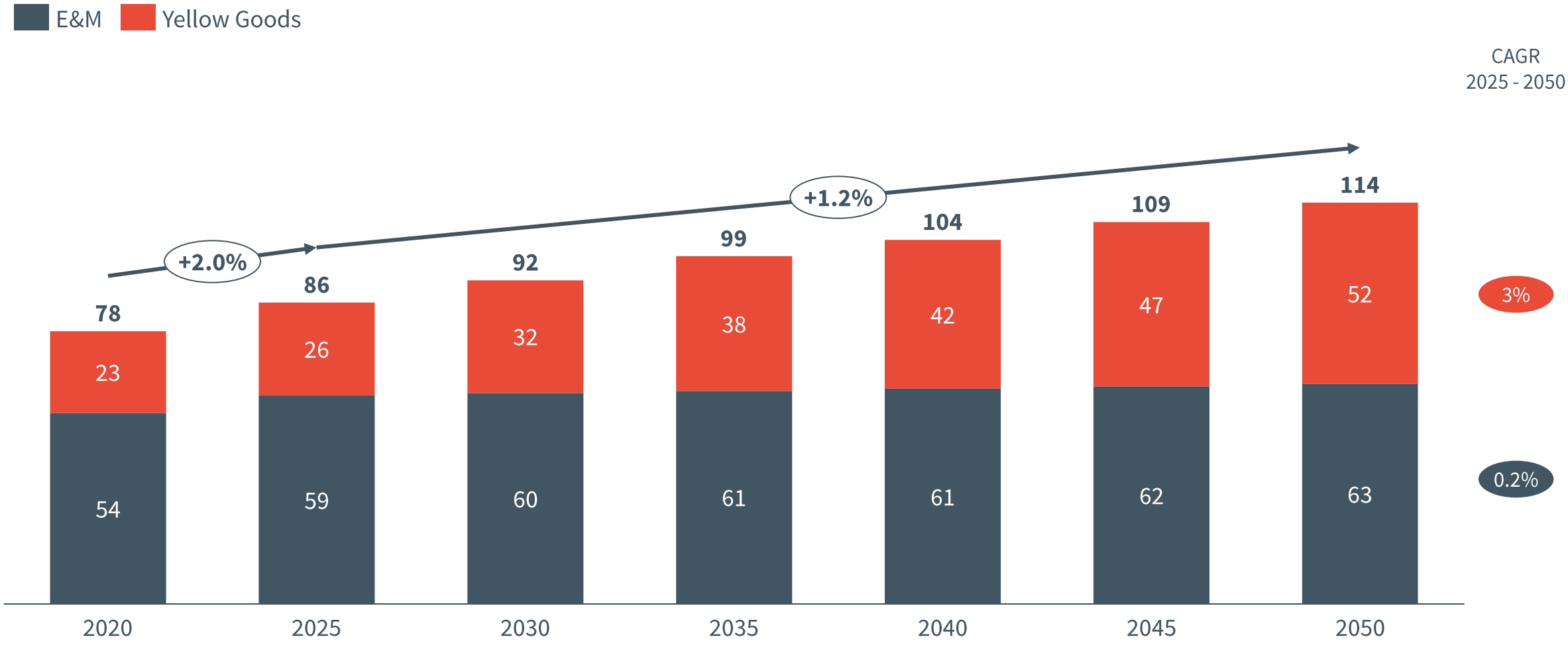


Source: Hatch analysis

Special profiles demand is expected to grow at a 1% rate; both end-use sectors are mature and expected to remain steady over the long-term

UK Special Profiles Demand, 2020 – 2050 (ktpa)

Long

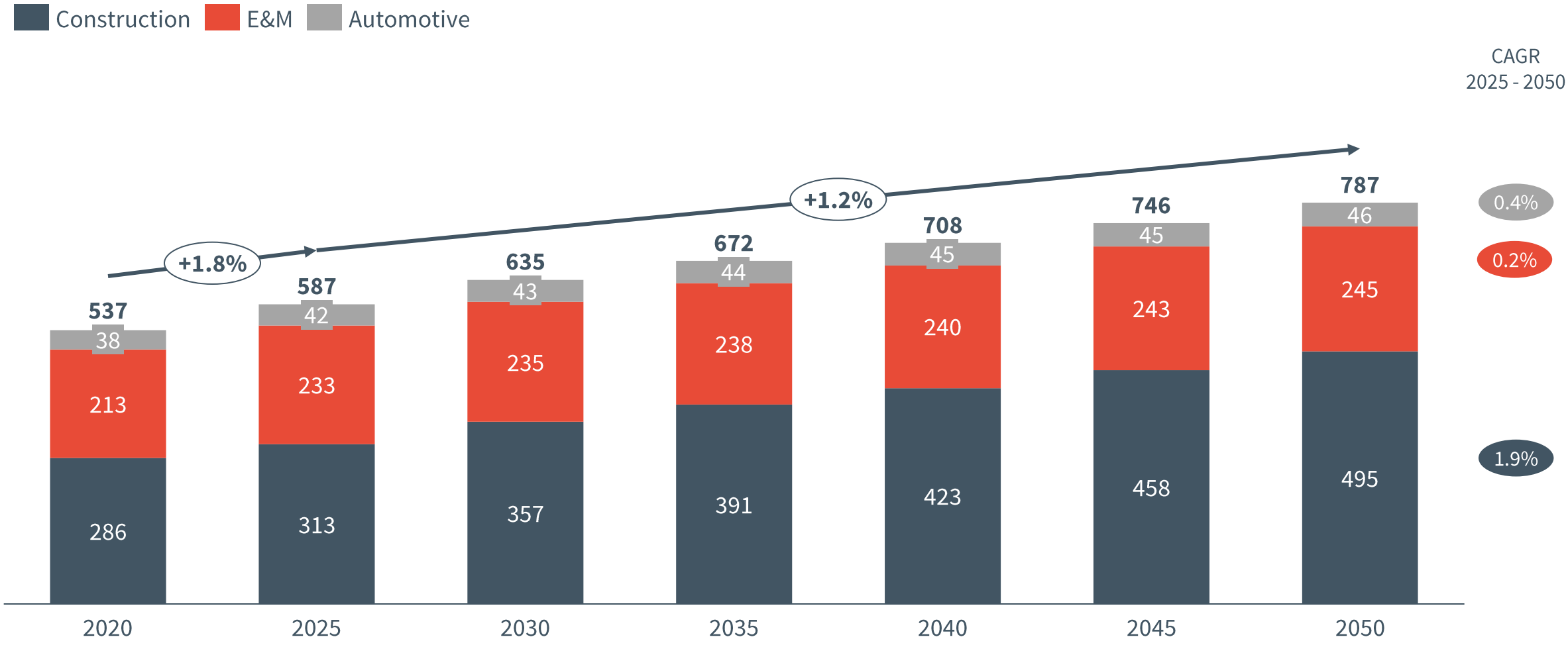


Source: Hatch analysis

UK wire rod demand is expected to grow at a 1% rate; while construction and auto applications will see steady 2% growth, E&M demand will remain flat

UK Wire Rods Demand, 2020 – 2050 (ktpa)

Long

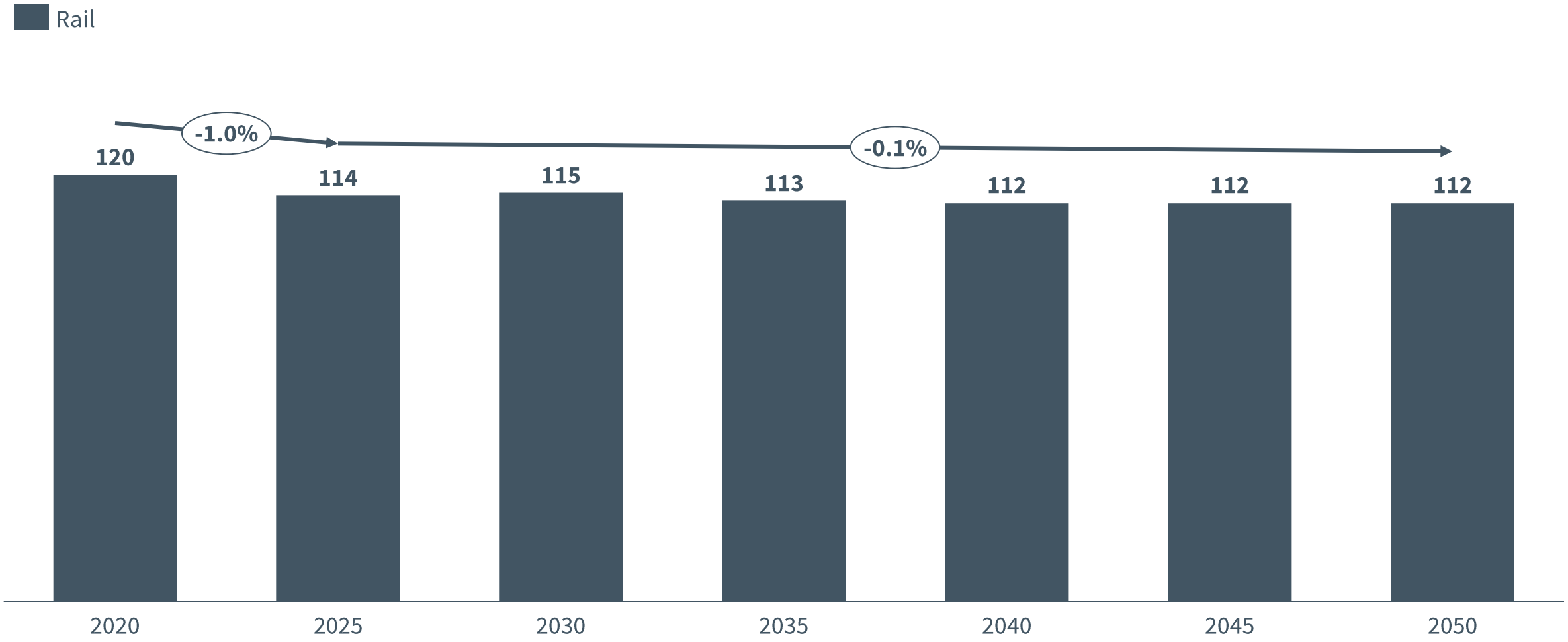


Source: Hatch analysis

UK rail demand is expected to remain steady due to regular rail maintenance which accounts for >98% of consumption

UK Rail Demand, 2020 – 2050 (ktpa)

Long

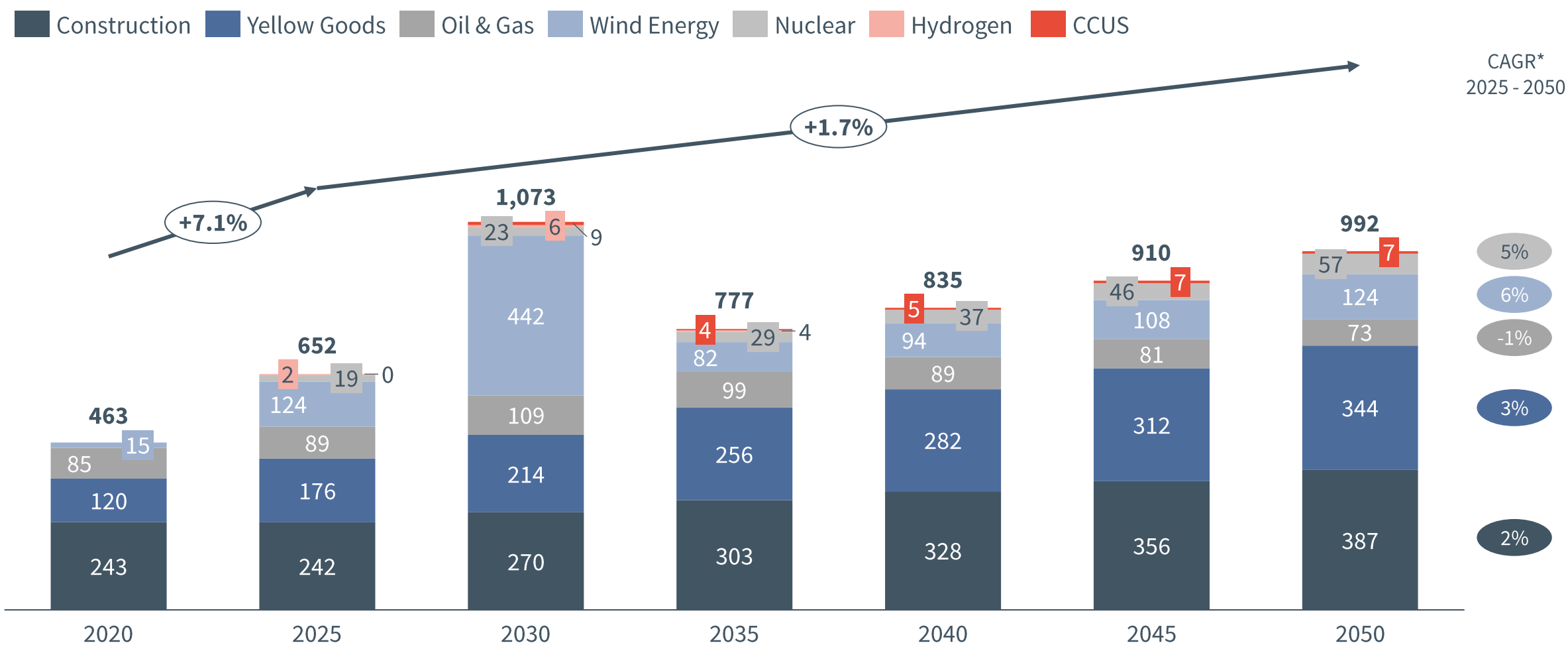


Source: Hatch analysis

UK plates demand is expected to grow at a 2% rate; 2030 is expected to see an increase from the wind sector in line with renewable energy targets

UK Plates Demand, 2020 – 2050 (ktpa)

Flat

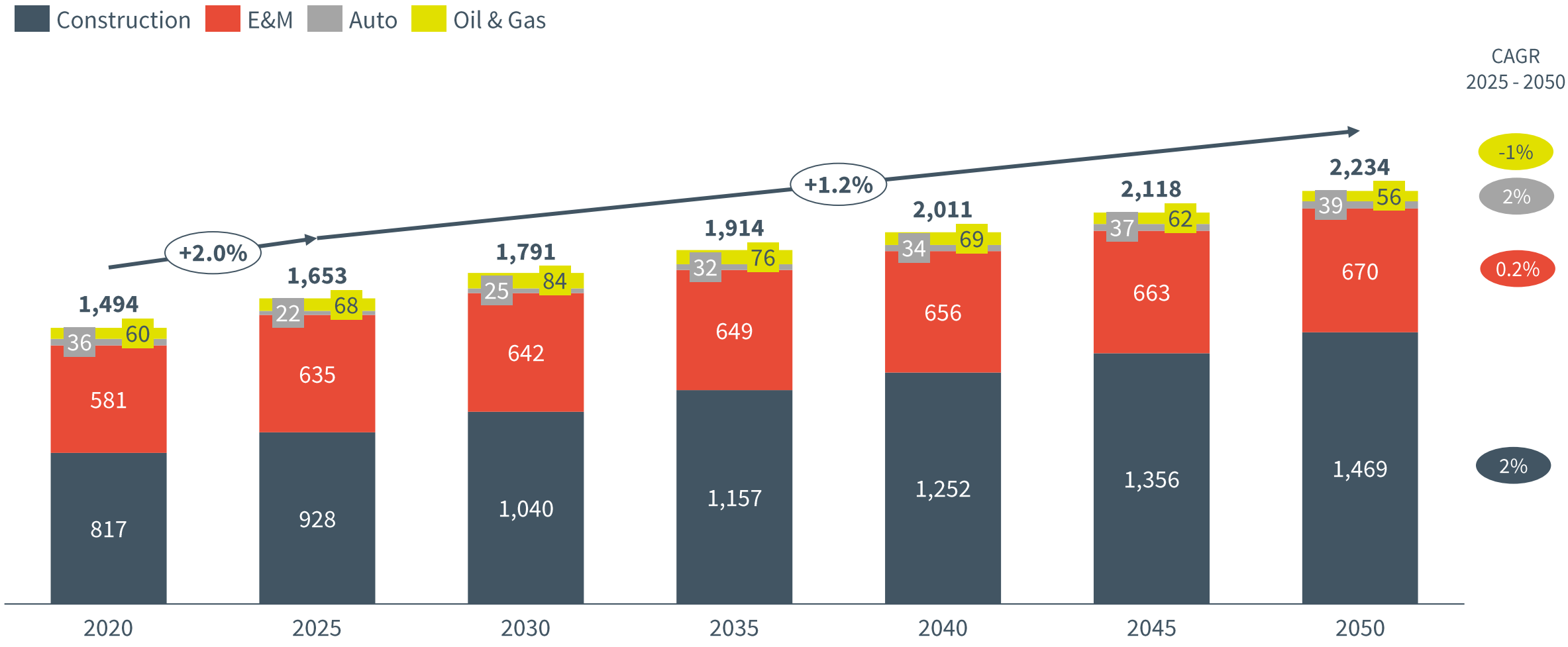


Note: Localisation factors have been taken into account for wind. *Hydrogen and CCUS are being forecasted based on projects, therefore a CAGR is not a representative metric in these instances and have not been included.
Source: Hatch analysis

UK HRC demand is expected to grow at a 1% CAGR; demand is significantly driven by construction and E&M, both of which are mature industries

UK HRC Demand, 2020 – 2050 (ktpa)

Flat

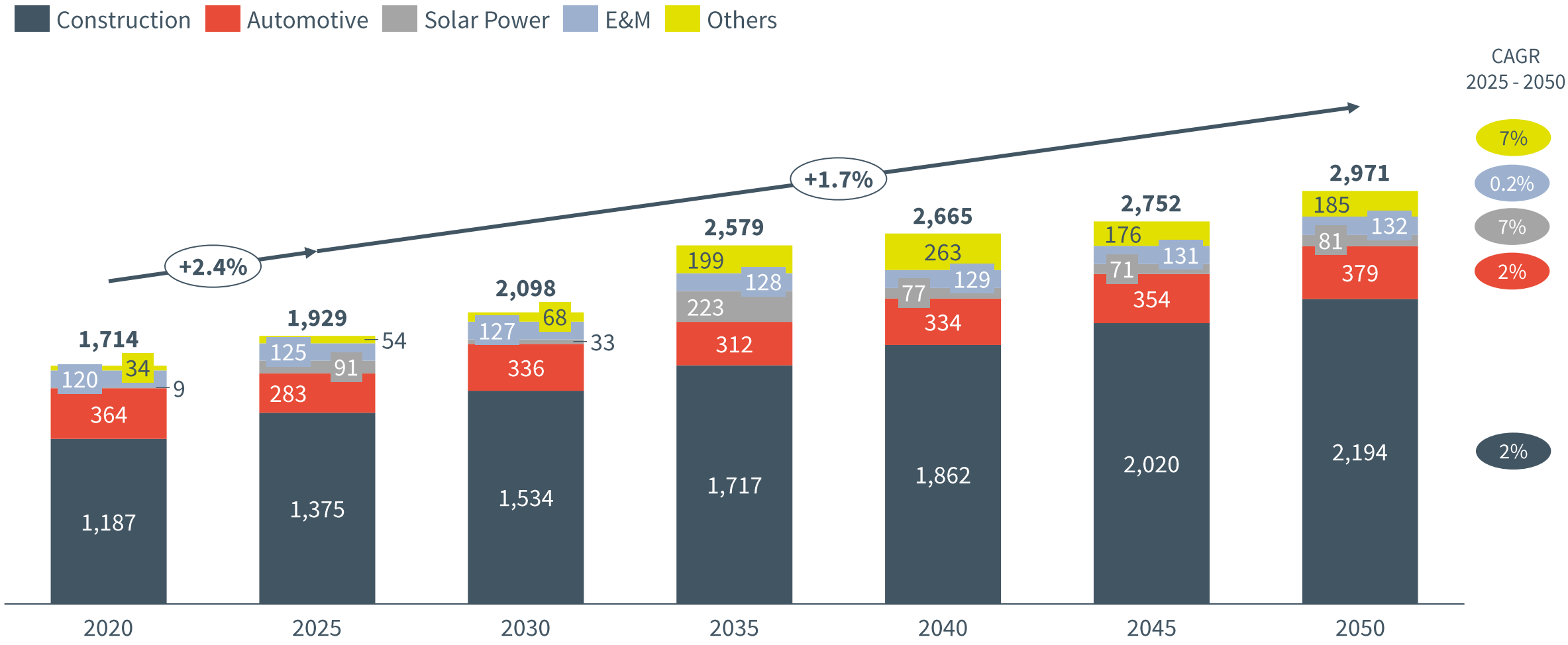


Source: Hatch analysis

UK HDG demand is expected to grow at a 2% rate; demand is predominantly driven by construction which accounts for over 75% of demand

UK HDG Demand, 2020 – 2050 (ktpa)

Flat

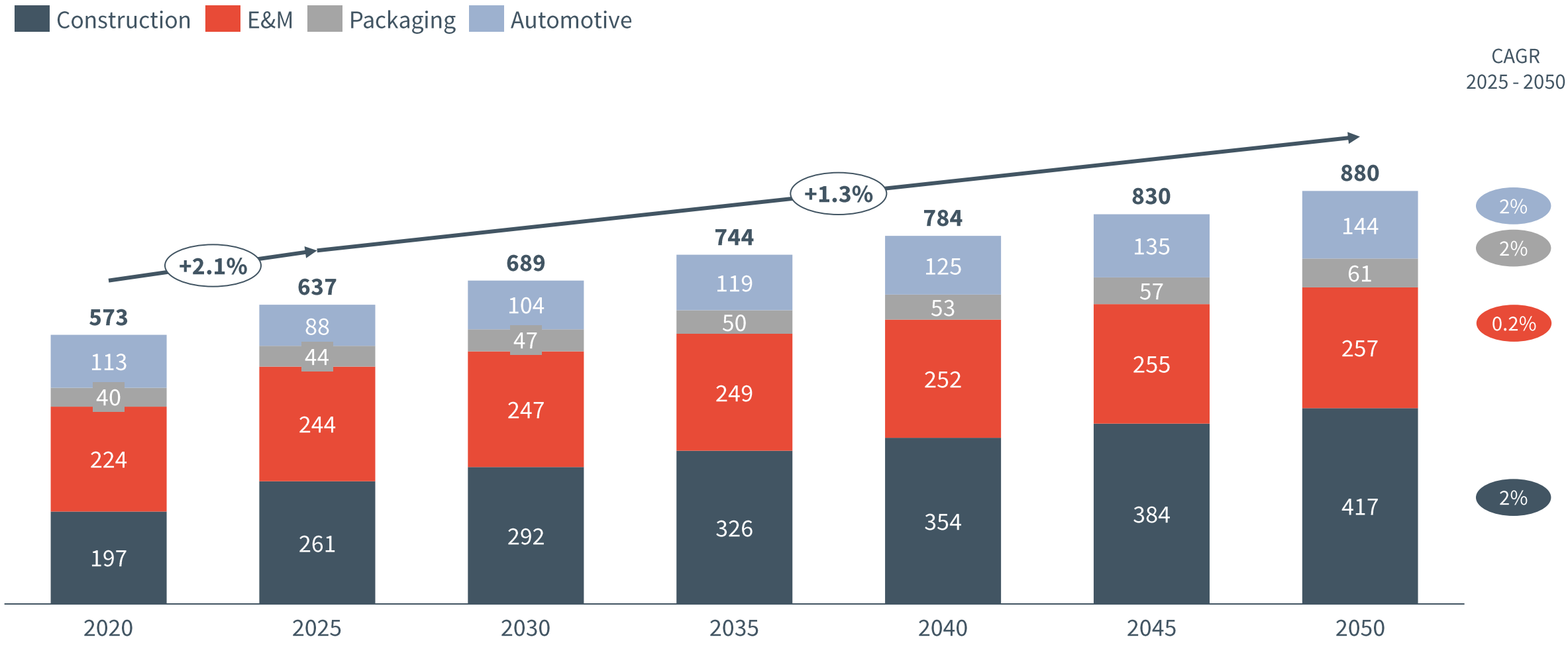


Note: Others include packaging and heat pumps
Source: Hatch analysis

UK CRC demand is expected to grow at a 1% rate; demand is driven by core sectors that are likely to remain steady

UK CRC Demand, 2020 – 2050 (ktpa)

Flat

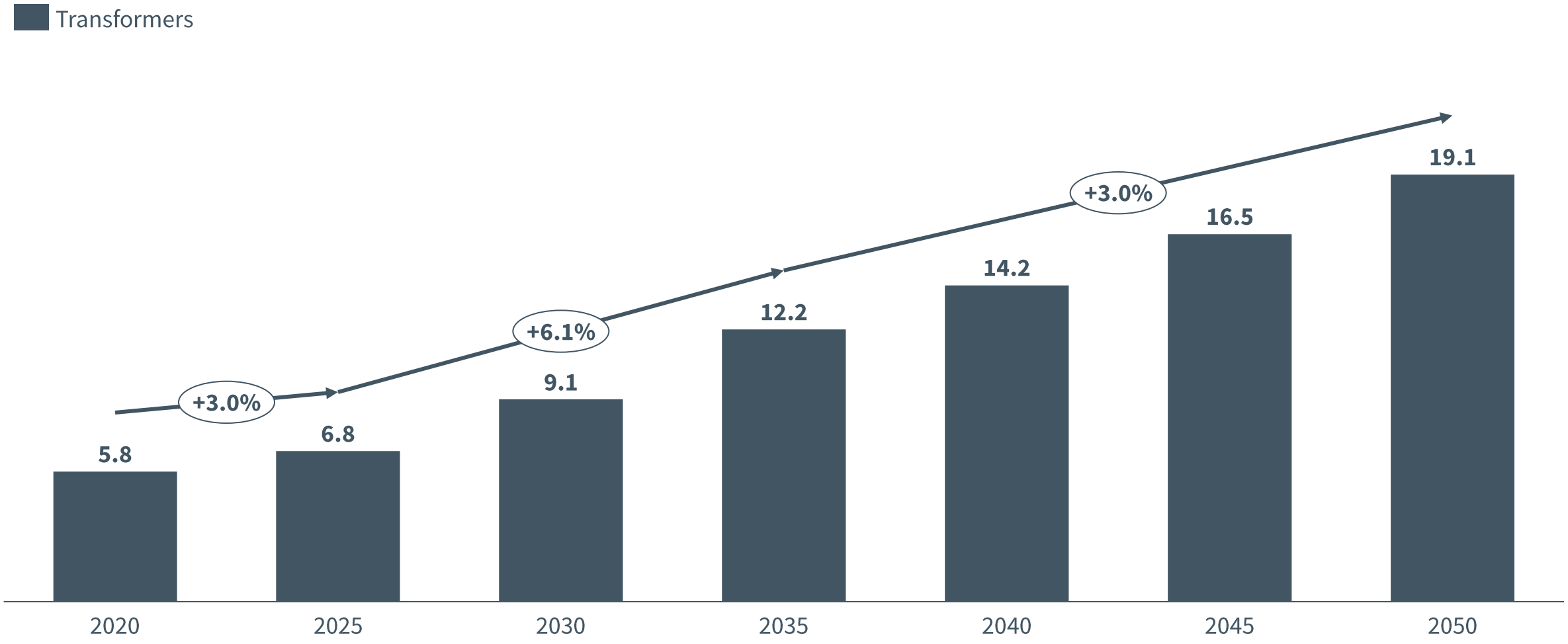


Source: Hatch analysis

UK GOES demand is expected to grow at a higher rate in the short-term before trending towards a steadier long-term rate post 2035

UK GOES Demand, 2020 – 2050 (ktpa)

Flat

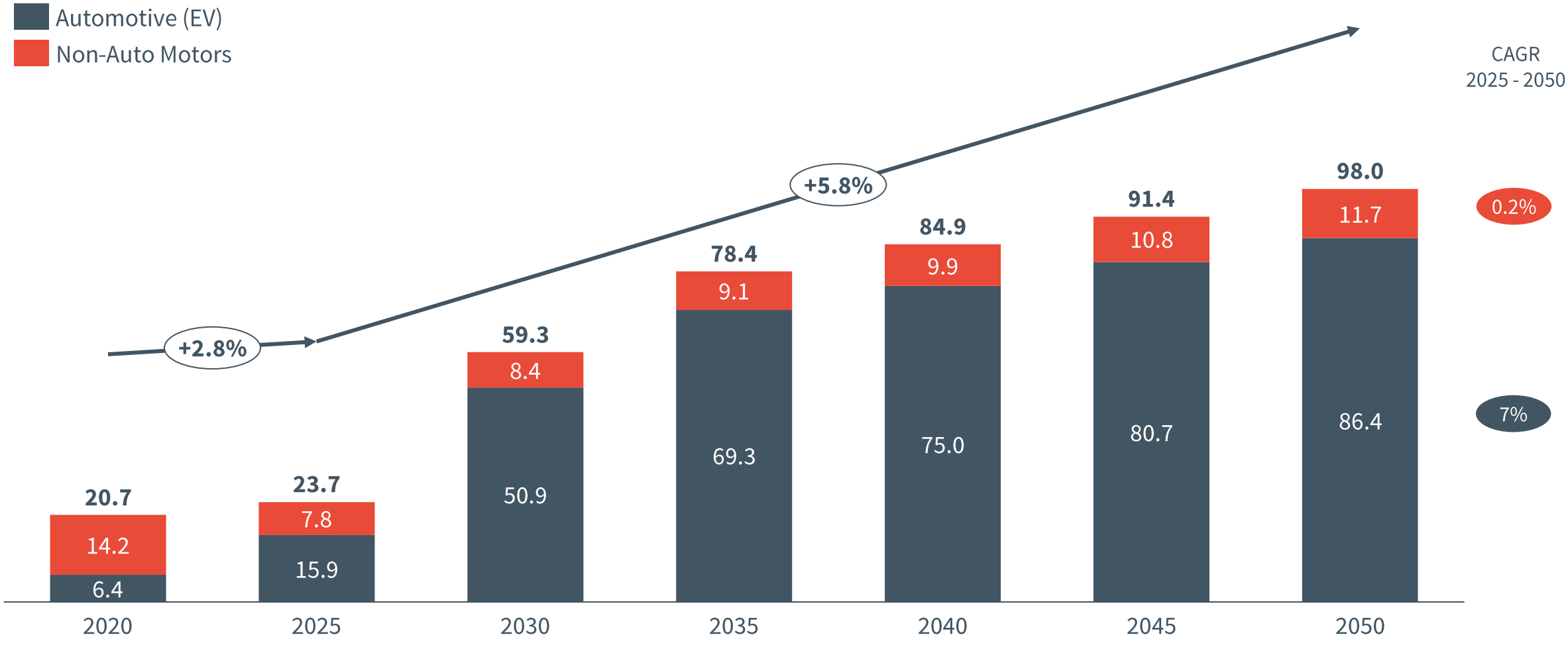


Source: Hatch analysis

UK NGOES demand is expected to grow at a 6% rate, primarily due to increased EV adoption as the UK phases out ICE production in line with net zero targets

UK NGOES Demand, 2020 – 2050 (ktpa)

Flat

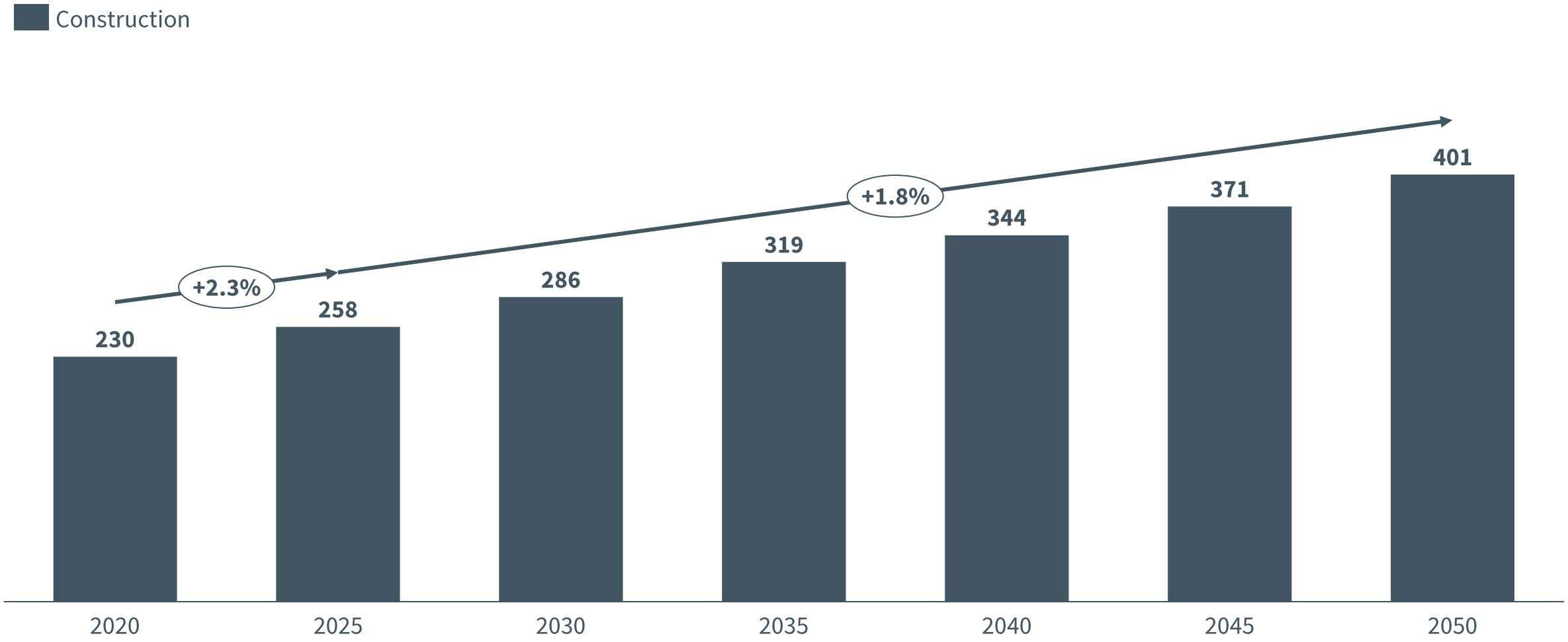


Source: Hatch analysis

UK PPGI demand is expected to grow at a 2% rate, as it is solely driven by construction which is expected to grow steadily

UK PPGI Demand, 2020 – 2050 (ktpa)

Flat

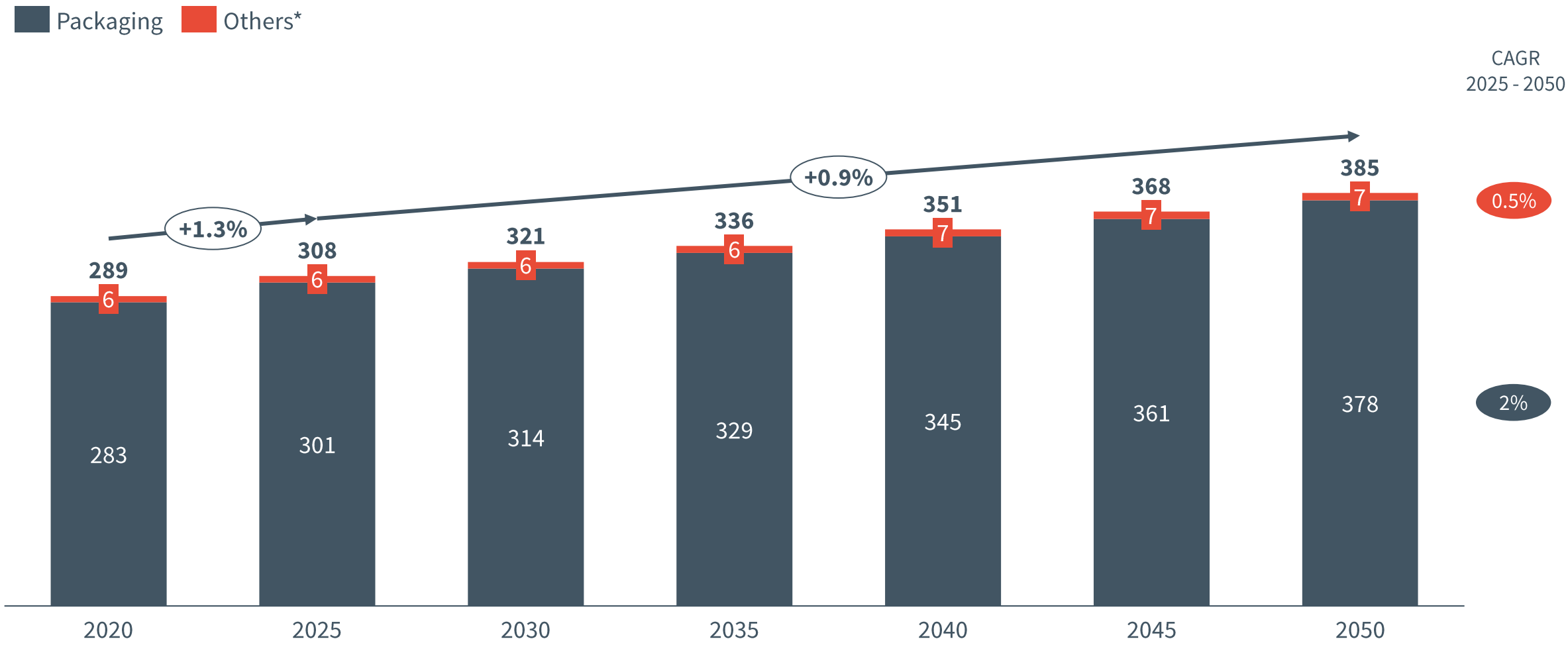


Source: Hatch analysis

UK tinplate demand is expected to grow at a 1% rate; demand is generally driven packaging which generally corelates with population growth

UK Tinplate Demand, 2020 – 2050 (ktpa)

Flat

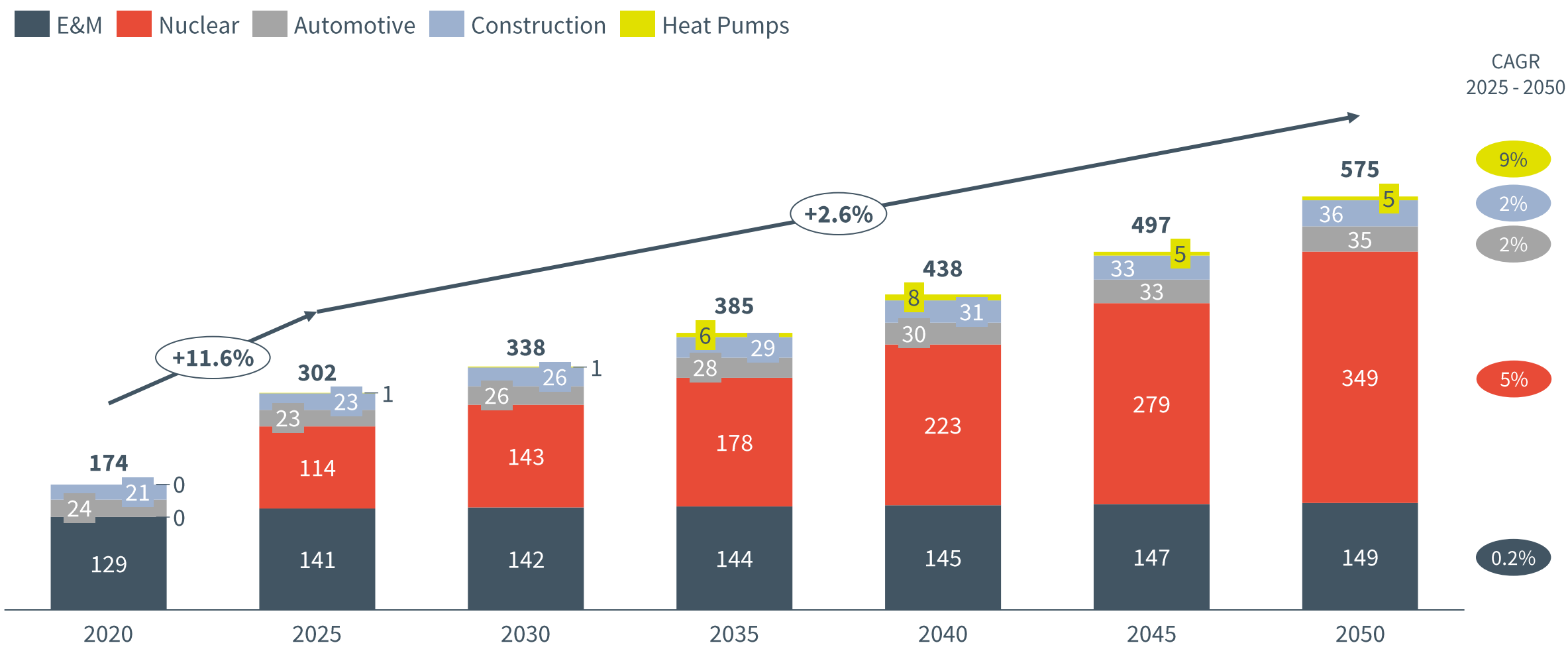


Note: *others include applications such as toys, commercial and others
Source: Hatch analysis

UK stainless steel demand is expected to grow at a 3% rate; this growth is predominantly from the nuclear industry requiring stainless liners and pipes

UK Stainless Steel Demand, 2020 – 2050 (ktpa)

Other

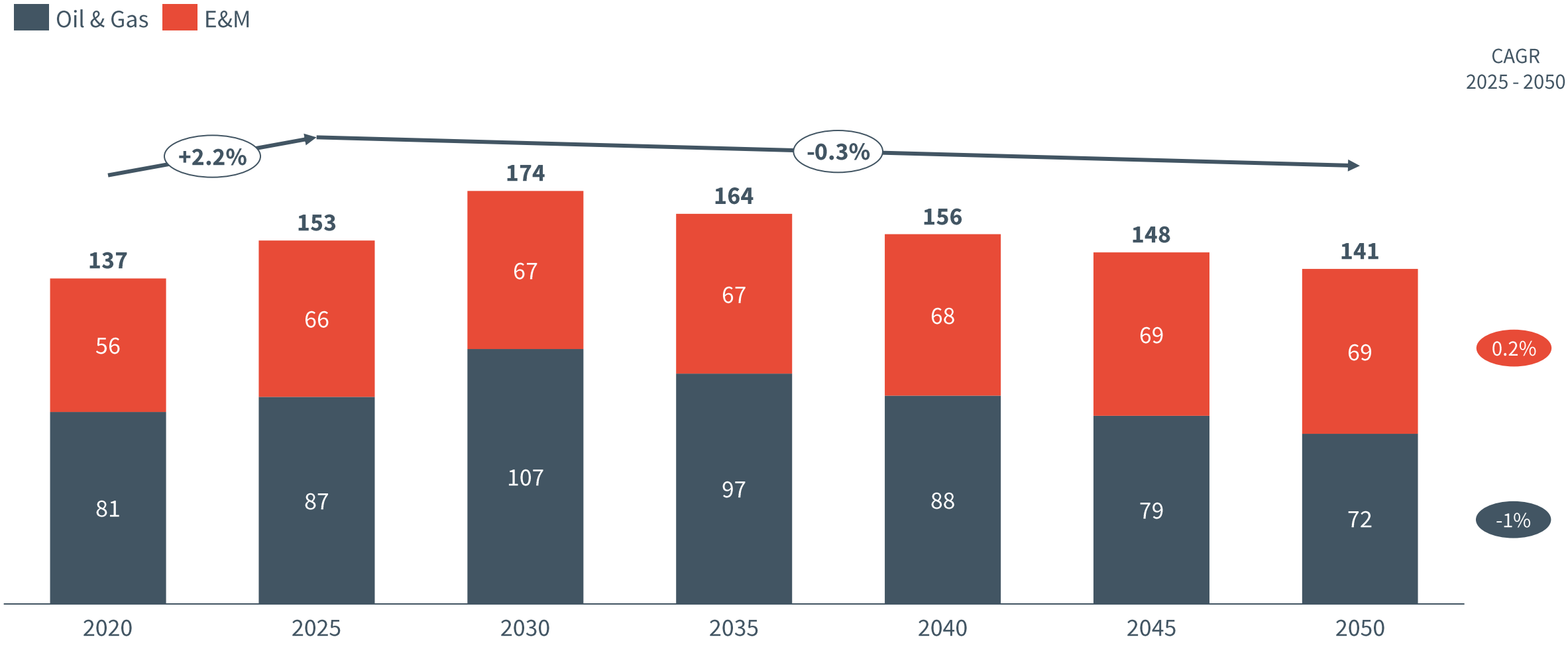


Source: Hatch analysis

UK seamless tubes demand is expected to decline at a 0.3% rate in line with an expected decline in oil & gas upstream investments

UK Seamless Tubes Demand, 2020 – 2050 (ktpa)

Other

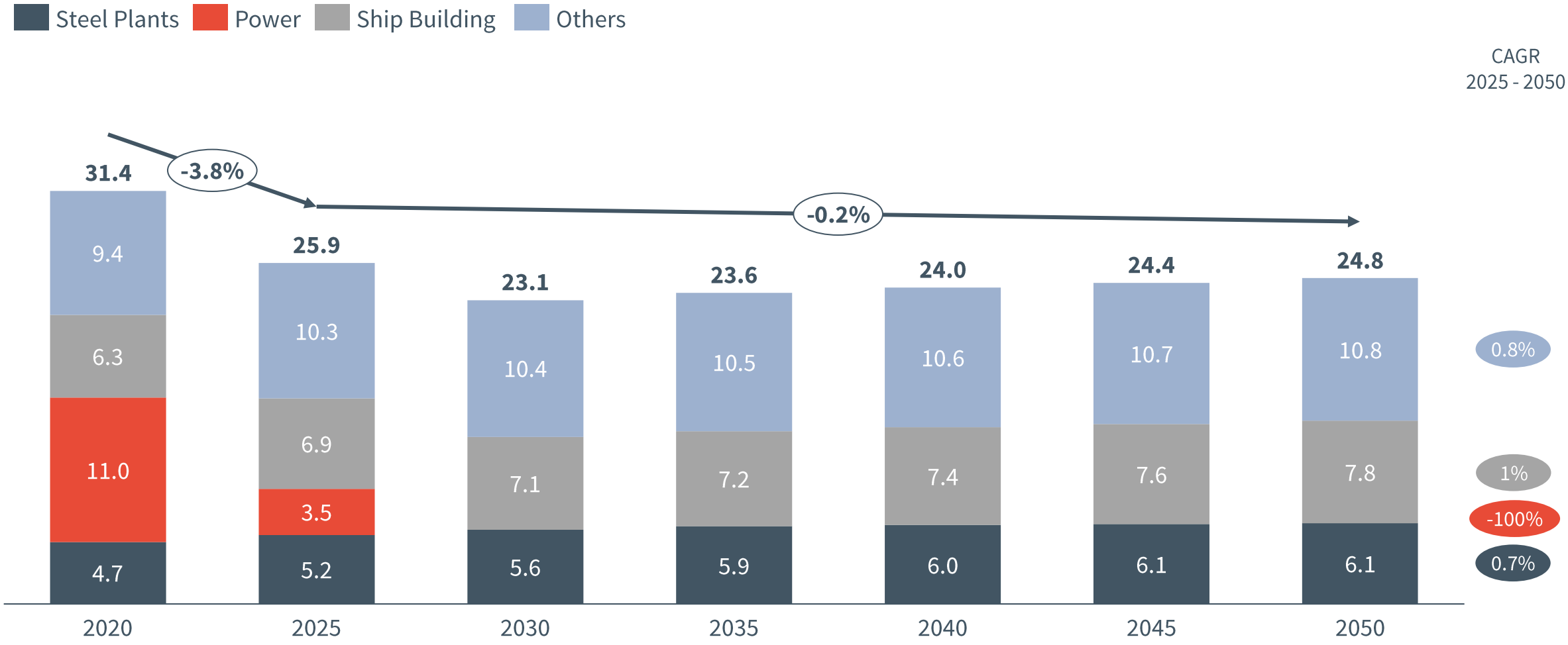


Source: Hatch analysis

UK forged product demand is expected to decline at a 0.2% rate, primarily driven by the reduction of coal and natural gas power investments

UK Forged Product Demand, 2020 – 2050 (ktpa)

Other



Source: Hatch analysis

For more information,
please visit www.hatch.com

Hatch Associates Ltd.
4th Floor
20 St. Andrew Street
London EC4A 3AG
United Kingdom

HATCH