

# A skills report for the petroleum industry

## PETROLEUM INDUSTRY



*Skills for Science  
Based Industries*

# Foreword



This Skills Report for the petroleum industry sets out how we are working with petroleum employers to support workforce skills development – an ongoing process that takes account of a changing landscape and an exciting future ahead.

We are guided by employers: an employer-led Board directs our strategy; our Downstream Advisory Council defines our programmes; we run extensive consultations on qualifications and we gather detailed Labour Market Information (LMI).

A significant piece of work has been to make sure that the qualifications on the new Qualifications and Credit and Framework (QCF) are far more relevant to employers and learners.

Our standard-setting remit has seen us continue to deliver a raft of Gold Standard role standards for industry. Where the industry carries out a range of courses around the same subjects, we've produced training standards, with the input of many subject experts.

We're also developing a higher level skills strategy which promotes innovation. Our new employer-led Foundation Degrees will play a critical part in driving up these critical skills.

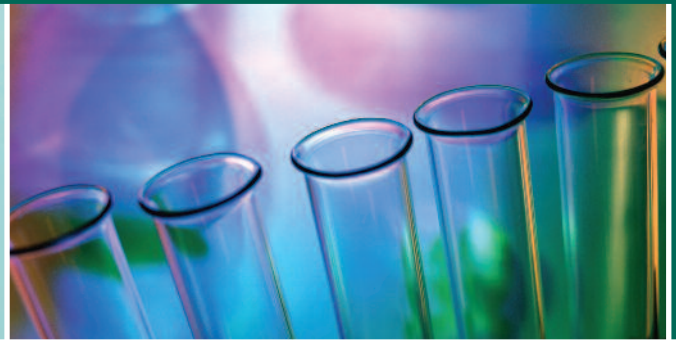
The National Skills Academy Process Industries is taking our qualifications and standards and delivering them via the quality assured provision of training and development aimed at technical, associated professional, and management levels.

During the past year the downstream industry has joined forces with the Skills Academy, so that its remit now formally includes meeting the Sector's skills needs.

Thanks must go to all the employers and partners for their vital contribution to the downstream skills agenda.

We look forward to continuing our work with them to bring young people in both through apprenticeships and from university; to upskill and re-skill the current workforce and to ensure the industry has the high level skills it needs.

Joanna Woolf,  
CEO



## Our objectives

Cogent is the Sector Skills Council (SSC) for the Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymer Industries.

Cogent's Mission is:

To meet the skill needs of the Cogent industries to allow them to compete successfully.

We are doing this through:

- Being the voice of employers on skills
- Designing qualifications
- Attracting young people into the Sector
- Understanding industry skills needs



## Our strategic action plan

Cogent and the National Skills Academy Process Industries are together working to ensure a highly skilled workforce. Cogent is developing the standards and qualifications and the Skills Academy is transforming learning through its quality accredited provider networks around the UK.

The Downstream Advisory Council provides strategic advice to the Directors on Cogent's main Board and its Executive. It provides a focus for working hand-in-hand with employers to develop skills solutions.

Cogent's remit is delivered through five "Big Tickets", each one of which has a focused programme of activity.

# 1

# Cogent Industry Skills Standards and Qualifications

Cogent is developing a suite of employer-led qualifications that underpin its competency based Gold Standards. Take-up and completion of Level 3 Cogent Sector qualifications has seen a dramatic increase since Cogent's inception:

Cogent Sector S/NVQs	2005	2009	% increase
Level 2	1330	1495	12%
Level 3	275	595	116%

## We have delivered

### Cogent Industry Training Framework

The Cogent Industry Training Framework (CITF) provides a web-based database of qualifications and training and the associated standards right across the Cogent. Sector. It provides the benchmark function for employers for skills gap analysis through the Skills Academy's Skills Passport.

[www.cogent-prospectus.com](http://www.cogent-prospectus.com)

### National Occupational Standards

Cogent continues to work closely with employers to develop high quality and useable National Occupational Standards (NOS) which are the building blocks for vocational qualifications. The following NOS are currently used by the industry, to form a suite and provide entry level routes for those entering the sector.

### Training Standards

We have worked with employers to develop standards for the benchmarking of training across the industry. The development of these important standards has taken place in consultation with many subject experts.

### 14-19 Diplomas

Cogent has continued to steer the development of the new Engineering Diploma and the Manufacturing and Product Design Diploma. Diplomas are a new qualification for 14-19 year olds which are designed to develop invaluable work related skills.

### Higher Education (HE)

Foundation Degrees: Foundation Degrees are degree level qualifications which combine academic study with workplace learning. Cogent's ground-breaking collaborative project Working Higher is developing a Framework for Foundation Degrees in Science and Engineering. It includes the FdEng Refining and Petrochemicals to be delivered by the University of Hull.

#### Downstream Qualifications

##### QCF

Diploma in Downstream Field Operations L2/3  
Diploma in Downstream Control Room Operations L3  
Diploma in Bulk Liquid Operations L2  
Diploma in Jetty Operations L2/3  
Certificate in Transportation of Petrochemicals by Road L2

##### SVQs

SVQ L3 in Downstream Operations  
SVQ L2 in Bulk Liquid Operations



“We see Foundation Degrees as crucial to the recruitment, maintenance and development of the workforce, empowering them with the skills required to respond to the many challenges the sector is facing. These new qualifications will be of particular importance for the development of the existing workforce and will be of benefit in attracting new talent to the industry.”

David Smith, Head of Training at Murco Petroleum Ltd, Milford Haven Refinery



## We are working to

### Agree

We are working to agree with industry the appropriateness of qualifications or common Industry Training Standards.

### Develop

We are developing a suite of vocational qualifications and training standards for the petroleum industry aligned with the development of Gold Standards.

### Work

We are working with Higher Education to develop a range of provision from entry level to the HE sector, including 14-19 Diplomas and Foundation Degrees, through to Honours Degrees and post-Graduate education programmes.

# 2

# Cogent Skills Benchmarking

Cogent is setting the standard for skills in the Sector and developing the tools to allow companies to assess their performance.

## Current Petroleum Industry Gold Standard job roles

## We have delivered

### The Cogent Gold Standard

The Gold Standard is a national framework for Continuing Professional Development (CPD) setting out the skills required for world class performance in key job roles in the process industries. Each Gold Standard role sets out the competencies, qualifications and training standards that will provide a route to securing skills across four areas:

- Technical Competence
- Compliance
- Business Improvement
- Functional and Behavioural

Bulk Storage Operator	Level 2
Jetty Operator	Level 2
Jetty Operator	Level 3
Downstream Field Operator	Level 3
Downstream Control Room Operator	Level 3
1st Line Supervisor	Level 3

A full list of all the process industry Gold Standards can be found at [www.cogent-ssc.com/Gold\\_Standard](http://www.cogent-ssc.com/Gold_Standard)

## An extract from Jetty Operator Level 2

Cogent GOLD STANDARD	The Gold Standard Job Role skills, knowledge and behaviours	Gold Standard Qualifications (Awards, Certificates & Diplomas) & Training Standards
<b>Technical Competence</b>	<p><i>the individual can work safely to</i></p> <ul style="list-style-type: none"> <li>• contribute to the mooring operations</li> <li>• contribute to the preparations and transfer of product</li> <li>• monitor and maintain jetty plant</li> <li>• respond to emergency situations</li> <li>• carry out activities prior to berthing</li> <li>• sample and measure to provide product control information</li> </ul> <p><i>understanding of</i></p> <ul style="list-style-type: none"> <li>• how to use numerical calculations to support processes</li> <li>• the theory, principles and practice involved in the transfer of bulk liquid products</li> </ul>	<b>PAA\VQSET L2 Diploma in Jetty Operations</b>
<b>Business Improvement</b>	<ul style="list-style-type: none"> <li>• apply measurement and charting techniques</li> <li>• use problem solving techniques</li> <li>• contribute to a structured improvement project</li> </ul>	<b>L2 NVQ in Business Improvement Techniques</b>
<b>Compliance</b>	<p><i>the individual understands</i></p> <ul style="list-style-type: none"> <li>• the reasons for and application of a variety of safety management systems</li> <li>• the implications and relevance of company policy, external legislation and regulation</li> </ul>	<b>NEBOSH Award in Workplace Health and Safety</b>
<b>Functional &amp; Behavioural</b>	<ul style="list-style-type: none"> <li>• basic skills in communications, numeracy, ICT</li> <li>• responsibility for initiating/ completing tasks</li> <li>• exercise autonomy and judgement within parameters</li> <li>• exchange information at handover</li> <li>• develop co-operative relationships</li> <li>• plan work with others and review progress</li> <li>• contribute towards collaborative working</li> <li>• take responsibility for supervising others</li> <li>• take responsibility for personal development</li> <li>• review progress towards targets</li> </ul>	<p><b>Skills for Life can be acquired through GCSE or Scottish/NI equivalents and Key/Functional skills programmes</b></p> <p><b>L2 ILM Award In Personal Development</b></p>

## Skills Match

This new web tool is now available via the Cogent website. The Cogent Skills Match tool allows the user to check their skills against Cogent Gold Standards. There are two routes through the tool: the individual route where qualifications can be benchmarked against industry standard job roles and the employer route, where a company can check its competence profile against the industry standard and find further information about relevant qualifications and training standards.

[www.cogent-skillsmatch.com](http://www.cogent-skillsmatch.com)

## Competence Assurance

In a highly regulated industry the ability to demonstrate workforce competence for example, to the regulator, is critical. We have developed a Cogent sector-wide Competence Assurance web tool which provides a self-check on the competence assurance systems in place within a company and benchmarks these against other high-hazard companies.

## Skills Passport

The Skills Academy has developed a Skills Passport which provides process industry employers and employees with a user-friendly, online record of their accredited and non-accredited training and qualifications, creating a full skills profile of the learner/s.

# We are working to

## Embed

We are working with the industry to ensure the Gold Standard framework is embedded within downstream industry training and development plans.

## Review

We have formed a task and finish group to review all UK client and contractor passports to decide which passports are suitable for the downstream sector and potential inclusion into the Skills Academy scheme.

## Roll-out

We are currently launching our Skills Match tool to the industry to support employers seeking a framework for Continuing Professional Development (CPD). [www.cogent-skillsmatch.com](http://www.cogent-skillsmatch.com)

## Develop

Cogent, working closely with the Health and Safety Executive (HSE) is developing Core Tools for raising risk awareness of safety critical barriers in all parts of the downstream industry. Safety critical barrier means a safety barrier whose degraded performance could play a part in a major accident scenario.

The project is concerned with:

- an understanding of how perception and learning can be used to prevent safety barriers from degrading.
- the identification and prioritising of safety critical barriers and how they degrade.
- developing messages about keeping barriers intact.
- identification of good and poor behaviours in safety awareness.
- developing strategies for both implementing and improving safety barrier awareness at every level in the organisation.

# 3

## Cogent Apprenticeships

Apprenticeships provide the vital supply of skilled employees for the future and we are working to ensure sufficient numbers, with the right skills to meet future needs. Cogent's work on apprenticeships is reflected in the significant increase in the take-up of sector apprenticeships. Between 2005 and 2009 there has been 48% increase in registrations on the Cogent apprenticeship framework and a 13% increase in registrations across all main apprenticeship frameworks used within the Cogent industries.

### We have delivered

#### Apprenticeship Expansion Programme

We've engaged with employers and providers to pilot a ground-breaking Learning and Skills Council (now the Skills Funding Agency) match funded Apprenticeship Expansion Programme, which has seen 46 additional apprentices being taken on.

#### Energy Skills Foundation

Sixteen young people are graduating from the new Energy Skills Foundation Programme at Lowestoft College. This pre-apprentice course is the result of a three year £100k project led by Cogent, ECITB, Skills for Energy and Lowestoft College. The employer-led course is training young people in practical engineering skills and covers the different industries in the energy sector.



### We are working to

#### Develop

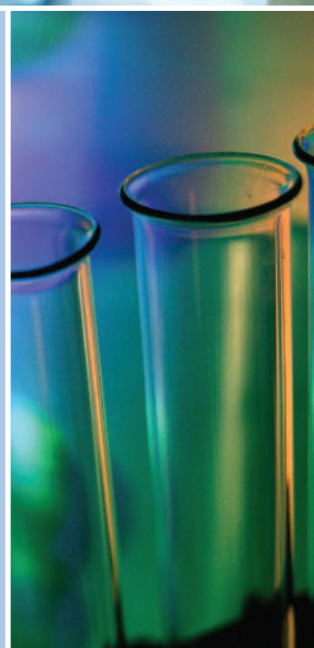
We are working to ensure that both specialised and general apprenticeship frameworks are developed or updated and that they can be delivered flexibly to meet the needs of large and small employers.

#### Align

We will ensure alignment of client and contractor apprenticeship schemes so there is a clear understanding of the client/contractor interface in the UK.

#### Assess

We will identify the need for Community Apprenticeship Schemes using our sound Labour Market Information (LMI).



# Future Skills

# 4

Cogent's Future Skills research programme is providing the essential intelligence to inform future skills needs. Reliable Labour Market Intelligence is necessary to develop valued education, training or recruitment interventions. Prioritisation of resource to develop standards and qualifications must be based on knowledge of the current and future requirements of the industry.

## We have delivered

### Cogent Skills Oracle

The Cogent Skills Oracle is a unique benchmarking tool. It is using a barometer sample of 200 companies in the Cogent Sector, providing comprehensive coverage across all the Cogent industries and all sizes of organisations.

### Headline Findings

- Annual average company turnover in employment is approximately 15%.
- 78% of petroleum employers report professional scientists and engineers vacancies are 'hard to fill'.
- Petroleum has the highest average annual spend on training per employee at £1,170, followed by the Nuclear Sector (£1,160).
- Petroleum employers were satisfied with the coverage of qualifications across the sector.
- Health, Safety and Environment (HSE) was the most frequently reported training undertaken.
- 100% of petroleum employers use private training providers; 90% use FE providers; and 60% use HE providers.
- For private training providers, satisfaction levels tended to be extremely high in all areas.
- The satisfaction ratings for FE and HE were also significant (ranging between 50% and 75%),
- The majority of petroleum employers (90%) place a high level of importance on the supply of Apprentices and Graduates to their workforce.
- 60% of petroleum employers reported skills gaps among existing employees had 'some impact'
- 90% of petroleum employers report that competence based skills needs have increased in the 12 months preceding the survey.
- Designing National Occupational Standards, improving access to training courses and securing funding, are viewed by petroleum employers as the highest priorities for a Sector Skills Council.



## We are working to

### Undertake

We will continue to undertake LMI against a range of scenarios reflecting current and future operations.

### Analyse

We will analyse our LMI and ensure that this is fed back into the Cogent Petroleum Industry Strategic Plan so that the research informs our actions.

### Increase

We will seek to increase the number of downstream employers and contractors taking part in Skills Oracle, who will each get their own bespoke company report with individual company benchmarking.



# 5

## Cogent Career Pathways

### We have delivered

#### Cogent Career Pathways

Our flagship careers resource, [www.cogent-careers.com](http://www.cogent-careers.com) is the established resource for careers in the Sector. The website provides detailed information, advice and guidance on career progression, jobs, training and salaries in the petroleum industry.

Cogent focuses at a high level to ensure that the Cogent footprint, including the petroleum industry, gets visibility within the national and regional Science, Technology, Environment and Maths (STEM) agendas, rather than duplicating initiatives ongoing elsewhere.

The Cogent career pathways site is used by many organisations with a jobs and careers guidance remit, and a recent survey showed that the resource is used by a third of all careers advisors.



### We are working to

#### Develop

We are working with employers to develop Gold Standard roles and use these roles as the core of the petroleum career pathway.

#### Update

We will annually update Career Pathways information, to include the role profile details developed within the Gold Standards, job locations, salary information and real life case studies.

#### Invite

We will invite employers to place company profiles, with a view to linking to vacancies

#### Monitor

We will monitor the website use by industry, schools and other stakeholders and evaluate its value with the customer base on a regular basis.

#### Conduct

We will conduct Labour Market Intelligence around STEM issues, including regular surveys of students, teachers and career advisors to ensure that Career Pathways remains current.

## The National Skills Academy Process Industries

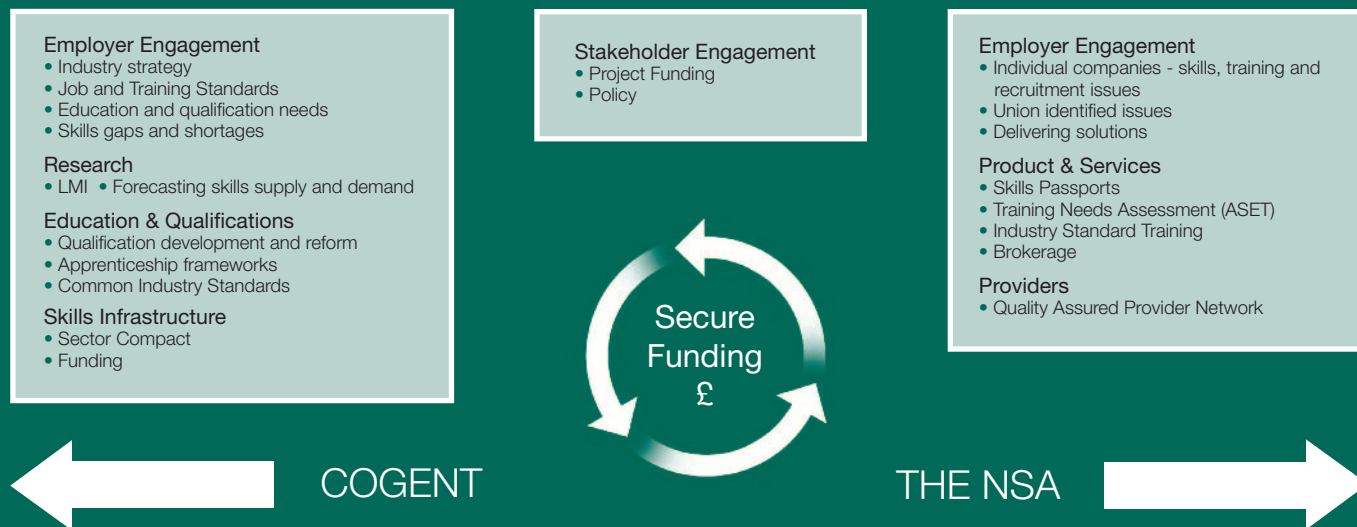
The Skills Academy is transforming vocational training in the process industries. It is giving employers a unique opportunity to shape training as well delivering products that work right across the Sector, ensuring transferable 21st Century skills.

It has developed a bespoke model that reflects the needs of the employers in the sector. Underpinning all of this is a network of quality-assured providers who provide training and qualifications based on Cogent standards.

As the value chain shows, Cogent is developing strategic skills action plans, undertaking research, developing qualifications, setting standards and representing the employer voice. At the other side National Skills Academies undertake regional employer engagement and deliver skills solutions to meet their needs.



# Value Chain for Cogent and Academies



## The Skills Academy and the downstream industry

The Skills Academy is supporting the downstream sector by consulting with the industry and designing and agreeing products and services which are cost-effective and add value to their businesses.

### Skills Passport

A key Skills Academy deliverable is its Skills Passport; this provides a transferable record of safety, technical and all other training based on the Gold Standard framework. Credit for in-house training and new training is captured on the Passport providing a unique record for the individual. With the sector's support, Cogent and the Skills Academy are exploring the potential to rationalise/combine the numerous passports available into a more manageable record of competence. This would also present the opportunity to monitor and strengthen the skills of the downstream contractor work force.

### ASET (Assessment System for Employer Training)

Companies perform significant amounts of in-house training for which employees and employers currently

receive no recognition. The Skills Academy offers an assessment scheme for in-house training, ASET, that accredits company training programmes to the Gold Standard. Through this process employees gain recognition for the training they have undertaken. Employers are able to identify skills gaps and through the Skills Academy find suitable training to bridge the gaps.

### New industries, new opportunities

With more traditional manufacturing and assembly operations continuing to move to lower cost in the Far East and Central Europe, the key to the future economic success of the process industries centres around skills and innovation. The Skills Academy is focusing closely on biotechnology. It is actively involved in assessing the type of jobs arising within the bio-business environment and crucial training and skills needs associated with these. In addition, Cogent and the Skills Academy are responding to an increasing number of enquiries from around the world, from global process industry enterprises seeking to base their workforce competence strategies on the highly respected Gold Standard.

## Downstream Advisory Council

Employers and stakeholders play a key role in our delivery, with the Downstream Advisory Council guiding our strategy and reviewing our progress. With a number of our partners, collaborative working arrangements in the form of a Memorandum of Understanding (MOU) have been agreed.

- AMEC
- BP
- Department for Energy and Climate Change
- Chevron
- ConocoPhillips
- ECIA
- Exxon Mobil
- Federation Petroleum Suppliers
- Hoyer
- Ineos Grangemouth
- Murco
- NuStar Energy Ltd
- Petroplus
- Shell UK Oil Products Ltd
- Tank Storage Association
- Total Lindsey Oil Refinery
- Total UK Ltd
- Unite
- Vopak Terminal Teeside Ltd
- UK Petroleum Industries Association

## Contact Us

### Cogent enquiries:

T: 01925 515 200

E: [info@coagent-ssc.com](mailto:info@coagent-ssc.com)

[www.coagent-ssc.com](http://www.coagent-ssc.com)

Cogent SSC, Unit 5, Mandarin Court  
Warrington WA1 1GG

For information on undertaking a Cogent qualification or to find out more about training contact:

National Skills Academy Process Industries

T: 01325 740 900

E: [enquiries@process.nsapademy.co.uk](mailto:enquiries@process.nsapademy.co.uk)

[www.process.nsapademy.co.uk](http://www.process.nsapademy.co.uk)



## Cogent is also supported by:

**Brian Worrall, Chevron:**  
Cogent Board Member

**Lynne Sampson, Shell UK Oil Products:**  
Cogent Board Member

**Walter Williamson, MBE:**  
Skills Development Director and Petroleum Industry Lead, Cogent SSC

[walter.williamson@coagent-ssc.com](mailto:walter.williamson@coagent-ssc.com)

## Key partners of Cogent and the Skills Academy include:

### Process Safety Leadership Group:

Cogent continues to support The Process Safety Leadership Group (PSLG) especially in the area of Human Factors.

### DOIF (Downstream Oil Industry Forum):

The Downstream Oil Industry Forum is a Business, Innovation and Skills (BIS) led forum. It is a Strategic Forum chaired by the Energy Minister that acts on matters concerning the Downstream Industry including emergency contingency plans to maintain oil stocks, the impact of bio-fuels on the market and the development of a Downstream Oil Emergency Plan.

### UKPIA HR Manager Forum:

This forum comprises HR managers from all refineries in the UK and Cogent and assesses the impact of pan-UK HR issues affecting the refining sector.

### Scottish Chemicals Strategy Group:

This group comprises employers, colleges, government stakeholders and Cogent, and was responsible for preparing the Scottish Chemicals Strategic Plan.

### Chemicals Northwest:

The Northwest chemistry-using sector remains the largest regional centre for chemicals manufacture in the UK. Cogent is ensuring that it fully supports the Chemicals Northwest agenda.

### NEPIC (North East Process Industries Cluster):

NEPIC has identified a number of key priorities within its Skills and Education framework. Cogent is providing detailed input and support for this work.

### Highlands & Islands Rural Distribution Forum:

This forum comprises distribution companies operating in the Highlands & Islands of Scotland. Cogent plays a key role in ensuring the skills and competencies of delivery drivers are maintained.