



## **North East Leadership Board**

Tuesday 15th July, 2014 at 2.00 pm

Meeting to be held: Committee Room, Civic Centre, Newcastle upon Tyne, NE1 8QH

[www.northeastca.gov.uk](http://www.northeastca.gov.uk)

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## **SUPPLEMENTAL AGENDA 2**

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North East Rail Statement	

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**To All Members**

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Page 1



# RAIL CAPABILITIES

Our contribution to the future of Britain's railways

Agenda Item 4a

# Foreword

## North East England – home to expertise in rail technology

The North East of England was the cradle of the railways and has a strong track record of innovation in railway engineering, from the days of Stephenson's 'Rocket' to the pioneering development of the Tyne and Wear Metro system in the 1970s.

A track record recently endorsed by the decision of Hitachi Rail Europe to locate its European manufacturing facility in County Durham. The North East has a vibrant rail engineering sector, supporting delivery of the £389m Metro modernisation programme, among other major national and regional infrastructure projects.

It is home to a wealth of high expertise in the rail technology industry and our current and forthcoming plans aim to ensure that these skills and knowledge are future proofed for generations to come.

The North East continues to be a net exporter of goods and therefore transport links, including rail, remain crucial in helping our industries to find new markets and contribute to economic recovery.

The North East Combined Authority and The North East Local Enterprise Partnership would welcome the opportunity to play a role in the future of the recently announced hs2 skills academy and we believe we are strategically placed to play a fundamental role in the 'hub and spoke' model approach which government has recommended for the academy as well as an overall positive contribution to the hs2 rail network.



Simon Henig  
Leader Durham County Council  
Chair North East Combined  
Authority



Paul Woolston  
Chair North East Local  
Enterprise Partnership

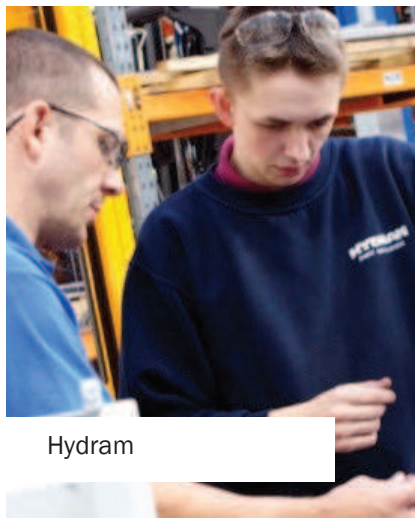


Dyer Engineering



Hitachi Rail Europe





Hydram



Romag Ltd



Ebac

## Track record

The North East's rail capabilities were recently endorsed by the decision of Hitachi Rail Europe to locate its European manufacturing facility in County Durham.

## Introduction

The North East Combined Authority is embracing its role as the region's strategic lead and is fully committed to promoting and developing economic growth together with the North East Local Enterprise Partnership. We have a shared responsibility for 40,315 businesses and a workforce of 850,600 equating to 3.5% of the national total (212 figures). The geographical area this partnership covers includes County Durham, Gateshead, Newcastle, North Tyneside, Northumberland, South Tyneside and Sunderland.

The businesses and people in the area have delivered excellent economic performance in recent years, outperforming national growth rates for output, productivity and employment. In just twelve months, nearly 20,000 additional jobs have been created – equivalent to 28% of the employment growth seen over the ten year period of the previous growth cycle. This is a great achievement

which demonstrates the area's economic potential. Our scale, sector strengths and international reach make us a powerful place to do business, with commercial strengths manufacturing, engineering, life sciences and low carbon technologies. Coupled with a quality of life which is second-to-none and real incomes that are some of the highest in the country, the area offers a compelling story for investment and increasing prosperity.

This document highlights the wealth of expertise and knowledge that the North East holds specifically in the rail industry and its associated technologies as well as our positive current and forthcoming plans. The hs2 Skills Academy, recommended by Lord Deighton, presents a unique opportunity to ensure that the country is skills ready to undertake hs2. This document details how the North East could play a pivotal role in its development and in the construction and operation of the High Speed Network as a whole.



Engineering

## Strong And United Leadership

This proposal has been developed by the North East Combined Authority, comprising the seven local authorities of Durham County Council, Gateshead Council, Newcastle City Council, North Tyneside Council, Northumberland County Council, South Tyneside Council and Sunderland City Council. The formation of this new body enables the North East to have a strong and united voice in outlining the strategic role we can play in HS2 and rail engineering skills training, helping to maximise our region's opportunities and potential and the nation's ability to deliver this transformational infrastructure project.

Our plans have the enthusiastic support of the North East Local Enterprise Partnership (the fourth largest local enterprise partnership in the UK) which brings together business leaders, universities and elected members of the North East Leadership Board to promote and develop economic growth in the area. The Partnership's Board includes each of the leaders and the elected Mayor representing the seven councils making up the Combined Authority. In turn, the Partnership Chair is a member of the North East Leadership Board, the strategic decision-making body of the Combined Authority. This demonstrates the close and co-operative working arrangements we have in place between local authorities and the business community, with the Combined Authority providing the necessary democratic oversight and leadership.

The North East's Strategic Economic Plan, submitted to government in March 2014 by the Local Enterprise Partnership, sets out an ambitious vision to strengthen the area's economy and provide more opportunities for businesses and communities, with the aim of providing over one million jobs by 2024. Particular emphasis is placed on infrastructure investment and skills and our ambition to build upon our rail capabilities is perfectly aligned with the goals of the Plan.

Our area has a strong track record in developing skills and expertise to ensure the efficient delivery of major transport schemes, with the new Tyne Crossing project, which was completed on budget and ahead of schedule, receiving the top civil engineering award at the British Construction Industry Awards in London during October 2012.



Haymarket, Newcastle



# The North East Local Enterprise Partnership Area

The North East local enterprise partnership's economy has become one of the most dynamic in the UK and Europe, helped by massive investment in a new generation of advanced technologies.

Newcastle international airport provide excellent connections into Europe, and the North East's Port of Tyne plays a big role in making it one of the UK's largest exporters. Good road networks throughout the North East link the major business and industrial centres with journey times of well under an hour. More than 500 leading international companies are located in the area. They include Nissan, VanTec Europe, P&G, Sage, GSK and Hitachi Rail Europe. Their presence and the ground-breaking projects in which many are involved, have turned the North East into one of the most dynamic parts of Europe.



Haymarket, Newcastle

## Enterprise Zones

Enterprise Zones support new and expanding businesses by offering a range of incentives. By being priority sites they offer not only business rate relief or enhanced capital allowances, but also a quicker planning process. The North East Enterprise Zone has ten sites located around the Port of Blyth, the North bank of the River Tyne and the Nissan plant in Sunderland. A number of incentives are available to assist firms to locate on these sites.

## Accelerated Development Zones

Within the North East Local Enterprise Partnership area, government has announced a NewcastleGateshead Accelerated Development Zone (ADZ) which comprises four key sites covering 80 hectares offering significant growth potential over the next 25 years. Forecasts indicate that that the ADZ will generate 13,000 jobs and attract new inward investment. The Science Central site is expected to support 1900 jobs in STEM related professions.

## International Advanced Manufacturing Park

Through the Sunderland and South Tyneside City Deal, a new 100 hectare International Advanced Manufacturing Park (IAMP) is to be built in Sunderland, which will house automotive, off-shore and other hi-tech businesses. The Park will build on the North East region's track record for manufacturing and exports, and is predicted to attract £295m of private sector investment and create an estimated 5,200 new jobs, the majority in STEM sectors.

## Merchant Park

Merchant Park at Newton Aycliffe has planning permission to develop out 1.4 m sq ft for B1, B2, B8 uses. The first occupier will be Hitachi Rail Europe with its 430,000 sq ft manufacturing facility, with an investment of £82m. The Agility train consortium has been awarded a £5.8 billion contract from the Department of Transport to finance, design, manufacture, maintain and service the next generation of intercity carriages. The park will act as a catalyst for our rail skills and supply chain.



Our area is a great place to do business which is, in part due to our exceptional growth in productivity and competitiveness. The North East is a great place to live and work. The area has the lowest median wages in the country making it an attractive location for employers as well as creating a higher quality of life and lower costs of living for employees.

In both 2011 and 2012, the North East was the only area in England to record a trade surplus of goods (of +£2.5bn and +£4.8bn respectively). The profile of the North East as a net exporter makes it unique in the UK and export performance based on a strong engineering and manufacturing sector is one of the defining features of the area. The area has successfully captured inward investment over recent decades, and over 42,000 jobs have been created in the North East through foreign direct investment (FDI) between 2005/06 and 2012.

For more information on land and premises in the area visit:  
<https://www.locatenortheastengland.co.uk/>

### NORTH EAST LEP

<b>POPULATION</b>	<b>1,934,095</b>
<b>WORKFORCE</b>	<b>850,600</b>
<b>BUSINESSES</b>	<b>40,315</b>
<b>GVA PER CAPITA</b>	<b>£16,100</b>
<b>EMPLOYMENT</b>	<b>69.2%</b>



**EDUCATION**  
30.0% NVQ4+



**AVERAGE HOUSE PRICE**  
£148,000

### GROWTH OF GVA PER HEAD

North East LEP economy has done a very good job catching up with the rest of the country particularly in the last 3 years, when we had one of the best growth performances in England





# Research & Innovation

## Newcastle University

Multidisciplinary research teams based within the University's Transport Newcastle and NewRail offer a wide range of transport and rail related expertise. Transport Newcastle focus predominantly on environmental considerations, safety/security, transport connectivity, transport intelligence working closely with Changing Age team to delivery age inclusive solutions. Whilst NewRail is the leading rail research group in Europe, have expertise in Rail Freight and Logistics, Rail Infrastructure, Rail Systems and Rail Vehicle Engineering aspects. They are also the preferred university research supplier to Embardier Transportation, particularly with regards to materials. New Rail has a working railway centre which provides excellent facilities for full-scale rail vehicle and track investigations.

**Durham University's** School of Engineering and Computing Sciences perform research and technology transfer. Industry collaborations include large global companies such as ALSTOM, Cemex, Cummins and G.E. Research teams are currently involved in developing new technologies in energy systems, power generation, design and manufacturing, computational mechanics, process modelling and aerodynamics, using state of the art computational and experimental facilities. Durham University also hosts the national EPSRC Centre for Through Life Engineering in partnership with Cranfield University.'

**Sunderland University's** Institute for Automotive & Manufacturing Advanced Practice (AMAP) is part of the Faculty of Applied Sciences. Its expertise covers a broad range of industrial applications and digital engineering technologies and provides a range of valuable services to manufacturers including those in manufacturing and maintenance engineering. By providing problem-solving solutions to manufacturers of all capabilities, offering training or advice, or working in partnership-based research, AMAP's basic working principle is to improve or develop the current state of a company or individual.

**Northumbria University's** research expertise focuses on Communications, Control and Instrumentation, Advanced Materials and Manufacturing, and Sustainable and Renewable Systems. In addition, the Design School has a research focus on Interaction Design, meeting the challenges presented by new technologies in the 21st century. The group takes a multidisciplinary approach to the development of robust but highly novel paradigms and methodologies such as user-security, community empowerment, interactive media performance and transdisciplinary collaboration.



One of the seven Centres of Excellence of the **High Value Manufacturing Catapult** is located at NETPark, County Durham. The Catapult works with corporations of all sizes across many industries - from companies like Rolls-Royce to start-up SMEs needing to reduce the risk of developing the next great idea. The Catapult provides UK business with a gateway to access the best manufacturing talent and facilities in the country. NETPark is an exemplar location for science and technology companies in the UK providing a dynamic environment to accelerate growth of companies into global markets

The **North East Satellite Applications Catapult Centre of Excellence**, located at NETPark, County Durham, provides the region with a unique opportunity to exploit satellite applications and technology within the global rail sector. The UK is strongly engaged in using satellite based technologies in the rail sector and has developed group standards to support the implementation of Global Navigation Satellite Systems (GNSS) within UK railways.



## Skills & Training : Colleges

Our colleges and universities are working together to offer a coordinated range of railway engineering, and transportation courses across the region. Tailor made apprenticeships for key local employers, together with generic programmes defined by national standards, enables students to develop their skills in actual working environments. This further education investment will build on existing experience and training infrastructure to develop the right skills necessary for the future of the railways in Britain.

Newcastle College Rail Academy is the first hub in the country which focuses on railway engineering. A £5 million Academy, opening September 2014, to train the rail engineers of the future from GCSE to degree level. Developed in conjunction with the National Skills Academy for Rail Engineering and key rail employers such as Network Rail, over 800 students will be trained in the next five years in topics such as electrification, signalling and telecommunications. At the end of the course students will receive a Level 3 Diploma in Rail Engineering. The purpose-built facility will have real working environments with equipment donated by the London Underground.

Gateshead College is delivering a tailor-made training and assessment programme for 30 rail apprentices with 20 engaged as rail technicians for Nexus and DB Regio. They are also in advanced negotiations to establish a specialist light railway engineering academy which will offer a co-delivery model; industry experts delivering on college training courses in bespoke training facilities aligned to one of the region's key rail employers. This model has proven successful in the automotive manufacturing sector with bespoke and state of the art college facilities aligned to Nissan UK and their supply chain. Building on their success in other sectors, delivering unemployed and ESF funded training with exceptionally high job outcome rates, the college will engage with industry partners to design a rail industry recruit and train model to plug recognised employment and skills gaps. This will include bespoke skills development and training for a

range of key groups including NEET, Unemployed, Pre-apprenticeship and Apprenticeship learners as well as up-skilling the existing workforce and providing career pathways for OLAS and armed forces resettlement individuals. The college is also delivering a suite of other rail related curriculum and qualifications including IT/ Internet protocols and signalling, leadership and management and a track safety and safety critical rail curriculum. Working with regional stakeholders and partners, Gateshead College hopes to develop a railway engineering training solution that is fit for purpose, collaborative and meets the needs of the region enabling us to secure a reputation for rail training excellence in the North East.

New College, Durham offers Engineering Apprenticeships at NVQ level 2 and 3. Successful students can progress to HNC and HND qualifications in Mechanical, Electrical and Electronic Engineering. The college has 2,500 students and is in the top 10% of colleges based on performance. East Durham College, Peterlee has a dedicated engineering department and has recently invested over £100k on new, state-of-the-art facilities and equipment including an ABB Robot Cell, EMCO Vertical Milling Machine, SMC Production Simulation Systems and much more. The College offers Engineering BTEC levels 1 to 3 in Electrical Engineering, Engineering Operations and Manufacturing. It also offers an Electrotechnical Apprenticeship at NVQ level 3. A City and Guilds Railway Engineering NVQ is offered in Durham and Gateshead and provides knowledge,

understanding and practical skills to introduce students to the railway industry.

Tyne Metropolitan College is securely placed as a regional leader in STEM training, working alongside employers with international pedigrees and a strong track record for high performance in partnership. The specialist engineering areas at TyneMet, mechanical, electrical, precision and power engineering, places the offer in North Tyneside and the region well in relation to specialist rail technology at the heart of the hub and spoke concept.

The College performs in the top 10% of Colleges with a 480% growth in students selecting the top performing College and department to study engineering. The College is the only STEM Assured © College in the North of England, undergoing the highly rigorous New Engineering Foundation review to achieve the quality kite mark, which places the College in a unique position to offer the skills and training to meet industry needs and standards.



## Skills & Training : the North East LEP skills pilot

The North East Local Enterprise Partnership is one of only three Enterprise Partnerships to have been chosen by government across the country to pilot new approaches to skills development funding to help boost local jobs and business growth.

Working together through the strategic skills group with the combined Authority, the Skills Funding Agency and local colleges and providers, the development of the model is progressing well.

The model will use financial incentives to encourage colleges and local training providers to make sure that the skills provision meets the skills need of businesses. Focusing on job outcomes, higher skill levels and training in science, technology, engineering and mathematics (STEM) subjects it will help create more and better jobs for the area. The pilot is due to begin in September 2014.

Apprenticeships are fundamental to the sustainability of many local businesses and it is therefore crucial that the system works effectively for individuals, employers and providers. Through our strategic economic plan, we will enable employers to support our objective to double the number of youth apprenticeships by 2018. In addition to these two specific proposals, local partners are committed to building on existing school-business relationships to ensure all young people are exposed to business and enterprise opportunities

The number of apprentices studying in STEM subjects in the NELEP area is 4,600 for the 12/13 academic year.

Key companies in the region offering apprenticeships include BAE Systems, Nissan, Deutsche Bahn, Nexus, Wellstream, British Engines, JDR Cable systems and Rolls Royce.

A bid to create the North East's first University Technology college (UTC) specialising in engineering has recently been submitted to the Department of Education. If successful the college will be built on land near the Hitachi plant. The bid which is being championed by University of Sunderland, Hitachi Rail Europe and Gestamp Tallent. The college will train 600 students per year and will be vitally important in bolstering the region's manufacturing strength.

As part of the skills implementation plan as part of the North East Local Enterprise Partnership, projects have been submitted for funding which would start in 2015/16; several of these include:

Northumberland College: Advanced Manufacturing Centre - a complete training solution for advanced manufacturing and next generation wind turbine energy and aims to become a regional, national and international Centre of Excellence.

Through investment supported through the Local Growth Fund, a STEM

and Innovation centre located at TyneMet College will be established which will support the engineers of the future developing level three and higher qualifications as NELEP priorities identified by the economic review as well as a key stage 4 facility working in partnership with North Tyneside Council to deliver a facility that will provide young people in North Tyneside and beyond with training, career advice and guidance, project base solutions and with employers, schools and universities to support the future needs of industry, due to open September 2015. This will be facilitated by the strategic partnerships which Tyne Met College has with Siemens PLC, Rolls Royce Training (NE) Ltd, British Engines Ltd, Fabricom, Chirton Engineering as well as delivering on behalf of a range of training providers.

South Tyneside College: Facilities for Marine & Offshore Engineering - Development of facilities for technology and manufacturing in the offshore, renewable energies and advanced production areas.

Nexus employs 400 people in rail engineering on Metro, and was named best in the country for Training and Development at the 2014 UK Rail Business Awards. It provides major apprenticeship and management training programmes based at regional colleges and universities as it seeks to revitalise an ageing workforce over the coming years. As part of the wider Strategic Economic Plan, Nexus is seeking to establish a rail training facility at Heaton in order to supplement existing arrangements for Metro as well as offering the possibility to work in partnership with other training providers within the rail industry



Engineering apprentice



# Skills & Training : Universities

**Northumbria University** offers a four year full time course in Transportation Design informed by professional practice as well as research and academic debate. It is project and studio based, integrating design practice, technology and theory. A vocational focus equips graduates for employment in the transportation design industry. The course also broadens understanding of the changing needs of society, the concept of sustainable transportation design, the maintenance of appropriate ethical standards and the regulatory framework within which work is conducted.

**Sunderland University's** Computing and Engineering School will have nearly 300 graduates in 2014 and offers engineering courses in Automotive, Mechanical, Manufacturing, Telecommunications, Electrical, Systems, Digital and Motorsport. Sunderland University is leading a partnership bid for a South Durham University Technical College (UTC) in Newton Aycliffe in collaboration with Hitachi Rail Europe and Gestamp Tallent. The curriculum will have a heavy focus on Engineering and will seek to teach with significant reference to real world examples of the excitement and challenge that engineering offers.

**Newcastle University** has been offering engineering courses since 1871 and is ranked 5th in the UK for employability and amongst top 12 in the UK for research power in science and engineering. In 2012 95.2% of our UK/EU graduates progressed to employment or further study within six months of graduating. It offers a wide range of general engineering course like Automation and Control,

Digital Electronics, Electrical and Electronic Engineering, Electrical Power Engineering, Electronic Communications, Electronics and Computer Engineering, and Microelectronics applicable to rail engineering. NewRail also offer an MSc in Rail Freight Logistics and a range of accredited Continuing Professional Development courses which are directly related to developing key skills for rail engineering and rail management. It runs an established summer school for both home and international rail students.

**Durham University** is the only university in the UK to have all of its subjects ranked in the top ten, it is also ranked fifth overall according to the Complete University Guide 2015. Durham's graduate engineers are busy developing and maintaining the global infrastructure required to support modern life (transport, buildings, communication systems, energy generators and grid networks, clean water supplies and medical implants). The School of Engineering and Computing Sciences is one of a small number of General Engineering departments in the UK as the University considers it an integrated subject. The School is closely linked to many industrial partners for both teaching and research purposes, which ensures that graduates are best placed to apply their learning on entry to the working environment.

**There is a commitment from the North East's graduates to remain in the region. 57% of the North East's employed graduates work in the North East. This retention level is only bettered by London (74%) and the North West (66%).**



Northumbria University



Sunderland University



Newcastle University



Durham University



# RAIL CAPABILITY IN THE NORTH EAST LEP AREA



The region has an energetic and diverse rail engineering sector spanning large infrastructure companies, global train and component manufacturers including Hitachi and Siemens, major fleet maintenance facilities for northern England and a diverse supply chain network. Many of the area's successful businesses hold a prominent position in national and international markets, with exports for goods such as machinery and passenger vehicles holding up well. Manufacturing is located largely in modern out-of-town industrial parks; there are particular clusters and corridors emerging, specifically around vehicle manufacture and renewable energy. The area remains particularly strong in the engineering and manufacturing sectors. Our firms have a commitment to building future skills and are ideally placed to offer apprenticeships, collaborate with education providers and to provide the components, skills and expertise required to deliver both conventional and high speed rail solutions. The map shows the clusters of rail expertise present in the NELEP area.

- ### GENERAL RAIL CAPABILITY
- 1 Romag Ltd - Glass made to rail industry standards.
  - 2 Elite Composite Products Ltd - Laminates & lighting systems for carriage interiors.
  - 3 Hydram - Specialist fabrication of metal products & components for rail & aerospace.
  - 4 Dyer Engineering - Design, fabrication & welding, CNC machining, specialist coatings.
  - 5 Ebac Industrial Products Ltd - Specialist air-conditioning systems for rolling stock.
  - 6 Thermacore Europe Ltd - Thermal management of power electronics, motors etc.
  - 7 Kilfrost Ltd - De-icing products for track and rolling stock.
  - 8 Tharsus Engineering Ltd - Advertising displays (technical).
  - 9 BSS LED Ltd - LED lighting systems for rolling stock.
  - 10 Nomad Digital Ltd - Wirelsss solutions for transport sector.
  - 11 Petards - Passenger security, on board CCTV, level crossing monitoring.
  - 12 DB Schenker - Brownfield 65 acre site at Tyne Marshalling Yard.
  - 13 Ontrac - IT solutions company.
  - 14 TES 2000 - Ensures safe working practices on the rail network.
  - 15 Nexus - Owns, manages and modernising 60km Metro infrastructure.
  - 16 Houghton International Rail - Leading Traction Motor & MA Set repair & manufacture.

- ### ROLLING STOCK
- 17 Deutsche Bahn Regio - Major fleet maintenance and operations facility for Metro.
  - 18 Northern Rail - Major fleet maintenance facilities at Heaton.
  - 19 Hitachi Rail Europe Ltd - Assembly of carriage and interiors.
  - 20 Sabre Rail Ltd - Manufacturer of braking systems and dampers.
  - 21 Siemens - All aspects of electrical switchgear & components for rolling stock.

- ### INFRASTRUCTURE
- 22 Trackwork Ltd - Production of track systems including switches & crossings.

- ### SERVICE
- 23 Rail Restorations North East - Traditional coach building & heritage vehicle restoration.

# Contacts

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