

Skills that work

For the Chemicals Industry



Delivering our aims through:

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



Foreword



Joanna Woolf
CEO

The Cogent Sector science-based industries are undergoing rapid change and development with new technology and innovation at the forefront.

The Chemicals Industry recognises that to sustain growth it needs to attract new generations of technicians, engineers and scientists into long and rewarding careers. Employers are increasingly looking to Cogent to bring coherence and co-ordination to successful attraction initiatives and to bringing young people in through apprenticeships.

In our first four years, Cogent has moved from “pathfinder” SSC status through the Sector Skills Agreement with industry to the establishment of the industry supported National Skills Academy Process Industries. We are proud to be one of the first SSCs to be relicensed by the UK Commission for Employment and Skills (UKCES); a recognition of the significant progress we have made as a Sector Skills Council.

Our research and collection of Labour Market Information (LMI) continues to build unrivalled intelligence and analysis about the skills needs of the Sector.

Our second licence is enabling us to implement our highly regarded Sector Qualification Strategy (SQS) to ensure that qualifications are genuinely transformed to meet the needs of employers. This includes our new Gold Standard for Industry.

We work in partnership with our many stakeholders, who have important decision making and funding powers: it is essential we influence their thinking and direction on your behalf.

Our partner employers in the Chemicals Industry have a long track record in supporting employees to improve their own skills as well as their company performance.

Now they have come together to establish a collective responsibility for ensuring a highly skilled workforce operating to the highest standards of health and safety. There are many examples of this within the document.

The champions on our Employer Advisory Council are endorsing our approach which sees skills as an investment. Together with them, we are promoting the Cogent Sector Skills Pledge as a means of securing the all important employer public commitment to developing and upskilling the workforce.

Thanks go to all the employers we work with for their inspiration and for their contribution to the skills agenda. With them we’ll work to ensure a responsive and dynamic system that meets future needs.

Cogent Board Members representing Chemicals



Steve Westhead - Solutia UK Limited

Steve Westhead is currently Managing Director of Solutia UK Limited, the subsidiary of a \$ 2 bn US chemical company. He is a member of the Chemical Industries Association Employment and Communications Strategy Group, and has been a Cogent Director since early 2004. The Newport site that Steve manages is a Top-Tier COMAH site and Solutia are dependent on a highly skilled workforce with objective evidence of their competence.

George Ritchie - Sembcorp Utilities

George Ritchie is Senior Vice President Human Resources and IT at Sembcorp Utilities. He is an Engineering Graduate from the University of Newcastle-upon-Tyne. He worked for Steeley Company Ltd for 13 years and in 1979 joined ICI as a Construction Engineer. He joined Enron's Teesside Operations Limited 1999 and following the sale of the company to Sembcorp in 2003 he has operated in his current role.



Tim Eyre - Skills Development Director and Chemicals Industry Lead, Cogent SSC

Tim has a BSc in Chemistry and Physiology and a PhD in Organic Chemistry from the University of Salford and an MBA from Middlesex University. He started his career in pharmaceutical process support, subsequently moving into technical support. In 1991 Tim joined Texaco as Technical Manager. In 1999 Tim was promoted to Global Account Manager for the Commercial /Automotive sector developing new business.



"I've been a Director of Cogent since it was licensed and have been closely involved in its strategy to support skills development in the Chemicals Industry, as well as its work to secure a much-needed Skills Academy. In that time I have been proud to have worked with a Board, Executive and staff who have positioned Cogent SSC as one of the most successful Sector Skills Councils. A key part of this is the Cogent Gold Standard – I am very enthusiastic about the potential benefits to Solutia of this world-class approach."

Steve Westhead,
Managing Director of Solutia Inc
Chemicals Industry Representative
Cogent Board

The Chemicals Advisory Council

- Banner Chemicals
- Brunner Mond
- Department for Business, Innovation and Skills (BIS)
- Catalent
- Chemicals Northwest
- Chemical Industries Association (CIA)
- Chemistry Innovation Knowledge Transfer Network
- ECITB
- Innovia Films Ltd
- Lucite International
- North East Process Industries Cluster (NEPIC)
- National Skills Academy Process Industries
- Perstorp
- PICME
- Reaxa Ltd
- Rohm & Haas
- Royal Society of Chemistry
- RS Clare
- Seer Pharmaceuticals
- Sembcorp Utilities UK Ltd
- Solutia UK Ltd
- Total Chemicals
- Unite
- PAA/VQSET



The Council makes a significant contribution to a range of developments including standards, apprenticeships and our longer term direction. It includes employers, trade organisations, government departments and Cluster Groups.

About Cogent

Cogent is the Sector Skills Council (SSC) for the Chemicals, Pharmaceuticals, Nuclear, Oil and Gas, Petroleum and Polymer Industries. Cogent was established by employers and is licensed by Government to develop skills strategies, products and services to meet the Chemicals Industry's skills needs.

We are doing this through:

Being the voice of employers on skills:

we are providing the "collective voice" of employers on skills for representation and influence to Government and public providers of skills, education and training right across the education spectrum.

Designing fit-for-purpose qualifications:

we are developing fit-for-purpose and future-focused qualifications which, where possible, attract Government funding. These standards-based qualifications increasingly match the way employers actually train their people.

Attracting young people into the Sector:

we are working to attract young people into the Cogent Sector; helping to shape the STEM (Science, Technology, Engineering and Maths) curriculum and promoting careers.

Understanding industry skills needs:

through our in-depth labour market research we are providing an industry-by-industry picture of the skills needs and issues now and into the future.

The twin pillars underpinning all of this are the crucial upskilling of the existing workforce (the Sector's "stock") and attracting new young people to meet emerging new technological challenges, as well as to replace the ageing workforce within the Sector (the Sector's "Flow").

Cogent's Mission is:

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

The Skills Challenge

The link between skills and higher productivity is now well-established. The Chemicals Industry is operating in an intensely competitive marketplace and its success is dependent upon new strategies in product development, quality as well as efficiency. Sustainability is also requiring the industry to think very hard about the long-term implications of its activity and to develop products that meet both the environmental and social challenge. Continued innovation is a priority right across the industry. Chemicals companies say they will require higher skill levels in their workforce to achieve all of this. Cogent is supporting them in meeting this challenge which is wholly dependent upon having the right skills.

The industry is experiencing skills shortfalls which employers right across the Cogent footprint are facing. This is a real issue within Process and Plant Operative Occupations as our Sector assessment shows that over thirty per cent of employees in this group are doing jobs which need a Level 3 qualification, but less than twenty per cent of this population actually hold such a qualification.

The industry is knowledge and skills intensive, relying on higher level skills in science, engineering and innovation. However due to an ageing workforce, replacement demand within the industry in the next ten years is forecast to outstrip the total number of individuals retiring.



Cogent Strategic Priority 1: Upskilling the existing workforce (STOCK)

The vast majority of the skills that will be required to meet the future challenges faced by Industry will be from people already employed within the sector. Upskilling the existing workforce is both a huge challenge and priority for the sustainability of the employers within the Sector.



Achievements and activity

Cogent and the National Skills Academy for the Process Industries are advancing their plans to secure the skills that are needed in a world where nothing stands still for long. This process is boosted by the exceptional support we get from industry, with employer leaders playing a key role in a range of Cogent skills initiatives.

Programme delivery through Cogent Big Tickets

Cogent's key deliverables for industry are focused around five "Big Tickets" and associated programmes of work.

Cogent Strategic Priority 2:

Attraction and Supply (FLOW)

There will be an ongoing need to attract new young people to meet emerging technological challenges as well as replace the ageing workforce within the Sector. Cogent must ensure that the skills pipeline is robust both in terms of quantity and capability.

Cogent is developing a suite of qualifications that underpin ‘Gold Standards’ for key roles in the Sector. Cogent is also producing Industry Training Standards to capture the significant amount of informal learning in the Sector.

We are re-shaping qualifications so that they are fit for today’s chemicals industry. We are developing a bite-sized approach that supports continuous professional development which allows smaller blocks of learning to be assessed and given credit.

The Cogent Gold Standard

Cogent continues to develop and promote the Gold Standard which takes key job roles in the Chemicals Industry and defines a framework of training and qualifications. It has had the full endorsement of the industry and is an aspirational standard organised around four skills areas and associated qualifications:

- 1 Technical Competence
- 2 Business Improvement, including quality and innovation
- 3 Compliance
- 4 Functional and Behavioural Skills

A further development as part of Cogent’s SQS is moving from full qualifications to smaller qualifications. During the year Cogent saw the accreditation of a range of qualifications for the Chemical Industries which are “bite-sized” pieces of learning packaged as Awards, Certificates and Diplomas.

Three Gold Standards have been developed for the Chemicals industry:

- Process Operator
- Process Technician
- 1st Line Supervisor

Four are in the pipeline:

- Plant Manager
- Plant Engineer
- Maintenance Technician
- Laboratory Technician

Sector Qualifications Strategy (SQS) Action Plan

Our SQS action plan is inclusive of all parts of the Sector. Sector Qualifications Strategies are a key mechanism for the delivery of employer driven skills supply.

Example Gold Standard – Process Operator

The Gold Standard - Job Role skills, knowledge and behaviours	
<p>Technical Competence</p> <p>Process Operations</p> <p>Process Technology</p>	<p>the individual can work safely to...</p> <ul style="list-style-type: none"> • prepare to start up a process • start up a process • monitor and maintain a process • complete/shutdown a process <p>additionally an operator may....</p> <ul style="list-style-type: none"> • carry out handover • sample and test materials • prepare process materials • transfer materials into and between production stages • clean and prepare items of plant and equipment • prepare the work area for maintenance • reinstate the work area after maintenance • carry out routine maintenance operations • separate & dispose of by-products and waste <p>the individual has the underpinning science and technology knowledge for the chemical sector & job role</p>
<p>Business Improvement</p>	<p>the individual can...</p> <ul style="list-style-type: none"> • contribute to Continuous Improvement projects (Kaizen) • contribute to problem solving projects • use Visual Management Systems • apply workplace organisation techniques <p>...to solve business problems and improve efficiency</p>
<p>Compliance</p>	<p>the individual understands...</p> <ul style="list-style-type: none"> • the reasons for and application of a variety of safety management systems such as Permit to Work, Standard Operating Procedures and Risk Assessmen • the implications and relevance of company policy, external legislation and regulation on working practices (including environmental control).
<p>Functional & Behavioural</p> <p>Basic Skills</p> <p>Autonomy</p> <p>Working with others</p> <p>Personal Development</p>	<p>the individual has...</p> <ul style="list-style-type: none"> • basic skills in communications, numeracy and ICT <p>the individual can...</p> <ul style="list-style-type: none"> • take responsibility for completing tasks and procedures • exercise autonomy and judgement subject to overall direction or guidance <p>the individual can...</p> <ul style="list-style-type: none"> • develop co-operative relationships with others • plan work with others and review progress against objectives • contribute towards the improvement of collaborative working • take responsibility for supervising or guiding others where appropriate <p>the individual can...</p> <ul style="list-style-type: none"> • take responsibility for personal development by setting targets and planning how they will be met • review progress towards targets and establish evidence of achievements

National Occupational Standards Development

Cogent is the custodian of National Occupational Standards (NOS) which are statements of the skills, knowledge and understanding needed in order to carry out a particular job role. Their development is led by chemicals employers.

NEBOSH Awards in Workplace Safety, Health and Environment

Cogent has worked in partnership with The National Examination Board in Occupational Safety and Health (NEBOSH), employers and the National Skills Academy Process Industries to develop Safety Health and Environmental (SHE) qualifications for the Gold Standard, aimed at Process Operators and Technicians. The qualifications (below) are now in the pilot stage which is being led by the Skills Academy.

- The Nebosh Award in Workplace Health and Safety is a generic award covering the foundations of Health and Safety including a work-based risk assessment.
- The Nebosh Award in Safety, Health and Environment for the Process Industry has been developed with significant process employer input and includes a Process Safety Unit and an Environmental Management Unit. An environmental risk assessment is included in this award.

Further development work is planned for other key roles in the Cogent Sector including Polymers and Supervisors.

Foundation Degrees

These are degree level qualifications designed with employers and combine academic study with workplace learning. With Cogent's guidance employers are shaping Vocational Foundation Degrees (FDs) to suit their needs and to support the development of a real progression path for apprentices. FDs include both technical modules and generic modules covering project management and control, team working and leadership.

Cogent, has been successful in a Higher Education Funding Council (HEFCE) bid for a £3m plus fund to develop sector-facing Foundation Degrees. The funds will support the development of government subsidised flexible qualifications for employers and employees in the Chemicals Industry.

Business Improvement Techniques

Cogent has steered the development of an employer-designed Business Improvement Techniques (BIT) NVQ specifically for the Process Industries. BIT's been used in manufacturing for many years, and is now much more relevant to the Process Industries.

14-19 Diplomas

Developed to meet the needs of both universities and businesses, Diplomas will secure a fully-rounded education for all young people. Cogent has continued to be closely involved in the Engineering Diploma as well as the partnership which is steering the Diploma in Manufacturing and Product Design. Both are being successfully rolled out in secondary schools and are aimed at 14-19 year olds.

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Apprentices continue to be a major strand of Cogent's work and represent a highly-respected system of training and education. Apprentices represent the process industries' skilled employees of the future and we must ensure sufficient numbers, with the right skills, to meet future Sector needs.

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Apprenticeship Expansion Programme

Cogent has engaged with employers and providers to pilot the Apprenticeship Expansion Programme. The trial aims to develop models that support high-quality employers engaged in the delivery of Apprenticeship programmes so that they can recruit and train additional apprentices.

These apprentices will either secure employment with employers in the supply chain or with those in the wider sector. The trial match funds the wage for additional apprentices and includes chemical companies who are both established or new to the Apprenticeships Programme, to engage new and atypical learners and deliver a programme that minimises bureaucracy and offers value for money.

Big Ticket Number

3

Future Skills

Cogent's Future Skills research programme provides the evidence and essential intelligence to inform Cogent's strategy and programme of activity, as well as providing employers with the trend data to support their own workforce planning.

The Future Skills ambition includes an annual report on the State of the Nation in each part of the Sector. During 2008 Cogent launched its latest Report, *Skills for Science Industries: Skills at Work*. This is the 'State of the Nations Report' for 2008. The far-reaching report is available via a unique microsite dedicated to the research: <http://skillsreport.cogent-ssc.com>

Cogent's research services include Fact Sheets and Trend Data both of which provide profiles and headline statistics based on industry, national data, primary research and labour market intelligence and education and qualifications.

The Cogent Industry Oracle is producing an important in-depth data analysis and tracking of workplace trends across the Cogent sector in the UK. It will provide a baseline human capital benchmark report on skills for the science-using industries over time.

Big Ticket Number

4

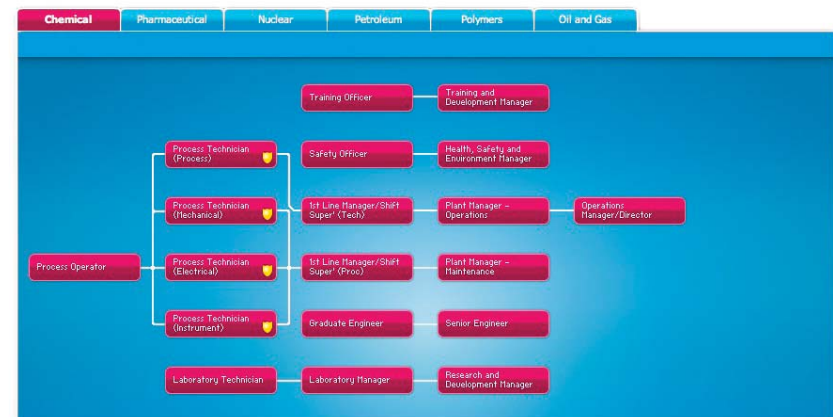
Cogent Career Pathways

This is a sector-wide web-based initiative, welcomed by both employers and stakeholders alike and which is attracting thousands of new users month on month. It is playing an important part in securing the talents the Chemicals Industry needs now and in the future.

The website is a rich resource and provides a one-stop-shop information advice and guidance web portal which holds information on career progression, jobs, training and salaries in the Chemicals Sector.

It is used by a range of third parties from schools and colleges, to the Government's Connexions careers advice service. Example career pathways have been developed with employers who have also provided real life case studies.

See www.cogent-careers.com



This Big Ticket is underpinned by an IT platform which provides the all-important employer benchmarking against the Cogent standards and job roles, as well as a web-based skills match product which allows individual assessment against the Gold Standard Competencies.

This area of work also includes our online tool: www.cogent-competence.com. As part of this an online questionnaire allows companies to benchmark themselves against the Cogent employer database and identify areas for improvement.

The web-based self-assessment places the all-important emphasis on company-wide competence. It is a total systems check which allows organisations to identify and manage regulatory requirements and business risks.

ASET

The National Skills Academy Process Industries has launched a scheme that means UK employers can have their own training assessed against Cogent's Gold Standard. The Academy is now working with a range of employers across the UK, and the relevant awarding bodies, to roll out The Assessment System for Employer Training (ASET) programme.




The National
Skills Academy
PROCESS
INDUSTRIES

Assessment System for Employer Training

Through this practical framework employer skills development can be measured against the industry world-class standard. Industry research shows that many process industries employers are likely to have existing staff training programmes in place that already meet the standard, giving them a head start in their upskilling activities. The aim of ASET and the Gold Standard together is to reduce the formal assessment burden through a template which allows full scale evaluation of employer training against identified Gold Standard job roles. This will ideally lead to group accreditation of prior learning for employees, and give employers a clear yardstick of where they rate against the applicable industry standard.





Partnerships

We work in an effective partnership with all our stakeholders including Providers, Education Institutions, Government Departments, Regional Development Agencies (RDAs), Cluster Groups, Trade and Professional Bodies and Trades Unions. We are grateful to our many partners for their ongoing commitment, contribution and support for our work across the Sector. They all play a key role in our delivery. With a number of these bodies, collaborative working arrangements in the form of a Memorandum of Understanding (MOU) have been agreed.

Key partners include:

The Chemical Industries Association: The CIA is the UK's leading trade association for the chemical and chemistry-using industries, representing members both nationally and internationally. The CIA is supporting a sustainable stream of skills, greener processes and products that will help members satisfy their customers' needs now and into the future.

Chemical Sciences Scotland: this group comprises employers, colleges, government stakeholders and Cogent and was responsible for preparing the Scottish Chemicals Strategic Plan. Cogent and other key stakeholders are driving the process forward.

Chemicals Northwest: Cogent is ensuring that its Sector Skills Agreement, Gold Standard, Skills Academies, Train to Gain and Apprenticeship Programmes are firmly on the Chemicals Northwest agenda and is engaging with regional employers to encourage engagement.

NEPIC (North East Process Industries Cluster): NEPIC comprises a cluster of around 250 employers from base, bulk, speciality, bio, polymers and pharmaceuticals manufacturers. NEPIC have identified a number of key priorities which dovetail with Cogent sector skills priorities.

Yorkshire Chemical Focus (YCF): is a not-for-profit industry-led membership organisation which supports and promotes Yorkshire's chemical sector. It works in partnership with its members from across the industry and with the public sector to encourage growth and increase competitiveness.

Humber Chemical Focus: has evolved into a network of over 90 organisations. It has hosted a range of publicly funded contracts spanning industry surveys, skills programmes, projects, promotions and network groups. Learning opportunities are one of its strategic pillars.

Chemical Innovation: established in 2006 to stimulate and support product and process innovation in the UK chemistry-using industries. It facilitates innovation and knowledge transfer by providing unique events and networking opportunities that connect companies, universities, funding bodies, national, regional and devolved administrations to enable them to focus on a common innovation agenda.

The Institution of Chemical Engineers: the IChemE is the hub for chemical, biochemical and process engineering professionals worldwide. It is at the heart of the process community, promoting competence and a commitment to sustainable development, advancing the discipline for the benefit of society and supporting the professional development of members.

The National Skills Academy Process Industries

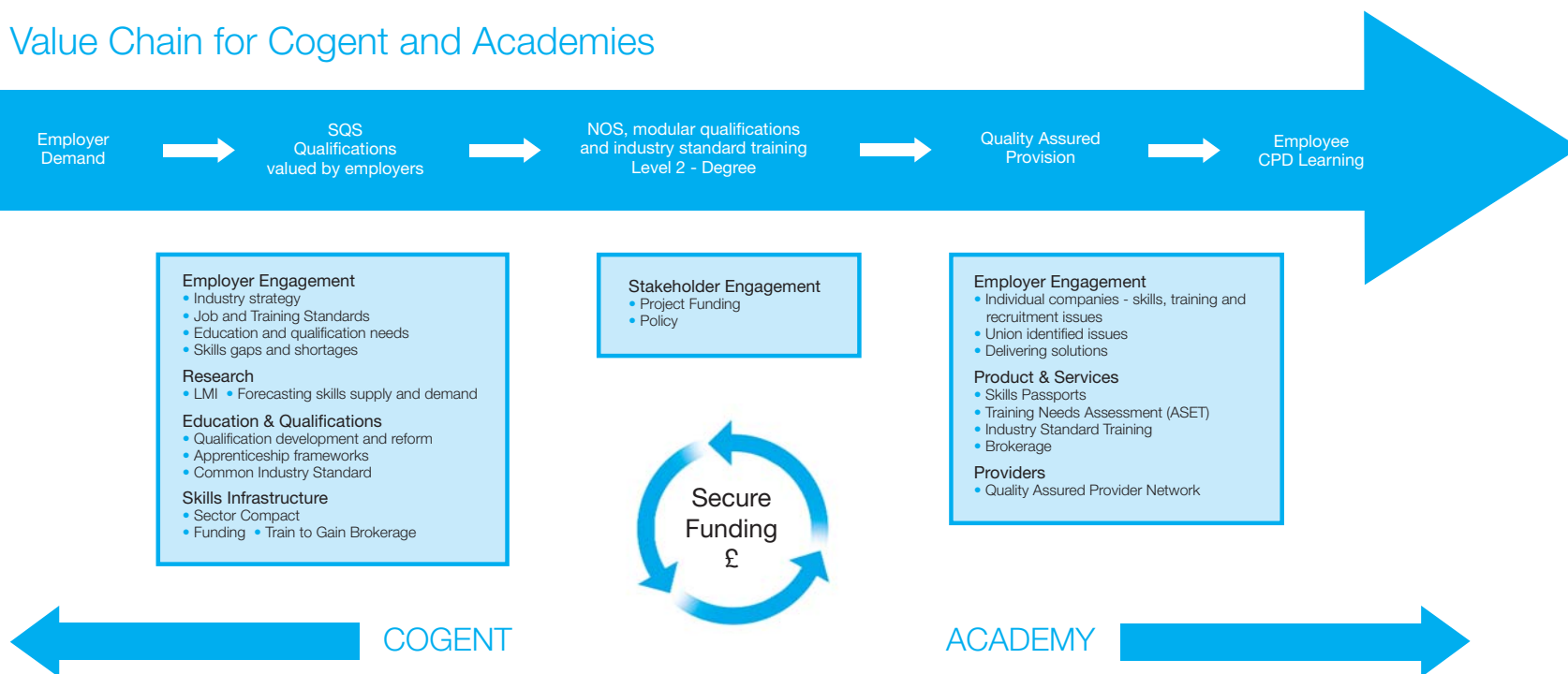
One critical success factor for meeting the skills challenge is delivering training in the right format, in the right place and at the right time, for both the employer and the learner.

After building a detailed case, and following several years of in-depth lobbying, planning and consultation, Cogent and employers were successful with their bid for the National Skills Academy Process Industries.

Cogent has developed a synergistic relationship with the Academy in order to develop and quality assure vocational training that is valued and used by every company they represent. This relationship is represented in the Value Chain below.

www.process.nscademy.co.uk

Value Chain for Cogent and Academies



Cogent's focus is towards the left side of the Value Chain – developing strategic skills action plans, considering future business environments and the implications on skills, as well as setting standards and representing the employer voice.

At the other end of the Value Chain the National Skills Academies engage with employers and then commission and deliver skills solutions, products and services to meet their needs.



Membership of the Strategic Skills Alliance for the Process Industries

This gives Chemicals employers access to a range of support, products and services from the alliance of The National Skills Academy for the Process Industries and Cogent Sector Skills Council both part of the Cogent Group.

All corporate members of the Skills Alliance for the Process Industries will receive a support package tailored to their needs. Members are supported by the Alliance's regional teams receiving regular visits and updates on news and developments. The skills agenda is complex but the Alliance is designed to help employers find their way around it. Representatives can review an employers' organisational development plan and its links to the business plan, update on providers, new qualifications, products in development, and funding such as Train to Gain. They can also help with forms and paperwork if necessary.

Cogent's licence to operate

In 2008 The UKCES commissioned the National Audit Office (NAO) to audit the SSC network as part of relicensing. Cogent was in the first group of SSCs to go through the process and the auditors carried out telephone interviews with Sector employers

The assessors were looking for evidence that Cogent:

- has the confidence, approval, and support of Sector employers
- provides a clear, credible and coherent voice for employers on the skills and qualifications requirements of the Sector
- has set ambitious and realistic targets
- is well-led and managed
- can demonstrate that it has had a positive and constructive impact on skills within its Sector
- can demonstrate how its Sector has developed and changed since its original licence was granted, and that it represents a significant Sector

The NAO reviewed the evidence gathered and we received very positive feedback. We were subsequently relicensed in 2009.

We are indebted to all those who took part in NAO interviews, with special mentions going to key employer representatives and members of our Board.

Cogent Sector Skills Council would like to thank you for your continued and significant leadership role and collaborative input to our work to close skills gaps and reduce shortages.

To discuss any aspect of your company's partnership with Cogent please contact us on 01925 515 200



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