Securing the future of gas

Gastech – Global LNG Leader’s Address

Tokyo, Japan

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April 4, 2017
Maarten Wetselaar is Integrated Gas & New Energies Director and a member of the Executive Committee of Royal Dutch Shell. He is responsible for Shell’s Integrated Gas business, including the industry-leading liquefied natural gas and gas-to-liquids positions. He also leads the New Energies business, including Shell’s investments in new fuels, new energy carriers and new business models for a low-carbon future.

Maarten holds a master’s degree in Economics from the University of Groningen and a post doctorate Controllers degree from VU University of Amsterdam in the Netherlands. After joining Shell in 1995 he held a variety of financial, commercial and general management roles in Shell’s downstream and trading businesses in Europe, Brazil and Ghana.

He continued his career in Shell’s Upstream business, holding financial and commercial Vice President roles in the Middle East and Russia/CIS.

In 2009, Maarten became Executive Vice President Finance in Upstream International. From 2013 to 2015 he served as Executive Vice President for Integrated Gas, based in Singapore.
Maarten Wetselaar argues that there are four agendas industry must work hard on to ensure gas reaches its full potential as a lower-carbon, cost-competitive energy solution. One, encourage policies which target carbon emissions and air quality; two, cut costs and price gas competitively to make it as attractive as possible to the consumer; three, adopt a rigorous approach to measuring, reporting and repairing methane leaks; and four, relentlessly open up new markets for gas.

Ladies and gentleman, good morning. It’s a pleasure to be here.

Two articles in the news caught my attention last month.

The first reported that despite the growing global economy, energy-related carbon dioxide emissions were flat for a third straight year, according to the International Energy Agency.

The second stated that carbon emissions in the UK have dropped to what they were in the late-nineteenth century. A remarkable achievement for the birthplace of the industrial revolution.

What’s behind this? A big part of the answer is the reason we’re all here today: gas.

More and more evidence is emerging that everywhere where emissions are going down, gas – the cleanest-burning hydrocarbon – is replacing coal.

Look at Europe. Last year, coal-fired power generation fell by 94 terawatt hours, while gas-fired power grew by 101 terawatt hours. This helped a 4.5% drop in CO₂ emissions from Europe’s power sector compared to 2015, according to the European think tanks Sandbag and Agora Energiewende.

This is proof that the product we extract, process, produce and sell should play an increasingly important part in the global drive to meeting growing demand for energy while moving to a low-carbon future.

Creating demand
But just because gas should play a big role, that doesn’t mean it will.

There can be no cause for complacency.

Think back a few years. The ‘golden age of gas’ was on all of our minds. There was an expectation that an automatic success story for gas was on the cards. But it hasn’t happened in the way we hoped.

This is largely because rising costs and rising prices challenged gas’ claim to be an affordable energy solution.

Poor energy policy in various places frustrated the rise of gas. And more recently, gas’ long-term role in a low-carbon energy system is being challenged on the issue of methane emissions.

This time round, we must not let the opportunity pass us by. It’s a moment of truth for us – the gas industry. Can we do what it takes to ensure that gas reaches its full potential as a lower-carbon, cost-competitive energy solution that will serve the world for many decades to come? To ensure that gas is widely seen as part of the solution, rather than part of the problem, in the energy transition?

I’m convinced we can. But it is not inevitable. For this to end well, we must work hard on four agendas.

One, encourage governments to introduce policies and regulatory frameworks which support cutting carbon emissions and cleaning the air we breathe.

Two, continue to cut costs across the supply chain, from companies like Shell to drilling contractors to equipment suppliers and distribution chains. And we must translate this progress on costs into improved affordability for our customers.
“Although [China’s] economy expanded by 6.7% in 2016, emissions fell by 1%. A key reason for this is a switch from coal to gas in the industrial and building sector.”

“Gas has to be affordable when compared with cheap coal, but also when it is blended into a power mix with solar and wind, which continue to have deflationary business models.”

Three, make sure we’ve got a handle on our environmental footprint, including methane emissions.

And four, using the momentum created by these three agendas, we must relentlessly open up new markets for gas: new countries as well as new sectors.

Effective policies
And so to policies.

I’ll flag recent developments in the UK, China and Germany.

I’ve already mentioned the reduction in CO2 emissions in the UK. This is a result of deliberate political and legislative commitments.

Commitments like the emissions performance standard for any new power station built in the country.

Like the Climate Change Act, which includes a UK target to reduce emissions of greenhouse gases by 80% in 2050 from 1990 levels.

And like the introduction of a carbon price floor – which taxes fossil fuels used to generate electricity.

This carbon price increased from around £5 a tonne in 2013 to £18 a tonne in 2015.

This contributed to gas demand in the power sector shooting up by 56% and coal-fired power generation dropping by 73% between mid-2015 and mid-2016. The consequence is emissions from the power sector in the UK decreased by 24% in that time, according to Aurora Energy Research.

Turning to China, policies are also having the desired impact.

Although the country’s economy expanded by 6.7% in 2016, emissions fell by 1%. A key reason for this is a switch from coal to gas in the industrial and building sector.

This was prompted by government policies aimed at directly tackling air pollution.

Promoting gas, which emits less than one-tenth of the air pollutants that coal does when burnt to produce electricity, is a key way of achieving that objective.

On to Germany.

Although the German Energiewende provides commendable support for renewables, coal-fired generation remains unconstrained by any effective policy, despite its impact on CO2 emissions and air quality.

For one thing, wholesale prices of coal remain low. And for another, the price for carbon emissions derived from the EU Emissions Trading System remains very low due to structural flaws within the market design.

An unintended consequence is that CO2 emissions in Germany, home to a quarter of the EU’s coal plants, increased by 0.9% in 2016.

From all this I conclude that where a policy offers financial support for renewables to promote their growth it is not enough to curb emissions.

However, where a government policy such as carbon pricing focuses on the overarching goal of cutting carbon and slashing local air pollutants, it has the intended effect. The use of more polluting fuels goes down, while demand for gas and renewable sources of energy goes up.

Cutting costs
Now for my second point: costs.

Gas has to be affordable when compared with cheap coal, but also when it is blended into a power mix with solar and wind, which continue to have deflationary business models.
There are valid reasons why the costs of gas projects have increased: tighter regulations, more remote locations, and higher prices of construction materials.

But these should not shoulder the full responsibility.

Escalating costs have happened on our watch. And it is within our power to do something about it.

The industry need to be competitive, attractive and affordable for our customers. To achieve that through the price cycle, we need to exercise greater innovation and cost control.

So what is to be done?

First up, get the competitive scoping of a project right. This means ensuring the initial design and technical specification meets an acceptable level of performance. Certainly no less than that. But also no more.

Second, execute a project efficiently. Where is the waste? Are the right people, with the right level of training doing the right bits of work to the right level of quality? We should be asking such questions day in, day out. All pretty standard stuff. But important to get right.

Third, use technology wherever it can reduce overall costs, or improve operational reliability, productivity and profitability.

And finally, transform the supply chain. This is about being far more open to sharing risks to arrive at a win-win situation.

None of these points are revolutionary. And that exposes a great irony.

Over the past century billions of people have benefited from the ongoing energy transition. Moving from biomass such as wood and peat to oil and gas has required extraordinary feats of engineering. The energy industry’s achievements have – and continue to be – staggering.

And yet we lost sight of the spiralling costs and passed it on to our customers when we could.

The good news is that if we can drill down thousands of metres to reach a reservoir, if we can operate in blistering heat and freezing conditions, if we can cool gas to -160ºC and ship it all over the world, then we can certainly achieve the points I have run through and tackle the cost-reduction challenge, whilst never compromising our safety and environmental performance.

And whilst tackling it we will need to work closely with our customers to ensure that structurally lower costs translate into structurally competitive pricing. And give confidence that a choice for gas is a resilient choice through the price cycles.

Environmental footprint
Now for the third point I want to touch on: our environmental footprint.

We have got to make every effort to reduce the greenhouse gas intensity of the gas supply chain – particularly methane leaks.

As we all know, gas emits around 50% less CO₂ than coal when burnt to produce electricity. That’s why it’s got to be part of global efforts to meet rising demand while lowering emissions.

But we’re at risk of undermining the credibility of the place of gas in the future energy mix if high levels of methane are emitted across the value chain of delivery of our product.

So it is on every company in the game to do their bit. To detect [methane] leaks. To repair them. And to reduce venting.

As an industry we need to take control of this issue. Make sure we measure any methane leaks in the chain accurately. Report those leaks in a transparent way across the chain from production to liquefaction to distribution. And reduce leaks purposefully to secure our place in the...
Maarten Wetselaar speech at Gastech in Tokyo, Japan

narrative of gas being part of the solution to the challenge of the energy transition.

Measure, report, improve. That is the methane agenda.

There’s an important environmental argument behind taking these steps, but there is also an economic incentive. We sell every molecule that we save.

New markets
Armed with the fundamental strengths of this great global business, and with progress on the three agendas I outlined, we can confidently target demand growth.

Since 2015, six new countries joined the global club of gas consuming nations. As an industry we can unlock far more demand by investing in import and distribution infrastructure, serving new customers, and playing a key role in addressing energy poverty.

But there is another dimension to the potential for new gas demand.

When we talk about new or existing gas demand we often talk about the power sector. While extremely important, it is only one piece of the pie.

To successfully provide energy for everyone at the same time as slashing emissions, it is necessary to look at other sectors of the global economy where a significant proportion of energy-related emissions of CO₂ occur. That’s transport, buildings and industry.

After all, today electricity only meets around 20% of global energy demand.

Renewable energy sources will be fundamental to meeting demand while tackling climate change. But they chiefly produce electricity. And there are parts of the world’s economy, such as industries that produce iron, steel, cement, plastic and chemicals that cannot be electrified yet. Certainly not at a reasonable cost. That’s because they require extremely high temperatures, chemical reactions or dense energy storage.

With a gradual transition towards a lower-carbon energy system, by 2050, electricity could take up 30% of the market share, according to Shell Scenarios. Ultimately, we think electricity can take up around 50% of final consumption, but that is more likely towards the end of the century.

That still leaves a lot of energy demand that cannot be met by electricity. And with energy demand set to double this century, that’s a big market to play in for gas.

On top of this we see a whole new sector opening up with LNG serving the shipping market and long range heavy transport market. There are already around 200 seagoing vessels powered by LNG in the world. It is a fast growing sector with very substantial volume potential. It deserves our support and investment.

And thinking further ahead, gas plus carbon capture and storage is an ideal source to serve a hydrogen economy, in which carbon-free hydrogen serves many sources of energy demand, including light vehicle transport.

What an opportunity for all of us.

Part of the solution
Time to wrap up.

We can be part of the solution. To meeting growing energy demand. To lowering emissions. To improving air quality.

One reason why is because gas is a stable, reliable energy source, ideally placed to backup renewables when the sun doesn’t shine and the wind doesn’t blow.

Another reason is the multiple benefits of gas, beyond the power sector. Components of gas will continue to be needed to make fertiliser, for example. It will also be an important fuel for powering heavy transport,
which cannot operate on battery power because they need to retain space for storage or to remain light in weight.

I don’t need to sell you on the reasons. We’re in agreement.

But our collective agreement on the merits of gas is not enough.

We need to encourage policies which target carbon emissions and air quality. We also need to make gas as attractive as possible to the consumer. That means cutting costs and pricing our product competitively. And it means adopting a rigorous approach to measuring, reporting and repairing methane leaks, as well as reducing what we vent.

The power to do all this is in our hands. So let’s embrace the opportunity. And in so doing, we’ll ensure that gas is a central part of the solution to the challenge of providing much more energy while emitting far fewer emissions.

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