



Meeting energy demand while reducing emissions requires urgent, pragmatic action

G20 Natural Gas Day
Beijing, China

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June 29, 2016



Maarten Wetselaar is Integrated Gas and New Energies Director. He was appointed to the Executive Committee of Royal Dutch Shell on January 1, 2016.

Maarten is accountable for delivering and growing Shell's global Integrated Gas business serving customers around the world, as well as Shell's exploration and investment in new low-carbon opportunities through the New Energies business.

Maarten holds a master's degree in Economics from the University of Groningen and a postdoctorate 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 and Brazil before becoming Vice President of Finance & Information Technology for downstream in Africa, based in Ghana.

He then moved to the upstream, where his roles included Vice President Finance for the Middle East, and Vice President Finance and Commercial for Russia/CIS.

In 2009, Maarten became Executive Vice President Finance in the Upstream International business. In 2013, he was appointed Executive Vice President for Integrated Gas, based in Singapore.

Maarten Wetselaar argues that governments, policymakers and the gas industry must work together and take immediate, focused and concerted action to ensure natural gas and renewable sources of energy grow more prominent in the global energy system. He highlights measures encouraging the use of these energy sources in three diverse countries – Morocco, South Africa and China.

Ladies and Gentleman, good morning. It's a pleasure to be with you in Beijing – a city right at the heart of the debate on the future of energy.

I want to cover quite a bit of ground in the next ten minutes. I'll begin by looking back at two UN meetings that focused on how to provide energy to everyone, while lowering emissions of greenhouse gases.

I'll then touch on some of the steps that need to be taken to address this major challenge, especially the increasingly important roles of natural gas and renewables. I'll follow this by highlighting some actions taken to encourage the use of these energy sources in three diverse countries – Morocco, South Africa and China. I'll close with my take on the best way forward for both governments and industry representatives here today.

UN summits

And so to two historic meetings which took place last year. The first was the United Nations Sustainable Development Summit in New York. It was there that world leaders agreed on 17 Sustainable Development Goals, one of which is ensuring "access to affordable, reliable, sustainable and modern energy for all."

This goal seeks to address the fact that one in every six people on the planet live without access to electricity. It also recognises the 2.9 billion people who are still dependent on wood or other biomass to cook food and heat their homes. The resulting air pollution is leading to more than 4 million deaths every year. That's totally unacceptable.

A few months on from New York, heads of government gathered in Paris for a UN climate summit. At this meeting, they reached a deal to keep "global average

temperature to well below 2°C above pre-industrial levels".

To stay within this 2°C goal, energy related emissions need to be 19 gigatonnes a year by 2040. But current energy policies are expected to take the world to 44 gigatonnes a year by then. That's a difference of 25 gigatonnes a year. To give an idea of the scale of this challenge: abandoning 211 million cars – that's twice the number of passenger vehicles in the USA – would save 1 gigatonne a year.

Immediate action

Meeting this climate goal, reducing air pollution, and providing energy access to a growing global population, will be a huge undertaking. But it can be done. Indeed, it must be – to ensure the wellbeing of all the world's citizens. The stakes are that high.

What needs to happen is nothing short of the transformation of the entire global economy, especially four areas where the bulk of emissions occur: power, buildings, transport and industry.

Efforts must range from huge improvements in energy efficiency, to more government-led initiatives that promote low-carbon technologies and infrastructures, such as carbon capture and storage.

More stringent emissions standards must be introduced, such as the International Maritime Organization's regulations on emissions from ships exhausts. There also need to be significant investments in both renewables and natural gas.

Perfect partners

Renewables will be increasingly critical in the years to come. So much so that wind and solar could grow to supply 40% of

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primary energy demand by the end of the century, up from around 1% today.

But renewables are intermittent. And solutions for storing power when the sun isn't shining and the wind isn't blowing are either dependent on location or very expensive, especially in the case of seasonal storage.

On top of this, although growth of renewables will help lower emissions in the power sector, electricity is less than one fifth of the world's total energy use.

So to further reduce emissions, other parts of the world's economy will need to rely more on electricity. The industrial, transport and buildings sectors are good examples.

This switch is possible in sectors, such as the manufacture of clothes and food, which require low temperature processes and mechanical activities. But different solutions will be needed in other sectors, such as heavy-haul transport (which accounts for more than 20% of annual road transport energy demand), as well as energy-intensive industries, including steel, iron, cement, plastics and chemical production.

All of this points to the fact that other energy sources will still be needed. Gas has a fundamental part to play in the transition and in the end-game. It's readily available. It produces half the carbon dioxide and one tenth of the air pollutants that coal does when used to produce electricity. And it can meet all the world's energy needs.

Morocco

The Africa Progress Panel, among others, has recognised the partnership of gas and renewables. It stated: "The idea that countries in Africa have to choose between low-carbon development and economic growth is coming increasingly anachronistic...the smart money for the future is on natural gas and green-energy sources."

That's the direction Morocco is going, for example. The government has introduced a target of more than half of installed

electricity production to come from renewable sources of energy by 2030. The recent inauguration of the solar plant Noor, near Ouarzazate, demonstrates that words are being followed up by action.

In addition, Morocco's National Energy Strategy highlights the important role of gas. It includes a target to install an additional 2,400 megawatts of gas-fired power plants running on liquefied natural gas, or LNG, by 2025.

South Africa

The benefits of a gas and renewables partnership have also been endorsed by South Africa's Minister of Energy, Tina Joemat-Pettersson. Last month, she remarked that as South Africa continues its work in developing renewable energy, "complimentary electrical energy sources will be required". She noted that "natural gas will provide the country with a measured step in the direction of a lower carbon future and improved energy security".

This isn't empty rhetoric. As in Morocco, there's a good deal of evidence to show that actions are behind these words. Actions include the development of the 140 megawatt Cookhouse wind farm – the biggest wind system in Africa, and Africa's first solar-powered airport on the country's south coast, which opened earlier this year.

Efforts aren't limited to the power sector. There are 14,000 taxis in South Africa being converted to compressed natural gas. This will reduce emissions by around 25% a vehicle.

China

China is another country adopting a holistic view, and looking at all aspects of its energy system.

In the power and heating sector, for example, policies range from promoting the role of gas in meeting peak demand for power to encouraging the use of gas-fired combined heat and power plants to replace small and inefficient coal-fired units.

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And in the transport sector, there are currently around 200,000 heavy-duty trucks and buses powered by LNG. That's more than 130 times the number of LNG trucks in Europe. The trucks get the LNG from around 2,000 LNG re-fuelling stations and more than 100 small-scale liquefaction facilities.

China compliments such efforts by using more renewables. Effective policies have paved the way for significant growth in both solar and wind. In the last three years, wind capacity has doubled, while solar capacity has increased 12 times. This makes China the largest market in the world for renewables.

Conclusion

Time to conclude.

The access to energy and climate goals agreed by world leaders at two UN summits last year set the direction for the world to go.

Just like buying gym membership after an indulgent festive season, they are encouraging steps forward, signalling good intent. But buying gym membership is one thing. Going regularly is another.

The talking's now over. Now's the time for urgent and pragmatic action.

One's no good without the other. Urgent action in some countries, for example, has led to a coal and renewables mix. That's intermittent renewables backed-up by the dirtiest fuel. This is the wrong kind of urgent action, and given the global availability of

gas as an alternative, an unnecessary step backwards.

A legacy for future generations is being created one way or another – either by action or inaction. Both the governments and the gas industry represented here today have a big part to play in shaping that legacy together. Through the policy decisions and business investments they make.

As the Chinese proverb says: A single tree does not make a forest; a single string cannot make music.

More and better cross-sector collaboration to bring the gas-renewables partnership to its full potential – as well as collaboration between the gas industry and governments and policymakers – has never been more important.

Everyone here today knows what needs to be done. Why wait? Let's work together and take immediate, focused and concerted action to ensure gas and renewables become increasingly prominent in the global energy landscape to help address climate change and energy poverty. Let's act.

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