



**SCOTLAND PLAN
AGENCY LAYS OUT
ITS STRATEGY TO
GROW CHEMICALS
OUTLOOK P26**

BRIGHTER 2014

BASF and Solvay are both more optimistic for the year ahead as the macro recovery gathers pace **5**

US ETHYLENE

Plans to grow capacity by up to 51% driven by low cost feedstocks from the shale gas boom **34**

3-9 March 2014

ICIS Chemical Business

ANALYSIS OF CHEMICAL MARKETS

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Scotland aims for chemicals growth

Although the country's chemical sector has suffered a bruising industrial dispute as well as plant closures, there are ambitious plans to boost growth through innovation and a new biotechnology plan

WILL BEACHAM LONDON

The drama surrounding the INEOS dispute at Grangemouth, Scotland, shoved the nation's chemical industry into the limelight for all the wrong reasons during 2013. There were also capacity closures last year, as the economic downturn led to a retreat by some global players.

But Scotland does have a lot to offer, especially in terms of innovation and technology, a skilled workforce, and availability of land for manufacturing. The moves by INEOS to import US shale gas should also help stimulate a revival of the sector.

Despite the downturn, there are over 200 core chemicals businesses such as basic, specialty, pharmaceuticals and fine chemicals in Scotland with a turnover of over £9bn (\$14.8bn, €10.8bn) and exports of £3.7bn in 2011, level with pre-crisis levels, according to

development agency Scottish Enterprise. It is the second-largest exporter after whisky.

Just under 14,000 people are employed directly and 60,000-70,000 jobs are supported indirectly. As well as large companies like INEOS, ExxonMobil, DuPont Teijin, Syngenta and Versalis there are a large number small-to-medium-sized businesses (SMEs), which make up 85% of the region's chemicals businesses. There are also a lot of smaller technology businesses.

With a vote on Scottish independence due in September 2014, the strength of the economy there has become a hot political issue. The Scottish government is keen to stimulate the basic chemicals sector, as well as related fine chemicals and pharmaceuticals. Scottish Enterprise – with a budget of around £300m – is the principal Scottish government development agency covering mainland areas.

According to Caroline Strain, head of



NiTech's continuous process technology

chemical sciences at Scottish Enterprise, the limited domestic market in Scotland means that maintaining global competitiveness is vital. In common with most of Europe, Scotland also suffers from high energy costs.

Scottish Enterprise sees high-value manufacturing as a major growth driver for Scotland. Chemical Sciences Scotland (see box, right) aims to boost current export revenues by 50% by 2020 from £3.7bn today. Industrial biotechnology is seen as a major opportunity so late in 2013, Scottish Enterprise launched a National Plan for Industrial Biotechnology. This aims to boost the sector from £189m turnover now to £900m by 2025.

PROCESS INNOVATION

According to Strain: "One of our strengths is academic excellence. We have a lot of strength and depth in top-rated Edinburgh, St Andrews, Glasgow and Strathclyde universities which boast academic and vocational excellence. There are also colleges offering full chemical engineering degrees such as Forth Valley."

At Strathclyde University, a lot of work is being done to stimulate the move from batch to continuous process manufacturing in chemicals and pharmaceuticals.



The Grangemouth dispute has been resolved and investment is planned

INVESTMENT JONATHAN LOPEZ LONDON

SCOTLAND TO CREATE BIOTECH CENTRE, NEW JOBS

THE SCOTTISH government will allocate £10m (\$17m, €12m) for a biotechnology research centre at the University of Strathclyde, which is expected to create 1,500 jobs and help push the biotechnology sector's turnover in Scotland to up to £3bn by 2030, the Scottish Funding Council (SFC) said.

The new Industrial Biotechnology Innovation Centre (IBioIC) aims to be a collaboration between industry and academia and will have the support of the Scottish government's agencies SFC, Scottish Enterprise and Highlands & Islands Enterprise.

The SFC is making an initial £10m investment. The IBioIC aims to gather a total investment of £45m during the next

five years coming from industrial membership contributions as well as from funding agencies such as Research Councils UK, European Commission's Horizon 2020 and Technology Strategy Board, a UK agency supporting innovation.

The SFC has allocated a total of £110m until 2018 for its Innovation Centre programme, launched in 2012, which has so far enabled the opening of four research centres in Scotland, it said on Wednesday 5 February.

"We aim to surpass the targets set by Scotland's national plan for industrial biotechnology [published in November 2013] by raising the estimated turnover of industrial biotechnology-related products from around £190m currently, to

between £2bn and £3bn by 2030," said Ian Shott, chairman of IBioIC.

Caroline Strain, head of chemical sciences at state-funded regional development agency Scottish Enterprise, said the national plan for industrial biotechnology aims to work with the existing 43 companies involved in biotechnology based in Scotland – such as GSK, Ingenza and INEOS – to build on their expertise, as well as encourage more businesses to take on biotechnological projects.

The SFC cited an economic assessment, which forecasts the IBioIC will generate around £130m of gross value added and 1,500 jobs within five years, both directly through the innovation centre and indirectly through private companies. ■



Caroline Strain aims to boost chemicals

Scotland has two crackers and both can crack gas: INEOS at Grangemouth and ExxonMobil/Shell at Mossmorran. Shell sources ethane for Mossmorran from Scotland and Norway.

Scottish Enterprise offered a £9m grant to INEOS as part of its rescue plan for Grangemouth. Strain says it is also working on a funding bid for contract manufacturer CalaChem. It has also made R&D grants to Fujifilm on the dispersal of pigments, to BASF and DuPont Teijin Films.

Scottish Enterprise and NiTech, a company which aims to commercialise the process, are having discussions with businesses about the switch, which can cut costs, improve the quality of production and minimise waste.

According to NiTech chairman, Paul Hodges, the company has "now attracted five major chemical companies and research laboratories to be its launch customers for its next-generation DN15 range of laboratory and pilot-scale units".

Meanwhile, the dispute between INEOS and unions at Grangemouth nearly cost Scotland one of its key petrochemical platforms.

Now it has been resolved and the company is committed to investing in an import terminal for US ethane.

Strain said: "Grangemouth was both dramatic and quite traumatic but we're very pleased to be working with INEOS on a posi-

tive note. We're very keen to ensure that what we've got can be retained and built on."

She added that Grangemouth is a very important part of the Scottish chemicals scene. INEOS has some land available and Scottish Enterprise is interested in the opportunities shale gas could offer for high-value sustainable manufacturing.

Some commentators suggest that with public money, more infrastructure such as terminals and pipelines could be put in place to enable other parts of Scotland and the UK's chemical industry to benefit from cheap feedstocks.

"If there was demand from Scottish businesses for broader access to imported shale gas then that's something we'd work with them on. If there was an economic opportunity for Scotland then we'd be interested in exploring it. But there has been no discussion about this amongst the business base so far."

IMPACT OF DOWNTURN

Strain says that in 2008 Scotland did see an enormous drop off in activity, and some businesses said they saw a 25-40% drop in demand. "Things are slowly improving especially in agrochemicals and contract manufacturing. We're back at 2008 levels in terms of turnover and exports but not jobs."

Scotland has experienced the sharp end of the downturn with Dow and BASF announcing closures. BASF said in October 2013 that it is refocusing its pigments business into Asian markets, leading to 650 job cuts by 2017.

The measures include the closure of its pigments plant in Paisley, Scotland, and the restructuring of its plant in Huningue, France.

In common with other global players, investment is switching to Asia, where it is investing €250m (\$342m) for high-performance pigments in Nanjing, China, and the expansion of its pigments plant in Ulsan, South Korea.

Meanwhile, in December 2013 Dow Chemical announced it is to close its methyl methacrylate butadiene styrene (MBS) plant in Grangemouth, Scotland. Dow blamed the impact of prolonged economic uncertainty on demand levels.

"When coupled with increases in manufacturing costs, competition, fluctuating raw material and energy prices, the facility has been operating in an increasingly challenging environment," Dow said. ■

PUBLIC SECTOR

WHO'S WHO IN SCOTTISH DEVELOPMENT?

- SCOTTISH ENTERPRISE – the main is the principal government development agency covering mainland areas.
- Industry Leadership Groups – these are bodies representing different industrial sectors in Scotland. They bring together

people with an interest such as business leaders and senior people from the public sector including Scottish Enterprise, Scottish Government and other key stakeholders.

- Chemical Sciences

Scotland – this is an Industry Leadership Group to represent the voice of anyone affected by or with an interest in the chemical sciences: industry as well as academics and government departments. ■