



## **Skills Support for the Workforce Local Response Fund**

LRF- Sector Skills GAP Group  
Skills Gap Report

Sector: Chemicals



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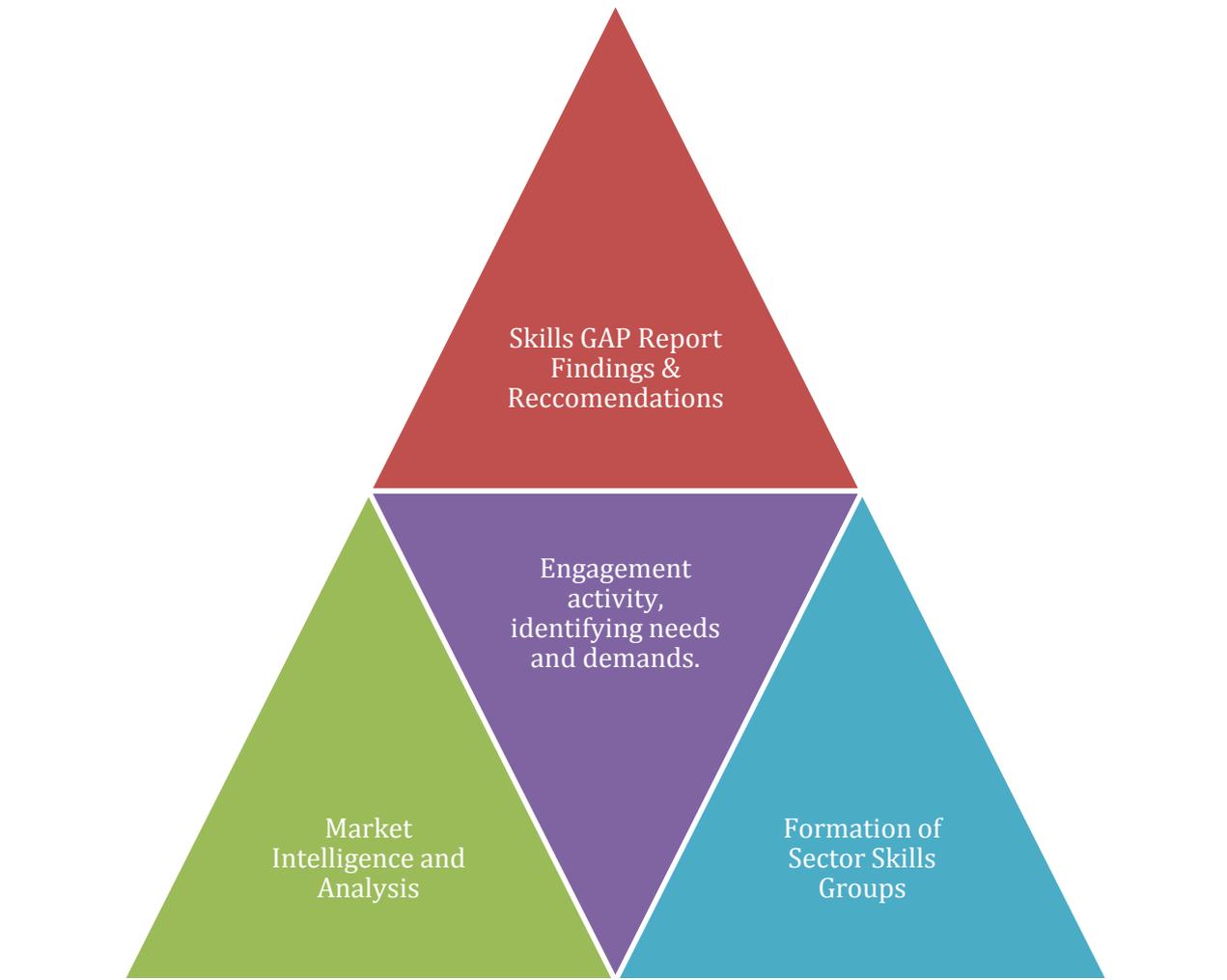
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\*1 submission is required per sector if you represent multiple sectors.

## The Sector Skills GAP Report Model



## Background

HCF CATCH Ltd, formerly Humber Chemical Focus Ltd, was established in 1999 as a public private sector partnership between the Humber local authorities and the chemical and allied industries sector. Through an industry led Board of directors HCF CATCH has established a wide range of industry led networks and engagement activities with the sector and its supply chain. HCF CATCH is now recognized as the foremost organization representing the process, engineering, energy and renewable sectors in the Humber. A full list of our member companies can be found in <http://www.hcfhumber.co.uk/membership.aspx>

The Yorkshire & Humber region is the UK's powerhouse for process, energy, engineering and renewable sectors. The Cogent industries (Oil and Gas, Petroleum, Nuclear, Chemicals, Pharmaceuticals and Polymer) are strategically important to the Yorkshire and Humber region and collectively represent 7% of employees and 9% of employers in the region. They account for 14% of the manufacturing workforce and 12% of manufacturing employers in the region ([www.cogent-ssc.com](http://www.cogent-ssc.com)). New capital projects worth over £6billion are on the cusp of being approved, including projects that are critical for the UK to meet its renewable energy targets. The Engineering Construction Industry Training Board (ECITB) forecasts suggest a future shortfall of 56,000 skilled workers nationally and the need for 500 apprentices to be recruited every year from now on until 2020.

HCF CATCH has been involved in skills surveys and research since it started up in 1999 and the outcome of some of this research directly led to the CATCH training centre being established in 2006, to serve the industrial skills and competence development needs of the chemical and allied sectors in the Humber. CATCH is recognised for its unique realistic industrial training environment providing technical and engineering training (through a range of site based providers) for apprentices, unemployed and employed adults. As a focal point for HCF's networking services, and hub for the sector's school liaison, recruitment, induction and skills development activities.

The Humber LEP first established 'chemicals' as one of the regions key sectors in 2011 and has ensured representation from the sector at all levels throughout the organisation. A Director from the HCF Board sits on the Humber LEP Board as well as HCF Directors and staff on the LEP Employment & Skills Board.

The Sector Skills for the Workforce fund has been established to develop and implement a plan to improve participation of workplace training in the Humber region and responds to the priority sectors set by the LEP.

For the purposes of this report, and the work undertaken for the SSW project, we are assuming a very wide definition for the 'chemical' sector. In our experience, the phrase 'chemical sector' is too narrow and HCF CATCH has for some years referred to our industries as the 'process industry'. This definition encompasses the variety of manufacturing businesses that HCF CATCH represent, over the last two years this has evolved to bring in the engineering supply chain businesses

supporting the process industries and the newly established biofuel and biomass processing sector. The latter will certainly fall into 'renewables' sector, which has been dominated by offshore wind developments, but has a very close synergy with the process sector. The biofuels/bioprocessing sector has very similar skills required and similar hazards and safety standards.

Our definition of the process or 'chemical' sector we represent includes:

- North Sea natural gas processing and storage
- Biogas from waste or other bioprocessing such as Anaerobic Digestion (AD)
- Oil Refining
- Specialty gases
- Pharmaceuticals
- Synthetic chemicals
- Resins, paints, coatings
- Biofuel production

### **Supply Chain**

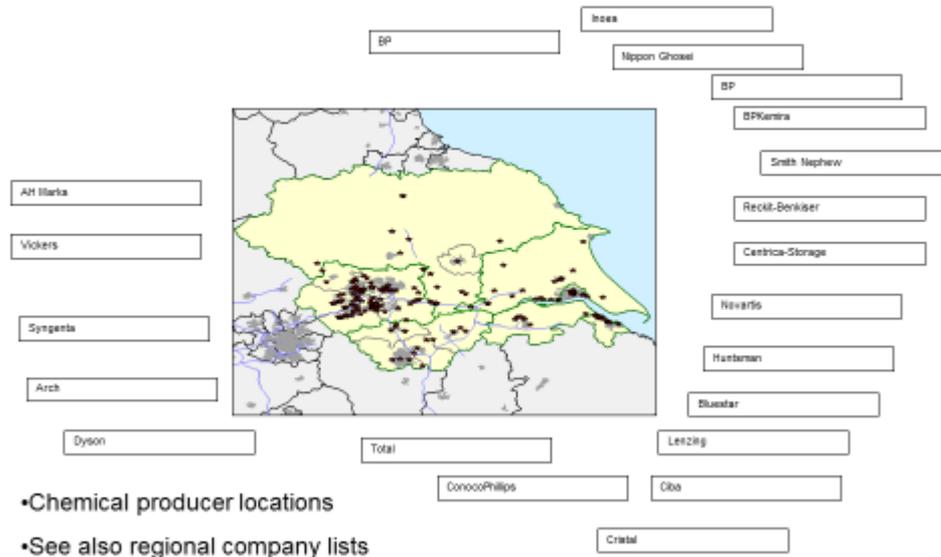
The majority of the 'chemical' manufacturing companies in the Humber are not SMEs and do not qualify for support under SSW. However, the sector relies heavily on a competent engineering supply chain to supply skilled and qualified personnel to complete maintenance activities and provide a range of services to manufacturing sites, performing design and build projects for new equipment and delivering new investment projects.

HCF CATCH has concentrated our efforts under SSW on understanding the needs of the SME supply chain to the 'chemical' manufacturing companies and how skills solutions can be provided to address these needs.

This report sets out the challenges facing the SMEs in our sector and how SSW helped to address these.

## Market Intelligence

### Yorkshire & Humber : Location of Major Production Centres and Examples of Blue Chip Groups Operating in the Region



The map details the 'chemical' sector in the Humber area – many of the larger businesses are clustered along the river banks where they originally located for proximity to ports, a source of process water/cooling water and cheap available land for industrial development.

HCF CATCH has a client group of around 40 'chemical' companies with an established supply chain of over 300 contractors that regularly supply services to these sites – not all of them are Humber region based.

HCF's client group of around 40 'chemical' companies has an established supply chain of over 250 contractors that are regularly supply services to these sites (not all Humber based).

Further reading:

[www.ecitb.org.uk/custom/ecitb/docManager/documents/LMI%20Report%202014.pdf](http://www.ecitb.org.uk/custom/ecitb/docManager/documents/LMI%20Report%202014.pdf)

[www.guidance-research.org/future-trends/food/regional/reg-data/york-humber/](http://www.guidance-research.org/future-trends/food/regional/reg-data/york-humber/)

[www.guidance-research.org/future-trends/logistics/regional/england/yorks/](http://www.guidance-research.org/future-trends/logistics/regional/england/yorks/)  
[www.guidance-research.org/future-trends/engineering/regional/regdata/yorkhumb/](http://www.guidance-research.org/future-trends/engineering/regional/regdata/yorkhumb/)

[www.guidance-research.org/future-trends/cogent/regional/region/yorks/](http://www.guidance-research.org/future-trends/cogent/regional/region/yorks/)

[www.guidance-research.org/future-trends/energy/regional/pen-portraits/yorks-humber/](http://www.guidance-research.org/future-trends/energy/regional/pen-portraits/yorks-humber/)

<https://www.gov.uk/government/statistics/labour-market-projections-for-the-yorkshire-and-humber-of-england>



## SME Skills GAP Groups

The Humber Contractor Competency Forum meets monthly. The meetings are minuted and attended by client and contractor representatives. This forum was established in 1998 and has seen a very strong relationship develop between contractor and client. The 'chemical' clients rely heavily on the quality and availability of a skilled engineering workforce.

The Humber Skills & Competency (formerly ChemSkills) forum was running before HCF took it on in 1999 and meets quarterly. The meetings are well attended, mostly by large employers from the Humber Bank Process Industries. The discussions are around competency assurance which involves the large supply chain of contractors from the engineering sector. These businesses support the large clients during their maintenance mechanical engineering overhauls. Skills gaps and shortages are identified and strategies are developed through collaboration across the network.

In order to assure competence within the workforce, and active succession planning to replace retiring personnel, the following are examples of the network's projects:

- The unique Process Technician Apprenticeship was developed in 2008, with delivery starting in September 2009. This programme addresses acute skills shortages in Process Operations and makes use of the CATCH facilities.
  - HCF CATCH was successful in bidding into the Employer Ownership of Skills pilot round1. Cofely Fabricom GDF Suez was leading this project whilst HCF CATCH was acting as managing agent and grant recipient. Research preceding the bidding process revealed acute skills shortages in:
    - Process Operations
    - Mechanical maintenance
    - 'Shut-down' project management, supervision and execution
    - Pre-apprenticeship work experience
    - Renewables sector specific engineering skills
-   
Course Research  
companies May 12.x
- Course list – results from EOS research

HCF CATCH Board. The directors and the HCF management team have direct experience of the sort of skills gaps the sector has experienced and continues to address the needs of the sector. The CATCH centre is home to a wide range of training providers offering a full spectrum of courses to meet our industries' needs. An overview of the providers on site and their offers can be found in the HCF CATCH site catalogue.



Site Catalogue  
e-book.pdf

## Skills GAP Report Findings / Recommendations

### Key findings:

Reported by client companies in terms of recruitment challenges and hard to fill vacancies:

- Process Engineers (degree qualified) with 5+ and 10+ years' experience
- Instrumentation engineers and technicians
- Asset Integrity Inspectors

Age profile of workforce and experienced technicians and engineers retiring before suitably qualified new recruits are trained

*Contractors are reporting the following challenges:*

- Training and Assessments at level 3
- Apprentices employed by contractors can spend year 1 at CATCH in a realistic industrial environment but following years are still hard for contractors to provide mentoring/supervision and appropriate work placements/jobs to complete learning modules

Companies are not investing as much in training and development as perhaps they should be and the risk of candidates being 'poached' from one business for higher wages at another can be a challenge.

*Challenges affecting clients and contractors in our sector:*

Technical skilled staff in our sector are located in clusters around the UK – Aberdeen, London, Teesside and North West. The Humber is on the map for oil & gas production, the wider range of chemical sector companies based here and a strong engineering supply chain supporting our sites

Booming process sector in Middle East is attracting skilled personnel from UK to design, build, operate and maintain chemical plant and equipment in these oil rich countries.

Recruitment agencies are targeting the Humber for skilled labour to work in Middle East as local skills and training provision has not caught up with demand. The remuneration packages are very attractive and there is a challenge for local business to keep their skilled staff.

Contractor rates are being pushed up and current rates for skilled engineers are £80/hour in London and Aberdeen where the job market is booming. Typical rates for the same skills in the Humber are nearer £50/hour and relies on people who are settled in the area and not willing to move for more money.

*More local competition:*

The growth of the renewable sectors in the Humber (with predictions of much more investment to come) adds additional pressure on the already stretched local pool of skilled engineers and technicians. An electrical or instrumentation engineer skilled in the 'chemical' sector is an attractive potential recruit to the

offshore wind sector who are set to grow their numbers rapidly over the coming years. Project managers and project engineers are also in short supply and can be wooed into the renewables industry for a high pay.

*Poaching Strategy:*

There is an unfortunate trend for some businesses to choose to poach trained staff to fill their vacancies. This can happen when the client companies is a very profitable business with less pressure on overall salary costs – basically they decide it is easier short term to pay a bit more (add to HR bill) than invest in longer process of recruiting and training new starters. HCF is working closely with our member companies to support those who want to recruit and train (school and college leavers) as well as taking semi-skilled workers and train them to work in our sector (for example ex-forces personnel).

**Recommendations:**

*Our sector needs:*

Increased investment in apprenticeships for young people supported by client and contractor companies:

- Mechanical
- Electrical
- Welding
- Instrumentation
- Process
- Laboratory
- Asset Integrity Inspection

Introduction to operations and engineering for people aspiring to work in the sector:

- Process Technology – City & Guilds 0610
- Mechanical Engineering
  - Short
  - Medium
  - Long term

Conversion courses – Forces leavers

- Skills gap analysis
- Upskilling / complimentary skills
  - Instrumentation
  - Electrical
  - Inspection

Workforce development

- Maintenance Turnround, Outage and Shutdown training
  - Managers
  - Supervisors
  - SMTD for contractors
- Confined space training

- Top-man
- Rescue
- Work at height
- Rope Access
- Health & Safety
- CCNSG Safety Passport
  - 2 day training
  - 1 day refresher
  - 1 day supervisor
- First Aid
- NEBOSH – certificate and diploma
- ISO Auditors
- Scaffolding
- Slinging & Lifting
- Manual Handling
- Risk Assessment
- Method statement
- Permit-to-work training
- IOSH
  - Working safely
  - Managing safely
- Fire Warden level 2
- BA Training
- Gas Testing
- ASME Plant Inspector
  - Level 1
  - Level 2
- API PRV Inspections & test
- Non-intrusive inspection DNV-RP-103
- Boiler inspection certificate
- 17<sup>th</sup> edition electrical wiring regulations
- JTL AM2 electrical assessment
- City & Guilds 2394/5 electrical inspection & test
- DCS simulation (TSC suite)
- Control Room operations (Emerson Delta V)
- Process Plant awareness and operations
- Abrasive Wheels
- Mechanical joint integrity (ECITB - MJ110, 18,19)

#### General Health & Safety

- Accident / Incident Investigation
- Root Cause Analysis
- Asbestos Awareness
- Band Saws
- COSHH Regulations
- Dangerous Good Awareness
- Display Screen Equipment Regulations

- Fire Extinguishers and Utilisation
- Gas Bottle Handling and Cylinder Safety
- Handling Loads at Work
- Legionella
- Manual Handling Operations Regulations 1992
- Noise and Hearing
- Overhead Remote Controlled Lifting Gear
- PPE Regulations
- Power Press Regulations
- Press Brake Safety
- Safe Isolation and lockout procedures
- Safe use of Harnesses & Lanyards for Working at Height
- Safe Workshop Practices
- Working at Height Ladders & Tower Scaffolding
- Working at Height Safe use of Ladders and Steps

#### Electrical/Electronic

- Basic Domestic Electrical Appreciation
- The Domestic Electrical Installer
- Part P of the Building Regulations
- Portable Electrical Appliance Testing
- 17th Edition IEE Electrical Regulations (C&G 2382)
- Level 2 Certificate in Fundamental Inspection, Testing & Initial Verification (C&G 2392)
- L3 Award in the Initial Verification and Certification of Electrical Installations (2394-01 – formerly known as 2391)
- L3 Award in the Periodic Inspection, Testing and Certification of Electrical Installations (2395-01 – formerly known as 2391)
- Fault Finding
- L3 Commercial / Industrial Electrical Appreciation
- Mechanical Building Services for Electrical Engineers
- Electrical Engineering for Mechanical Engineers
- Programmable Logic Controllers (PLC)

#### Management Development

- Supervisory/Team Leader Programme
- Residential Team Building
- Senior Management (Strategic) Programmes
- ILM Introductory Award Certificate
- ILM Certificate in Management
- ILM Introductory Award at Diploma Level
- ILM Diploma in Management
- Leadership
- Leading Change
- Finance For Managers
- Effective Appraisals
- Team Building

- Team Briefing
- Objective Setting
- Counselling/Coaching
- Standards and Discipline
- Recruitment and Employment

#### Employee Development

- Assertive Communication
- Personal (Attitude) Development
- Time Management
- Making Meetings Matter
- Team Working
- Coping With Change
- Presentation Skills
- Problem Solving
- Assertive Skills
- Personal Organisation and Control
- Train The Trainer

#### Engineering

- Basic Fitting Skills
- Performance Engineering Operations
- Fault Finding and Repairs
- Electrical Skills for Mechanical Engineers
- NVQ L2 & L3 Engineering Maintenance
- Mechanical
- Electrical
- Service Maintenance
- Instrumentation and Controls
- NVQ L3 Installation and Commission

## Legacy

Throughout this project HCF CATCH has extensively used their existing network, in particular the Contractor Competency Forum and Skills & Competency network, in order

- To obtain market intelligence
- To research skills gaps and shortages
- To develop skills solutions
- To offer training

It is difficult to identify the top three successes as the SMEs that took up the training might have done so without the SSW fund, however, we did note an increase in the training activities. It can be assumed that this was due to the financial assistance from the SSW fund.

Due to the slow start with the delivery of training in our sector we were only able to access this from Autumn 2014. Despite concerted marketing efforts SMEs in the Chemicals sector were showing no real interest in increasing their staff development. A planned marketing event in early 2015 had to be cancelled due to lack of interest and very low numbers of attendees.

As far as we are aware no new qualifications have been developed during the time of delivering this project. As far as new ways of working or impact on the businesses goes we would suggest that this is a separate piece of research which couldn't be done due to the short time our sector was engaged with this project.

HCF CATCH has spent the majority of the time on the project marketing training and events which due to our sector knowledge would attract interest and learners. This gathered momentum once SMEs realized the value of the training and were able to engage. It remains difficult however for SMEs to release personnel on to training activities. It is not uncommon to hear comments like 'we are only releasing staff to train if it is mandatory'. Added to this is the extra ordinary amount of forms to complete which is another barrier to take up funded training courses.

As a recommendation for the utilization of future funds we would suggest to minimize the paperwork or build in a budget for administration support.

HCF CATCH would welcome a continuation of this type of project, in particular as we have noted the recent increase in training activities. More time and financial support would also allow further research into new programmes and qualifications for the Chemicals sector and its supply chain. This will then lead to the creation of new training courses which will be developed by employers to address their skills gaps and shortages in line with their business needs.

## Signatures

Sector Lead signature

*S. Holmes*

Name Sabine Holmes

Position Industry Skills Manager

Date 1<sup>st</sup> April 1, 2015

Hull College Acceptance Signature

Name \_\_\_\_\_

Position \_\_\_\_\_

Date \_\_\_\_\_