

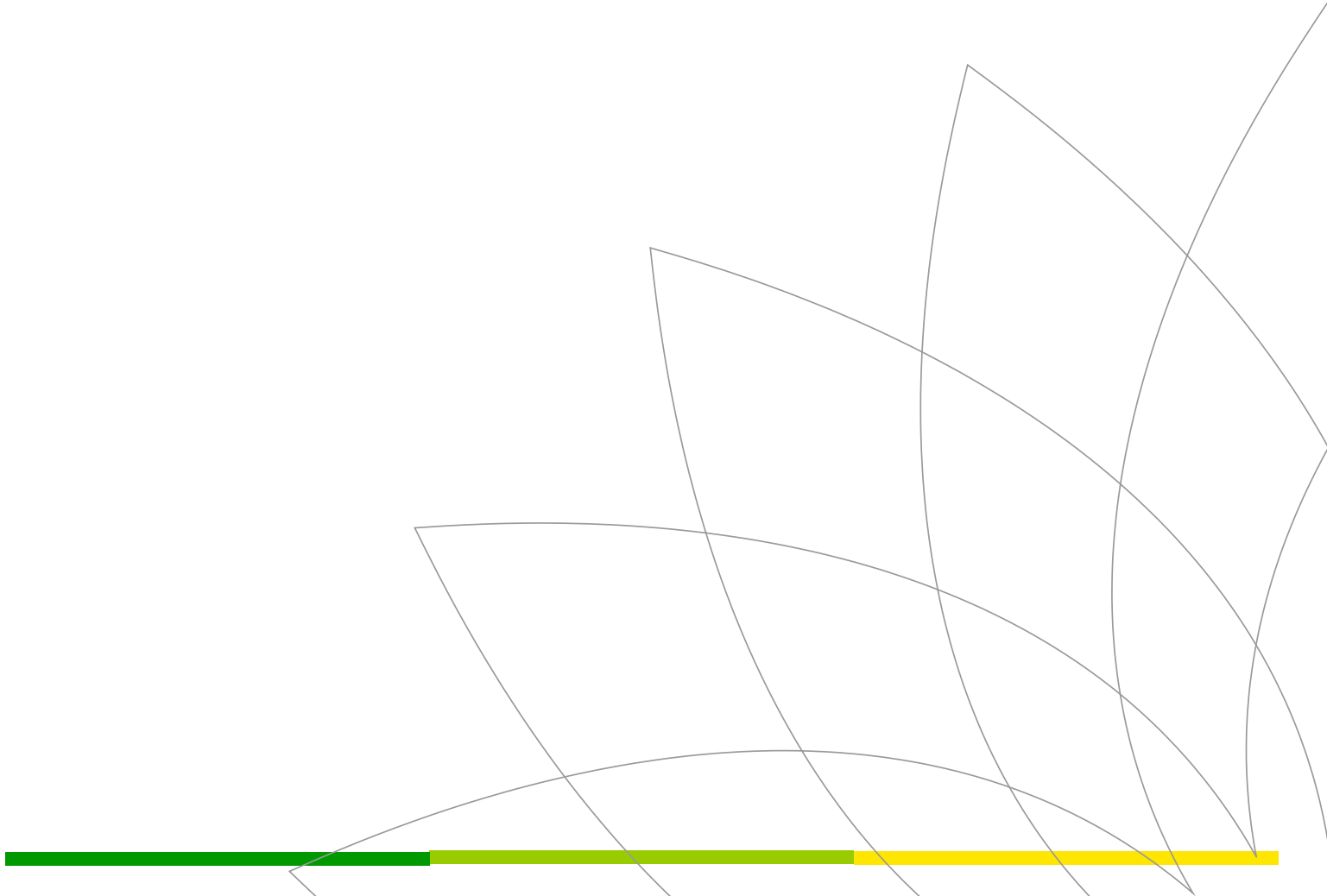


Fit for the future

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Introduction

Good morning, and thank you for asking me to join you today.

I want to start by endorsing everything my friend and colleague Amin has just said.

Incidentally, I'm planning to make many of the same points next month, at CERAWEEK in Houston.

A lot of questions are being asked about the role of oil and gas in the future – in the energy transition.

We have a big role to play, and that's the basis of my remarks this morning.

What might the future hold?

In terms of what the future holds for our industry, I'm going to refer to scenarios from the latest edition of the BP Energy Outlook which we published earlier this month.

For those who are interested, you can hear much more about the Energy Outlook tomorrow from one of Spencer Dale's economics team.

That session with Anne-Sophie Corbeau starts at 8:05, so if you want to go into more depth, be here early tomorrow.

We make a point of saying the Energy Outlook is not a forecast. The future for energy demand and supply has many possible scenarios and depends on a range of factors to do with society, geopolitics, technology and policy.

That uncertainty makes any kind of precise prediction impossible, but it's helpful to make projections – one of which we call the evolving transition (ET) scenario.

It assumes that government policies, technology and social preferences continue to evolve as in the recent past.

If that happens, global energy demand is likely to grow by around a third by 2040.

That's a lot, but it's at a significantly slower rate than in the previous 20 years.

The demand growth is largely driven by improving living standards in Asia, particularly China and India.

It's coming from a growing middle class having greater access to household appliances, cleaner cooking facilities, vehicles for mobility, smart phones for connectivity. And it's people travelling outside their own country as tourists for the first time.

We're already seeing these changes in demand and there are equally big changes in the way that the energy is being supplied.

Renewable energy is projected to grow faster than any fuel in history.

Natural gas is set to grow strongly and overtake coal in the fuel mix.

Nonetheless, that Evolving Transition scenario also sees carbon emissions rising by around 7% by 2040 – when we know that meeting the goals of the 2015 Paris Agreement requires emissions to fall rapidly.

So we face a dual challenge: producing more energy to meet the world's needs – but with fewer emissions. And this year's Energy Outlook goes into both of those themes in some detail.

Increasing demand correlated with human development

On the topic of more energy, we looked at the United Nations Human Development Index, or HDI.

This is an index based on inputs such as infant life expectancy, years of formal schooling and gross national income per capita.

We considered the relationship between the UN's HDI and average annual energy consumption for countries across the globe.

When we did that we found that there's a really steep curve up to around 100 gigajoules per person, and then the curve begins to level out.

So, for countries where average energy consumption is less than 100 gigajoules per person, increases in energy consumption tend to go hand-in-hand with significant improvements in human well-being.

Let's call it the well-being mark.

Right now, 80% of the world's population lives in countries below that mark – 80%!

If energy demand grows by around a third by 2040, as in our Evolving Transition scenario, then more people are lifted above the well-being mark – but around two-thirds of the world's population remain below it.

If you want to lift more people above it – say two-thirds above it rather than below – that would require around 65% more energy than today – which is not far short of three more Chinas.

We call it the More Energy scenario in the Energy Outlook and it shows just how much more energy is needed to give most of the world's people what is taken for granted here in the West.

But now here's a really interesting twist.

What if all the countries using much more than 100 gigajoules per person today reduced their consumption to something like the EU average?

If that happened by 2040, that would provide almost the entire energy required to bring two-thirds of the world up to the well-being mark.

So, using energy more efficiently in both developed and emerging economies is absolutely critical to meeting the challenge of more energy and fewer emissions.

We have another scenario we call the Rapid Transition scenario. It's one that's broadly consistent with meeting the Paris climate goals.

It might surprise you, but in this scenario, oil and gas are still projected to make up around half of global energy in 2040.

However, we will also need new forms of energy. Meeting the dual challenge requires fuels of many kinds and progress on multiple fronts.

The power sector currently has the highest CO2 emissions from energy and is the biggest opportunity to make a difference over the next 20 years, and do so efficiently.

We can do that by generating more power based on renewables and natural gas.

And as I mentioned, energy efficiency is vital.

In our Rapid Transition scenario, meeting the Paris goals means increasing overall energy use by just a fifth instead of the third that current trends would lead to.

Preparing for the future

One forecast we can confidently make is that we are moving into a future that our industry is already preparing for.

Just take a look at those who are represented here this morning – and the range of activities we're all involved in.

Equinor, Exxon, Saudi Aramco and Shell are all increasing their interests in different forms of clean and cleaner energy...whether that's gas, wind, solar, biofuels, biomass, hydrogen, carbon capture use and storage, or CCUS for short.

We're doing the same in BP.

And we're working collectively as well.

There are 13 companies who have joined the Oil and Gas Climate Initiative or OGCI, many of which are represented here at IP Week.

Amin and Saudi Aramco have been with OGCI since the beginning.

Together with our fellow OGCI members, we're making collective investments such as in the feasibility study for the UK's first commercial full-chain CCUS project. It's called the Clean Gas Project in Teesside and the plan is for it to provide a hub for capturing and sequestering multiple sources of carbon emissions.

We are doing a lot in the industry and we urge governments to play their part too, as we're seeing from the UK government.

We need measures like carbon pricing that will make the forms of energy that are environmentally attractive, economically attractive as well.

We also need to respond in the right way to what society and our own shareholders are asking for.

You may have heard that BP recently announced its support for a resolution proposed by the Climate Action 100+ investor group.

It will see us adding to our existing reporting with more on how we expect to remain a highly attractive investment through the energy transition – including in a world that is consistent with the Paris goals.

We see the resolution as a good step – one that's supportive of our progressive approach.

Getting fit for the future - five priorities

So we are preparing for a lower-carbon world. But that's not all we have to do to be fit for the future.

In many ways, we are heading into uncharted and stormy waters...our businesses need to be very seaworthy vessels.

What are the qualities that make us fit for the future?

Here are five priorities that I see as important for BP and I think will resonate with all of us.

Safety always comes first.

Latest industry figures show that industry fatalities fell to their lowest level in 2017.

But that was still 33 people who lost their lives – 33 families who lost a loved one.

This needs to be zero and we need to believe it can be zero.

So we must always look to do more to keep our teams safe.

Each company is seeking to raise its game, individually and collectively.

We see that in the campaign to implement the 'life-saving rules' drawn up by the International Oil & Gas Producers, or IOGP, in the Upstream.

Consistent, practical standards across operators based on Lessons Learned is especially important in a sector where contractors can work for many different operators in a single offshore stint.

I think the **second priority is maintaining discipline on costs.**

We are all working on this as competitors. But here too, there are also things that we can do as an industry...and again, standardization is central.

The IOGP, through the Joint Industry project – the so-called JIP33 is developing common procurement specifications – low-voltage switchgear is the latest example.

Three more specifications have been published – Christmas trees, ball valves and piping, plus 11 more are in the queue.

And the next phase aims to draw up 40 to 50 specifications by the end of next year.

I think the idea of everyone having their own designs will soon feel very old-fashioned.

Turning to **priority number three, which is digital.**

Ten years ago, digital technology was what we used in the office. Now it's what we have in the field, on every rig and platform and in every refinery - and the pace of change is blistering.

Technologies like quantum computing, AI and blockchain are going to deliver phenomenal advances – not just in energy but across the whole of society.

The reality for us is that digital is going to be disruptive in a way we've not seen before. So if you're smart, you're planning for that already.

But as someone once said, when you invent the ship, you also invent the shipwreck.

Any new technology creates risks as well as opportunities – and the dark side of digital is of course cybercrime.

As one recent report put it, the internet of things also means ‘the internet of hackable things’.

The access and transparency we are all driving for also creates a vulnerability that is a challenge for all of our companies and all of our staff.

That’s why the **fourth priority is cyber-security**. Large companies are fighting off thousands of attacks a day – and every device is a potential entry point.

That said, across the industry we’ve responded well in defending our companies’ assets. We must keep our people informed, vigilant and prepared.

Conclusion

Let me end with the **fifth priority**. This is about **being a responsible company** that values trust and respect with all our stakeholders.

In broadest terms, it’s about being open and engaging with our stakeholders, making the case for energy and our industry, while also listening carefully to what our society want from us.

It’s about earning trust at a time when it’s in short supply.

I said I wouldn’t make predictions, but let me make one exception.

If each of us goes away from here with a single action point to demonstrate responsibility, then it will make a difference.

And in time, our collective actions will help to deliver the successful and sustainable future we all want to see.

Thank you very much.