Action in the field

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24 April 2018

Introduction

Good morning and let me add my thanks to you for taking the time to join us today.

As David has said, BP is advancing low carbon across the business. We're fully-committed to doing that while at the same time meeting growing global energy demand.

Central to that is our belief in gas playing an increasingly important role, so managing methane emissions is a hugely important issue for us – as it is for everyone in the industry.

The issue is a core focus for me.

I have responsibilities towards the competitiveness of the business and what we're doing in the upstream to lower emissions and I don't see these pulling in different directions.

We're actually finding that as well as improving environmental performance, our work to reduce emissions is also improving operating efficiency, bringing down our cost structure and delivering positive social and economic developments.

So just the same as with safety – our agenda on carbon makes good business sense, as well being the right thing to do for the environment and society.

This isn't a revelation - throughout my career at BP, controlling emissions has always been a key focus.

As a young engineer, I ran platforms in the North Sea. And even 20 years ago, BP maintained strict protocols, such as only using flaring in an emergency situation.

What I think has changed today is increasing recognition across the industry that we all need to find ways to do even more in this area – both individually and collectively.

At BP, we think one of the ways to do this is to challenge ourselves.

That's what we're doing with the targets we announced last week.

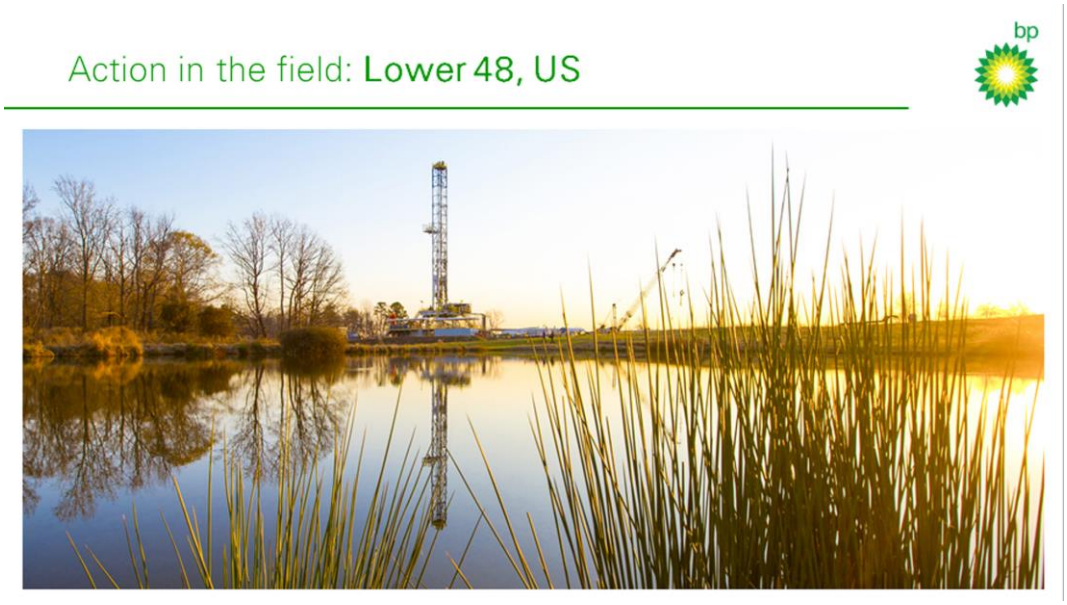
0.2% on methane intensity is not easy. The Environmental Defense Fund called it a "stringent quantitative target". But we do think it's achievable and it's what we are aiming for.

So let me start with two examples of what we have been doing in the field.

Action in the field - Gordon Birrell

And then I'll come on to what we are doing to accelerate progress.

Action in the field



The first is BP's Lower 48 onshore business in the US.

Lower 48's operations cover 6 million acres, across five states.

It operates nearly 10,000 wells and has interests in close to 13,000 others.

That's across a lot of terrain that's rugged or remote, or both – and often without electricity.

This vast and complex business with considerable logistical and technical challenges also represents around half of all BP's methane emissions. And we have made methane-reduction a priority here.

We have introduced what we call "green completions" – which, as many of you will know, captures gas that would otherwise be flared or vented during the completion and commissioning of wells.

Twenty years ago, there were something like 10,000 high-bleed controllers in use across the business – pneumatic controllers that vent gas. We've been replacing these with controllers that emit less methane. Now we're down to about the last 145, with the remaining ones all replaced by the middle of next year.

We're drilling more horizontal wells, which cuts down the number of production facilities you need – which means fewer associated emissions.

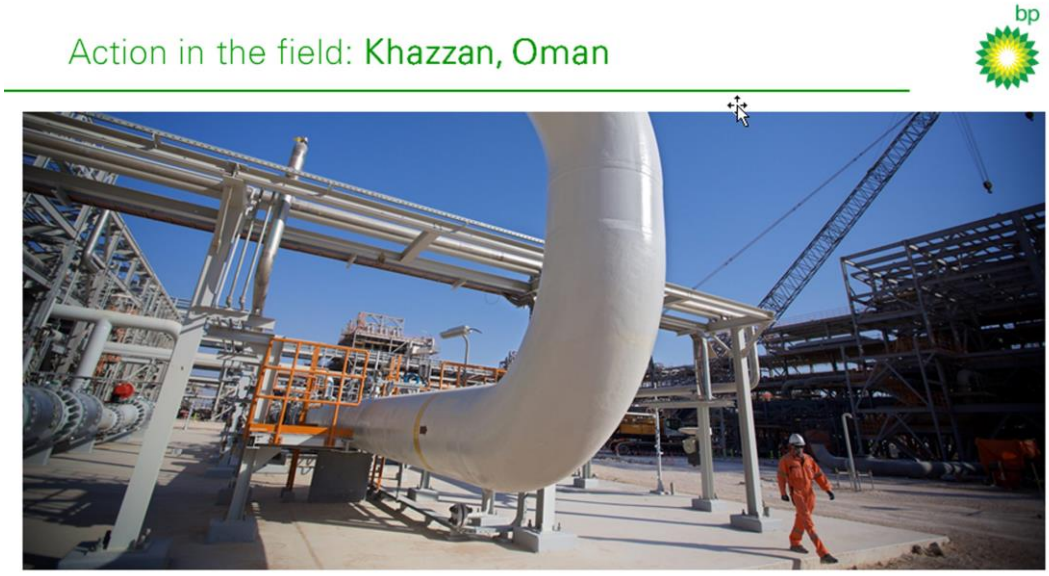
Enhanced automation for the unloading of liquids is reducing methane leaks, and we're looking to adopt new technologies like this all the time.

We're also trialling pumps powered by solar power, rather than gas, and truck-mounted laser sensors to detect and quantify methane leaks.

Despite the difficulties, these actions saw Lower 48 deliver around 80 thousand tonnes of greenhouse gas emissions reductions last year – of which half came from reducing methane emissions.

But BP isn't just tacking methane emissions onto our existing operations.

We're also building methane-reduction into developing new facilities.



This is our Khazzan project in Oman, which is expected to produce around 40% of the country's total gas supply.

There is a connection with Lower 48 – where we developed the expertise to unlock Oman's gas, which is deep underground in really hard rocks.

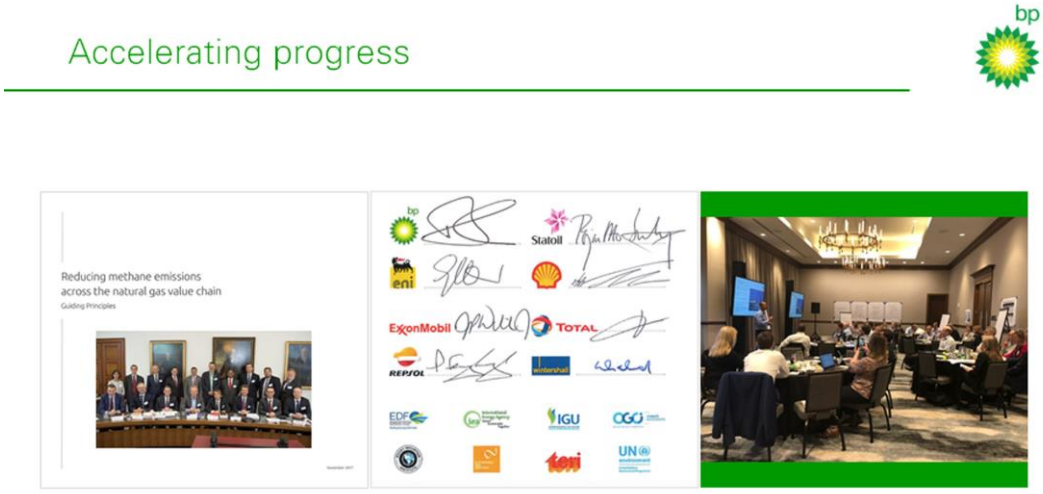
From the start, we designed Khazzan to be inherently efficient, and this has had a major impact on emissions in two respects.

Building a central processing facility, reduced the need for equipment at each well site – which lowers the potential for methane missions.

We also use some of Khazzan's gas to power the facility as well as generate electricity on site to power some of the equipment. And by recycling waste heat from the gas turbines, we have achieved twice the efficiency of a typical oil and gas asset.

Now let me move on to our wider plans for accelerating progress.

Accelerating progress



This first thing to say here is that collaboration is really important.

Last November, BP and seven other companies signed up to the Methane Guiding Principles.

And just last month BP held a two-day workshop in Houston to help shape our plan going forward.

Steve Pacala joined us there – thank you, Steve.

We intend to incorporate these principles to reduce methane emissions across our Upstream business. And I now want to talk to you in a bit more detail about that.

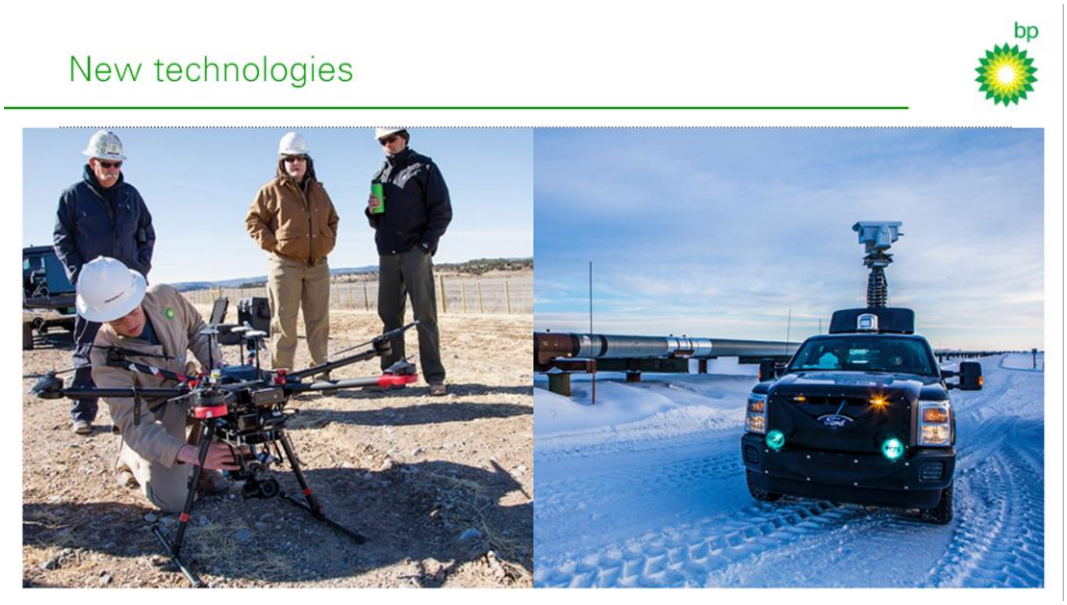
1. New Projects

What you are seeing here is the location of our Khazzan field in Oman – and the extension to that field – Ghazeer – which we've just recently signed the FID on.

That will deliver an additional 0.5 bcf per day and over 15,000 bpd condensate production.

From the very beginning – at the point that we began thinking about the extension project – we considered methane emissions and they were factored into the Final Investment Decision.

That's something we'll be doing for new projects in future.



2. New technologies

This is some of the new technology we're deploying to improve detection and quantification of methane emissions.

Today, most reported methane emissions are estimated using engineering calculations, rather than direct measurement.

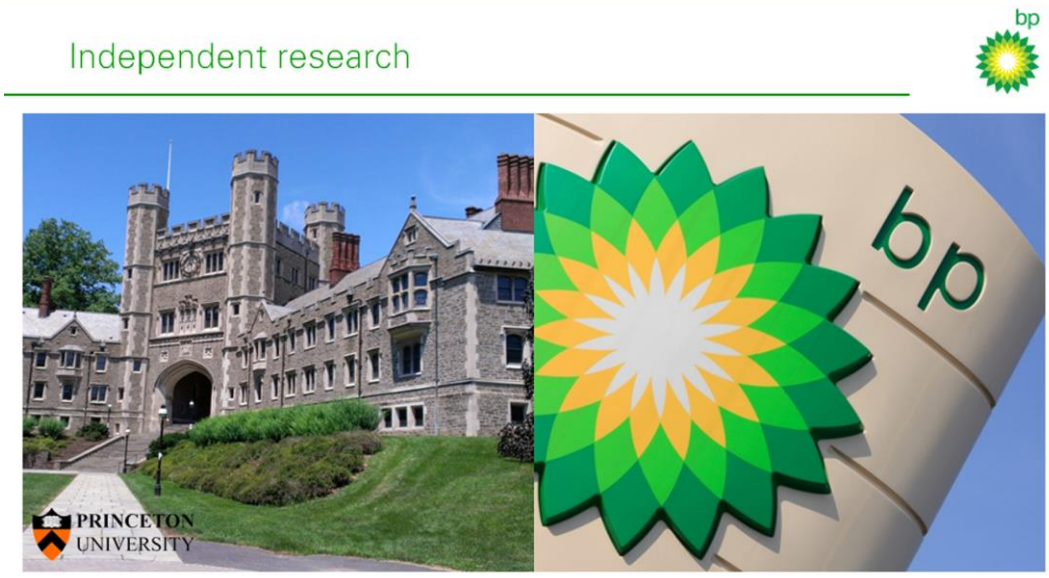
But if we can get better at identifying and quantifying emissions, then we can get much better at reducing them, hence the focus on trialling and deploying new technologies.

We've been using infra-red cameras for several years to detect leaks and now we're trialling new technology that goes with these cameras to quantify leaks.

On Ghazeer we plan to go further, by installing gas cloud imaging cameras at our Central Processing Facility.

These cameras have a 1,700 metre constant scanning radius, looking for methane emissions and can quantify any emissions they detect down to 100 ppm. It means that once we find a leak, we can then act and fix it.

We're trialling vehicle-mounted sensors in our Lower 48 business. And we're testing data analytics using remote technologies, including UAV and Satellite.



3. Independent Research

Our association with the Climate Mitigation Project at Princeton goes back around 20 years, and is a key part of the research ecosystem that David mentioned at the start.

Independent research, such as the Princeton Methane Cycle work, is going to be a great benefit to everyone and the hope this will close gaps in what we know, help identify solutions lead to wider action.

Today is an opportunity to help ensure it does that.

4. Gas value chain

It goes without saying that reducing methane emissions is important right across the gas value chain. We're always ready in BP to work with partners who share our vision of lowering emissions.

We are active members of trade groups like IPIECA and the IOGP – where we can work with industry partners and share knowledge.

And we are an active member of the Oil and Gas Climate Initiative – which brings together the world's largest energy providers to work collaboratively on climate change.

5. Culture of methane leadership

Finally, I wanted to explain how at BP we want to create a culture of methane leadership.

We want our upstream management to have the skills and the tools they need to fully understand and tackle the issue.

We know how important this is. Because it is the commitment of our people that will make our ambition to lead on methane a reality.

Conclusion

Just to conclude, very briefly, I want to reiterate BP's commitment to advancing lower carbon.

That has to be the direction of travel for society as a whole, for the industry, and for businesses like BP – more energy, to meet growing demand, but in new ways and with fewer emissions.

And as part of that transition, our firm belief is that gas must be part of the solution.

Our recent growth shows how important gas is to BP. Six of the seven major projects we brought on last year were gas, as are 75% of our planned start-ups by 2021.

Our gas projects are bringing much needed, cleaner energy supplies – and revenues – to countries around the world. They are also bringing jobs, skills and infrastructure. At its peak, our Khazzan project in Oman created 13,500 jobs, contributing to 90 million hours of work. More than two-thirds of our workforce in the country are Omani nationals, and more than one in 10 are women. We have other positive stories to tell in Indonesia, Egypt, Mauritania & Senegal, and beyond.

So our gas projects are helping us manage the energy transition – and helping the communities we operate in.

But as the world looks to gas to help lower global carbon emissions, we are alert to the need to address the methane issue.

Through the actions we are taking in our business, and our work with partners and peers, we are taking a lead in managing the methane challenge.

That is why David and I are here today, alongside others from BP and our guests.

We want to share our thinking. But we also want to learn from the experience of others here today.

And we want to continue the conversation about how we can all reduce emissions, while meeting the world's energy needs.

Thank you