

LARGE SCALE BULK STORAGE AND HANDLING

Institution of
**MECHANICAL
ENGINEERS**

19-20 November 2014
Forest Pines Hotel, Broughton, North Lincolnshire
www.imeche.org/events/S6155

Process Industries Division
Seminar/Technical Site Visit

**TECHNICAL
SITE VISIT:
PORT OF
IMMINGHAM**

SEE PAGE 4
FOR DETAILS

Image courtesy of Immingham

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LARGE SCALE BULK STORAGE AND HANDLING

19-20 November 2014, Forest Pines Hotel, Broughton, North Lincolnshire



WITH ITS CURRENT FACILITIES CAN THE UK BULK SOLIDS SECTOR MANAGE?

As the UK continues to push its renewable energy policy, the demand on imported bulk materials such as coal and wood pellets is growing and the pressure to handle and store such materials safely is a priority for the whole sector.

Alongside the need to respond to this increasing demand is the requirement to ensure that large quantities of bulk materials are delivered efficiently. The Port of Immingham handles up to **55 million tonnes** making it the UK's largest port in terms of tonnage. Within that figure coal accounts for **10 million tonnes** of the overall solid bulk handled annually.

Given the unpredictability of certain materials and their riskier properties, a greater awareness is being generated to reduce the risks to health when handling materials such as biomass. Coupled with the construction of larger storage facilities is the need to implement technology that will reduce human interface in this particular supply chain.

BENEFITS OF ATTENDANCE:

- **Understand** how the UK's bulk solids sector is responding to the growing demand on alternative solid fuels
- **Compare** and contrast the design and material options for storing large scale bulk solids
- **Identify** the supporting role ports play in the UK bulk solids supply chain as they continue to handle and store large quantities of bulk solids
- **Update** yourself on mitigation measures when handling volatile bulk materials
- **Visit** the Port of Immingham's brand new coal and biomass storage facility and acknowledge the port's growing status on a global level

OUR EXPERT SPEAKING PANEL INCLUDES:



JOHN FITZGERALD
ABP DIRECTOR HUMBER



PETER EMERY
PRODUCTION DIRECTOR,
DRAX GROUP PLC



MARTIN OUWERKERK
MANAGER ENERGY AND DRY BULK,
PORT OF ROTTERDAM AUTHORITY

See page 5 for full speaker list

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PROGRAMME

DAY 1		WEDNESDAY 19 NOVEMBER 2014
08:30		REGISTRATION AND REFRESHMENTS
09:00		CHAIR'S OPENING REMARKS Mike Bradley, Director Wolfson Centre, University of Greenwich
09:10		KEYNOTE ADDRESS: AN INSIGHT INTO THE ACHIEVEMENTS AND AIMS OF THE DRAX ECOSTORE PROJECT Peter Emery, Production Director, Drax Group PLC <ul style="list-style-type: none"> • Preparing to reach full biomass capacity by 2016 to support the UK's energy policy • Handling bulk materials appropriately; the challenges that arise when unloading after transportation • Sharing best practice on how to store bulk materials successfully on a large scale
09:40		RWE INNOGY MARKINCH CHP – CASE STUDY Ian Gaunt, Plant Manager, and John Goulding, Logistics Coordinator, RWE Innogy <ul style="list-style-type: none"> • Introduction to the Combined Heat & Power Scheme • Solid fuel handling system • Off-site fuel processing facility
STORAGE SELECTION: GETTING IT RIGHT THE FIRST TIME		
10:10		LARGE SCALE WOOD PELLET STORAGE AT IRONBRIDGE POWER STATION AND LIVERPOOL BULK TERMINAL Andrew Archer, Materials Handling Engineer, E.ON <ul style="list-style-type: none"> • Different storage options considered for the projects and factors affecting the selection • Fuel condition monitoring before and during storage • Fire and explosion prevention systems employed at the plants
10:40		NETWORKING REFRESHMENT BREAK
11:10		MINIMISING THE RISK OF PARTICLE DEGRADATION WHEN CHOOSING A STORAGE SOLUTION Robert Berry, Research Fellow and Consulting Engineer Wolfson Centre, University of Greenwich <ul style="list-style-type: none"> • Recognising that certain materials are prone to separation during transportation and pre-empting the delays this can cause • Taking into account safety strategies prior to design and selection as materials such as blended coal can produce handling risks • Working with reduced volumes during the storage process
11:40		DESIGNING AND CONSTRUCTING THE RIGHT STORAGE SYSTEM Paul Scott, Engineering Manager, Graham Construction <ul style="list-style-type: none"> • An overview of Immingham's Renewable Fuels Terminal from design through to construction • Preparations to manage and store in excess of 100,000 tonnes • Taking into account fire suppression, heat monitoring and dust extraction systems
12:10		PANEL SESSION Mike Bradley, Director Wolfson Centre, University of Greenwich Peter Emery, Production Director, Drax Group PLC Ian Gaunt, Plant Manager, RWE Innogy John Goulding, Logistics Coordinator, RWE Innogy Andrew Archer, Materials Handling Engineer, E.ON Paul Scott, Engineering Manager, Graham Construction Should registered delegates wish to put forward a question prior to the event please email eventenquiries@imeche.org
12:30		NETWORKING LUNCH
INVESTMENT AND INNOVATION INTO PORTS		
13:30		KEYNOTE ADDRESS: CONTRIBUTING TO THE UK ENERGY SUPPLY CHAIN FROM 2014 ONWARDS John Fitzgerald, ABP Director Humber Ian Schofield, Director Engineering & Procurement, ABP <ul style="list-style-type: none"> • The Port of Immingham's role over the past 20 years and its ability to support the UK energy sector • Acknowledging how the change in approach of the UK energy policy has boosted the status of the Port of Immingham on a national and international level • Partnering with Drax and becoming a key player in the Ecostore Project

14:00	IMPORTING ON A LARGE SCALE AND HOW TO SUCCESSFULLY MANAGE LARGE BULK Martin Ouwerkerk, Manager Dry Bulk and Energy, Port of Rotterdam Authority <ul style="list-style-type: none"> • Sustaining the reputation of Europe's largest coal port and continuing to serve Europe's coal market • Working to manage large quantities of alternative bulk materials • Investment to ensure that the Port of Rotterdam continues to support the wider European energy supply chain
14:30	UK AND EUROPEAN PANEL SESSION: John Fitzgerald, ABP Director Humber Martin Ouwerkerk, Manager Dry Bulk and Energy, Port of Rotterdam Authority Steven Harrison, Chief Operating Officer, Port of Tyne Mike Bradley, Director Wolfson Centre, University of Greenwich
14:40	NETWORKING REFRESHMENT BREAK
MITIGATION IS THE SOLUTION TO REDUCE RISKS	
15:10	LARGE SCALE BIOMASS STORAGE AT DRAX POWER STATION John Pethullis, Project Engineering Director, Shepherd Group Power <ul style="list-style-type: none"> • Storage dome construction • Storage dome reclaim • Fire and explosion prevention and protection
15:40	FINAL QUESTION AND ANSWER SESSION: John Pethullis, Project Engineering Director, Shepherd Group Power Robert Berry, Research Fellow and Consultant, Wolfson Centre, University of Greenwich Mike Bradley, Director Wolfson Centre, University of Greenwich
16:00	CHAIR'S CLOSING REMARKS
16:10	END OF SEMINAR

DAY 2	THURSDAY 20 NOVEMBER 2014
TECHNICAL SITE VISIT	
08:00	REGISTRATION
09:30	SITE VISIT TO PORT OF IMMINGHAM Introduction and presentation by Mike Sellers, Port Manager Delegates will have an unprecedented opportunity to visit the Port of Immingham's newly opened biomass handling facility – Immingham Renewable Fuels Terminal. Hosted by Mike Sellers, Port Manager, Immingham Port, delegates will be taken on a unique tour of Immingham's storage facilities in order to understand how the port is prepared to manage the growing demand of large quantities of dry bulk cargo for the energy market. Benefits of attendance: <ul style="list-style-type: none"> • Identify how the Port of Immingham responded to the import requirements of large quantities of bulk solids • Understand how the Port of Immingham has successfully facilitated the handling of coal and biomass, as you are shown around the newly opened storage facility • Recognise how IRFT is able to support the Drax Ecostore Project by delivering an integrated supply chain support solution ex vessel to be loaded into specialist rail handling facilities
12:30	At the conclusion of the site visit lunch will be provided prior to delegates boarding the coach to be transported back to the venue
13:30	END OF SITE VISIT

Find out more about our speakers at www.imeche.org/events/S6155

- This programme is subject to change.
- The Institution is not responsible for the views or opinions expressed by individual speakers.

Organising committee:

Bulk Materials Handling Committee

SPEAKERS AND CONTRIBUTORS



THE INSTITUTION IS DELIGHTED TO HAVE SECURED AN INSPIRING LINE-UP OF SPEAKERS THAT WILL SHOWCASE SOME OF THE OUTSTANDING RESEARCH AND APPLICATIONS CURRENTLY WITHIN THE FIELD OF BULK SOLIDS HANDLING.

- Eddie McGee, Chair, Bulk Materials Handling Committee

JOHN FITZGERALD KEYNOTE SPEAKER ABP DIRECTOR HUMBER, PORT OF IMMINGHAM

John Fitzgerald is Associated British Ports' Director Humber. John joined ABP in 1997 and has held board positions since 2004. In February 2008 he was appointed Port Director for Grimsby & Immingham, the UK's busiest port, handling more than 54 million tonnes of cargo a year. In September 2013 ABP's operations throughout the Humber, which include ports of Scunthorpe, Goole, Grimsby and Immingham as well as Humber Estuary Services, were unified into a single directorate under John's leadership. John previously held port management positions in both the Mersey and the Medway estuaries. He is currently Regional Chairman of the Confederation of British Industries for the Yorkshire and Humber region.

PETER EMERY KEYNOTE SPEAKER PRODUCTION DIRECTOR, DRAX GROUP PLC

Peter Emery is the Production Director of Drax Group PLC, an Executive Director with responsibility for the group's plant operations and the development of carbon capture and storage. Peter has been with Drax since 2004, being a member of the executive team which successfully listed the group on the LSE in December 2005. Prior to joining Drax, Peter spent 20 years with ExxonMobil in the downstream business working in the UK and overseas with experience primarily in corporate planning, distribution and refining.

MIKE BRADLEY CHAIR DIRECTOR WOLFSON CENTRE, UNIVERSITY OF GREENWICH

Mike Bradley is Professor in Particle and Bulk Technology and Director of the Wolfson Centre. He was awarded both his honours degree and PhD from Thames Polytechnic (now the University of Greenwich) and, as manager/director, provides technical leadership in all aspects of bulk solids handling. His particular areas of interest lie in pneumatic conveying, design of hoppers and silos, dust control, plant integration and maintenance of product quality. He is a member of the Solids Handling and Processing Association (SHAPA) and Chair of their Technical Committee, Materials Handling Engineers Association (MHEA) and of the Institution of Mechanical Engineers Bulk Materials Handling Committee. He was awarded a professorship in 2006 and the directorship in 2008.

ANDREW ARCHER MATERIALS HANDLING ENGINEER, E.ON

Andrew Archer started his career at Birtley Engineering in Chesterfield in 1992 and became responsible for mechanical engineering at the company. Birtley's was the largest supplier of turnkey bulk materials handling plants in the UK until it was closed in 1999, due to the decline in the industry. Andrew then worked for a supplier of wheel alignment machines for car factories for the next seven years, but returned to bulk materials handling when he joined E.ON Engineering in 2006.

ROBERT BERRY RESEARCH FELLOW AND CONSULTANT, WOLFSON CENTRE, UNIVERSITY OF GREENWICH

Robert Berry joined the Wolfson Centre as a full time PhD student, evaluating silo design methods for reliable flow. During this time he was involved in the QPM project, which resulted in the production of the Segregation Tester. He has recently been involved in another project, funded by DEFRA, which led to the production of the Powder Flow Tester, a unique piece of kit used for powder characterisation. His interests lie with silo design, powder flow measurements and feeder design.

SPEAKERS AND CONTRIBUTORS



**THIS EVENT WILL
BRING END-USERS
AND MANUFACTURERS
TOGETHER WITH
THE MATERIALS AND
DESIGN SPECIALISTS
RESPONSIBLE
FOR BULK SOLIDS
HANDLING.**

**- Ian Gaunt, Plant Manager,
RWE Innogy**

JOHN PETHULLIS **ABP DIRECTOR HUMBER**

John Pethullis is Project Engineering Director at Shepherd Group, where he works at strategic level on renewable energy projects, including materials storage and handling. His recent experience includes the conversion of three of the six generating units at Drax power station, the UK's first and largest single converted renewable electricity generator, to burn sustainable biomass in place of coal. He is a Chartered Engineer with 39 years' experience of bulk materials handling and is the former Chair of the Institution of Mechanical Engineers Bulk Materials Handling Committee, where he still maintains an active role.

MARTIN OUWERKERK **MANAGER ENERGY AND DRY BULK, PORT OF ROTTERDAM AUTHORITY**

Martin Ouwerkerk is the Business Manager for Dry Bulk and Energy at the Port of Rotterdam Authority. Martin has worked at the Port of Rotterdam Authority since 2009, heading up a number of business sections including Pipelines. Martin has also held a number of positions including Project Manager USP Marketing Consultancy and Manager at BouwHRM, a division of USP Marketing. Martin graduated from the University of Erasmus having achieved a degree in Economics and Marketing Strategy in 2006.

IAN GAUNT **PLANT MANAGER, RWE INNOGY**

Ian Gaunt has been working within the power industry since joining National Power as an MSc graduate in 1994. Although originally working within the Research & Engineering Division, Ian soon branched out into Power Station Operations taking positions at Deeside CCGT, Didcot B CCGT and then Didcot A before becoming Site Manager at npower Cogen's CHP facility in Ellesmere Port. Subsequent moves have seen Ian work in Asset Management, Supercritical Coal Power Station Development and Third Party Owner's Engineer roles specialising in Combined Heat and Power projects. After a brief spell working for a private investment house undertaking due diligence on acquisitions throughout Europe, Ian returned to RWE and became Plant Manager for RWE Innogy's Biomass Plant based in Glenrothes, Fife, in 2011.

JOHN GOULDING **LOGISTICS COORDINATOR, RWE INNOGY**

John Goulding joined RWE Innogy in January 2012 as the Bulk Logistics and Materials Coordinator for the Biomass CHP Plant in Glenrothes, Fife. Prior to joining RWE John worked in Opencast Coal Mining with Scottish Coal Company Limited for 20 years, becoming their Logistics Manager in 1999. As part of the role for RWE John has operational responsibility for the Offsite Fuel Processing Facility approximately 12 miles from the Biomass Plant where small round wood is chipped and stored along with recycled wood chip.

MIKE SELLERS **PORT MANAGER, ASSOCIATED BRITISH PORTS, GRIMSBY & IMMINGHAM**

Mike Sellers took up his position as Port Manager for Grimsby & Immingham in January 2014, where he is responsible for the day-to-day running of the two ports. Mike has 21 years of port industry experience, starting his career working for Northern Cargo Services, an independent stevedoring company based on Scunthorpe docks. He was promoted in 2002 to ABP's Port Operations Manager in Lowestoft and then again two years later to Deputy Port Manager for ABP's East Anglian ports, responsible for the day-to-day operations of the ports of Ipswich and Lowestoft. In March 2008 Mike moved to the Humber as Deputy Port Manager at Scunthorpe and Goole.

BOOKING FORM

EVENT CODE: S6155AB

EARLY BIRD ENDS 17 OCTOBER

LARGE SCALE BULK STORAGE AND HANDLING

19-20 November 2014

Forest Pines Hotel, Broughton,
North Lincolnshire DN20 0AQ

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Registration fees include entry to the sessions, refreshments, lunch and an event guide.

	EARLY BIRD RATE Before 17 October	STANDARD RATE	TOTAL
Member, Institution of Mechanical Engineers	£306.00+VAT	£360.00+VAT	£
Member, supporting organisation	£306.00+VAT	£360.00+VAT	£
Non-member	£418.20+VAT	£492.00+VAT	£
Student/retired	£79.48+VAT	£93.50+VAT	£
Invoice charging (if applicable)	£10.00+VAT	£10.00+VAT	£

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www.imeche.org/events/C1419



3 December 2014
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AGEING PLANT: MINIMISING HAZARDS THROUGH BETTER DETECTION TECHNIQUES

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www.imeche.org/events/S1826



9 December 2014
Aberdeen

PIPING AND PIPELINE RISK-BASED INSPECTION

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INFORMATION AND BOOKINGS

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