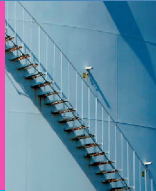


## In this issue...



▶ Safety and Environmental Standards for Fuel Storage Sites



▶ Update on the future of the UK's Compulsory Oil Stocking



▶ E5 - B7 Guidance

[www.ukpia.com](http://www.ukpia.com)

# The UK oil refining market in a global context

## Background

**A robust domestic refining industry is crucial to the nation's future security of energy supply. Globally, we face a huge challenge in meeting greatly increased demand for energy, which the IEA 'Reference Scenario' estimates (the Reference Scenario assumes no changes in energy and environment policies) place in the region of a 45% increase versus 2007 levels by 2030 with the demand for oil estimated to increase by as much as 50% by 2030, mostly driven by strong demand from the Far East and Middle East. Within the EU, however, oil consumption is projected to reduce by around 25% by 2030.**



The UK's downstream petroleum industry continues to work hard towards providing consumers with affordable and secure sources of transport fuels and other products that support everyday life, satisfying changing demand and specifications for petroleum products and in meeting substantial environmental targets.

Industry and Government working together will be an essential feature of meeting the future challenges of the refining sector, as well as in addressing the wider energy issues facing the nation, where refining plays and will continue to play a vital role in future security of supply.

It is in this context that UKPIA has produced a study on UK oil refining, as part of the DECC/ Industry's Downstream Oil Industry Forum (DOIF) Task Group. The Task Group, comprising of four

work streams, is undertaking a study of the UK market and has considered supply and demand forecast scenarios looking forward to 2030, the land use and major hazards regulatory framework, supply infrastructure and resilience and the challenges faced by the oil refining sector. All of these areas have a major impact upon security of supply, in keeping the country moving on the roads and in the air.

## UK Oil Refining Study

The *UK Oil Refining* study highlights the important contributions of a robust domestic refining industry as a reliable source of transport fuels and feedstock for other industries.

The UK has the 4th largest refining capacity in Western Europe and provides a resilient and flexible infrastructure system, comprising of 8 operational refineries, extensive private and government pipelines carrying 30 million tonnes of fuel each year, 50 distribution terminals and 8,921 service stations.

Moreover, over the last 15 years, oil companies in the UK have made significant investments not only to reduce the environmental impact of refineries and the fuel they produce, but also to meet changes in product demand and specifications.

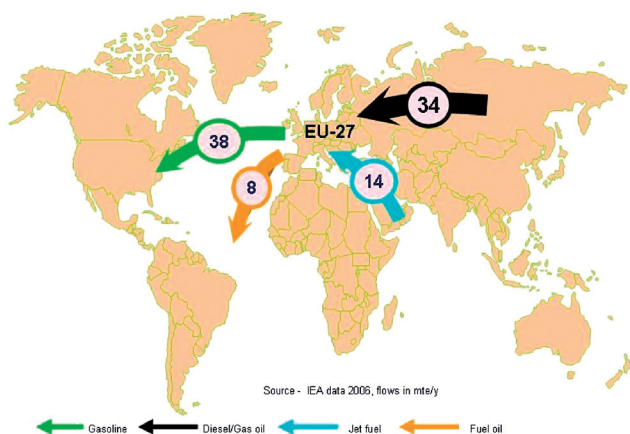
Yet, UK refineries, in common with those in the rest of the EU, are under enormous pressure due to a tough operational climate, coupled with

UK **pia**  
Refining Britain's fuels

SUMMER

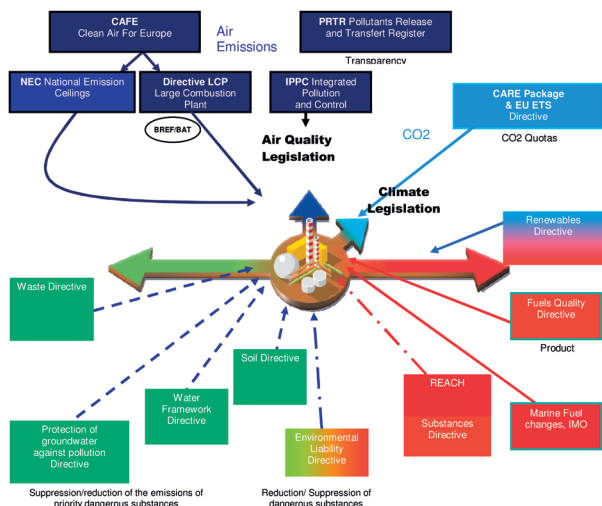
reducing demand for oil products, increased competition from export refineries, particularly in Asia, structural imbalances in supply and demand and a challenging legislative background.

Particularly significant is the shift in product demand from petrol to diesel, in the UK and in the EU as a whole. Indeed, the UK market demand for petrol and heating oils has been declining, countered by a growing demand and imports of diesel and jet fuel, causing a structural imbalance. The situation is similar in the EU, which is importing approximately 30 million tonnes of diesel per year - equivalent to about 15% of total consumption - mainly from Russia. The EU also exports more than 30 million tonnes of gasoline, mostly to the US. On the other hand, the demand for gasoline imports in the US is reducing through increased use of ethanol and lower overall demand. This will undoubtedly cause a 'squeeze' on the supply and demand balances both in the EU and US, which is likely to cause disadvantaged refineries to reduce throughput and possibly close.



Source: IEA

All EU refineries are also impacted by multiple legislation and are facing considerable incremental cost demands in terms of operational and other requirements. These include: the *EU Emissions Trading Scheme (EUETS)*, *Industrial Emissions Directive (IED)*, *Fuels Quality Directive (FQD)* and *Renewable Energy Directive (RED)*. In the UK, refiners face additional legislation covering the *CRC Energy Efficiency Scheme* and an increasing obligation for *Compulsory Stocks (CSO)*.



Source: EUROPIA

The industry continues to adapt to meet the energy challenges of transitioning to a lower CO<sub>2</sub> in the future, and is working with Government to achieve practical and achievable implementations of both EU and UK legislation. The industry is successfully managing the technical and logistical aspects of the introduction of biofuels without impact upon consumers, whilst meeting ever so stringent environmental legislation. Nonetheless, the UK refining industry must be able to offer a competitive environment to maintain and attract the crucial ongoing investment needed to meet the challenges ahead. A stable policy background and level playing field with EU competitors are vital for UK refineries to be able to compete in a global context, whilst ensuring that supply of petroleum and other products continues to be secure and affordable for its consumers.

### ...and the UK's Renewable Heat Incentive

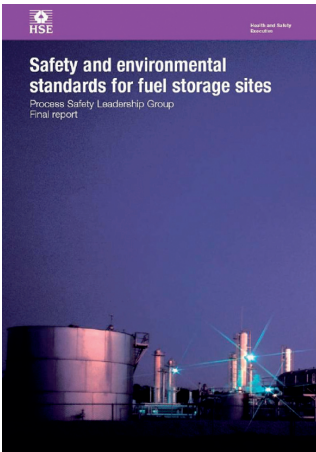


As part of the Renewable Energy Strategy, DECC is proposing to subsidise renewable heat, mostly biomass, heat pumps, and solar. DECC has not yet consulted on the funding mechanism and one of the proposals is by means of a levy on fossil fuel suppliers. The Renewable Heat Incentive (RHI) is due to be implemented in April 2011 and, if the proposed levy is applied to 'self-supply' refinery fuels used in refinery processes, there is risk that UK refinery viability could be subjected to severe challenges. The extent of the subsidies is also uncertain and likely to fluctuate. Based on the impact assessment of the Renewable Energy Strategy of July 2009, the levy is estimated at 0.76 p/kWh. If levied on refinery fuel, this would equate to around \$1 per barrel of refinery throughput - comparable with energy analyst Wood Mackenzie's estimate of NW European gross refinery margins in the year 2009 up to September. The proposal is not replicated by any other EU member state and would directly disadvantage the competitiveness of domestic refineries compared to EU and non-EU refiners.

UK refineries are already regulated under multiple legislation and are fully involved in efforts to reduce carbon emissions from their operations and the use of their products. Refined oil products are also relatively easy to ship and store and refineries operate at the margin between the global price of crude oil and that of oil products. The proposal would not only impact the viability of the domestic refining sector, but also lead to import substitution, loss of investment and jobs, carbon leakage and reduced security of supply of refined products. To avoid such adverse effects the levy needs to exempt industries exposed to international competition which self-supply fuels used to generate heat, and to treat all imports on an equal basis.

For more details visit [www.ukpia.com](http://www.ukpia.com) - Industry Issues/Publications

## Safety and Environmental Standards for Fuel Storage Sites



On 11th December 2009, the Process Safety Leadership Group (PSLG) issued its final report on safety and environmental standards at fuel storage sites.

The report addresses the 25 recommendations set out in the Buncefield Major Incident Investigation Board's (MIIB) *Design and Operation of Fuel Storage Sites* report (published in the spring of 2007), and examines all key areas of

design and operation of fuel storage sites, along with key guidance on delivering high performance through culture and leadership.

The PSLG was formed in September 2007 as a joint industry and regulator forum, consisting of one main steering group and seven specialist working groups. These working groups comprised of experts from industry, trade unions, other expert organisation and the Competent Authority.

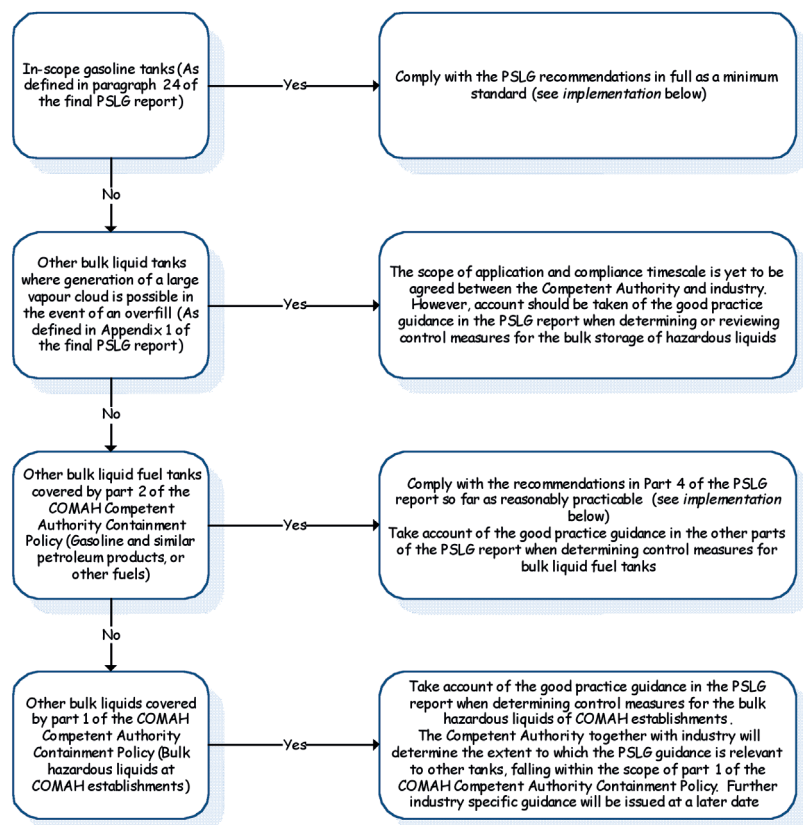
Its final report represents the industry's high commitment to the health and safety of its workforce and the public, and delineates the significant collaborative work between industry and regulator. The work builds upon the progress made by the Buncefield Standards Task Group in examining the MIIB's key recommendations in the implementation of high safety standards and in providing an authoritative benchmark for guidance on best practice. It sets out the minimum standards of safety and environmental protection for all establishments storing large volumes of petroleum products, whilst offering practical recommendations on operation and maintenance of high-hazard processes.

The structure of the PSLG report aligns closely with that of the MIIB recommendations and the various mechanisms necessary to protect against loss of process containment from fuel storage tanks:

- **Systematic assessment of safety integrity levels** - Guidance on determining the necessary requirements for protection systems through risk assessment.
- **Protection against loss of primary containment using high integrity systems** - Recommendations on guidance for designing, operating

and maintaining a safety instrumented system.

- **Engineering against loss of primary containment** - Recommendations and guidance for managing the integrity of new and existing storage tanks.
- **Engineering against loss of secondary containment** - Clarification and guidance on the implementation of the key elements of the competent authorities' containment policy.
- **Operating with high reliability organisations** - Recommendations and guidance on the human and organisational factors involved in the design, use and maintenance of hardware and systems used to prevent loss of process containment.
- **Delivering high performance through culture and leadership** - Recommendations and guidance on delivering excellence in process safety, through encouraging continuous improvement in process safety and learning from within an organisation and other industry sectors.



This flowchart indicates the application of guidance to existing establishments subject to the Control of Major Accident Hazards Regulations (COMAH), contained in the PSLG's Safety and Environmental Standards for Fuel Storage Sites report.

Continued overleaf...

Tony Traynor, chair of the Process Safety Leadership Group, commented "The PSLG final report is unique in that it is the product of close collaboration between the Industry, Trade Unions and Regulators. It represents a comprehensive guide not only to the MIIB recommendations but also to what is considered best practice in the control of risk in petroleum storage installations. A great deal of its guidance is relevant to the Petrochemical and Chemical industry in general. UKPIA has made a major contribution to the production of this report and to raising the profile of Process Safety in our Industry. I very much thank them for this. I know they will be instrumental in promoting the delivery of these recommendations in their sector."

Peter Davidson, UKPIA's Process Safety Programme Manager added "The industry has taken significant steps in reinforcing safety standards in the downstream oil industry. In addition to the PSLG report, the industry has turned into a reality its commitment to process safety, launched

in 2008, this commitment, together with the PSLG report, is actively tackling the challenges of high reliability organisations and delivering high performance through culture and leadership. As one of the founding members of the Process Safety Forum, we are also sharing good practice, tools, and high level learnings with other industry sectors."

Following the publication of the report, Chris Hunt, UKPIA's Director General, has been appointed Chair of the PSLG, replacing Tony Traynor. The next step for the Group will be to monitor the implementation of the report's recommendations. To assist the PSLG on this, a practitioners' group has also been established.

**For more details visit**

[www.hse.gov.uk/comah/buncefield/fuel-storage-sites.pdf](http://www.hse.gov.uk/comah/buncefield/fuel-storage-sites.pdf)

## Update on the Future of the UK's Compulsory Oil Stocking

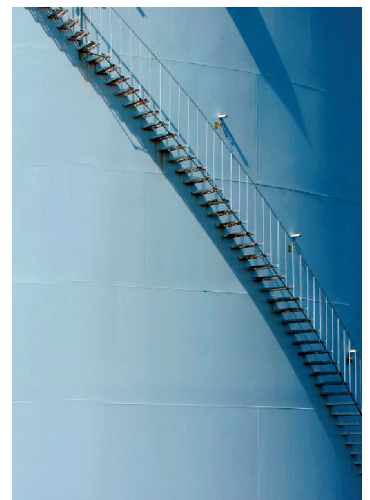
**As a member of the European Union and the International Energy Agency, the UK is required to hold emergency stocks of oil products and to take part in any collective response to a major international disruption of oil supplies. The UK has always met its international obligations by directing commercial companies to hold stocks. The system today is based on all product supplied into the UK market from refineries or as imports, having originally been based on company sales into final consumption.**

A joint Industry-Government review on the UK's future options for holding emergency oil stocks was commissioned in September 2009.

The review, issued in January 2010, examines the current stocking system in the UK and highlights the options for alternative models against a background of diminishing North Sea Oil production, increased UK oil stocking obligations, and the changing UK oil infrastructure and commercial market. The review points to the creation of a private Stockholding Agency as a practicable long-term solution for the UK, minimising barriers to entry for suppliers and creating a level, transparent playing field for all participants.

DECC officials have combined the review in a ministerial brief, which is currently awaiting consideration by the newly formed Government.

Subject to a positive outcome, a further study to outline a definitive framework and strategy for a stockholding agency will be commissioned for completion by the end of this year, with a full public consultation possible in 2011 should an agency model prove viable.



## Budget Changes

In the March 2010 Budget, the following changes affecting duty on fuels were announced:

- Duty rates for the main road fuels have risen by 1 penny per litre on 1st April 2010. These rates will be increased by a further 1ppl in October 2010 and 0.76ppl in January 2011.
- On 1st April 2010, following the end of the duty differential for biofuels for road use, the duty rates for bioethanol and biodiesel have increased to the same rate as the main road fuel rate of 57.19ppl. This rate will increase by a further 1ppl on 1st October 2010 and 0.76ppl on 1st January 2011.
- The duty rate for natural gas will be increased to maintain the differential with the main road fuels. The duty rate for LPG will be increased by 2.86p per kg to reduce the differential with main road fuels by the equivalent of 1ppl. These rates will be increased further on 1st October 2010 to maintain their differential with main road fuels.



# Interview - Gary Haywood

## Changes in the oil sector: Refineries

**Nunzia Florio interviews Gary Haywood, INEOS Refining's Commercial Director. Gary is responsible for refining strategy and UK commercial operations.**

**Gary has almost 30 years of experience in the oil industry, primarily within the Refining business, but also including roles in the Chemicals and Upstream segments. Gary began his career with BP in Australia, and held a variety of technical and commercial roles in Australia and the UK over his 26 years with BP. In 2006, Gary joined INEOS Refining as the Refining Commercial Director, based at the Grangemouth complex. He is married with 3 children and enjoys running, hill walking, and collecting antiquarian books.**

**Today, the fabric of the UK and EU's refining industry is changing. How are refiners responding to these challenges?**

Yes, the market has been changing rapidly, and we have had to adapt. The past few years have seen the industry facing some difficult challenges and operating in a particularly tough climate. Volatile market conditions and reducing product demand have affected refiners in the UK and the EU. In addition to this, we have seen increased competition from large and efficient export refineries, particularly from the Far East.

At the same time, there have been changes in the structure of the industry as a whole. The role played by the integrated oil majors continues to decline, and there has been an emergence of more specialised independents in both the refining and downstream trading, distribution and marketing segments. This diversity has benefited the consumer and reflects the increasingly competitive structure of the market in which we operate.

The refining industry continues to invest in various product quality improvements, which have significantly reduced road transport emissions. We also continue to invest in reducing carbon emissions from our refineries, which is an important factor in our competitiveness and environmental performance given the significant role that

variable fuel costs play in our operations. And of course, we have also introduced biofuels to our product in response to the Renewable Transport Fuels Obligation (RTFO) legislation. This is a one of the biggest changes to fuel specification since the move to unleaded petrol some 20 years ago.

In order to meet the challenges of changing patterns of demand and future environmental requirements, and to attract the further essential investment that is necessary to meet these challenges, the industry will need to work together with all stakeholders and Government. It will be important for us to continue to invest in our facilities, both in the processing plant and the all important infrastructure, to respond to the demands placed upon us - and the UK legislative framework will need to encourage this investment by ensuring we are operating on a level playing field with our global competitors.

It is also important however that we invest in our people, as it is our people that ultimately deliver performance from our assets. The refining industry relentlessly looks for ways of doing things better, and this involves setting high expectations for ourselves, and sometimes seeking expert help - but it also requires that we invest in and nurture our talented people.

**Global trade dynamics are shifting, what does this mean for the refining sector in the UK?**

In the UK and in the EU there have been some considerable shifts in product demand. In the UK the demand for gasoline has been declining as opposed to a growing demand for diesel and jet fuel. The situation is similar in the rest of the EU, which is now importing some 15% of its total consumption of diesel. In addition to this, the UK and EU have traditionally exported the surplus gasoline they produce, mostly to the US. However, US demand for gasoline has also been declining, mainly due to the increased use of ethanol and general lower overall demand. And of course, the long term outlook is for declining fuel oil demand, which presents additional challenges to refiners.

Looking forward, we expect to see an upgrading of the refining portfolio to

meet these challenges, which will necessitate substantial investment. Therefore, the UK refining industry must be able to attract significant further investment. Again, this will require a legislative level playing field versus our competitors, in order for our domestic industry to be able to compete at a global level.

**How are the EU's tough environmental and climate change policy objectives affecting UK refining?**

The refining industry has been working hard and continues to invest significantly in reducing emissions from its operations and from road transport via use of its products. This is extremely important.

However, it is again crucial that we are able to operate within a stable and clear legislative framework which recognises the internationally competitive nature of our industry. This is particularly true of the EU and UK targets for emissions reduction, including greenhouse gases. Ideally, the framework will allow us to achieve key environmental and health objectives whilst maintaining a thriving UK refining industry.

**How is UK refining coping with global competitiveness and EU ETS?**

UK refineries are impacted by a wide range of legislation, both UK and EU based, and are facing considerable associated incremental cost demands. We are also facing increased competition from large export refineries, particularly in Asia.

Under the revised EU ETS Directive, refining has been recognised as an industry exposed to international competition and at significant risk of carbon leakage. Industries exposed to such carbon leakage will be allocated a proportion of free carbon allowances based upon stringent benchmarks - through a ranking of each installation versus its peers. The development and application of such a benchmark to allocate allowances



*Continued overleaf...*

within the refining industry is vital if we are to meet CO<sub>2</sub> reduction targets and at the same time minimise the risk of carbon leakage. The alternative is an erosion of the competitiveness of the EU industry versus international competition, and an increase in the usage of imported refined products from other regions at the expense of our own energy security, with no net benefit to the environment.

**High levels of investment will be needed to equip refineries for these new challenges. What policy initiatives would you like to see from a new Government?**

Encouraging investment to UK refining is key. A competitive environment, underpinned by a clear policy background, will ensure that we are able to meet the many challenges ahead.

It is also crucial that industry and Government work together. For instance, UKPIA has

recently produced a paper on the UK refining industry as part of the DECC's Downstream Oil Industry Forum Task Group. This is a tremendous example of the collaborative framework we aspire to, and clearly articulates the many ways in which we believe that a clear and focussed legislative framework can help us deliver compliance with UK and EU legislation and a successful and secure UK refining industry.

## E5 - B7 Guidance

**Over the last few decades considerable progress has been made in reducing pollution from vehicles.**

This is reflected in Government statistics which show that emissions of the main pollutants from road transport have been declining significantly for the past 20 years. The oil industry has played an important role in this achievement by substantial investment in producing cleaner petrol and diesel, which has enabled new engine and exhaust clean-up technologies in vehicles.

Many countries now require that petrol and diesel sold to motorists include some biofuel. The UK's Renewable Transport Fuel Obligation, which came into force in April 2008, has also an obligation on fuel suppliers to ensure that a target percentage of their total fuel sales (petrol plus road diesel) are biofuels. The target percentage for 2010/11 is of 3.5% by volume, rising to 5% by 2013/14. Also, recent EU Directives - the Renewable Energy Directive and the Fuel Quality Directive - will require production of fuels containing higher volumes of biodiesel and bioethanol in the future.

### E5 and B7

Standard petrol and diesel with the blended biocomponent are commonly referred to as E5 (up to 5% ethanol) and B7 (up to 7% FAME) respectively.

The British and European Standard for automotive diesel BS EN 590 has been amended in July 2009 and now permits up to 7% by volume of biodiesel FAME (fatty acid methyl ester). In the case of petrol, the 5% by volume target represents the maximum ethanol content currently allowed by the BS EN 228 specification for fuel sold at filling stations as standard petrol.

**The increased use of FAME and bioethanol require strict housekeeping practices throughout the fuel supply and distribution chain. Nonetheless, these changes have no noticeable impact for consumers.**

Oil companies and vehicle manufacturers have been working closely with biofuel producers to agree quality standards. EN 14214 is the European standard for FAME, which is suitable for blending with conventional diesel to ensure that the product meets the technical requirements of modern diesel engines. The agreed standard for ethanol for blending with conventional petrol is EN 15376.



### Biodiesel Guidance

B7 can generally be used in diesel-powered vehicles without modification and blends of up to 7% in conventional diesel have been available for some time in the UK.

Higher blends of biodiesel are available for use only in vehicles whose manufacturers have approved the use of these fuels. It is important to always check the owner's manual or and if in doubt contact the engine manufacturer for guidance prior to using higher blends of biodiesel and take all appropriate precautions.

### Bioethanol Guidance

At the moment, bioethanol blended with petrol (B5) is available in the UK at a limited number of outlets since blending facilities have to be constructed at distribution terminals to supply these fuels. These facilities are required since this fuel presents some particular problems associated with the tendency for ethanol to absorb water and moisture during transportation and storage. Also, the energy content of bioethanol is less than that of petrol, so fuel economy could reduce very slightly.

**For more details on ethanol and biodiesel, please visit [www.energyinst.org.uk](http://www.energyinst.org.uk) - Publications**

**For more details on FAME, please visit [www.concawe.org](http://www.concawe.org) - Report 9/09**

**Information can also be found at [www.dft.gov.uk](http://www.dft.gov.uk)**

# EVENTS

## House of Commons Lunch

**Stephen Crabb, MP for Preseli Pembroke, kindly hosted a lunch at the Commons on 3rd March, for MPs with refineries in their constituencies or with an interest in energy issues.**

As well as Stephen Crabb, present were Andrew Miller (Ellesmere Port), Julian Lewis (New Forest), Ann Begg (Aberdeen) and Sir Robert Smith (Aberdeen West), with UKPIA represented by its Vice President, Gary Haywood of INEOS, Director General Chris Hunt and Communications Director Nick Vandervell.

A useful discussion touched on many of the current issues facing the downstream refining sector, including demand/supply imbalance, the UK's proposed Renewable Heat Incentive, pressure of legislation associated with environment/CO<sub>2</sub> reduction, the poor commercial climate at present and the impact of all these issues upon the UK's security of energy supply.

Some positive ideas for follow up were suggested, including the possibility of establishing an informal downstream MP group as an adjunct to the existing All Party Group on Oil and Gas.

## Conferences

**On 1st and 2nd March, Chris Hunt, UKPIA's Director General, chaired the Platts 3rd Annual European Oil Storage conference in Budapest. The conference provided delegates with a comprehensive overview of the EU's oil storage market, including safety, maintenance, emergency response and compulsory oil stocking. UKPIA's Director General also presented at the HSE Safety Alert Workshop in January 2010 and at StocExpo Europe in Antwerp in March 2010. Keynote speeches were delivered at the PSF's Conference and Exhibition 2010 and at the UK Oil Industry Taxation Committee's Awayday.**

Peter Davidson, UKPIA's Process Safety Programme Manager, presented the industry's work on process safety at several stakeholders' conferences, including the Health and Safety Executive's Safety Alert conference, HazardEX's international conference and exhibition, and at the Energy Network Association's Safety, Health & Environment (SHE) Management conference.

**For more details visit [www.ukpia.com](http://www.ukpia.com)**

# PEOPLE

UKPIA welcomes **Ian Blackwell** as Council representative for ConocoPhillips, replacing **Stefan Wulkan**. We thank Stefan for his valuable contribution to Council over the past year.

**Andy Roberts** was appointed as UKPIA's Director of Environment, Health & Safety. He has taken over from **Ian McPherson**, who retired in April 2010 after 17 years at UKPIA. We thank him for his invaluable work in those years and wish him all the best in his retirement.