

# Dutch Oil & Gas Conference 2011

Greg Guidry, Shell's EVP Europe

**Affordable  
Sustainability**

Jan Dirk Bokhoven, EBN

'We earn the best margins  
producing our own gas'

Hans Vijlbrief, Chief Treasurer  
of the Netherlands

'Energy policy serves many  
purposes, including making money'

Ruud Bos, Electrabel Netherlands

Another round of fossil fuels?



Roelof Platenkamp, Tulip Oil  
Making Tulips grow



Paul van Gelder, CEO Gasunie  
'With gas we can balance  
economy with ecology'

**Deloitte.**



# Introduction

economic developments in the US and Europe. Nor does the Arab Spring, clearly a wave of historic events, seem to have had much of an impact on the energy markets to date. In April this year the oil price peaked just below \$130 per barrel in the wake of the Fukushima nuclear meltdown, a disaster which may have a bigger impact on the oil and gas markets than the Macondo spill. To start with, Germany and Switzerland have announced their decision to phase out nuclear energy. This will most likely lead to an increase in a demand for gas.

This magazine is a follow-up to the Dutch Oil & Gas Conference that took place on June 22nd in Rotterdam. At the conference and in this magazine, we have further explored the theme of last year's conference, 'The developments in the oil & gas markets in north-west Europe and the implications for the Netherlands', focusing in particular on the E&P investment climate in the Netherlands and on the Gas Hub.

Closer to home, more recent developments underscore the importance and the vitality of the industry in the Netherlands. In the port of Rotterdam (Maasvlakte), Gate Terminal will start commercial operation of our country's first LNG terminal in September 2011. Bergermeer Gas Storage - another important element in the Gas Hub - started the 'open season' for longer term capacity. NAM, in its turn, has restarted oil production from the Schoonebeek field.

Meanwhile, shortly before the conference, two important reports were published. The Ministry of Economic Affairs, Agriculture and Innovation published its Energy Report containing recommendations to make the Netherlands less dependent on fossil fuels and gradually convert to renewable energy. Also in June, the Topsector Energy task force, chaired by Jeroen van der Veer, published its advice titled *Energie in Beweging* (Energy on the Move). One of its recommendations is to introduce a research and development tax break called RDA, offering companies a financial incentive for research and development in new energy technology.

For this magazine, Deloitte interviewed the keynote speakers at the June conference, as well as Jeroen van der Veer and professor Rien Herber, on the central theme of the conference and the developments outlined above. We are proud to share their insights with you. We have also included an impression of the lively panel discussions at the conference, which, as in other years, was a resounding success.

I hope you will find this magazine interesting reading.

**D.J. van Klink**  
Conference Chairman

**T**he conference was shortly after the anniversary of the disaster in the Gulf of Mexico. Eleven people died and it had huge consequences in the months following. In hindsight, however, and apart from the economic and environmental consequences in the US, the impact on the oil markets appears to have been limited. Supported by solid global economic growth, especially in China, India and Brazil, the oil price climbed from \$70 per barrel in May last year to \$110 per barrel today; an almost linear increase, only interrupted by a few brief dips which were mostly the result of negative sentiment on

## Colofon

Fact Special is a theme-based issue of Fact, Deloitte's corporate magazine.

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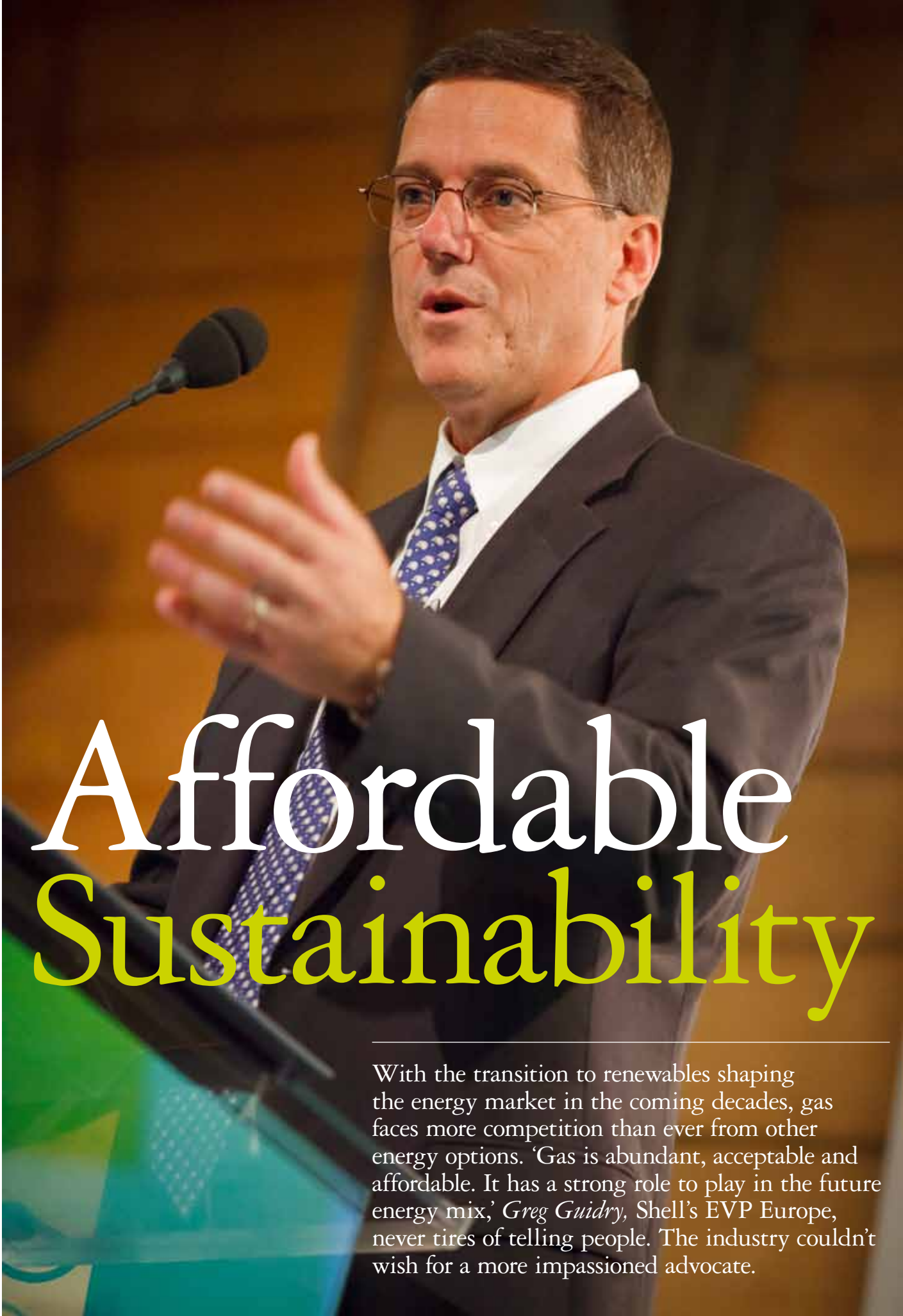
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# Affordable Sustainability

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With the transition to renewables shaping the energy market in the coming decades, gas faces more competition than ever from other energy options. 'Gas is abundant, acceptable and affordable. It has a strong role to play in the future energy mix,' *Greg Guidry*, Shell's EVP Europe, never tires of telling people. The industry couldn't wish for a more impassioned advocate.

***The biggest game changer of recent years has been the unlocking of massive unconventional gas reserves in the US. Europe may have considerable unconventional potential as well. What differences do you see in the situation on either side of the Atlantic?***

From a geological point of view the uncertainty band is huge. A big difference between the US and Europe is the sheer well count. In the US there are thousands of legacy oil exploration wells that encountered tight gas, so we already knew a lot more about the rock even before we got started. In Europe there are huge basins that have potential, but no wells. Overall just a handful of wells have been drilled, and we don't even have seismic of some areas. While US experience has made you smarter, it will still take quite a while to get your mind around what the overall potential is.

***Why start now with unconventional gas in Europe? Why not wait?***

You need to get started now because it's going to take long to develop: three to five years to get a better picture, and if that's favourable, production starting from 2020 onwards, Shell reckons. It's worth the effort, though, as this has the potential to be one of the cheapest and most environmentally acceptable alternatives for energy in this region.

***Could the Not-In-My-Backyard attitude in Europe be a reason to wait?***

Early exploration in North America was very invasive and left a heavy environmental footprint. Far too many wells were drilled by independent players who were not sensitive enough to the environment and public concerns. It's that image that's in the minds of some European stakeholders when they assess whether they do or don't like this. But what experienced companies like Shell have been doing in recent years is dramatically different from an environmental impact perspective. Europe needs to have a real, modern unconventional gas development to take the discussion beyond the hypothetical. People would be amazed at how sustainable the approach can be.

***How do you deal with the concerns voiced by European stakeholders?***

By improving operating standards and a more open and accountable dialogue with neighbouring communities. This summer, we launched a set of five global onshore principles for the development of tight/shale gas and oil. Our aim is not only to set the standard, but to raise the bar in extracting natural gas in the safest ways.

***What can we learn from the US experience?***

The US, with its more entrepreneurial climate, has thousands of

small independent oil companies. They did most of the drilling for unconventional gas at first, applying existing technology at low cost. And because US landowners, unlike those in Europe, own the minerals found on their property, many welcomed drilling operations on their land. This is ideal for evolving a capability through cost-efficient trials. It takes very few wins to pay for the losses. The downside is that it encourages overdevelopment and waste, and doesn't necessarily attract the most responsible players. Right now in the US we're dealing with the legacy of these early beginnings. Europe, by contrast, can skip this phase and apply the capability that's evolved. For unconvensionals to become a success here, though, everything has to match up: the fiscal framework, the richness of the opportunity, the safety and transparency of operations, acceptance by society. Certainly a challenge, but one that can be met by fully leveraging the US experience.

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***As stable as Holland's policy with regard to E&P has been, it's overall energy policy has been far from consistent.***

***How is the negative publicity around fracking affecting the image of the oil & gas industry and of gas as the most environmentally friendly fossil fuel? Does the gas lobby have to start all over?***

Gas is competing in the energy market against a range of choices, including nuclear and even wind. We have to do a much better job communicating about the sustainability of unconventional gas and how we operate. Not just us, but independent third parties need to do studies to provide credible witness that fracking is safe. There's a tremendous amount of misinformation out there right now. Many allegations put forth in the media are absolutely untrue.

***Can you name one?***

Shell, for example, won't operate wells where we can't isolate our completion and production activities from potable groundwater. The cases of water contamination seen in the media can usually be traced to drilling of water wells through

coal seams, or poorly cemented casing in oil wells drilled years ago. Fracking takes place several kilometres below the surface, well away from aquifers. With over a million wells fracked over the past 60 years, no case has yet been proven that a deep hydraulic fracture has actually caused the contamination of a shallow drinking aquifer.

## Unconventional gas has reshaped the energy supply picture for the entire world and the gas supply envelope to Europe.

### ***Is NIMBY the industry's biggest problem? What about fiscal issues?***

This non-technical risk is a very important factor facing our industry as it develops unconventional hydrocarbons, in some places outweighing technical or fiscal risk. But the predictability and stability of the fiscal regime is a concern for us in any country we operate in. The British Government changed the tax rate three times in the past ten years, and with no industry consultation in advance of the most recent, drastic change in March, which took us completely by surprise. Given all the other risks we run, and the long-term bets we make, the added risk of fiscal instability weighs really heavily. Norway and Holland, on the other hand, stand out as fiscally very stable, which invites investments in return. In Holland, the mining law actually requires industry consultation. And when the Dutch did change the tax regime, it was to lower the rate to stimulate the development of small fields. Thanks to the Dutch small fields policy, a substantial portion of Dutch production comes from small fields – a real success story in terms of fiscal policy.

### ***So you wouldn't call north-west Europe a sunset region?***

Overall, the reliable fiscal climate in north-west Europe is a key reason why we can afford to make long-term investments into the region. It accounts for about 30% of our production volume globally. And even for E&P outside Europe, the data interpretation increasingly takes place at our European hubs in the Netherlands, the UK and Norway. These days, digital advances allow us to bring more work to the talent rather than send expatriates abroad. Also, as a mature region, north-west

Europe is by necessity a centre of innovation. In Norway, for instance, we've opened a centre on subsea technologies in Stavanger this year recruiting 50 new people. Government incentives are very important in this respect and should be maintained.

### ***As we approach the 'zone of uncertainty', what needs to be done to avoid destabilising fuel and power shortages?***


The industry is looking at big investments that can only be justified if we get signals that governments see gas as a material part of their energy plans. As stable as Holland's policy with regard to E&P has been, it's overall energy policy has been far from consistent, with the recent choice for coal-fired power plants a really surprising one. That made sense in combination with carbon capture and storage, but with the current pessimistic outlook for CO<sub>2</sub> storage acceptance, that story is unravelling. In the Netherlands and Europe as a whole, plans to massively fund renewables and particularly wind are, in my view, difficult to reconcile with drastic cuts in government spending in social areas. A recent McKinsey study commissioned by the gas industry shows that Europe can achieve its CO<sub>2</sub> emission reduction goals at half a trillion euros less cost than calculated by the European Climate Foundation a few years ago if we introduce renewables more gradually, benefiting from the learning curve, and make more use of gas-fired power plants – which we'll need anyway because solar and wind alone cannot provide steady power supply.

### ***Has the discovery of unconventional gas made a difference in this respect?***

It has reshaped the energy supply picture for the entire world and the gas supply envelope to Europe. And I'm convinced that these resources can be developed sustainably, too. Shell sets high standards for its own operations, and we support regulation and enforcement that ensures responsible operating practices industrywide. Europe has a huge opportunity to lead in this space.

**Greg Guidry** is Shell's Executive Vice President for Europe. He was appointed to this position in 2009, after a career of over 25 years in the company's Exploration & Production business. Between 2007 and 2009 he doubled as VP of Production at Shell Canada and leader of the North American Onshore Production Directorate. Between 1997 and 2007 he was Asset Manager for Shell Oil in his native New Orleans. Greg has experience in well and reservoir engineering and operations management, and holds a degree in Mechanical Engineering.

‘We earn the best margins producing our own gas’



*Jan Dirk Bokhoven*, the man in charge of our country's participating interests in oil & gas, warns that, onshore, offshore and on the Gas Hub, our own gas production must have its place in the shaping of our future energy landscape. The future holds difficult choices. We asked him to make a few for us. >>



#### ***Invest in renewables or in fossils?***

Both. Our country intends to move to a sustainable energy supply by 2050, but fossils, and particularly gas, will always be needed at least as a backup. Gas has a vital role to play in the long-term energy future for the Netherlands and Europe. This means that in the physical battle for space, onshore and offshore, we must also reserve space for our oil & gas infrastructure.

#### ***Renewable electricity production: to subsidise or not to subsidise?***

There are better ways to stimulate renewable electricity production, like tax breaks for energy producers to encourage investment in innovation. That would also benefit innovation in the oil & gas sector, an area where EBN can play a coordinating role to bring knowledge and expertise together.

#### ***EBN's 30-30 ambition: uphold or lower the bar?***

It's an ambition, but EBN is still aiming for gas production of 30 bcm a year in 2030. To achieve this, we have to develop another approximately 600 bcm gas particularly in small fields over the next 20 years. This means the sector will have to invest €30-40 billion. Innovation will be key: new well techniques, more cost-efficient rigs, etcetera. It will take some out-of-the-box thinking to maximise production from Dutch fields, but we do see potential. Well stimulation such as fracking is incredibly important in this respect, and could become even more effective with further fine-tuning. Meanwhile, the gas price is a critical factor in realising EBN's 30-30 ambition. Oversupply tends to

push the spot price down, while the high oil price and high energy prices in general are supportive. I suspect prices could start moving up again as early as 2012-2013, with Japan needing an immediate power generation alternative in the wake of the Fukushima nuclear disaster, Switzerland and Germany pledging to phase out nuclear energy, and coal becoming increasingly controversial. In Europe, gas production is likely to remain steady at best, and LNG flows are mostly going eastwards. Already, gas prices have moved from a low of 13 cents early last year to around 23 cents now, and I wouldn't be surprised to see them climb to over 30 and maybe close to 40 cents in the next eighteen months.

#### ***Unconventional gas: to drill or not to drill?***

Drill. First of all, I think we need to get away from the term 'unconventional gas'. The U-word has been getting a lot of bad press lately, while producing gas from shale is in fact not so very different from producing gas from sandstone or chalk. Our industry still has a lot to learn in terms of communicating effectively about new technology! The first independent player to test the shale in the Netherlands is Cuadrilla. They will have to shoulder the responsibility for explaining the technology to the Dutch public. As always, EBN is involved in this venture, and we support them with communication, and ensure the message is consistent with that of the industry.

#### ***European solutions or local solutions?***

European. Right now, national politics are far too dominant, but



we cannot ignore what's happening beyond our borders. The energy agenda is not a Dutch discussion but a European one. The Netherlands has to focus consistently on that. We cannot afford to act like Europeans one moment and forget the bigger picture the next. Gasunie has taken steps towards becoming a European player with its purchase of German assets and its involvement in the BBL and Nordstream pipelines. And the Gas Hub, too, has to be a European project. It shouldn't be just Dutch. On the other hand, local solutions will be part of tomorrow's energy landscape, too. They can ease capacity problems on the big grids. Feeding gas production straight into local, low-pressure grids could potentially be an efficient solution for onshore small fields, including gas from shale and biogas.

#### ***Small field licences: to revoke or not to revoke?***

The industry's life cycle needs shortening, and the government could play a part to make this happen. International oil companies will undoubtedly give less priority in their portfolio to Dutch small fields, so the licences would be better off with smaller independents specialising in our market. We have a covenant for voluntary surrender of licences, which is good, but the process is being slowed down by legal snags. Splitting a licence or part of a licence may have undesired consequences for the remaining licences in a company's portfolio. This is an issue the government should address. Besides licences, though, free access to the accompanying field data would save the industry huge sums. New licencees can look at old cores at TNO, but they can't get the analyses. They would have to repeat the analyses which

is not always possible. Seismic is available, but not the special processing. EBN, as a minority shareholder in practically all Dutch E&P projects, does have access to all the data, but we're not allowed to share it. EBN could mediate between parties, but it would be much better to just make it more public. This would lead to more E&P activity and result in cheaper contractor services for all parties. A win-win situation.

#### ***Gas hub: first come, first served or Dutch gas first?***

GTS is legally obliged to accept gas produced by small fields. The Brattle report assumes that income for the Netherlands from the gas hub will break down into 50% from E&P and 50% from transit. But if we allow a shift towards transit, that income will erode, as transit is a low-margin business. We earn the best margins producing our own gas and therefore Dutch gas should, also in the future, be served first.

**Jan Dirk Bokhoven** is Chairman of the Board of Energiebeheer Nederland (EBN), which manages the Dutch state's minority interests in Dutch onshore and offshore exploration and production of oil and gas. He joined EBN in 2001. Before that he was Commercial Manager at Clyde. His early career included various roles at Conoco and Veba Oil. He graduated from Delft Technical University in 1983, specialising in petroleum engineering.



Tom Choi, Deloitte MarketPoint

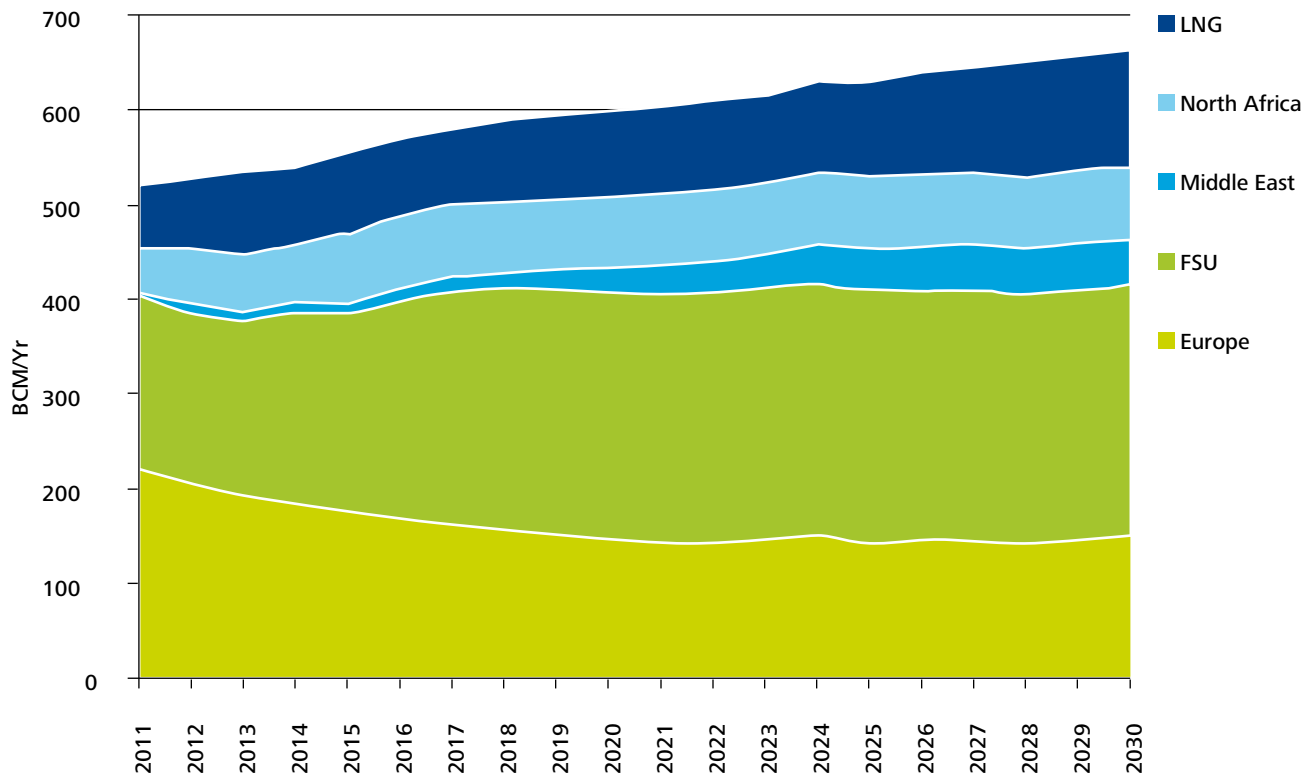
# Transitions in Global Gas Markets

The projections in this article are based on Deloitte's World Gas Model. To help understand the complexities and dynamics of global natural gas markets, Deloitte MarketPoint used its World Gas Model (WGM or 'The Model') developed in our proprietary MarketBuilder software. Based on sound economic theories and detailed representations of global gas demand, supply basins and infrastructure, the Model projects market clearing prices and quantities over a long time horizon on a monthly basis. The Model also represents supply contracts, which is critically important in Europe, since they typically include a swing volume that buyers can elect to accept when it is to their advantage. Using the Model, we have analysed how global changes could impact the supply mix and prices in Europe.

Events in recent years remind us that global natural gas markets are dynamic, ever evolving, and increasingly interconnected. A severe global recession significantly depressed worldwide natural gas demand, but it was followed by a remarkably swift rebound in demand. In North America technological innovations have transformed vast, previously uneconomic shale gas deposits into valuable energy resources. The so-called shale gas revolution could potentially transform markets in Europe and other parts of the world. In response to growing demand and high prices seen a few years ago, worldwide LNG supplies have climbed sharply, and the trend is expected to continue with major projects already under construction or in late planning stages. The Japanese nuclear plant failures resulting from the devastating earthquakes and tsunami that hit Japan in March 2011 caused Japan and other nuclear power nations to reexamine and in some cases slow down or completely shut down their nuclear programmes. All these factors are expected to directly affect European natural gas markets.

Furthermore, new pipelines already under construction, such as Nordstream, MedGaz, and Galsi, or being planned, such as Southstream, Nabucco, and Trans-Adriatic Pipeline, will provide Europe with additional supply options and increase competition

**Figure 1. Projected European Supply Sources**



Source: MarketBuilder's World Gas Trade Model

among suppliers. On the other hand, production from some North Sea supplies are declining with reservoir depletion. How will all these factors affect prices and the supply mix in Europe? More fundamentally, how will the changing market dynamics affect market structure and pricing mechanisms in Europe?

**Market Projections**

Although European natural gas demand is projected to grow at a fairly modest rate (1.1%/year), the growth rate still produces about 25% total growth or about 130 Bcm in incremental demand over the next twenty years. Furthermore, Europe will need to find new supplies to replace declining production from existing domestic supplies.

The projected European supply mix is shown in Figure 1. Total domestic European production declines over time, primarily due to a sharp downturn in UK production. Imports from the Former Soviet Union (FSU), including Russia and the Caspian republics, are projected to continue to be the largest source of gas into Europe. FSU imports are projected to hold fairly steady and then grow moderately due to increased production out of Kazakhstan and Turkmenistan, both of which hold significant resources and have relatively small domestic markets. Pipeline imports from the

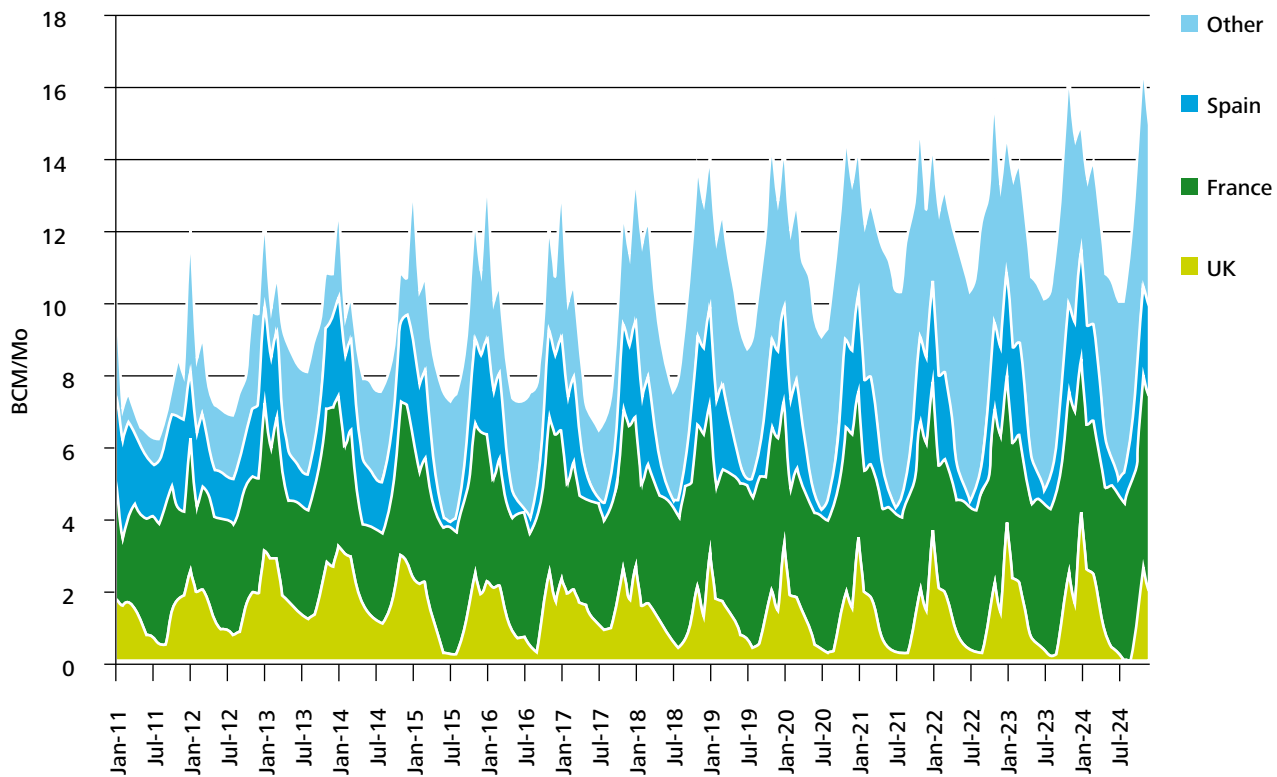
Middle East, including Turkey, are projected to increase sharply when Nabucco, or alternatively, Southstream, is constructed. North African pipeline imports are projected to increase once the Medgaz (Algeria to Spain) and Galsi (Algeria to Italy) pipelines come into service. LNG imports to Europe do increase, reaching 120 Bcm by 2030, but they still comprise only about 20% of the total supply mix.

Global LNG supplies have increased sharply over the past few years and we project the trend to continue. Based upon assumptions depicted in the model, our projection shows global LNG continuing to climb, reaching 400 MTPA by 2025. Most of the expansion comes from Australia in the near term and Qatar and other Middle Eastern countries in the long term. The projection is computed by the Model based on projects already being constructed or planned and additional LNG supply computed by the Model as being economic, on the basis of the competition among LNG producers for markets and market competition for LNG supplies.

Some of the incremental global LNG supply is projected to find its way to Europe, although most of it will be headed to Asian markets. Figure 2 shows the projected monthly LNG imports

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**Figure 2. Projected LNG Imports to Europe**



Source: DMP World Gas ModelWorld Gas Model

by European countries. Given the high capital costs required to construct an LNG supply train and the high variable shipping cost, LNG is likely to be a marginal supply into Europe.

Also notice that the swing (i.e., difference between summer base and winter peak volumes) in LNG imports increases over time. LNG is projected to comprise an increasing share of the total swing volume to meet Europe’s highly seasonal load pattern. Of course, storage will continue to provide most of the peak volumes but LNG, because it is mobile and can be diverted to other markets, is better suited to follow load variations than pipeline imports, which typically have a low variable cost, and domestic production, which is difficult to cycle by season.

**Market Implications**

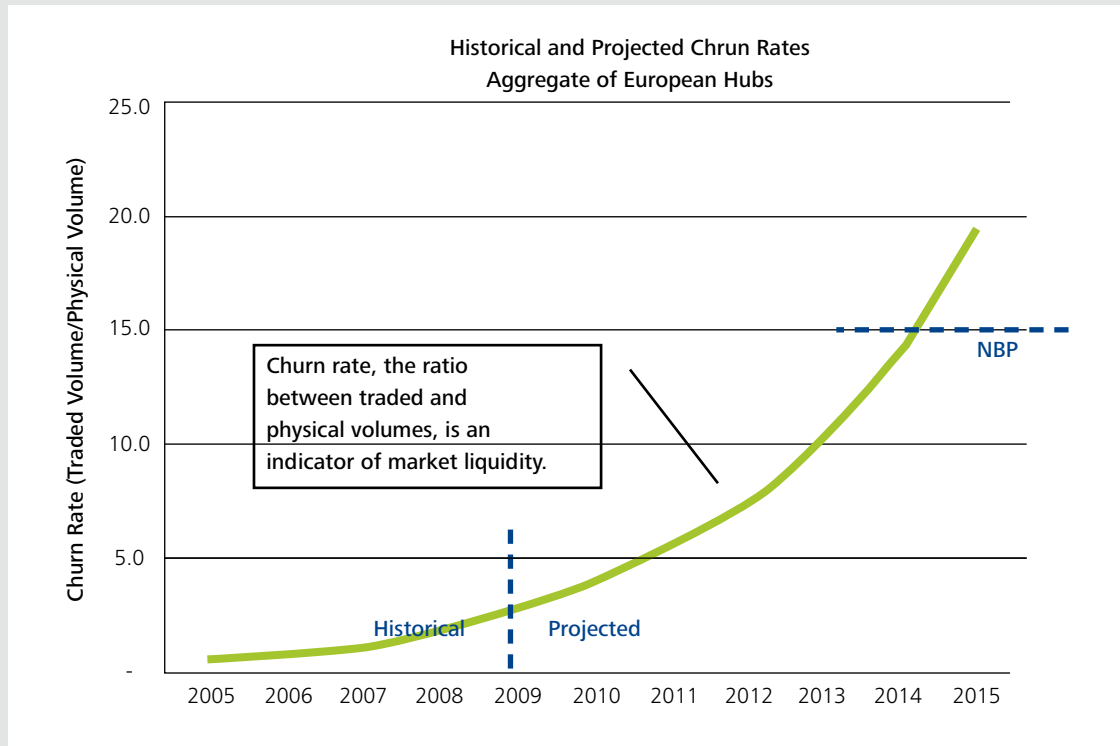
The increased availability of supply and supply options will apply competitive pressures on suppliers to Europe, which has long been among the highest priced markets. Long-term supply contracts in Europe have historically been pegged to an oil-price index due to lack of liquidity and price transparency. With a concerted European effort towards market liberalisation and increased competition among suppliers, we see a transition away from oil-pegged supply contracts and European prices trending

towards more competitively set prices. With available supply volumes surpassing total European demand, sellers insisting upon premium pricing through oil-price indexation will likely see erosion of their market shares.

The net impact will be more competitively set prices due to gas-on-gas competition, which will bring European prices more in line with competitively set US prices. Hence, basis differentials between Europe and the US (e.g., Zeebrugge-Henry basis) are projected to narrow over time. However, they are unlikely to ever reach parity because natural gas, unlike oil, may never have a world price. The cost of transportation, on a unitised energy basis, is much higher for gas than it is for oil. Therefore, global gas markets will remain partially interconnected regional markets with prices within each region determined by regional supply and demand balances. This also implies that a gas producers’ equivalent to OPEC is unlikely.

The timing of the shift to market prices is difficult to predict because it depends on many economic, political and regulatory factors. Our projection indicates that it will take several years before market prices really take hold. To provide another perspective, we analysed the historical traded volume at

**Figure 3. Historical and Extrapolated Churn Rate**



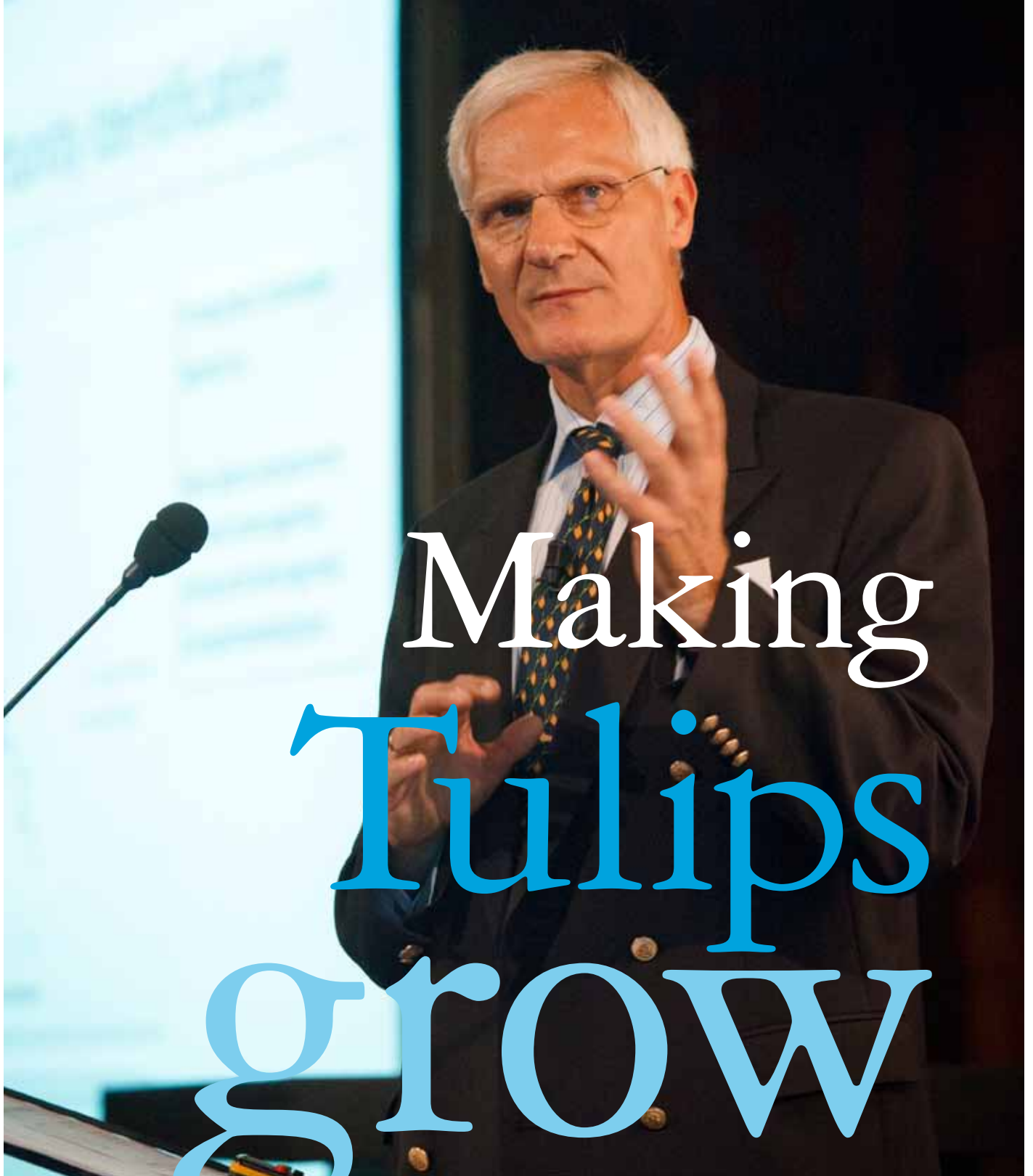
Source: IEA, Deloitte MarketPoint

European hubs. Over the past few years, the traded volume has grown considerably, with growth accelerating each year. We can compute a churn rate, defined as the ratio between the traded volume and physical volume, to provide an indicator of market liquidity. The thought is that a higher churn rate indicates a more actively traded and liquid market and if we project future churn rates then we can gain an idea as to when European markets will achieve liquidity comparable to established liquid hubs such as the UK's NBP (National Balancing Point). Figure 3 shows historical churn rates for Western European hubs, including Zeebrugge, TTF, PSV, PEG, Gaspool, and CEGH, through 2009 and a statistical extrapolation into the future. The extrapolation shows that in several years, the combined churn rate for European hubs will reach a liquidity level comparable to that of the NBP. This simple projection is not meant to be a precise prediction of the timing, but rather a rough indicator to compare with our model projection of the timing of competitive markets. Both analyses indicate that in just a few years, Western European hubs will have transitioned to fairly liquid and competitively priced markets.

**Summary**

The findings of this study underscore the rapid transition in Europe towards competitive natural gas markets. Indeed, the transition is already well underway, and supply competition will likely complete the transition in Western Europe in several years. As this transition occurs, oil-price indexation will face increasing challenge as the paradigm for long-term supply contracts and European markets will likely shift to lower, more competitively set prices. The transition bodes well for European consumers, but could pose a challenge to suppliers and holders of long-term contracts pegged to higher oil-indexed prices.

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# Making Tulips grow

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After a long career with Shell, Roelof Platenkamp started Tulip Oil to focus on squeezing more oil and gas out of unappreciated accumulations and abandoned fields close to home. Not as 'sexy' a business as the mega oil and gas developments that he was used to, he concedes, but certainly a profitable one, for independent oil companies and for cash-hungry governments. He provides some recommendations for growing more Tulips.

**R**oelof Platenkamp is just back from talks about awarding one of the biggest seismic surveys ever to be done in Germany. Quite a milestone for an independent oil company less than a year old. This multi-million up-front investment following the recent acquisition of a majority holding in Rhein Petroleum is expected to pay off richly when the targeted fields - drilled in haste during and shortly after the Second World War and prematurely abandoned – come on stream again late next year, along with several newly identified appraisal prospects.

### Marginal prospects and fields a low priority

It's prospects like these that Platenkamp always dreamt of pursuing whilst he was still a high-ranking executive within Shell. Indeed, he was one of the driving forces behind the recent redevelopment of the Schoonebeek field, and proposed using the low pressure steamflood technique as early as 1989. However, marginal fields and exploration prospects are often not considered for capital allocation in big companies, Platenkamp knows, and for understandable reasons. 'Corporate capacity is one. Senior management out of necessity focuses on the most material projects rather than on marginal fields and small projects to optimise production in mature fields. In a multinational company, moreover, projects are prioritised on a global scale, even further reducing the chances of the smaller projects in individual countries getting the green light. Staff, meanwhile, prefer to work on large projects as well, as that provides exposure to senior management and enhances career development. All in all, this leaves interesting business opportunities for smaller companies.'

### Value proposition

Interesting indeed. The figures Platenkamp presents to back this up are impressive. In the UK, for instance, independent oil companies have an aggregate market capitalisation of EUR 20 billion – that amounts to one major! They report higher growth and higher EBITDA, while their cost of capital is lower.

'An investment in an abandoned field is below the radar of the big players. But the margins on these projects can be very attractive,' he points out. 'These shallow fields were developed at the time with relatively old technology: vertical wells, poor or absent seismic control, drilling fluids which led to formation impairment. At abandonment, probably a fraction of the reserves were actually produced compared to today's recovery benchmark. Applying new technology to old prospects is a cheap business model. Just think: no exploration costs, low infrastructure costs, low operating costs, low transport costs, given that in Europe a refinery is never far away. The math is

simple. Relatively low technical cost per produced barrel. That leaves a generous margin per barrel to be divided between the producer and the taxman. The authorities we talked to are very supportive. The government is pleased with tax returns it would otherwise not have received. The company is expected to walk away with a healthy revenue at relatively little up-front cost. Of course it isn't quite as simple as this, but we're clearly looking at an interesting value proposition, one that resonated with our partner, Barclays Capital.'

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## Independents report higher growth and higher EBITDA, while their cost of capital is lower.

### Looking for mismatches

Platenkamp doesn't mean to say, however, that any upstart has the same odds of succeeding as Tulip. 'Most companies start by chasing assets, and then go after funding,' he explains. 'As the brainchild of industry veterans in Barclays Capital and Tulip, however, Tulip had a head start in terms of funding, knowledge and an industry network. That equals financial flexibility and technical credibility, and gives us a head start in chasing assets. Tulip has actually been approached by financial players who want to invest in us, which we preferably channel through our financial partner Barclays. We also get offers from oil companies interested in collaboration. The big difference is that we can focus on the job at hand and don't have to go around with a tin cup asking for funding.'

So far Tulip Oil has been relatively successful. Shortly after its foundation, Tulip was able to move very quickly to acquire Rhein Petroleum. It now has an attractive acreage in Germany: proven hydrocarbon areas with undrilled prospects, abandoned fields and producing fields nearby. Since then, agreements with other parties have been created and updated, and more deals are in the making, also in the Netherlands. 'We look for mismatches between portfolios and management teams. If we relieve a distressed company of an asset they're not keen to develop, so it has more money to use on other assets, it's a win-win situation.'

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### Weaknesses and threats

Bright as the picture looks, Platenkamp concedes that, like any company, Tulip has weaknesses and threats to deal with. 'A danger is spreading ourselves too thin, embarking on too many projects at once. And we could get our prognoses wrong and fail to produce the volumes we expected. Unlikely, but it can't be ruled out, and the earlier that happens, the more dangerous it is. As for bad luck, we're not immune to that. We've already had one setback. We invested time and money in a potential takeover, but ultimately withdrew because I didn't feel comfortable with the valuation.'

'A final risk,' he adds, 'is that public acceptance of what we do cannot be taken for granted. We have to take care to build good relationships with the communities we operate in. We're getting support from the University of Wageningen in developing smart solutions to minimise waste and integrate our operations in the environment, for example by piping any CO<sub>2</sub> we produce into a greenhouse, or feeding excess electricity back into the grid.'

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## An investment in an abandoned field is below the radar of the big players, but the margins can be very attractive

### Government's role

The success of small independents like Tulip always depends to some extent on governments. There are various measures, Platenkamp explains, that the Dutch government can take to make Tulips grow - in our garden rather than elsewhere. 'The fiscal climate is attractive enough. But the industry would certainly benefit from investment credits, tax breaks and accelerated amortisation to support investment in new technology.' Government intervention is also needed to level the playing field, Platenkamp feels. If incumbents have good deals on electricity or the gas they need for production processes, these should be extended to newcomers. But the first priority, Platenkamp emphasises, is solving the problem of fallow acreage.

'The last two decades were dynamic, with lots of fallow acreage being relinquished, old players leaving and new players entering the fray, but now the Dutch market has lost steam. The recent covenant between licence holders and the Ministry to make unused licences available was a good start, but to date nothing has happened. The licence holders are still studying their portfolio.'

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## Multinationals are missing the opportunity to share in the profits at no cost or risk to themselves.

### British-style E&P market

By holding on to their fallow fields for the sake of future optionality, Platenkamp argues, multinationals are missing the opportunity to share in the profits these fields can yield now, at no cost or risk to themselves. The government, as long as it doesn't put its foot down, is missing out on very welcome extra income. With the licences being brought back in the game on the basis of the 'use it or lose it' principle, everything would be in place for a British-style E&P market in Holland - with rows upon rows of Tulips.

**Roelof Platenkamp** is the Executive Chairman of Tulip Oil, a partnership with Barclays Natural Resources Investments. Tulip Oil focuses on undeveloped oil and gas discoveries, small fields and late life assets in Western Europe. Roelof founded Tulip after a long career with Shell in a broad range of jobs including Global Vice President Petroleum Engineering and Development and CEO of NAM.

He graduated in Molecular Physics at the University of Wageningen and holds a PhD in Mathematics and Physics from the University of Leiden.



The  
better  
story:

# tight gas

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*Rien Herber*, appointed professor of Geo-Energy at Groningen University after a long career in the oil & gas industry, gives us five reasons why the Netherlands should primarily focus on tight gas and consider shale gas as a possible, but modest bonus, plus five tips to encourage tight gas development. >>

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## Five reasons why tight gas is a better story than shale gas:

**1. Shale gas volumes in the Netherlands are likely to be modest**

• If shale gas is found in the Netherlands, the volumes which can be produced will be small compared to what our small fields now produce. Unconventional offshore prospects are simply too expensive to develop economically any time soon, so only onshore prospects are worth studying. Of the onshore shale formations, not all are mature for gas. That leaves just a few areas in the south-east, with a fairly thin prospective shale layer of 10 to 30 metres net. I reckon they might hold maximum recoverable volumes of 10 to 20 bcm. But even if it were 100 bcm, the amount that can be brought to market in any given year is modest because of low production rates. So in terms of our country's future position in the gas sector, the contribution shale gas could make is a nice little bonus, but not something we can build our strategies on.

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## The business plan for shale gas development follows organic growth

**2. Shale gas developments are dependent on 'sweet spots'**

• The business model for shale gas development is very different from what we are used to. For conventional gas projects, the cash sink is at the beginning. Nearly all the investments - in platforms and wells - are made before the field comes on stream. Not so for shale. The business model in this case follows organic growth. You drill a few wells, test them at length. If flowrate and connected volume are meeting economic criteria, it means you've found a 'sweet spot' and then you drill a few more wells close to the first ones. It's like gold digging. Even in sweet spots though, a well has a production life of some 7-8 years on average, so you have to keep on drilling new wells throughout the fieldlife. Investments are spread over a longer period. Every well presents a new investment decision moment, with the recovery per well determining whether to continue or abandon. Ideally, that would mean the company can finance follow-up investments from the production of the first wells, and can cut its losses if the wells disappoint or market circumstances change. But this isn't a business model that allows accurate claims for total recoverable reserves at the time of discovery. This complicates the long-term planning of our country's gas production.

**3. Shale gas cannot help the Netherlands deal with demand peaks**

• In the gas market, two factors are relevant, bulk volume – such as delivered at constant rates from the big trunk lines from Russia - and production capacity - in other words how fast can we react to increases in demand. On a freezing winter morning, demand rises almost instantaneously and has to be met from high capacity wells in the Groningen field or gas storages. Shale gas wells, with their low production rates, simply cannot deliver serious volumes at short notice.

**4. The environmental footprint of shale gas developments is very large**

• Getting shale gas to the surface means intensive drilling. The wellcount of these developments is very high. A conventional well in the Groningen field produces 3 to 5 million m<sup>3</sup> of gas a day, a shale gas well, even a good one, only 10,000 m<sup>3</sup>. Producing volumes of shale gas that would materially help pushing our country's gas production horizon forward, assuming such volumes are found, would involve drilling thousands of wells. Horizontal and multilateral drilling can help reduce the number of actual wellpads, but we're still talking in many hundreds. Groningen, Europe's biggest gas field, covering an area of some 850 km<sup>2</sup>, has some 300 wells on 29 production locations. An average conventional Dutch field is produced from 1 or 2 locations. So you can imagine the difficulties such a high shalgas wellcount would pose in our crowded country. Any company embarking on shale gas exploration needs to be transparent up front about what the development will look like if its exploration wells are successful. Authorities, in their turn, need to weigh the impact at the surface against the possible reward.

**5. Tight gas is relatively plentiful and already found**

• Tight gas is conventional gas trapped in reservoirs with a permeability of less than 1 to 5 milliDarcy, compared to 300 to 400 milliDarcy for our average Dutch fields, and a few nanoDarcy for shale gas. On Dutch territory, tight gas is present in volumes that can make a difference. It will not be enough to replace production from the Groningen field, but it will go some way towards realising the ambition of maintaining current production from small fields in 2020-2030. The big advantage is: many tight gas fields have already been discovered, mostly offshore. We just haven't developed them yet because the reservoirs are challenging.

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## Five tips to create the right environment for developing tight gas fields:

**1. Develop the technology – or buy it**  
The Netherlands is not yet a front runner in technology to develop tight gas. With a field like Groningen within our borders, there was just no need. Industry and universities have only recently started stepping up their efforts in this area. We can get the technology from abroad, too, but it will need some tweaking to fit the geological realities of Dutch onshore and offshore fields.

**2. Team up to create critical mass**  
We know where the tight gas fields are. Every operator has a few, and mostly inside its production concessions, so competition is not an issue. But none of these players alone, even the larger ones, has the critical mass of tight gas reserves to get a long-term drilling campaign going. Try ordering a fracking ship for just one well! If all the players pool their prospects and pledge to develop them together, sharing their technology, they can put a joint services contract out to tender that the service industry will want to come to Europe for. This will also bring us quickly up the learning curve developing the required operational skills

**3. Adjust tax rates**  
The Dutch government stands to benefit from development of tight gas fields, so it makes sense for it to provide some encouragement. For example by lowering the tax rate for tight gas production. An oil & gas producer currently gets a blanket tax bill on its total profit, but it's possible, on the basis of the production data the government already compiles, to determine which production comes from which field, and vary the applicable tax rates.

**4. Provide direction**  
The government is in a position to oil the wheels of cooperation between companies and facilitate technology development and exchange. First steps are being taken in that direction now. The first intercompany task force meeting has already taken place under the auspices of Minister Verhagen. This is not enough, however. Proper development of energy resources requires a long-term government energy vision. This has been lacking for some years in the Netherlands. As a result, the energy mix was left to market mechanisms only. That doesn't necessarily produce solutions that are in the public interest. If the government is clear about its priorities, industry players can focus their resources accordingly. The recently issued 2011 Energy Report is a step in that direction.

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## Players should pool their tight gas prospects and pledge to develop them together

**5. Educate and inform the public**  
Public awareness of what's down there under our feet is still alarmingly low. This leads to perceptions of risk which are often unfounded or based on anecdotal information. Industry, authorities and knowledge centres like universities need to step up their efforts to communicate and build trust, and in doing so increase public understanding of our activities. Improving education and providing understandable, reliable information not *after*, but *as a part* of the decision making process, could lead to shorter and more successful permit procedures.

**Rien Herber** became a full-time professor of geo-energy at the University of Groningen in 2009, having spent the previous 30 years working for Shell. Starting in research in 1979, he moved into more practical and managerial roles around the world. His jobs included deputy head of NAM and Shell's European Head of Exploration. He earned his degree in geophysics in Utrecht.



Panel discussion

highlights





**About the E&P climate and the Ministry's Energy Report:**

**Greg Guidry:**

Growing more 'Tulips' is all about free markets. I just came back from Calgary, and guess how many oil & gas companies are listed in Canada? 1800! In Europe, you need to encourage entrepreneurialism. It takes regulatory accommodation. Time is even more important to small players than it is to us, as they've got a lot of investment capital tied up without a whole lot of revenue. One way to kill them off very quickly is to have them wait. I'm very accustomed to operating as a larger company amongst hundreds of thousands of very small companies. I think there's enough there for both. It's good for the Ministry and it's good for the public, because it maximises the recovery of resources.

**Jan Dirk van Bokhoven:**

In the Netherlands there are only few small companies, but if you consider that the Netherlands is supposed to be a very mature basin, it's also surprising that all the majors are still out there, so maybe it's not so mature yet.

**Meb Somani (Barclays):**

Worldwide, there's a huge amount of investor demand. It's a matter of catalysing the situation, in terms of putting together the talent, the resources and the money. The hardest part is prising the assets away from the larger companies.

**About social acceptance of E&P operations:**

**Roelof Platenkamp:**

Most parties are actually very willing to let you do the work you need to do. But you have to listen to these parties, treat them respectfully, and answer them honestly. In Germany, we've started early to engage the local community, talking to individual farmers, opening up an information centre. It's the eye for detail that makes a difference. We're actually being welcomed. It's just like in Schoonebeek. People ask if we're bringing the nodding donkeys back. That said, it's key that we're doing something they've seen before, rather than talking about frac jobs or shale gas. And they are glad they're dealing with Tulip rather than companies from further away. Speaking the language and knowing the culture helps.

**Greg Guidry:**

Should we stop using the word 'unconventional'? Good point. We continually use the jargon that works for us internally. We need to quit communicating to the public in a way that means something to us, and think about what really communicates to them. Also, when you go in for an early exploration campaign for unconventional gas, you talk about the impact that that exploration is going to have, but when they ask you 'what if you're successful?' don't answer 'our chances of success are 30%, so why do you want to know?' If you don't communicate clearly what success could look like, the fear is that it's something you don't want to talk about. We've fallen into that trap many

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times. You need to describe the success scenario and deal with whatever the consequences are. Otherwise, you'll forever be chasing your tail, talking about uncertainty, and trust starts to vanish.

#### **About unconventional:**

##### **Greg Guidry**

I can't tell you all the specifics, but we're planning to be an active player in unconventional in Europe. In Germany, we're basically 50-50 with Exxon, they operate but we're funding half of the programme. It's already a very active programme. And there are several other countries where we're in the appraisal phase. We're going to be a part of it. But whether it ever comes to anything like what's happening in North America? At this point it's a crapshoot.

#### **On the powerhouse:**

##### **Hans Vijlbrief:**

It's up to the market. I believe the Netherlands can be an energy and electricity exporter. I don't care very much as long as it's safe, as long as it's not too polluting, as long as it's accepted by the people. As long as we're meeting these conditions, I don't care about the energy mix in this country, nor what we export.

##### **Ruud Bos:**

We've been raising questions and subsequently alarm bells that natural gas was being taken for granted. After some years it's back to centre stage and we're crying 'Hallelujah'. But I'm a little bit afraid that we're putting so much effort into this industry that one of our other major industries, the power business, might just miss this window of opportunity. Whether we use coal, nuclear, renewables or gas, I'll leave that aside. Right now, due to market constraints, the supply and demand gap will emerge in Germany and Belgium before it does in the Netherlands. And that means capacity will be built somewhere else, whereas we as a country have a competitive advantage to play this role as a powerhouse.

##### **Paul van Gelder:**

I don't object to the whole concept of the Netherlands being a powerhouse, in fact we're in discussions with Tennet. The Netherlands could be a swing provider of flexibility. But not everybody understands the physics and the hard data behind the transport of energy, and the lower efficiency of electricity transport compared to gas transport. I think it's the task of the gas industry to convey the message that gas is a very efficient way to transport energy. That doesn't rule out the powerhouse concept, in fact Gasunie is already thinking of the same concept and trying to support this.

#### **On the 20-20-20 targets:**

##### **Hans Vijlbrief:**

I don't like backcasting. This world is so fundamentally uncertain, that I don't believe in confining the sector with roadmaps that reach so far ahead. Three years ago, gas was dead, and now we're talking about a powerhouse. The same goes for nuclear. Let's be careful about making choices that limit our options for the future. No taboos, because we can't afford to have taboos.

##### **Hans Vijlbrief:**

Of all the three energy targets, there's only one that's really important, and you can guess which one I mean. If climate's really your goal, CO<sub>2</sub> is all that matters. And the solution is to price it.

##### **Paul van Gelder:**

In many countries, 'carbon neutral' is interpreted as a non-fossil energy mix. That's rubbish. We need to move away from that. In the Netherlands, households are very lucky to be connected to two energy sources. In Norway, last winter was cold but very dry, and hydropower generation was lower than usual. They had to urge people through TV commercials to keep their showers short!

#### **On the (partial) privatisation of Gasunie:**

##### **Hans Vijlbrief:**

We don't like the decision made by the NMa regarding Gasunie's transit tariffs, and we think it's up for discussion. The NMa is a supervisory body, we're fond of them, we love them even, but if Gasunie wants to attract money, it needs to earn money. And it's not the level of the earnings that counts most, but the stability of the earnings. Gasunie can't do business if the rules of the game change every year. And we'll won't get investors. What you can count on is that we'll try to bring stability into the system.

##### **Paul van Gelder:**

If the state was willing to inject new equity, then privatisation would not be needed. But the reality is, we see huge infrastructure investments coming our way that are needed, badly, and these projects take a long time, so we shouldn't wait too long. The discussion is focusing on whether we're going to ask institutional investors to participate in Gasunie, go for a partial listing or launch a full IPO. All these options have to be examined, and in 2012 we must come up with a decision.





‘Energy policy serves many purposes, including

making money’

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We interviewed Hans Vijlbrief, recently appointed Chief Treasurer of the Netherlands, in his final days as our country's Director General of Energy. He believes in the slogan that Energy is Money. But we'll need to invest first. 'There's no such thing as a free lunch.'

'There was a time when our energy policy was becoming increasingly subservient to climate policy. It was the previous minister of Economic Affairs, Maria van der Hoeven, who created quite a stir when she started to shift the balance in the direction of economy. I've always felt that climate deserves to be taken into account, but independently of that, energy policy has a wide range of objectives: making money with energy is one of them, and keeping energy affordable is another.

It makes sense to view the energy sector in economic terms. I've discovered on taking on this job that the Netherlands may be a small country by many measures, but in the energy world we're a Big Country. When our Dutch officials and ministers talk, people listen – on my visit to Exxon in the US, I was treated almost like an Arab sheik! We have a great track record, two major energy ports, and of course our gas reserves. I never knew, and a lot of people in our country still don't, that the Slochteren field, when it was discovered, was the world's biggest gas find. And it's still in the top ten.

#### The Golden Age of Gas

Our leadership in gas is especially lucky as we seem to be entering the Golden Age of Gas. The nuclear disaster in Japan, and Germany's decision to phase out nuclear power altogether, have some positive effects for a gas country like the Netherlands. But we cannot just sit back. We need to invest to reap the full benefit, particularly in infrastructure. That's the real bottleneck.

Exploration and production is still viewed by the government as a high priority, though our Energy Report may not have devoted a whole lot of space to it. We're still working with industry players on identifying obstacles and seeing what we can do to improve the mining climate. Small fields are on our radar, too. A serious concern for me, and I'm thinking specifically about shale gas, is public opinion. Companies need to make clear what they're doing, what the risks are, what they're doing to mitigate

them. I can't say it enough: we're only too happy to make the investment climate as attractive as possible, but boys and girls, if there's one thing you should never compromise on, then it's safety. We've seen what happened to the German nuclear sector post-Fukushima. Germany is Germany, of course, but something similar happened in the Netherlands with public opinion turning against the proposal to store CO<sub>2</sub> under Barendrecht. Whatever you think of it, the fact is that the situation almost spun out of control.

What would also benefit the E&P sector is better cooperation between players, and that is something we want to encourage. In line with the advice provided by Jeroen van der Veer's task force for the energy sector, we'd like to see EBN, as the government participant in most E&P activities on Dutch territory, help oil the wheels. The idea is to bring together know-how that's now scattered across many industry players and research institutes. It could be the EBN will need more freedom to take on this role, and I'm willing to give that serious thought. I don't know if it's possible, but I think we should be making the most of the great institutes we have in this field, not just EBN, but research institutes ECN and TNO too.

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There's no difference between selling energy and selling peanut butter.

#### Solar

You can't find the sun in our Energy Report? Then you may be looking in the wrong place. It's in the chapter on innovation and research. Our operational policy – market mechanisms with a

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little subsidy where necessary, and, our ambition for the future, obliging producers to generate a portion of their electricity sustainably – applies to mature energy technology, which also includes wind. Technologies that are further from commercial viability, and that includes solar in our view, are supported by tax incentives on innovation. We've abandoned the concept of encouraging innovation through exploitation subsidies on renewable energy production. I believe the make or break of these technologies is mass, and we'll never beat the Chinese on that score.

### Powerhouse

With the Golden Age of Gas dawning, some say the Dutch energy policy seems to be harking back to our own Golden Age, when the East Indian Company sent its ships to distant shores in search of wealth for the motherland. If you mean we're looking for opportunities to earn money beyond our own borders, I agree. We decided at some point that our national grid companies Tennet and Gasunie have what it takes to make cross-border acquisitions. And that there's nothing wrong with Dutch grids owning German grids. The ultimate consequence is that we also accept that foreign companies should be allowed to own a stake in Dutch grids. Not allowing that would be odd, tantamount to xenophobia. It's a matter of principle. By which I'm not denying that there are other, more pedestrian motives – like replenishing the state coffers.

Likewise, I'm right behind the idea of making the Netherlands the Powerhouse of Europe. Barring the issues of fuel supply constraints and emissions, there's no difference between selling energy and selling peanut butter. We have a whole list of competitive advantages that make us the ideal spot for coal-fired and gasfired power plants. And this cabinet sees room for new nuclear plants too. If you believe they are inescapably a part of the European energy mix, it's ridiculous to say we can't have them here. If other countries ban them, that's up to them. We don't wear Lederhosen just because the Germans do.

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## In the energy world we're a Big Country

There are a few cross-border issues that would need ironing out, though. Regulatory issues and infrastructure issues. For example, wouldn't it be reasonable, if we generate electricity for Germany, for them to help pay for the extra high-voltage cable capacity needed? We've told the Germans, in a friendly way, that the implications of their decision need looking into. We and other countries have asked the European Commission to do so.

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## The Gas Hub has to be more than just a label

### Gas Hub

Another economic play I now like is the Gas Hub. I've always said it has to be more than just a label, merely stating our intention to remain at the heart of the gas industry beyond the life of our own fields. If you want it to amount to something, I told the parties involved a year ago, then let me know what needs changing, and what that will cost. They've now done so, and new building blocks are taking shape, with the green light for the Bergermeer storage facility a major milestone. I see us teaming up with the Belgians for instance, to strengthen our competitive position vis-à-vis the British. But what we have to keep in mind above all is that we need to invest in infrastructure first if we want to make money long-term. There's no such thing as a free lunch.'

**Hans Vijlbrief**, appointed this July as the Netherlands' Chief Treasurer, spoke at our conference in his previous capacity as Director General for Energy at the Dutch Ministry of Economic Affairs, where he had been working in various roles since 1992. From 2000 to 2010, he also held an extraordinary professorship in economic policy at the Free University of Amsterdam, where he earned his PhD in 1992.



for Another round

fossil

fuels?

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From his position at the helm of Electrabel Nederland, our country's biggest electricity producer, **Ruud Bos** still sees a window of opportunity for fossil fuels in the run-up to the low-carbon economy. >>

**T**he power sector, Ruud Bos argues, has an image problem. ‘The public thinks we’re sitting on piles of cash. I concede we’ve had a few good years in a row now, but we’re ploughing a lot of money back into the company, too. And you have to look at the game changers we’ve been up against in the past few years.’ He starts counting on his fingers. ‘The rise of unconventional gas has redrawn the global energy map. The credit crisis destroyed energy demand and left us with a significant change in the merit order of old versus newly built power generation capacity. And now the nuclear disaster in Fukushima has overturned public opinion regarding the energy mix of the future, and the political will to press ahead with nuclear power could wilt just as suddenly as it did in the case of onshore carbon capture and storage.’ He goes on to point out the regulatory problems hitting grid operators Gasunie and Tennet and the potential write-offs these entail, the legal proceedings against unbundling, ‘the list goes on and on, and the uncertainty all this creates is killing for our industry with its long-term commitments.’

#### Slower transition to renewables

These days, a long-term strategy is more important than ever. The fundamental challenge facing the entire energy sector is the transition to a low-carbon economy by 2050. ‘While we all agree on the destination, opinions differ on the time path and steps to be taken along the way,’ says Bos. ‘I think the recent study commissioned by the Gas Advocacy Forum offers a realistic approach, spreading the transition to renewables over a longer period, with a bigger role for fossil fuels.’ Electrabel is focusing on offshore CCS and on upgrading its gas- and coal-fired generation capacity. ‘Switching over to our new state-of-the-art plants,’ Bos explains, ‘is dramatically reducing our carbon footprint.’ The study also reveals an important inconsistency, he observes. ‘Of the EU’s 20-20-20 targets, the 20% CO<sub>2</sub> reduction is to be achieved on a European level, using the Emissions Trading Scheme, while each country separately is expected to meet the targets of 20% renewable energy and 20% lower energy consumption in 2020. We believe the 20% renewables target should also be pursued in a European framework, with each country focusing on what it’s best at. In our overcrowded and overregulated country, for instance, we see limited scope for building more wind parks, either onshore or offshore. But the Netherlands does offer the perfect location, close to ports and cooling water, for new coal- and biomass-fired plants. And we have very easy access to gas.’

#### The Energy Hub

The new Dutch government takes a no-nonsense approach to the energy market, focusing first of all on its economic potential. Accordingly, the idea of making the Netherlands the energy hub of Europe is back in the picture. This appeals to Bos, and he sees a window of opportunity opening up. ‘A lot of older power plants will be closing down, and Germany will be phasing out nuclear energy, but the gap this leaves cannot at this stage be filled by renewables. New, high-tech gas- and coal-fired plants, with feed-in of green gas and biomass, can keep Europe’s transition to low carbon on track. And the right place to build them is here.’

At the moment, though, our hypothetical hub is still missing a few key elements. Room to build is one. ‘It would be a lot easier for power companies to invest in new capacity, renewable or otherwise, if the government would not only give us permission to build, but also tell us where to do it. That way we no longer have to spend years hammering out deals with local authorities.’ Next, fuel supply lines need to be secure for many years to come. ‘Hats off to the Gas Hub initiative! It’s our best guarantee for the continuity of gas-fired power generation in the Netherlands, certainly if we have the ambition to supply our neighbours as well.’

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**We can expect another round for fossil fuels, but unless the Netherlands presses ahead with its energy hub concept, we’ll miss it.**

But interconnectivity with the German and Belgian power grids is the make or break of this plan. ‘Without the connections to export electricity,’ Bos explains, ‘building extra capacity will



merely push down local prices and defeat the purpose. Dutch grid operator Tennet has pledged sufficient capacity if it gets the green light to build soon, so time is of the essence.'

Meanwhile, if fossils are to be an efficient back-up for renewables as we approach 2050, the pricing model for electricity needs to change, Bos feels. 'Currently electricity is sold as a commodity, but companies need to be paid for upholding conventional generation capacity, regardless whether it is fully used or not.'

#### **Lasting framework**

Overall, what the sector needs most is certainty: a stable, long-term energy transition policy, the basics of which are independent of the political coalition that happens to be in power. The government's current plans for the energy sector, Bos feels, go some way towards creating such a lasting framework. Strict targets have been set and subsidies scrapped, allowing the market to do its work and ensuring survival of the fittest technologies. The government's role is to speed up innovation by giving tax breaks for R&D.

Electrabel, as part of GDF SUEZ, benefits from this global player's centralised R&D know-how. 'They're looking at sun, wind, CCS, biomass, tidal, you name it,' he says. 'They're interested in creating optionality.' But he warns that global players like GDF SUEZ have investment options all over the world, and they closely monitor market risk. 'It will take some (fiscal) encouragement to

keep them investing in the Netherlands and Europe rather than in regions that promise higher growth.'

#### **One round to go**

In any transition scenario, however, Bos sees a vital role for fossil fuels. So the gas industry's recent advocacy efforts make sense in his view, but advocates must be careful not to overshoot the mark. 'Gas is beginning to look like a competitor to renewable energy. It should position itself as the renewable sector's best partner.' That way, our country can benefit economically from leveraging its strength in this area, he believes. 'As 2050 approaches, we can expect another round for fossil fuels, but unless the Netherlands presses ahead with its the energy hub concept, we'll miss it.'

**Ruud Bos** is CEO of power company Electrabel Nederland, a subsidiary of GDF Suez. He was appointed in 2010. Before that, he was posted in Houston and in charge of GDF Suez' E&P activities in the region. Other companies he worked for are Eneco, where he was commercial director, and Gasunie. He has a degree in Business Administration from the University of Groningen.



# ‘With gas we can balance economy with ecology’

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Gasunie CEO Paul van Gelder has developed a long-term vision for his company, based on an unswerving belief in the North European Gas Hub. He’s convinced the Dutch government. What’s still needed is room for manoeuvre from regulators at home and abroad.

**MvdH:** Was Gasunie closely involved in the development of the government’s recent energy report?

**PvG:** Let’s just say the government has listened well to what all parties involved, including Gasunie, have to say. But what choice is there? Knowing how big the upcoming energy demand gap is, how far behind our country is in developing renewable energy, how many mass protests we’ll be seeing on the long road to new nuclear capacity in the Netherlands, what alternative is there to gas? It makes sense for our country to balance economy

and ecology by choosing a diverse energy mix with gas at its core. That will allow us to meet our European 20-20-20 targets affordably.

**MvdH:** Shouldn’t we be looking at the energy issue in a broader, European perspective?

**PvG:** Indeed, the Netherlands’ energy future is Europe’s energy future, and Gasunie has a role to play in that. Gas molecules don’t stop at our borders. Our aim is to create a balanced and



efficient energy market, with no more differences between regulatory frameworks and prices from one country to the next. That's why we favour a European investment strategy.

**MvdH:** The Netherlands is already a prominent gas country. Can we extend our lead?

**PvG:** Our German counterpart OGE is posting spectacular growth. The Belgian grid operator, thanks to its shareholder structure, has more financial flexibility than we have. In both countries, the regulatory framework offers more certainty for investments than here. Our country has to be careful not to surrender its lead.

**MvdH:** The year 2050, when Europe's energy supply is supposed to be fully sustainable, is appearing on the – necessarily long - investment horizon of grid operators. The business case for building hydrocarbon-related infrastructure looks sound enough now, but will that still be so in ten years' time? What are the implications for Gasunie?

**PvG:** The good news is that flexibility in energy supply - the ability to quickly switch power plants on and off - will become incredibly important, along with storage of surplus electricity on a daily basis or longer. Gas is structurally well positioned to contribute to both. Gas-fired power plants are suitable for on-demand delivery, unlike coal-fired or nuclear ones. Gas itself can be stored, and gas plays a role in new concepts for storing electricity. And there's green gas of course. Gas has a natural place in the energy mix in the low carbon economy.

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**Gas has a natural place in the energy mix in the low carbon economy.**

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**MvdH:** So the outlook for gas has never been better?

**PvG:** The end-user market is favourable, and more so than ever following developments in the past few months. But the process of establishing a regulatory framework in the Netherlands is creating uncertainty that is bad for the investment climate. Meanwhile, right now could be the last window of opportunity to make large-scale investments in gas infrastructure. You have to be able to get funding, and investor interest is likely to wane in the course of the transition.

**MvdH:** How much leeway does Gasunie have left for cross-border ventures?

**PvG:** The margins on our first acquisition in Germany may have become slimmer than we hoped, but strategically it was still worth doing. But the announcement by the Dutch competition authority NMa that it has developed new rules, which it intends to implement retroactively, could significantly reduce our cash flow. This threatens to be at the expense of expansion of the gas hub and thereby of the Netherlands' strong position in the international energy market. We can finance new investments at holding level only if we have sufficient cash flow. Otherwise we have to arrange project financing, and if we can't, that means we're pretty much out of the game in European terms. All the expertise we've built up over the years as gas industry leaders will go to waste.

**MvdH:** Some believe in the Gas Hub as a future source of income for the Netherlands that can at least partially make up for the decline in income from our own gas production. Are you a believer?

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## I don't believe predictions that gas will be obsolete in 2050

**PvG:** Transit margins will never be a match for E&P margins, because of the place of transit in the value chain. But we can generate a healthy flow of income from a gas-related activity, and ensure the Netherlands remains a significant force in the gas sector with a strong voice in the European energy debate. The Netherlands and Gasunie are thought leaders on market mechanisms, specifically on how to balance the European gas market. Elsewhere in Europe, balancing takes place on a daily basis, while we already balance on an hourly basis. This has created an extremely liquid and transparent market that new players can easily enter.

**MvdH:** But what's in it for us? When all is said and done, will this generate significantly more income for our country than it does already?

**PvG:** A year ago, I could have answered that state income from gas production will partly be replaced by income generated by the Gas Hub: dividend income from state company Gasunie, tax revenues from Taqa, income through EBN participating interests, and indirectly from job creation. But in the wake of the financial crisis, Gasunie invested an awful lot. We were the country's biggest investor in infrastructure. So you could say we've already done our bit to get the Dutch economy, and specifically large building firms, through the crisis years.

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## Right now could be the last window of opportunity for investments in gas infrastructure

**MvdH:** We're being snowed under with reports, commissioned by the European Climate Foundation, national governments and pressure groups, about the best way to achieve a low-carbon economy in 2050. Gas is completely absent in some of them, but central in the Gas Advocacy Forum's report. What's your view?

**PvG:** Part of the job description of the CEO of Gasunie is to develop your own long-term vision and stick to it, and not to let yourself be distracted by every report that comes along. And the Gas Hub strategy has our unswerving support. Any way you look at it, a future without a role for gas is unthinkable. I don't believe predictions that gas will be obsolete in 2050. Even if it were technically feasible, the cost would be too much for society to bear. In the very long term, I see the Netherlands as a leading player in European gas distribution, including the feed-in of green gas. We'll become the 'swing provider' for Europe.

**Paul van Gelder** was appointed CEO of Gasunie in 2010. His previous employer was TAQA, where after joining in 2007 he became Managing Director for Europe in 2008. During that time he was also elected chairman of NOGEP, the Netherlands Oil and Gas Exploration and Production Association, a role in which he made his mark as a powerful industry spokesman. He was an officer in the Royal Netherlands Navy for 14 years, during which time he also earned a degree in Industrial Engineering.



# ‘Balance has returned to the energy debate’

When the government pinpointed energy as one of our country’s Top Sectors and set up a taskforce to find out how to leverage our strength in this field, the obvious chairman was Jeroen van der Veer. We ask him what his top sector report means for the oil & gas industry.

***The subsidy tap for renewables is being turned off. How will that help innovation?***

The key problem with renewables is that they’re still in the early phase of their product life cycle and therefore still too expensive to compete with other forms of energy. The solution we propose is pooling all the different subsidies for renewable energy that we have now, including the funding of knowledge and technology institutes and universities, and channelling that money into research and development. Instead of subsidising uneconomical production of renewable energy, we invest our limited resources into making renewable energy cheaper. To allocate these funds, we propose setting up a joint committee of representatives of the government, businesses and academia. We call this the Golden Helix – a model that has already proven its success in agribusiness and chemicals.

***From 2015, knowledge institutes will no longer get funding from our country’s gas revenues. Won’t that stifle innovation?***

The government will be introducing a radical research and development tax break (RDA+). It was our task force that came up with the idea. Basically, companies can multiply their R&D spending by two before deducting it from their company tax bill, and those that outsource R&D projects to knowledge institutes can multiply it by a factor three, so that they end up paying only about one quarter of the costs themselves. This encourages smaller companies without their own R&D to get themselves organised. For example, if E&P companies want to develop new technologies to extract more oil or gas from small fields, they can jointly outsource this to a research institute like TNO and recover the bulk of their R&D spending through their tax bill. The beauty of this plan is that it targets medium-sized businesses. >>

Big multinationals already do lots of research here. It's the smaller businesses that aren't doing enough yet. That's where the innovation thrust will have to come from. A failure to innovate in that part of the market, where the suppliers and contractors of the big players are, will undermine our international competitiveness.

## If we don't position ourselves to benefit, somebody else will.

### ***Will this tax incentive be sufficient to get companies to join forces?***

We see a role here for Energie Beheer Nederland (EBN), which has dealings with all the companies in the sector, big and small, due to its minority shareholdings in exploration and production.

### ***The issue of unused E&P licences doesn't feature in your report. Why not?***

We had only three months to write our report, so we had to focus on a limited set of issues where we felt it was relatively urgent for the government to take additional measures, and action would not be taken without our prompting. The issue of the oil and gas exploration and production licences, in my view, is already on the government's radar, so we saw no need to interfere. We think the problem has been identified and is in hand. Strategically it makes perfect sense to try to extract every last drop of oil or litre of gas from our small fields. It's the best way to support the function of the Groningen field, which offers security in an uncertain world.

### ***What does your report have to say about the Gas Hub?***

We argue that the electricity and gas grids need investment to be made ready for tomorrow's agenda. This implies that we should give thought to the way we set our transport tariffs. If we base our tariffs on the short term, the grid companies will not have the scope to innovate and will inevitably fall into decline.

### ***Is the Gas Hub ever going to be a major money-earner for the Netherlands?***

There's more to the Gas Hub than just a spaghetti of pipelines. We need to look at the whole value chain. In the Minister's letter to Parliament, he speaks of the trade function, which doesn't necessarily have to coincide with physical distribution, but often does. He speaks of adjustments needed to the grid in this part of Europe in connection with new activities like LNG. Furthermore, there's a wild card that may or may not prove to be very important for Europe: shale gas. It's too early to say if it will be produced in significant volumes or exactly where

that will happen. But it could be a factor to reckon with for the development of hubs. Also relevant in this context is the decision in Germany and Switzerland to phase out nuclear energy. If the gap is to be filled by wind or solar energy, backup facilities will be needed and they are likely to be gas-fired. In that situation, delivering peak capacity close to power plants will become increasingly important. It's hard to make precise calculations of what gas demand will be like going forward. But all in all, the Gas Hub will need constant adjusting. There are unknowns that could have a major impact on the market, probably favourable for a gas country like the Netherlands, but if we don't position ourselves to benefit, somebody else will. So the Gas Hub idea is about more than just defending what we have.

### ***What differences do you see in the market since your speech at our conference last year?***

For one thing, the energy debate has become more balanced. Not long ago, everybody seemed to think renewable energy would solve all our problems. The Netherlands, rather than being proud of its position as a major gas-producing country, more or less forgot about gas. I think the Dutch should take a more positive view not only of our history in gas, but also of the new possibilities offered by gas – including LNG and green gas. It's good for our country, good for the environment. These days I see that awareness growing. Working in my Top Sector taskforce, I saw admiration among my colleagues for the gas industry we've built here over the years. Indeed, the overall attitude in the Netherlands has become more pro-business, including our business. Our new cabinet can't take all the credit, of course, it's partly to do with the world emerging from the financial crisis. But I hope for plain sailing ahead for Dutch businesses.

Furthermore, our appeal for more focus on technology and science, educating the kind of workforce we'll be needing for the future, finally seems to be hitting home. The days are over when everybody wanted to become a banker. But we do have to act on this shift in sentiment, so that we actually get more trained scientists and engineers. Oil and gas companies can do their bit by opening their doors to young people and showing them what it's like to work in our business. If we don't have the right people here, companies will take their expansion elsewhere. On the other hand, if we nurture these people, we'll actually attract activity to our country.

**Jeroen van der Veer** retired in 2009 after a lifelong career with Shell, which he led as CEO since 2004. He has a degree in mechanical engineering and a Master's in economics. He was chosen this year by the Dutch government to head the team of energy experts that produced the Top Sector Report on Energy. This influential report will guide Dutch economic policy on energy in the years ahead.



## In Conclusion

The outlook for the oil & gas business is encouraging. Global economic growth, driven by Asia and Brazil, supports a strong oil price and encourages further E&P activities. Even with the current weak economic situation in the US and Europe, market watchers foresee ongoing growth in demand for energy and, with that, for fossil fuels.

Our industry's gas advocacy seems to be working. In Europe, gas is increasingly seen not only as the ideal fuel to back up renewable energy sources as we gradually transition to a low carbon energy future, but also as a fuel with a permanent place in that future. And since the nuclear disaster in Fukushima, the public perception of gas has become more positive than ever. In the Netherlands the government has 'rediscovered' natural resources, and its gas reserves in particular, as a means not only to make the transition but also as a means to 'make money'.

Clearly these are also favourable conditions for the E&P Industry in the Netherlands and for the Dutch Gas Hub. Nevertheless, as several of our speakers have outlined, a lot of work needs to be done to seize the opportunities.

First of all, a healthy level of E&P activity is an important precondition for a healthy industry and further development of the Gas Hub. With production levels declining and the big players shifting their attention towards other regions in the world, new investments in E&P will probably have to come from new and smaller players. The current investment climate does not really facilitate that. More cooperation and new policies are required to make field data more readily available to whoever needs them, and to improve access to smaller and marginal fields for smaller players. The Small Field Policy (SFP) has been very successful and has stimulated the exploration and development of new but more costly reserves. The SFP was introduced as long ago as 1975, however, and now may be the time to refresh it.

The development of unconventional gas resources, many of our interviewees believe, has considerable upside potential, although the true magnitude of this potential is still very unclear and uncertain. To many in the wider public, however, it is controversial. One thing is clear: the industry needs to do a better job in communicating to the wider public about the risks and disadvantages, and how these are being dealt with. Right now, the negative image of unconventional gas in the media, however far from the facts it is, threatens to tarnish the environmentally friendly image of natural gas that the gas lobby has so successfully managed to project.

Much also remains to be done when it comes to the Gas Hub. This concept has been a cornerstone in our energy policy since 2008. With gas production declining, the Gas Hub is to secure a lasting role for the Netherlands in the northwest European gas market. The ambition is to strengthen our position as a major gas transit and gas services hub.

In most respects, the Gas Hub has been steadily taking shape in the past few years, partly driven by Gasunie's investment decisions, partnerships and shareholdings. The TTF trading hub is likely to continue growing in response to market signals. Effort, focus and coordination in R&D are improving. On the other hand, the further development of storage, LNG facilities and transit is in danger of losing steam. It remains to be seen whether the recent suspension of the storage project at Bergermeer – Europe's largest – is just a temporary setback. Meanwhile, new major gas storage projects are not likely in the foreseeable future. The development of LNG facilities in the Netherlands is also under competitive pressure from other existing and planned LNG terminals and extensions in neighbouring countries. All in all, our role as a major transit country has to be seen in the context of our competitive position relative to Belgium (with its interconnector pipelines to the UK, existing LNG terminal and trading hub at Zeebrugge) and Germany (which boasts Nordstream and an LNG terminal at Wilhelmshavn). Moreover, our role is also determined by market uncertainties in the UK with regard to future gas demand.

The Gas Hub is of great importance to the Netherlands. Several of our interviewees have pointed out that we want to do more than just defend what we already have. But that will require more investments, for which the business cases are not yet strong enough. Given the uncertainties and challenges outlined above, more coordination and cooperation is needed between the stakeholders in the Dutch industry.

We thank our speakers and interviewees for the insights they have given us into the global, European and Dutch oil & gas industry as it is now, and into its future. A future with uncertainties and threats and also opportunities. As always, Deloitte's experts will be around to help the industry make most of those opportunities. Our annual Oil & Gas Conference is one of the many ways we do that. We hope to see you there next year.

**Marcus van den Hoek**  
Energy & Resources Leader Deloitte Netherlands

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