# National Oilwell Varco, Inc.

# Analyst Day 2014

# NOV View Ahead

**DAVID REID**
**Chief Marketing Officer**

*David joined Varco in 1992, during his tenure he held several roles in leadership, management and product development. Developing the market and strategic engine of NOV across regional operations and business segments, David identifies how to offer customers the most valued position in their relative markets. He serves on the IADC Executive Board as the Vice President for Services, and is a founding member of the SPE Drilling Systems Automation Technical Section.*

Good afternoon. Thanks for coming. We're going to talk about our view ahead. How we look at things is slightly different than others who are in our industry. What I'm going to try and do is help you to understand how we look at things. If you imagine, I was going to give you a pair of glasses and you're going to see that we have two views. We have a long view and a short view; both are critical in understanding how we have operated in the past and how we will operate in the future. For us, it is critical to understand what that is and how that works. We're going to share some of that with you.

What we do internally is try and find a really solid way of looking at the future. We've looked at ExxonMobil's 2040 projection numbers and we find them very comfortable -- I'll share a bit more about that as we go -- in that we're looking for a healthy realism. Just as we all grew up in product businesses that then grew into large value-driven companies, we've all put together this great healthy realism into how do we see what's coming. ExxonMobil fits that really well with us. When we look at them, having looked through the numbers, it gives us a really good vision of what is on the future landscape of demand in the world. We'll talk to that.

We take that and we convert into products and we convert into services to understand what kind of work we have ahead -- not what is just next, but beyond that, because it's critical in how you structure your steps going forward. We develop a long-term view. You'll see some work tomorrow morning from our three segments looking at more of their ten-year strategy-driven view. I'll be showing you something even further than that right now to try and help you with how we look at the world and how we understand our moves as a corporation.

When you look at the 2040 outlook, simply it's talking about more people, who need more money and are growing our capability to earn and then, in turn, want more energy. They were saying fairly conservative numbers, I believe: 2 billion people added to the population, 130% larger global economy and then 35% energy demand growth. We believe in that. We believe that the earth continues on a path, which we map backwards and makes a lot of sense as you look forward.

This is a great quote from within the ExxonMobil report. Fundamentally what I want you to hear is: that we have to test all sources. We're looking at a world energy demand that is going to need us to find every possible method to get energy, to get low-cost energy to people. As it stands, we are sitting within the best producing business of low-cost energy in the world, and we have capacity to deliver more. It's a good fundamental for us.

In summary, what they look at is that there's a majority of the demand coming from oil and gas. Natural gas is making a changeover into surpassing coal and becoming a primary driver into the electricity market.

Enabling technologies actually are allowing us to go in and find new resources. A lot of the technologies that we've developed over the last few years are actually giving us more access, and that puts us right in the middle of this need to find this energy and deliver it. As well as all of the work ahead. If there's something fundamental to understand about future reserves and access to them is that they are very, very capital intensive. These very exciting finds you'll find in deepwater and unconventional result in the use of more equipment. The way the oil companies work is they find a reasonable resource, and they go after the easiest stuff first. You'll hear this terminology in our business that easy oil is over -- and you'll see that in our charts, we'll see how that projects forward -- but what that means is there's a lot of work to go into

actually accessing these reserves, so it becomes a critical part of the equation.

Let's take a look at some of the charts, just some simple visuals. I would suggest, you read this report; it's excellent. So you look at the liquids part of the business: here we have ExxonMobil's view, they're saying about 25% growth. Now if you look at this and are trying to chart what other people say, usually you hear -- recently, I guess the IEA was about 37% growth. So that's great, but we like this. We'll take the 25% number and say that there is a demand out there. Interestingly, where the growth is, you see 150% in the deepwater arena. We are just beginning the deepwater arena. As you saw in Clay's chart there, this is early days, this is just beginning.

When you look in the natural gas market, it gets very interesting. There is a lot of growth to happen and a lot of unconventional growth. 65% of natural gas production will grow, but inside of that, the unconventional part is where all the action is. You start seeing a 65% growth within the unconventionals. So the trends, although you may be used to hearing them from us, you need to understand something about what I'm saying here. Unconventional technologies to NOV, we have a picture there of a bit, it's not just a bit, it's not a drill string, it's not "just"; it's actually a lot of hard work and it continues to go deeper and it continues to be more and more use of hardware to deliver this oil and gas. You're looking at resources in these areas that turn into not just drilling rigs for us but everything that goes in the well, as well as afterwards as we go to frac the well. We have to make high tensile steels, we have to work on technologies that can get us deeper in that well to get frac equipment into what is complicated: turning a corner for a bunch of steel and hardware in a well. It needs technology.

We've been delivering that technology. We've been at the forefront of all of these movements in the industry and you'll find us there as the inventor. You're going to hear those stories as we go through. We've been buying up the leading companies and developing the leading technologies. So when it comes to unconventional, it's a heavy-use business and we are the main supplier.

When you look at the aging rig fleet, you might say, "well, you said that 10 years ago" because we did say that 10 years ago. You know what's been happening since you thought we were crazy 10 years ago? We've been replacing this aging rig fleet. We're quite close to this. I think when we look at this, we don't share this a lot and so we appreciate you coming to hear it, but there is 55% in the jack-up business that is over 25 years old. I'll give you a bit of a model as to what that means to us. But that's a lot, that's a lot of work yet to be done. While this fleet is getting old, you know what's happening to the new rigs that were delivered before? They're also getting old. It's not like this sudden moment that we're going to replace; this is an ongoing projection.

What happens with drilling rigs if you watch them is they seem to be getting bigger. If you look, you saw in the animation, there's smaller rig and larger rig. The bigger rig, it's a powerful thing but it actually is needed to drill the future wells. Age of fleets starts becoming interesting when you're calculating things. You've got 70% of your land fleet out there that is over 25 years, and you're also looking at about 40% in your floaters. There is some more work to be done. So the buildout of the floater fleets, that's in there.

Once we get out into the floating world, something to understand: in the jackup world, we've been building platforms, structures that sit out there. We put the rigs and the equipment on those structures, that's great. When you go out into deepwater, you don't have a lot of options. Sometimes rigs will sit there and you will bring services onto a platform on the shelf, but if you go offshore, you're into FPSO lines, you're into these rigs having to be over these wells. The amount of rigs needed to actually go to deepwater becomes more rigs; and so it's a fascinating driver towards more investment.

Let's take a look at drilling, short term and long term. Most of this is because short term for us has a lot to do with long term, so I'll explain how that works. What we do is, we'll take the ExxonMobil production numbers, we'll look at historic numbers on what it takes to deliver certain production in certain fields and we will develop our view of future production needs for deepwater. Then we'll calculate how many wells does it take to produce that amount of production and then we'll turn that into deepwater rig count, which gives you an idea of how many rigs you need, and then we can have a long term view that we can put into our ten-year plan, feed to our segments and say "okay, what are you going to do with that?"

When you look at a drilling rig, the assumption is as the rig life has gone on and we've seen, say, jack-ups going from 31 now to 34 years of life, but something you have to understand is, when you hit 25 years with an older rig, it was designed for the wells 25 years ago. This is an important part to understand because as it moves on, there aren't a lot of options, there's only certain work that you can do. If you look at our regular oilfield and you see large drilling rigs, yes, those are drilling rigs and then small ones come in and do workover. They come in and do other work that has to be done around the well. When you're offshore that work still happens, but it's often with a rig that's probably not turning to the right, but it's still working, still making good money.

When we assess rigs, we have to assess what is this rig, is it useful, is it not useful? When I mean useful, it's to the well and delivering to the well, so if you're thinking in terms of what's turning to the right, this kind of messes up your model a little bit because there is other work and

the person who owns the rig has to decide what kind of work am I going to do. They may invest and upgrade; a lot of that stuff has happened, a lot of rigs have been upgraded to do more work. In your model, you have to look at: what is the age, what is it doing. When you're relating it back to production, it becomes an important question as to what kind of work is getting done and what is needed to deliver that production. We bake some of that in the model.

Unfortunately, most of this isn't going to teach you how to build the same model as us because we have different information, and we really don't share it publicly so this is something we just use. We want you to understand how we think about the future and what makes these crazy guys think that there is some business out there whenever everyone else is screaming panic.

Similarly, when you look at land, here's just another example -- I'm not going to run through all the examples because pretty much the bubbles are the same. We take typical curves, we look at decline rates of the field, we actually look across fields. Often what you're looking at and what you'll be looking for is a type curve for a well, so you could understand how that works. What fits into your picture of the type curve is a -- and for the oil companies, too -- is it will deliver its value in the first year, and then you're just stacking the tail. So they basically will get their money out and now it's just some really nice producing wells. We'll look at our first one and say okay, across first year, you're going to see 50% -- of course it goes from one side of the curve to the other, but average of 50% in your first year. Then we'll just look at the average of wells to deliver that, how many can a rig produce. When you're looking in unconventionals, this stacking the tail becomes an important thing to understand, because although the well will pay out in its first year, what it delivers in production is not a pleasing sight when you're trying to build your production. It builds at first but it always is building against a curve that will drop steeply if you don't keep delivering these wells. In the production delivery system you have to understand what it's doing and how that works for you. We go through the same process, but it's a little bit more complex because of the type of curves that you're dealing with when you look at unconventional liquids.

Here's the shocking stuff when you add all this up. This will look surprisingly smooth on this curve. This is our rig count projected activity. If you look at active rig count, it really gets to a big number, right? Because we've got two things going on. One is the ongoing building of our fleet to deliver production, and what we do is we look at the world from a smooth curve -- in other words, we take about three years in average -- and what that does for us is it gets us a more balanced view because one thing you understand if you've been in this business for a while is it is up and to the right. We have a problem with the world needing energy, and we're trying to deliver it. Although politics may affect what is basically a commodity, you get to learn that these ups and downs ultimately don't change the production curve. You've got to go up and to the right as long as humanity is developing. When you're understanding, you look at the ExxonMobil numbers, they get you a little bit more balanced in the long view to say I want to look at what we can do. we're assessing -- you might look at the 3,995 number and say well, that doesn't quite balance in my view, because you're probably used to looking at Baker Hughes. That's got Baker Hughes numbers in it, but it also has an offshore view that's slightly different than most of what's out there for us where we are looking at contracted rigs more than we are turning to the right numbers. You don't have a stack up of a Baker Hughes number; you have a mixed number in how we view what's valuable offshore. It gets up to 2040 number of 6,690 rigs. It's a healthy number. This number here doesn't have China and Russia. Most of our internal models have China, Russia. Just listen before we tell you if the numbers are in there or not as we are going forward, but that certainly adds to the mix a significant amount.

Interestingly here with North American land, the reason why there is a thick line across it is I think there is a general perception that is developing that we're just going to go up and up in unconventionals in America, and that's going to be the end of the story; life would be good; thanks for playing, rest of the world. That's not how it works. What I'm talking about what you've been seeing is "sweet spot heaven." People have been going in and getting really good production results and learning how to do that well, and that's great and you're going to have rigs working on this for quite some time. There's a continual need for use of product and rigs in North America. If you look at the other side of the curve where it really starts to switch over is in the deepwater and unconventional international starts becoming an important part of where you're going to get production.

Okay, moving along. Are we crazy? Well, we want to check. We sometimes think we are, but generally we feel pretty comfortable and we go back and check against what people think. If you're looking forward a couple of years where do people think rig count is in North America and we will do this on each application and go, are we sitting inside of the normal view of what's coming? Generally, we like to be underneath that, just similar to ExxonMobil. Healthy realism is good in our business. If we're going to say things are going to be good, we better have a good healthy balance as to why they would be good. We went in there and we just checked our numbers in the front of the model against current views and we sit in a pretty healthy place. We're happy with that kind of trend for our numbers.

When you look at that from fleet additions, we're looking at 2040 with 6,650 land rigs, 589 jack-ups and 470 floaters. In this case, we are including Russia and China in our mix as a lot of work has yet to go on there. When we turn that into our other businesses and we start looking at well count, it really tells you a bit about the other work. So when we go into our NOV Wellbore Technologies world, this becomes a really interesting subject. What kind of work is going to go on and what kind of wells? We put a bit of history on this, so that you can get an

idea of the 2009 dip in well count activity, but I wanted you to see something different here. When we moved through the 2009/2010 line there, you start hitting the turning up of deepwater wells. Before that point, you barely can see it on the chart, but it just starts to build. That's one of the trends going on here: the growth of deepwater work. Of course, relative to land, it's a lot less wells. also in land, it gets very interesting when you go to the next level.

So we're seeing 121,203 wells sitting out there in 2040, a lot of work to be done. When you split that down to say, okay, what of that is conventional and what's unconventional, you start seeing a new trend. Once you hit that dip in 2009, suddenly a new thing starts happening as we see us moving to finding oil in unconventionals, and it starts building a curve that is a fundamental change in the work done. Unconventional wells take a lot of hardware. They need rigs that can take depth. They need equipment that can drill those depths. They need horsepower that they didn't need before. They need products. That's a huge growth in potential business and it looks at what we are doing and we have to deliver in a very demanding environment.

Okay, so you take from land and then we go to footage drilled, very similar story. A lot of footage, 1.2 billion feet required to be drilled. For us, there is a lot of work out there. We like this. We like this chart because it's driving towards businesses that are wear-and-tear type business, and it really plays into our model.

Over the next 25 years, the wells we're going to need is 109,000 offshore wells, 504,000 conventional wells, 1.9 million unconventional wells and 25 billion feet to be drilled. That's what we call a lot of work, and we believe it's going to have a lot of benefit into our business model. This does in this case exclude China, Russia, but fundamentally we're talking about getting a view that is a lot more longer term so we can make decisions today. What a lot of businesses do in oil and gas is they respond to the market for survival. You're going to hear more over the next few days about things that we've done in our model so that we don't have to do that. What happens when we go through the survival of going through a short-term cut is everyone comes back to the table as if they're starting the business again. We have significantly built a business that carries us through that and will allow us to be healthy on the other side. The only way we can do that as prudent business people is to understand the curves that are ahead of us.

Floating production gets even better because you're in a space where there isn't an alternative that really makes as much sense as floating production does. This up curve has not got a lot of dips in it or variance in it. It's a simple state of how we're going to get production out of these deepwater wells. When you look at the fleet, you have a curve that is building because a lot of this technology, as these fields are developing, becomes more and more needed. You start looking at things where you get into deeper waters, you get into areas where really this has to happen. We're really not far off the curve of anybody else on their thought patterns, but one of the interesting things you're going to learn during this conference is there is a tension in this market. There is an opportunity just like we have seen in the past in drilling rigs where projects are late, where costs are running up. We like this problem because our business model as you are going to learn after two days solves problems that are in the business. if you have a basic cost and delivery problem, we have the solution. You look at growing up into the 469 number as we start leveling off and having the right amount of FPSOs in business around 2040.

When you check us against others, our numbers aren't that wild. This is a five-year ahead projection. We are under par on this one, and we're okay with that. We're sitting with 70. Good healthy realism in there with 70 units in the next five years. This isn't guess work for us because most of the stuff takes that long to build. We're in very comfortable space as this is coming. It's serious, and it has to happen. When you do the mix, it starts getting interesting. You look into what is driving the growth and you can see there is deepwater. There is growth on your regular shelf, but there is plenty of growth in deepwater to come. A lot of technology, a lot of units to be built. Overall, when you look at additions into 2040, it's about 303 FPSOs that need to be added to the fleet.

Another model -- we have various models. The idea here is to give you a feel, not to give you our extensive models and everything, but to give you an idea of how we're thinking. When you look at the intervention and completion work, a lot of getting into a well has transitioned, as you look at directional wells, into using coiled tubing units. It's great business for us, but it's not a straight well, it's not just the wireline anymore. You need to have these systems if you're going to frac a well. Most of the frac units have moved over to running thru-coiled tubing. It's a great business, and frac stages has become an interesting chart to look at. Here we are looking at a more recent one from the last couple of years. Looking forward, you see a pretty steady trend and you might say well, maybe that's just more wells. actually what's happening is to make unconventionals economic, you obviously have to go deeper into the well, more frac stages, and that's really what's happening. It's a compound of increased unconventional, an additional ability to go deeper into a well, drill it deeper, and complete frac stages longer. For that, that's meant specific technology that we have brought to the table. That's been good news for our agitator business and good news for coiled tubing. As we go into more frac stages, it's a very positive curve for us.

Preparing for the future and our mind is accessing hydrocarbons for the good of the planet. We've got to deliver energy and to do that, we are going to need 6,650 more land rigs, we're going to need 580 jack-ups, 470 floaters, 303 FPSOs, 121,000 wells drilled and then 1.2 billion

footage. These are big numbers. It's a compelling argument and because we laid on our historic vision of what's going on in the past and how that affects the future and we've utilized someone who is very conservatively looking at what's real out there, we're pretty comfortable with these things. There's a lot of work to be done.

In summary, the growing demand will test all sources, which means that everything we can possibly deliver to this world it is going to be begging for. The aging of the conventional reservoir base changes the whole mechanics of how we go get oil and gas. Development of more challenging reservoirs plays right into the things that we do. Deepwater and unconventionals become the new normal. You often hear people saying unconventionals needs to be called conventional because easy oil is over. Then a capital-intensive process is required and new efficiencies are needed. As you look into our model, you're going to understand that we've always had a long view of how do we bring better efficiencies to this business so we become the preferred choice.

That ends my exciting view into the future.