

# THE IMPACT OF ALSTOM IN THE UK & IRELAND

2023 Report



**ALSTOM**  
• mobility by nature •

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# Foreword



**Nick CROSSFIELD**

Managing Director  
UK & Ireland, Alstom



Alstom has been part of the fabric of UK rail, in one form or another, for 200 years. This year we celebrated the bicentenary of the Newcastle factory of Robert Stephenson & Co, which later became part of Alstom, and we still operate the famous 19th century factories at Derby and Crewe today. We first built carriages for Ireland over 50 years ago.

As the UK and Ireland build back from the last few years, Alstom is once again at the forefront of the next rail revolution. We are supporting governments, operators, rolling stock owners and infrastructure owners and maintainers to increase passenger numbers, improve railway reliability and raise revenue – while meeting important net zero targets.

Alstom is the UK and Ireland's foremost supplier of new and refurbished trains and train services, and a major provider of signalling and rail infrastructure. Employing more than 6,200 people, we design, develop, build and test trains in Derby – the UK's largest train factory and home to Great British Railways. We operate from a further 36 locations including major sites at Crewe, Ilford, Plymouth and Widnes.

Our trusted partner status means we are not only delivering the biggest train manufacturing programme in a generation, but also the two largest major signalling frameworks in Control Period 6. 63% of the UK's installed train fleet is supported by Alstom in some capacity, while Alstom-manufactured trains for Dublin's Dart+ will bring battery-electric trains to Ireland for the first time. We are playing a crucial role in the hugely successful Elizabeth line which now accounts for one in six of all UK rail passenger journeys.

But it's not just about rail. EY's analysis of our activity in fiscal year 2022/23 found that we supported a contribution of near £1 billion to the GDP of the UK and Ireland. Our operations supported a further 10,981 jobs. With 78% of our 1,470 suppliers based in the UK and Ireland, they benefitted from 68% of our total procurement spend in the year – supporting jobs, innovation and world-leading manufacturing.

Investment in the railways positively impacts upon other transport users and our wider society, economy and environment. The Alstom in Motion 2025 strategy will see us lead the way to greener and smarter mobility in the UK and Ireland. With a focus on sustained growth, green and digital innovation, operational efficiency and an agile, inclusive and responsible corporate culture – we have set clear targets.

Moving forward, the rail sector must embrace new and innovative ideas that will put it on a sustainable financial footing for the long term. Excited by the opportunities ahead, we look forward to playing our part in rapidly decarbonising the transport sector – making rail travel the default option for millions more people.



**Elaine CLARK**

Chief Executive, Rail Forum



I'm delighted to recognise Alstom's vital contribution to the continuing modernisation and upgrading of the UK's railway systems. Their initiative in publishing this report – one of the first in the rail supply industry – rightly highlights both Alstom's and their UK and Irish supply chain's contribution to delivering projects on time, while targeting and achieving several additional socially responsible objectives such as decarbonisation.

Alstom's successful involvement in our railway system has been built in partnership with a wide range of UK-based suppliers. Over the years, the UK's industrial landscape has changed dramatically with the globalisation of supply chains across many industries. However, times are changing. The impact of the Covid pandemic and recent global conflicts alongside the imperative of decarbonisation have made supply chain resilience and security an essential feature of future business thinking. This report from Alstom shows their commitment to a sustainable and socially responsible business model.

I also welcome how the report demonstrates the importance of the private sector and its essential contribution to innovation and investment in the UK's railways. Organisations like Alstom have a choice about where they put their efforts and where they invest for the future. It is heartening to see Alstom's unwavering commitment to the UK market across infrastructure and rolling stock and I wish them well for their next 200 years.

“ We supported a contribution of nearly £1 billion to the GDP of UK and Ireland. ”

# The impact of ALSTOM in the UK & Ireland

## Highlights

Fiscal Year 2022/23

**£952** MILLION

SUPPORTED GDP CONTRIBUTION

**200**

YEAR HERITAGE

**37**

LOCATIONS

**6,286**

EMPLOYEES

**10,981**

OTHER JOBS SUPPORTED

UK'S ONLY

**END-TO-END**

TRAIN MANUFACTURING SITE

**78%**

OF 1,470 SUPPLIERS  
BASED IN THE UK  
AND IRELAND

**68%**

OF ALL PROCUREMENT  
SPEND WAS WITH UK  
AND IRELAND SUPPLIERS

**100%**

ON TIME PROJECT  
COMPLETION FOR  
SIGNALLING SINCE 2015

**ZERO**

SERIOUS  
ACCIDENTS

**100%**

GREEN ELECTRICITY FOR FULLY  
OCCUPIED ALSTOM SITES

### WORKFORCE SHARE

**14%**

WOMEN

**11.8%**

BAME

**10.9%**

DISABLED

**3.2%**

LGBTQ+

**100%**

WASTE RECOVERY  
AT SITES

**48%**

WASTE RECYCLING  
AT SITES

**59,172**

HOURS OF  
COLLEAGUE TRAINING

**91-95%**

OF THE CONTENT  
IN OUR TRAINS IS  
RECYCLABLE OR REUSABLE

**£849,000**

COMMUNITY INVESTMENT THROUGH  
THE ALSTOM FOUNDATION AND  
THE UK&I COMMUNITY ACTION PLAN  
SINCE 2016/17

**41,800**

BENEFICIARIES OF  
COMMUNITY ACTIONS  
SINCE 2018

**13,600+**

HOURS DEDICATED TO  
LOCAL COMMUNITY  
ACTION SINCE 2018

# ALSTOM at a glance

## ALSTOM Group



Leading societies to a low carbon future, Alstom develops and markets mobility solutions that provide the sustainable foundations for the future of transportation.

Alstom commits to contribute to a low carbon future by developing and promoting innovative and sustainable transportation solutions that people enjoy riding. From high-speed trains, metros, monorails, trams, to turnkey systems, services, infrastructure, signalling and digital mobility, Alstom offers its diverse customers the broadest portfolio in the industry. With its presence in 63 countries and a talent base of over 80,000 people from 175 nationalities, the company focuses its design, innovation, and project management skills to where mobility solutions are needed most. Listed in France, Alstom generated revenues of €16.5 billion for the fiscal year ending on 31 March 2023.



Over **80,000** employees worldwide



Over **10,000** patents



Over **250 sites** in 63 countries



Over **22,000** engineers

# ALSTOM at a glance



## ALSTOM in the UK & Ireland

Alstom is the UK and Ireland's foremost supplier of new and refurbished trains and train services, and a major provider of signalling and rail infrastructure. Alstom have built, or are building, almost 40% of the UK mainline train fleet – as well as the entire fleets in service with London Underground and Dublin's Luas.

We provide the widest range of smart solutions in the rail market, from innovative high-speed rolling stock, metros and trams to maintenance, modernisation, infrastructure and signalling.

Employing more than 6,200 people, we design, develop, build and test trains in Derby – the UK's largest train factory and home to Great British Railways. We operate from a further 36 locations including major sites at Crewe, Ilford, Plymouth and Widnes.



## KEY FIGURES

**£952** MILLION  
SUPPORTED GDP CONTRIBUTION

**1,144**  
UK&I SUPPLIERS

**6,286**  
EMPLOYEES

**0**  
SERIOUS ACCIDENTS

**37**  
LOCATIONS

## OUR KEY SITES IN THE UK & IRELAND

### Rolling Stock



10 Derby Litchurch Lane

### Services

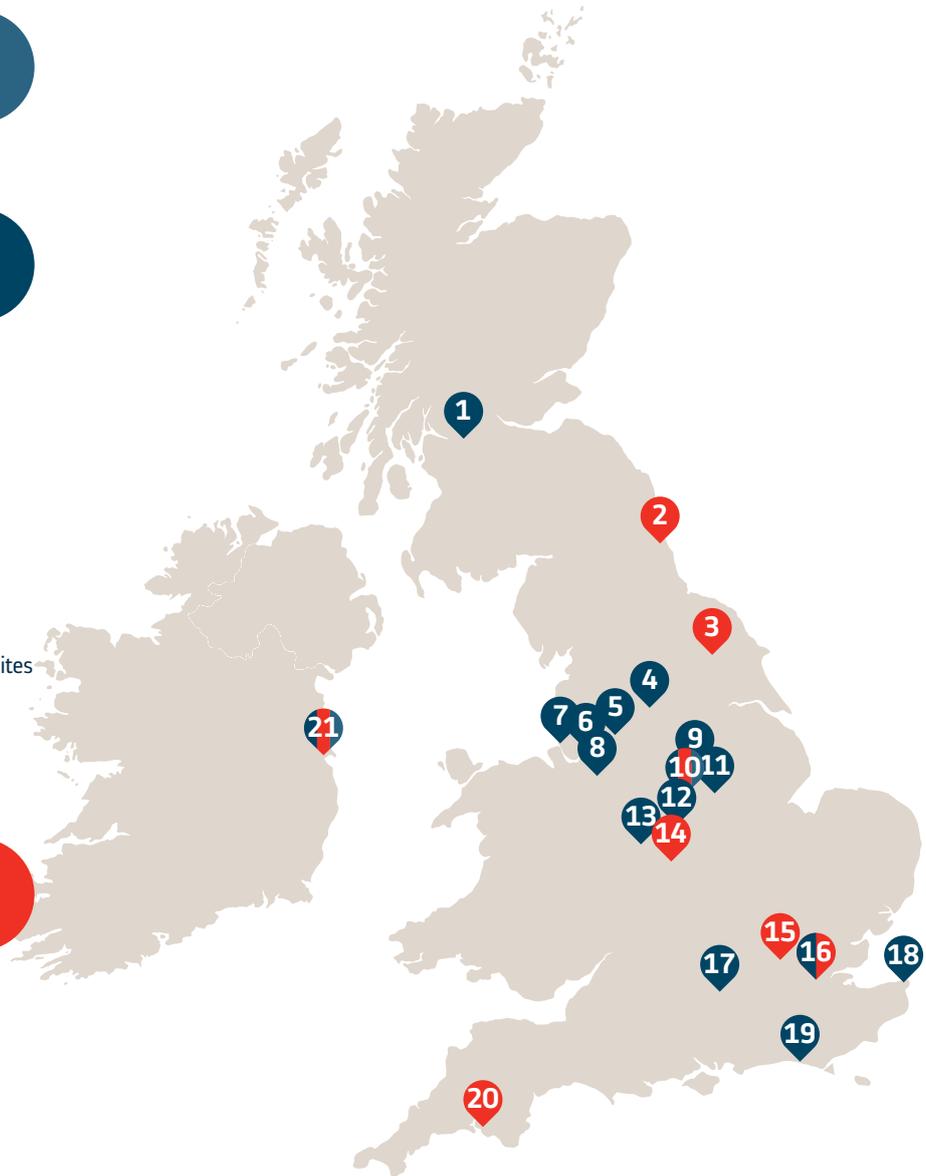


- 1 Glasgow - 2 Services sites
- 4 Crofton
- 5 Manchester
- 6 Widnes
- 7 Liverpool
- 8 Crewe
- 9 Mansfield
- 10 Derby Etches Park
- 11 Nottingham
- 12 Central Rivers
- 13 Wolverhampton
- 16 London - HQ + 13 Services sites
- 17 Reading
- 18 Ramsgate
- 19 Brighton
- 21 Dublin

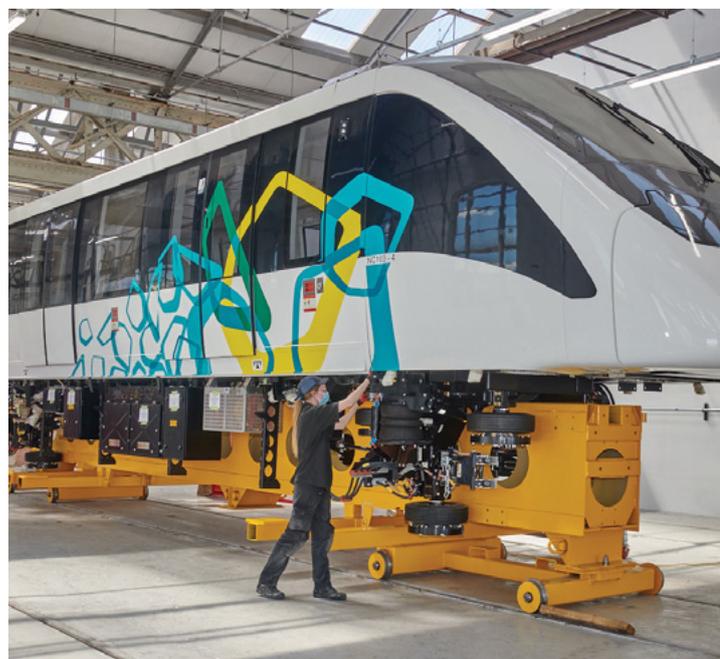
### Digital and Integrated Systems



- 2 Newcastle
- 3 York
- 10 Derby Litchurch Lane
- 14 Birmingham
- 15 Hatfield
- 16 London - King's Cross
- 20 Plymouth



# Manufacturing rolling stock for domestic and export markets



Alstom is uniquely placed to support the UK and Ireland's determined journeys towards net zero and decarbonised transport. We can offer every traction solution identified by the rail industry taskforce – battery, electric and hydrogen.

Alstom does not make pure diesel trains for the UK or Ireland. Our product portfolio offers not only high speed trains, regional and suburban trains, undergrounds (metros), trams and Automated People Movers (APMs), but also integrated systems, infrastructure, signalling and digital mobility. We are a world leader in delivering sustainable and smart mobility systems.

From the iconic Pendolino, now being refurbished by Alstom after 20 years of service, to the latest Elizabeth line AVENTRA trains, we have built, or are building, almost 40% of the total UK mainline train fleet – as well as the entire fleets in service with London Underground and Dublin's Luas. During the second half of this decade, the completed trains for High Speed 2 will begin rolling off our Derby production line.

Our Derby site dates from 1876 and at 340,000 m<sup>2</sup> – including 92,000 m<sup>2</sup> of production space – it is the largest of Alstom's facilities anywhere in the world. Importantly, Derby is the only UK factory able to design, develop, build and test trains for domestic and export markets. This means Derby is of unique strategic importance to the UK as a train design and production facility. 2,000 employees at Derby are currently delivering the UK's largest train manufacturing programme in a generation.

Our cutting-edge AVENTRA train platform was designed and developed for use on inter-regional, commuter, metro and high-speed passenger services.

## A WORD FROM



**Karl STEWART**  
MTL ADVANCED

« MTL Advanced is a contract manufacturer in the metal sector, based in Rotherham. We laser cut, bend, machine, weld and paint metal parts for various sectors. Our facilities stretch over 30 hectares and we employ 290 people.

In 2018, we developed a joint plan with Alstom aimed at implementing a knowledge transfer to develop our aluminium welding capabilities. Our people were trained both within Alstom's facilities and on our site on a variety of techniques for welding aluminium-based materials.

Through this partnership, we have also invested in in-house paint facilities and worked closely with Alstom to get the necessary approval and certifications to paint to their specifications and quality standards. The investment totalled £700,000, created a manufacturing footprint dedicated to welding aluminium materials, and allowed us to create 54 new jobs.

We are now able to deal with clients across Europe and diversify the sectors and range of work we can provide. Our scale of operations has increased considerably, thanks to the help provided by Alstom. Overall, I feel this relationship has been and still is very collaborative from both sides.»

## THE IMPACT OF ALSTOM IN THE UK & IRELAND

Manufacturing rolling stock for domestic and export markets

We are now 88% of the way through delivering an order book of 2,660 AVENTRA cars, which have an important role in attracting passengers back to rail. The first order came from the Crossrail programme, with a fleet of 70 trains now in passenger service on the hugely successful Elizabeth line.

The most recent Office for Rail and Road passenger rail performance figures<sup>1</sup> show that AVENTRA is underpinning two of the UK's top three most punctual services. The 70-strong fleet operating on the Elizabeth line has taken the top spot and also delivered the only improvement compared to the same quarter the previous year. Currently in service on Greater Anglia, the operators c2c, South Western Railways and West Midlands Trains are expected to introduce this hugely successful model into their fleets this year.

With the backing of UK Export Finance, Derby is exporting monorail cars to Egypt for the Cairo Monorail project. This £2.3bn order created 100 jobs and is the first UK rolling stock

export since our Derby-built trains were supplied to South Africa for the Gautrain project in 2008. 44 of 70 highly advanced, driverless and fully sustainable four-car monorail trains have now been finished.

The success of the Cairo project has led to our Derby site being designated Alstom's Global Centre of Excellence for Monorail. As a result, we are building trains for the Dominican Republic's Santiago de los Caballeros monorail.

When these projects are completed, the Derby site will undergo a complete transformation to support the manufacture of 432 cars for the first phase of the High Speed Two rail network from London to the West Midlands, along with future domestic and export orders. Our unique UK-based design and engineering teams are currently developing our next generation train platform, which will allow operators to respond to changes in passenger demand and use.

“Derby is the only UK factory able to design, develop, build and test trains for domestic and export markets. This means Derby is of unique strategic importance to the UK as a train design and production facility.”

### ALSTOM'S GLOBAL HUB FOR MONORAIL MANUFACTURE

Derby's designation as Alstom's Global Centre of Excellence for Monorail has resulted in responsibility for the technical development and validation of trains being moved to Derby from Saint-Bruno-de-Montarville, Canada. This transfer has secured around 50 engineering jobs onsite, including opportunities for graduates and apprentices. This year we are producing the first two trains for the Dominican Republic's Santiago de los Caballeros monorail project. As the demand for monorail systems continues to grow globally, Derby is well-positioned to provide high-quality, efficient and sustainable transportation solutions to customers worldwide.

### UNDERPINNING LONDON'S UNDERGROUND AND OVERGROUND NETWORKS

Alstom and its predecessor companies have built all the trains currently in service with London Underground and London Overground. The fleets include 106 trains in service on the Northern line, 63 on the Jubilee line, 47 on the Victoria line, 192 sub-surface trains in operation on four lines, 54 AVENTRA trains on the London Overground network, and most recently 70 AVENTRA trains in service on the hugely successful Elizabeth line. One in six of all UK rail passenger journeys are now on the Elizabeth line.

## KEY FIGURES

**2,000**  
ONSITE EMPLOYEES

**92,000 m<sup>2</sup>**  
PRODUCTION SPACE

**2,660**  
AVENTRA ORDER BOOK

**£2.3bn**  
MONORAIL EXPORT

<sup>1</sup> ORR Passenger Rail Performance, 1 Jan – 31 March 2023 (published 25 May 2023). Available at: <https://dataportal.orr.gov.uk/media/2203/passenger-performance-jan-mar-2023.pdf>

# Maintaining fleet availability and increasing asset life



Efficient and timely train servicing and maintenance ensures operators the highest level of fleet availability. This supports shared industry objectives to increase passenger numbers, improve the reliability of the railway and raise revenue.

63% of the UK's installed train fleets, from high speed and regional fleets to metro and light rail, are supported by Alstom in some capacity. We lead the market through our offer of a complete range of customised innovative services including maintenance, modernisation, parts & repairs and support. 3,000 Alstom employees are involved in fleet maintenance and operation from our major sites at Crewe, Ilford and Widnes, along with 26 Services sites at key rail centres including Polmadie in Glasgow, Longsight in Manchester and Oxley in the West Midlands.

Many UK fleets are now halfway or more into their expected operational life of 35-40 years. Our in-house teams partner with fleet owners and operators to determine the most cost-effective way of making the most of existing assets through modernisation and retrofitting 'green' solutions, while contributing to the circular economy. One such example is the iconic west coast Pendolino, owned by Angel Trains and operated by Avanti West Coast.

The Pendolino was manufactured by Alstom in the UK over 20 years ago. These trains revolutionised the way people travelled by rail in the UK, providing fast and efficient services with a new level of comfort and speed for millions of passengers every year. Having clocked up more than 270 million passenger miles, it remains one of the most recognisable and hardest working train fleets in service.



## MAINTAINING THE ELIZABETH LINE TRAIN FLEET

Alstom was awarded the £142m contract to design and build a nine-road depot for the Elizabeth line train fleet in Old Oak Common in west London. The depot features sustainability initiatives such as ground source heating and solar panels, as part of plans to further reduce our reliance on the grid. Through the Alstom-led ATC (Alstom TSO Costain) joint venture, we also built the Plumstead maintenance depot and sidings in Greenwich. With these two depots, Alstom will service the 70-strong fleet until 2046 and provide sustainable long-term employment for local people.

## THE IMPACT OF ALSTOM IN THE UK & IRELAND

Maintaining fleet availability and increasing asset life

The 56-strong fleet of Pendolinos is undergoing an award-winning £117m upgrade programme at our Widnes Technology Centre in Cheshire. Opened in 2017, at 13,000 m<sup>2</sup> it is the largest and most sophisticated centre for train modernisation in the UK. For anyone who has never taken the Pendolino in the past, these refurbished trains appear brand new. A hundred skilled jobs were secured as part of this programme, while UK suppliers are also benefitting from 80% of this multi-million pound investment. Features such as tables made from recycled beverage bottles and British wool carpets are supporting the sustainability credentials of this iconic fleet.

As part of our commitment to decarbonising transport, we are currently piloting the rollout of Intelligent Stop Start System (ISSS) upgrades for existing diesel fleets. This system will shut down engines when their full combined power is not required. This has many benefits – reducing emissions, fuel consumption and the required frequency of engine overhauls.

Our focus on safety, quality, performance, customer collaboration, corporate social responsibility and green solutions continues to be recognised by the industry. For example, the Pendolino project won the Major Project Award at the 2023 Railway Innovation Awards. At the most recent Golden Spanners Awards, several of our fleet teams came away with accolades, including the 'Best in Class' Golden Spanner for our Etches Park team and their Class 222 Voyager fleet operating on the Midland Main Line.

As governments and operators respond to post-pandemic trends, we continue to adapt and tailor our maintenance, overhaul, spares and services offer – to ensure their existing assets benefit from reduced operating costs and increased operational efficiencies.

“ Our focus on safety, quality, performance, customer collaboration, corporate social responsibility and green solutions continues to be recognised by the industry. ”

### FIRST UK MANUFACTURED BOGIES SINCE 2008

The historic Crewe Works dates from 1840 and continues to play a key role in the maintenance and operation of the railway. While much of the current work is focused on heavy overhauls of existing fleets, the maintenance of all the bogies and traction motors of the west coast Pendolinos has been carried out onsite since March 2023. Later this decade, the bogies for the 54-strong fleet of trains for HS2 will be built and maintained at Crewe. This will be the first time these high-value items have been manufactured by anyone in the UK since 2008, with Alstom moving the work from Germany. Ground breaking for the new facility took place in September 2022.

### MODERNISING THE DEPOT ESTATE

Investing in existing rail infrastructure is a key part of reducing the environmental footprint of our operations and that of the sector. Our Wembley Traincare Depot, originally opened in 1953, provides service, maintenance and repair to west coast Pendolinos and the Caledonian Sleeper.

In 2021 we installed 755 solar panels (314 kWp total capacity) and storage batteries (100 kWh capacity), resulting in 13% of our electricity consumption originating from renewables at this site – saving 208 tCO<sub>2</sub>/year. A new train wash water recycling system was also installed, helping to recycle 99% of wash water.

### KEY FIGURES

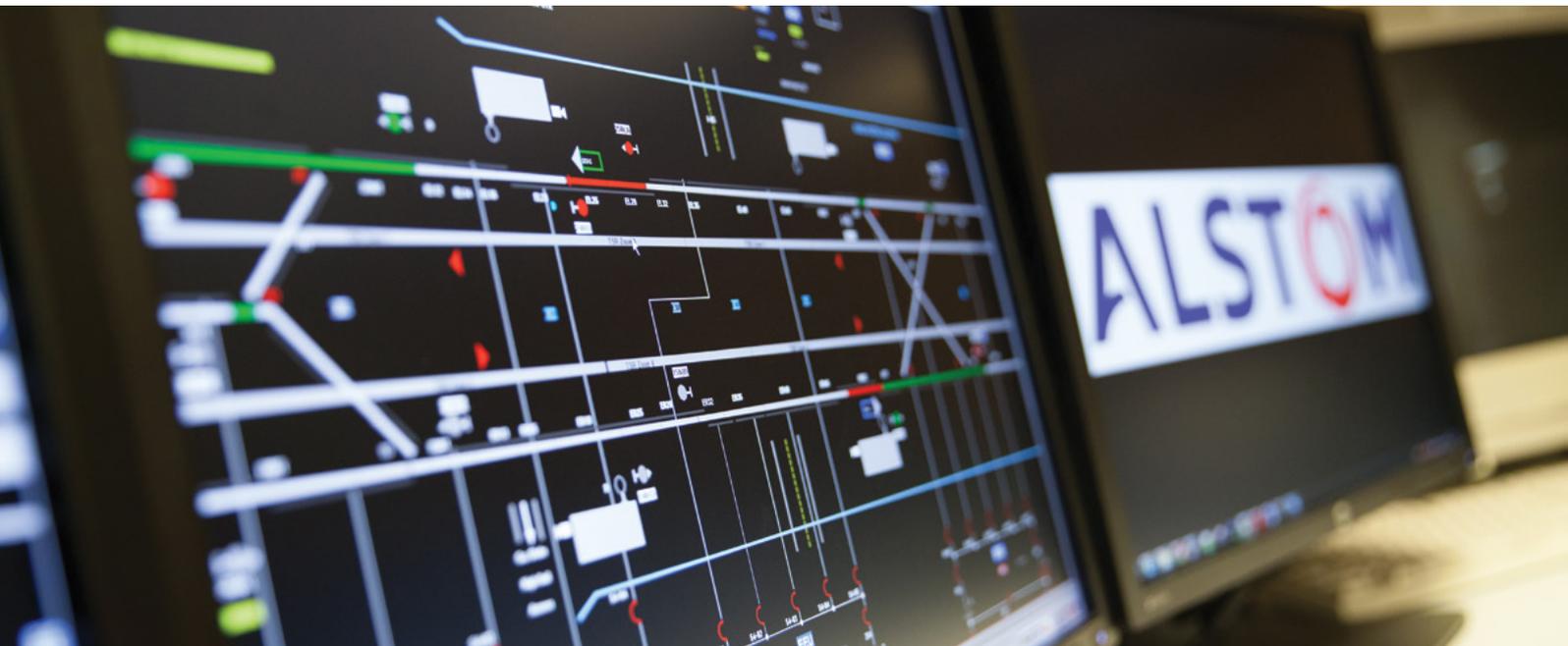
29  
SITES

3  
MAJOR SITES

3,000  
EMPLOYEES

63%  
OF THE UK'S INSTALLED FLEETS  
SUPPORTED IN SOME WAY

# Delivering the digital railway of the future



Alstom offers a complete range of signalling and infrastructure products and services. These enable rail operators and infrastructure owners and maintainers to ensure the highest standards in safe, seamless travel – with national network and metro solutions which meet the specific needs of each environment. Our approach combines automation with the latest Alstom digital technology to deliver a more dynamic, responsive and fit-for-purpose railway in the digital age. As a result, we are helping to reduce operating costs, drive greater efficiencies and improve safety for trackside workers.

Ensuring the rail network operates effectively, efficiently and safely is an important part of the solution to increasing passenger numbers and raising revenue. Our Digital & Integrated Systems (D&IS) business is a leading signalling and infrastructure provider in the UK and Ireland. We are currently delivering the two largest major signalling frameworks for Network Rail in Control Period 6 (CP6), in eastern and southern England. The breadth of our products and services is increasing network capacity, delivering new infrastructure, and protecting and enhancing asset value for the taxpayer.

Since 2015 we have delivered 237 commissioned signalling projects. These have involved more than 2,000 signalling equivalent units (SEUs) with a 100% record of on-time completion and zero major incidents. Our trusted partner status for the most complex high-profile projects in the UK and Ireland has resulted in exceptional growth, with our D&IS headcount increasing between 2020 and 2022 by 79%. We have also more than doubled the number of female employees to 22%.



## EXPORTING SIGNALLING EQUIPMENT

Our Plymouth facility is responsible for developing and manufacturing traditional signalling products alongside various components of Alstom's ETCS portfolio, for the UK and Ireland as well as international markets (15 countries and counting). Due to our growing market share, the production facility is currently being expanded to allow for the manufacture and export of a greater range of products. Our 80 on-site colleagues have recently been involved in the standardisation of onboard and wayside signalling equipment cabinets and are manufacturing these for both the Cairo Monorail and Frankfurt Airport projects.

## THE IMPACT OF ALSTOM IN THE UK & IRELAND

Delivering the digital railway of the future

As the largest major signalling framework holder in CP6, we have responsibility for delivering the Eastern and Southern Region workbank. We are also continuing to deliver major projects in the Wales & Western Region, awarded as part of CP5, as well as in the Republic of Ireland. These major projects include: track modernisation and re-signalling at London Victoria; re-signalling, recontrol and relock of the Cambridge area; Bristol area signalling renewals and enhancements – the largest single complex signalling project delivered in the UK; and the installation of a train protection system in Ireland.

Following the award of the Major Signalling Framework Agreements (MSFA) in 2019, we developed a 'One Team' collaboration charter with Network Rail to define how and why the team was formed. Developing this One Team Charter has helped create the correct behaviours to deliver on joint goals and a shared vision. To monitor collaboration and measure progress throughout the MSFA, we also jointly developed a framework-wide collaboration climate survey. As a result of a number of actions to improve collaboration, levels of trust were scored at 70.5%. Based on industry surveys in the last 15-20 years, scores above 70% are deemed strong.

Building on our successful partnerships, we will continue to support Network Rail and Transport Infrastructure Ireland through future control periods – delivering greater efficiencies and improving the reliability of railway infrastructure.



### UNDERPINNING THE HUGELY SUCCESSFUL ELIZABETH LINE

The Alstom-led ATC (Alstom TSO Costain) joint venture was awarded a contract of circa £1.3 billion to design, procure, install, test and commission the rail systems in 21 km of twin-bore tunnels for the Elizabeth line. This involved nine stations, five tunnel shafts and five tunnel portals. The contract included the design and build of the Plumstead maintenance depot and sidings in Greenwich. At peak, more than 2,000 people were working on the project and it was one of the top performing contracts from an environmental, health and safety perspective.

## KEY FIGURES

**237**  
PROJECTS

**100%**  
ON TIME DELIVERY

**0**  
MAJOR INCIDENTS

**79%**  
HEADCOUNT GROWTH

## ELECTRIFYING SCOTLAND'S RAILWAYS

Alstom, with our joint venture partners, installed the wires for the vital Edinburgh to Glasgow Improvement Programme (EGIP), where our high output wiring train installed over 350km of contact and catenary. On the Shotts project we broke new ground in efficient, cost-effective electrification. By using our wiring train we delivered the final three full wire runs – a total distance of 4,292m – in 6.5 hours and, as with all Alstom's electrification projects in Scotland, with zero safety incidents. We are well-placed to deliver multiple electrification schemes across Scotland – and provide interim battery and hydrogen trains on routes where electrification is currently not viable.

## INFRASTRUCTURE ACHIEVEMENT OF THE YEAR

Four years ago, Alstom D&S delivered a step change in reliability and performance on one of the most congested parts of the network – the 12 miles from London Paddington to West Drayton. We were commissioned to replace track circuit equipment and complete the switch to the new system within an allocated 52 hours at Christmas 2021 – minimising the impact on passengers. The project was de-risked by completing data preparation in off-site test facilities, along with a phased 'soak testing' that allowed the system to operate in 'shadow mode'. Involving 13,000 hours of offsite IXL data principles testing, it was the biggest data and systems test programme ever performed in the Western Region – and the largest ever undertaken by Alstom in the UK.

# Our responsibility as a global leader in sustainable mobility



As a global leader in sustainable mobility, we bear a great responsibility towards our customers, partners, employees, passengers and ultimately society as a whole. It is our mission to support the transition towards global sustainable transport systems that are inclusive, environmentally friendly, safe and efficient – while implementing a socially responsible business model.

## OPERATIONS

An ISO 14001:2015 accredited environmental management system is in place for all significant UK and Ireland activities. This focuses on mitigating environmental risks and managing impacts associated with resource use, carbon emissions, pollution and waste generation, to comply with legislation and set ambitious targets for improvement.

To progress our journey towards net zero carbon emissions, all fully Alstom-occupied sites are sourcing 100% green electricity from renewable UK sources. An action plan is in place to reduce energy consumption further, through new projects involving solar energy and the installation of heat pumps to lower our gas consumption. Public transport is mandated for business travel to all serviced sites. For sites not accessible by public transport, actions to green the van and car fleet have reduced the average CO<sub>2</sub> emissions per vehicle by 80-90% over five years. This included upgrading the entire van fleet to plug-in hybrid electric vehicles in 2020.



## DECREASING THE ENVIRONMENTAL IMPACT OF MOBILITY

Alstom pays great attention to the environmental impact of the products it offers over their entire lifecycle – from raw materials up to their production and use. In fiscal year 2022/23, 92% of the content in our trains is recyclable or reusable. Rail offers a clean mobility solution, emitting 76% fewer emissions (41g CO<sub>2</sub> per passenger kilometre) compared to a one-passenger car (171g CO<sub>2</sub> per passenger kilometre)<sup>2</sup>.

<sup>2</sup> BEIS/DEFRA Greenhouse Gas Reporting Conversion Factors 2019 <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2019>

## CIRCULAR ECONOMY

Alstom creates sustainable value by innovating throughout the lifecycle of our solutions. To achieve this, we follow three strategic priorities in partnership with our customers:



1

**WE INTEGRATE A CIRCULAR ECONOMY APPROACH IN THE DESIGN AND SUPPLY OF SOLUTIONS.**



2

**ONCE IN OPERATION, WE MAINTAIN AND MODERNISE ACCORDINGLY – PROMOTING STEPS THAT INCREASE COMPONENT LIFETIME THROUGH REPAIR AND REUSE.**



3

**WE OPTIMISE THE RECOVERY AND RECYCLING OF END-OF-LIFE ASSETS TO REDUCE WASTE AND ENSURE CRITICAL RESOURCES ARE PROTECTED.**



### EXTENDING PRODUCT LIFESPAN

The first circular economy project for a heavy maintenance overhaul programme has been piloted, measuring the environmental footprint of components to inform and prioritise reuse strategies. We plan to achieve at least a 49% carbon dioxide saving by reusing 70% of the fleet's fixings during heavy overhaul.

### TRANSFORMING BOTTLES INTO TABLES

100% recycled beverage bottles are providing the table-top core for the passenger tables being installed as part of the £117m upgrade of the iconic Pendolino. The structural PET foam is being manufactured in an eco-friendly manner without the use of CFCs or FCFCs. 100% of any material lost during production is reused by recycling internally.

## 95% EMISSION REDUCTION AT CAMBRIDGE

A recent study into the energy consumption of Alstom's temporary signalling sites has resulted in action to dramatically reduce carbon emissions by eliminating diesel use. For example, at Waterbeach in Cambridge, nearly 1,500 litres of diesel were being consumed each week by a generator to power the remote Cambridge Resignalling Project site – producing 219 tonnes of CO<sub>2</sub>e emissions per year. A 60 kVa generator powered by Hydrotreated Vegetable Oil fuel with a hybrid battery storage unit replaced the diesel generator, reducing annual emissions by 95% to 12 tonnes CO<sub>2</sub>e.

“As a global leader in sustainable mobility, we bear a great responsibility towards our customers, partners, employees, passengers and ultimately society as a whole.”

## THE IMPACT OF ALSTOM IN THE UK & IRELAND

Our responsibility as a global leader in sustainable mobility



Apprenticeships with Alstom usually last three years, during which apprentices acquire nationally recognised qualifications along with 'on-' and 'off-the-job' training. Our graduate trainees participate in a robust and structured two-year programme to develop their technical and managerial competencies. Alstom's Graduate Scheme is accredited by several professional bodies, including the Institution of Mechanical Engineers and the Institution of Engineering and Technology.

“ All levels of apprentices and graduates will now enter their traineeship with Alstom through the Academy, no matter which of our 37 locations around the UK they will eventually call home. ”

### ATTRACTING AND DEVELOPING THE RAIL INDUSTRY'S BEST TALENT

As a certified Top Employer in the UK with a CSR Commitment Label from French auditor AFNOR, we care for the people who decide to join our company. Along with direct entry for skilled professionals, on average we recruit 60 apprentices and up to 30 graduates each year. As a proud signatory to the Armed Forces Covenant, we have been recognised as Silver Level in the Defence Employer Recognition Scheme for our strong internal network of service personnel, and our efforts to support those leaving the armed forces on their journey into new employment.

In the year we delivered over 59,000 hours of training to develop the skills and knowledge of our colleagues. We also launched Alstom's National Training Academy, a £250,000 facility at our Derby site to further increase the professionalism of our training offer in the UK. All levels of apprentices and graduates will now enter their traineeship with Alstom through the Academy, no matter which of our 37 locations around the UK they will eventually call home.





## PROTECTING OUR EMPLOYEES' HEALTH AND WELLBEING

Environmental, Health and Safety protection continues to be an utmost priority for Alstom, our employees and our contractors. We deploy ambitious programmes, including the Alstom Zero Deviation Plan which focuses on high-risk activities, to reach a clear target: prevent accidents and eliminate all severe incidents. Continuous improvement is driven through measurable environment, health and safety objectives – including extensive training for all employees and a zero-tolerance approach to safety violations. In fiscal year 2022/23, there were no severe accidents or fatalities. A full review of any accident, incident or near miss is undertaken with senior management representation. Advanced root cause analysis is performed in all cases,

with outcomes shared throughout the business nationally and internationally.

We signed the Rail Mental Health Charter to demonstrate our commitment to promoting and supporting a culture where the physical and psychological health of our people is respected, protected and, where possible, improved while at work. We have a network of more than 200 Mental Health First Aiders and Health & Wellbeing Champions. In the report year, we saw a seven percentage point increase for the health and wellbeing score in our annual Top Employer Assessment.

### SAFETY FIGURES IN FY 2022/23



SEVERE ACCIDENTS OR FATALITIES



LOST TIME INJURY FREQUENCY RATE (IFR1)<sup>3</sup>  
Below the 1.2 target



TOTAL RECORDABLE INJURY RATE (TRIR)<sup>3</sup>  
Below the 1.6 target

### SAFETY AUDITS



ALSTOM SITES CERTIFIED  
TO ISO 45001

<sup>3</sup> Including employees and contractors

## CREATING A DIVERSE AND INCLUSIVE CULTURE

We value diversity and give everyone equal opportunity to contribute their knowledge, skills, experiences and perspectives. We aim to create an inclusive workforce which reflects the diversity of the communities that we serve and operate within.

In 2017 we launched our biannual Equality, Diversity & Inclusion census to identify improvement areas. From the findings we developed and delivered the Alstom8 workshops, to raise awareness and give practical advice on how to successfully drive inclusivity in the workplace. Alongside this, our four 'Voices' groups help us to share lived experiences; challenge groupthink in our strategy and policies; have oversight of relevant KPIs; and act as ambassadors.



### WORKFORCE SHARE

**14%**  
WOMEN

**11.8%**  
BAME

**3.2%**  
LGBTQ+

**10.9%**  
DISABLED

“ As the only train manufacturer to achieve the highest level of Disability Confident accreditation, Alstom joins High Speed Two Ltd and Network Rail in leading the UK’s rail industry towards true integration of disability and neurodiversity in the workplace. ”

## LOCAL COMMUNITY ACTION

We have aligned our Sustainability and Corporate Social Responsibility Strategy with the UK Government’s Social Value Model, to ensure our efforts secure wider social, economic and environmental benefits which will support the post-pandemic recovery.

As such, we prioritise actions that:

- ✔ Tackle social inequality
- ✔ Drive equal opportunity
- ✔ Fight climate change
- ✔ Improve health and wellbeing



**3,800+**  
STAFF INVOLVED IN COMMUNITY  
ACTIONS SINCE 2021

**13,600+**  
HOURS OF LOCAL COMMUNITY  
ACTION SINCE 2018

**41,800**  
BENEFICIARIES OF LOCAL  
COMMUNITY ACTION SINCE 2018

## THE IMPACT OF ALSTOM IN THE UK & IRELAND

Our responsibility as a global leader in sustainable mobility

### WIDENING ACCESS TO OPPORTUNITY

Alstom's educational outreach programme inspires the next generation of talent at partner schools, colleges and universities by promoting exciting careers in rail – to help tackle future skills and diversity shortages. Our STEM (Science, Technology, Engineering & Maths) ambassadors dedicate time during working hours to prepare and deliver interactive activities including classroom talks, site visits and work experiences. In addition, we have developed an established employability programme.

### VOLUNTEERING

Alstom encourages its employees to use their volunteer day to undertake an activity that is meaningful to them and which meets local social and/or environmental needs. Actions have

included renovating premises and gardens, growing vegetables for local food banks, fundraising for charities, tree planting and creating 24-hour kits for children entering foster care.

### CHARITABLE DONATIONS

Staff hold regular fundraising events throughout the year for charities of their choice, supported by Alstom's staggered match funding process for employees. In addition, collections for local food banks, clothing and children's charities are established across the country to support people in need.

## ALSTOM FOUNDATION

The Alstom Foundation supports and funds projects proposed by Alstom employees, who team up with local NGO partners and not-for-profit organisations to carry out initiatives aimed at improving living conditions in communities located near Alstom facilities and our project sites around the world.

### 4 Key Focus Areas:

ECONOMIC  
AND SOCIAL  
DEVELOPMENT

ACCESS TO  
MOBILITY

ENVIRONMENTAL  
PROTECTION

ACCESS TO  
ENERGY AND  
WATER

**£538,000**

funding granted by the Foundation to 8 UK and Irish projects since 2016/17

**£311,000**

community investment through the UK&I Community Action Plan since 2018/19

**7**

socio-economic development projects in UK

**1**

access to mobility project in Ireland

**2,000+ people**

benefited from Alstom Foundation actions in UK&I up to June 2023

### A WORD FROM



**Pauline MEDOVNIKOV**  
RAILWAY CHILDREN



Railway Children is a 25-year old charity fighting for children alone and at risk on the streets in the UK, India, and East Africa. We provide protection and opportunity for children with nowhere else to go and nobody to turn to. The Alstom Foundation has provided Railway Children with four consecutive one-year grants since 2019 for a total amount of more than £285,000. This recurring support has really helped set sound foundations for our projects, enabled us to plan ahead and given some visibility on our initiatives. Alstom's support is essential as it has enabled the continued and uninterrupted delivery of our programme in the North-West. It has helped us focus on three main issues faced by the young people who need our support: mental health, education and family relationships.»

# Future Outlook



The private sector has a critical role to play in reinvigorating the railways – as it did over 30 years ago. Approximately 389 million passenger journeys were recorded in Great Britain from 1 January to 31 March 2023<sup>4</sup>. This is 88% of the 443 million journeys in the same quarter four years ago (pre-pandemic).

Governments, manufacturers, train owners and operators, along with infrastructure owners and maintainers, are working to achieve the same objectives – increase passenger numbers, improve the reliability of the railway and raise revenue while meeting committed net zero targets. The disruption of the past few years must not be allowed to distract from this critical mission.

The UK Government has set a target to decarbonise rail by 2040, including seeking to remove or convert all of the circa 3,700 diesel rail vehicles used on the network today. The Scottish Government has set an earlier target for Scotland's railway, requiring the removal or conversion of all types of pure or partial diesel passenger trains by 2035. The Government of Ireland's Climate Action Plan has set out a pathway towards achieving a 50% reduction in transport emissions by 2030. The Welsh Government has also set an ambition for a net zero public sector - including transport - by 2030.

As a global leader in sustainable mobility, Alstom and our over 6,200 employees continue to step up and be a driving force in the UK and Ireland – with a blend of proven traction technologies including electric, battery-electric and hydrogen. Alstom is the only train manufacturer with hydrogen trains in passenger service, demonstrating that hydrogen traction is a viable option for future new and reopened lines where electrification remains unviable.

Alongside delivering new trains we also refurbish, enhance and green existing fleets, allowing customers to respond to changing passenger demands; and offer the very best maintenance, parts and spares service. Enhancing the cost efficiency of existing assets will support the sector's long-term financial outlook.

As the largest single supplier to Ireland, through the LUAS and DART+ projects, our ambition is to help Ireland deliver its Climate Action Plan in Dublin, Cork and across the country. Battery technology is particularly well suited to fill gaps on routes that are electrified with overhead catenary, or to allow for the introduction of new fleets while electrification is extended, as is the case with DART+. On longer and less intensely trafficked routes, using hydrogen fuel cells provides a viable, zero emission and cost-effective alternative to the capital costs of electrification. The same is true in Scotland, where we strongly support the Scottish Government's plan to remove diesel traction by 2035 - and where Alstom's ability to offer electric, battery and hydrogen capability means we are uniquely placed to play our part in meeting this goal.

Building on our position as the largest major signalling framework holder in CP6, we will continue to support Network Rail in delivering greater efficiencies while improving the reliability of the railway. Certainty and visibility of the work pipeline, both for CP7 and beyond, will help suppliers like ourselves build and maintain the world-class railway we all want as cost-effectively as possible.

Beyond these committed plans, Alstom would like to help the UK regain its position as one of the world's key rail sector exporters. With strategic support from Government, there is potential to grow UK exports of monorail cars, high speed rolling stock, digital signalling products and much more. At the same time, the UK should seek to be self-sufficient in key products such as train-grade aluminium and increasingly sophisticated train control software, which are currently imported.

Both of these visions are achievable, but only if industry works closely with Government and the future Great British Railways to ensure greater domestic market visibility – investing in the skills of the future and developing industrial strategies that create the sustainable domestic production of key components.

<sup>4</sup> ORR Passenger Rail Usage (Published 8 June 2023) <https://dataportal.orr.gov.uk/statistics/usage/passenger-rail-usage/>

# Methodology

## SCOPE OF THE STUDY

The numbers and statistics given are for the fiscal year (FY) 2022/23.

## SOCIO-ECONOMIC FOOTPRINT

The model used by EY to represent the socio-economic rippling effect within a given territory is based on the work of economist Wassily Leontief, who earned the Nobel Prize in Economics in 1973. This research is centred on the use of symmetric input-output tables to simulate the interdependence of all sectors of an economy. Moreover, since the model is linear, any economy of scale is ignored.

By combining this modelling of the economy along with the employment intensity of each sector, it was possible to determine the indirect and induced socio-economic benefits. Those results are being derived from all Alstom's activities worldwide and all global procurement. They are displayed at a national level but reflect the global supply chain of Alstom, along with the goods and services exchange made between economic actors of all the countries in the world.



The contribution of the activity/entity itself to the economy (e.g. in terms of the number of employees working for Alstom).

Socio-economic footprint job results are expressed in FTEs (Full-Time Equivalents). However, for communication purposes, the choice was made for this study to consider the number of employees as the number of direct jobs. The number of employees being greater than the number of FTEs, the choice translates in an 8% potential overestimation of the total number of supported jobs.



To "produce" direct effects, a company needs to acquire goods and services (e.g. scrap metal, electricity, technical analysis services etc.) from suppliers. Those suppliers increase their production and hire additional staff in order to meet the demand of Alstom. Suppliers themselves purchase from other firms (their suppliers), creating a second-rank effect and so on along the supply chain. Those effects along the supply chain are indirect effects. Socio-economic impact (jobs and Gross Domestic Product - GDP) generated by surplus of demand in the value chain are indirect impacts.



Induced effects are the results of increased household expenses caused by the labour income of direct and indirect jobs. Employee spending generates more demand in the economy, which leads to more production and, in turn, more profits, GDP contribution, employment, taxes, and so on.



**Eric MUGNIER**

EY Partner, Sustainable  
Performance & Transformation



For more than 200 years, Alstom has accompanied the UK and Ireland in the modernisation and development of its transportation network. Alstom participates in industrial development of the UK and Ireland, thus ensuring the sustainability of mobility, and positively impacts the daily life of populations through its social, environmental and community commitments.

The study conducted by EY focuses on the impact of Alstom in the UK and Ireland and is based on the identification, measurement and evaluation of more than 40 KPIs connected to Alstom's CSR strategy pillars. Selected KPIs include a socio-economic analysis using a multi-regional input-output model, enabling the quantification of Alstom's contribution to UK and Ireland's development in terms of jobs and value creation. Those socio-economic indicators rely on a state-of-the-art methodology involving Alstom data and the use of external databases (EORA).

This approach enables Alstom to better assess and measure its impact on stakeholders. It also demonstrates and strengthens Alstom's commitment to having a positive influence for the communities in which it operates.

“ This approach enables Alstom to better assess and measure its impact on stakeholders. ”





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• mobility by nature •

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