Jonathan Brearley, senior partner for networks, Ofgem, keynote speech to the Low Carbon Networks and Innovation Conference, December 6, 2017

Good morning I am pleased to be here at one of the most important seminars of the year for the energy networks.

We are here to celebrate successful innovation, to share best practice, and also to think about the future.

What do we mean by innovation? What are we trying to achieve through it?

To answer that we need to look at the sector as a whole.

In the case of network companies, put simply, it's about finding better ways of delivering affordable, green and secure supplies of energy to consumers and businesses.

I hope you'll forgive me by saying that in the past, innovation and the energy industry – particularly energy networks – have been uneasy bedfellows.

Or at the risk of stretching the analogy too far, for much of the time, they have spent many years sleeping in separate rooms altogether.

Our RIIO (revenue=incentives+innovation+outputs) price controls were designed in part to address that. And the advantage of joining Ofgem half way through the current price controls, as I have done, is that I can see a lot of things that have worked.

We have already seen rapid changes in the energy market

Over the past six years wind and solar generation have become increasingly cost-competitive compared with conventional generation due to falling prices for components, dramatic improvements in efficiency, and other factors.

Up take of solar generation has been near exponential – GB now has around 12gw of solar capacity connected to the networks.

It is almost impossible to accurately predict what the future system will look like in 10 or 20 years, as in the not too distant past, such predictions have sometimes been wrong.

Just a few years ago some experts were saying that by the 2010s we would not need any gas fired generation at all. Conversely, some thought that solar generation would not be affordable in the UK.

Given all this change there has never been so much to gain from innovation.

Or looking at it in a glass half empty way, there has never been so much to lose if we don't capitalise on the opportunities and benefits that innovation offers.

We are now standing at the crossroads of an energy revolution with new technologies and business models making what was thought impossible, possible.

The networks will have a key role to play here as they sit at the heart of the energy system.

Network services could be fungible in future. For example, investment in reinforcing the grid could be substituted by battery storage.

We need the industry to adapt quickly to an unpredictable outlook, and focus on where it can drive value for consumers.

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My message to network companies today is that they must step up innovation, as the need for them to use it will only increase from 2021 when we set the next price controls.

We also need to see better value for money on innovation spending.

I will talk about innovation in the retail market, where new business models involving peer-to-peer trading could shake it up.

And I will talk about our plans for tougher price controls from 2021.

As I mentioned, our RIIO price controls encourage innovation.

In addition we provide specific funding for projects through our annual Network Innovation Competition and the Network Innovation Allowance.

Last Autumn we asked independent consultants to review the impact of the Low Carbon Networks fund used by the distribution network operators in their 2010-15 price control.

This fund is the predecessor to the current programmes.

The consultants' review showed some encouraging results. They estimated that net benefits for all the projects are around £1 billion if each DNO adopted the learnings and new technology into its business.

This is significant as it is three times the cost of the schemes. The benefits could be up to £8 billion if the innovation is successfully adopted across all DNOs in Britain.

Overall the consultants found that the fund succeeded in moving the level of innovation within the DNOs from a 'low' base to a 'moderate' level.

However many DNOs that they spoke to still did not see innovation as being critical to their business.

That has to change, and fast.

Innovation will be critical in helping networks to manage the many uncertainties in the next decade and beyond.

For example, depending on how the system develops there could be a greater need to invest in the lower voltage networks than the high voltage grid, if the trend in generators connecting to distribution networks continues.

Electricity distribution network operators will also need to use innovation as they start to offer a wider range of different services to customers, and as they take on the Distribution System Operator role.

In other scenarios big increases in electricity demand driven by the electrification of heat, and electric vehicle use may require investment in the high-voltage grid to connect baseload generation.

In gas, there are uncertainties about how much hydrogen, or biomethane will be pumped into the networks in the future.

The key point is that whatever scenarios develop, network companies must use innovation to react quickly so that they aren't holding up changes in how their customers want to use the system.

For example, after we set the 2015-2023 electricity distribution price control, Western Power Distribution found that demand for grid connections was higher than expected, especially from solar generators.

WPD could have requested further funding but instead they found an innovative solution, by offering flexible connection offers where generators agree not to use the system at times of highest demand.

In this case, innovation offered a quicker solution to connecting more generation. By making better use of existing capacity, WPD did not have to invest in building new infrastructure which would have taken longer to deliver.

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As well as challenging network companies to step up innovation, we also want to see better value for money for customers on innovation spending.

Out of a total funding pot of £90m for this year's Network Innovation Competition we have only awarded funding of £57.5m to seven projects.

We have only chosen the projects which offer the highest potential to help the companies manage a rapidly changing energy system.

Better value also results from companies sharing best practice from successful innovation, and greater collaboration on projects.

Network companies are monopoly businesses. They don't have to compete – still less work with – other network companies.

But when it comes to innovation, we need to see a different mind set.

We need to see companies working together more and pooling their knowledge.

That is why we are requiring three of the winners of this year's Network Innovation Competition (Western Power Distribution, Scottish Power Energy Networks and Scottish and Southern Energy) to collaborate on the projects that they proposed, as they are all linked to supporting markets for flexibility.

The energy sector is being closely watched and I'm sure that some of you will have read about the concerns on network company returns.

Many of you will be familiar with Dieter Helm's views on the price controls and network regulation in his report on the Cost of Energy.

It is important that we achieve the best value possible for customers under the current gas distribution and energy transmission price controls.

When we set the price control we expected that financial performance would vary, based on levels of efficiency and the performance of companies against incentives.

However the outturn, as it looks today, has been somewhat different. All companies are at, or close to, real double-digit returns.

At the same time financial markets have fundamentally changed meaning these returns are very high compared to current market expectations.

Early evidence points towards cost of capital and returns being lower from 2021 onwards. Therefore the companies must prepare for lower returns as well as delivering a better outcome for consumers.

Since the start of the price controls in 2013, we have secured additional savings of over £4.5 billion for customers.

These result from a combination of reduced revenues or voluntary contributions from some companies, including National Grid, Cadent, Scottish and Southern Energy Networks, and most recently, SGN, at the end of last month.

In total the contributions so far will result in £650m being paid back to customers.

Northern Gas Networks and Wales and West Utilities, which are both owned by CKI, have yet to make a contribution.

They may ask why they should do this. This is a decision for them and their boards.

Network companies need a licence to operate not just from the regulator, but from society at large.

Their profits need to be seen to be legitimate.

I hope that Northern Gas Networks and Wales and West Utilities take note of this.

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In the future, retail and wholesale markets will be increasingly linked and innovation in these markets will have an impact on the networks.

Therefore network companies need to take note of the questions we raised last month on whether arrangements known as the 'supplier hub model', which put energy suppliers at the heart of the market, are fit for the future.

Since privatisation, suppliers have been the middleman between the customer and the energy system.

The supplier buys energy in the wholesale markets, and it 'owns' the relationship with customers through billing, metering and other customer service.

This approach has tended to reinforce the market dominance enjoyed by the large suppliers.

We think that has stifled competition in the retail market and is one reason why so many households remain on poor value deals.

There has never really been a viable alternative to it until now as we are moving towards a world of potentially multiple suppliers of energy and associated services.

Exciting new business models want to enter the market including peer-to-peer trading platforms where consumers can buy and sell power locally, bypassing suppliers.

We want to help innovative business models to enter the market and such platforms are among more than 130 companies that we have engaged with over the past year through our Innovation Link service.

However, the current regulatory framework may be blocking innovative business models from entering the market.

For example, industry codes such as the Master Registration Agreement for metering services and the Balancing and Settlement Code which matches suppliers' and generators' requests to buy and sell electricity are written with a single supplier per customer in mind. This has created hurdles that limit innovation and access from players outside of the industry.

This has forced new entrants wanting to trial peer-to-peer energy trading in our Innovation Link's regulatory sandbox programme to scale back their plans.

We are asking for views on whether the 'supplier hub' arrangements need to be changed and we will set out next steps in the spring.

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I have outlined how the innovation programmes which Ofgem established in the price controls have brought significant benefits.

However my challenge to them is to build on the progress they have made so that they move from being 'middle of the road' innovators to becoming 'highly innovative'.

For the time being we want to see better value for customers on innovation programmes with greater collaboration between network companies.

In subsequent price controls we want to see the companies using innovation as part of everyday working practices, rather than relying solely on incentive programmes run by the regulator.

As part of our review of the framework we will use to set the next price controls, we have been asking for views from across the industry on our approach to innovation funding in the future.

We have been asking people to tell us what has worked well, and what has worked less well, so that we can design the next set of price controls in a way that gives the companies the strongest possible incentives to innovate.

We may need to rationalise and simplify incentive programmes such as the Network Innovation Competition from 2021, so that we encourage companies to move away from a sole reliance on these programmes, to making innovation business as usual.

We will share more detailed views on this next spring when we publish the decision on our review of the framework we will use to set the next price controls.

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To sum up, greater use of innovation by network companies is vital, so that they are well equipped to manage the uncertainties they face in the future.

We need to see a culture change within the companies so that innovation moves from being a ‘nice to have’ to something that is hardwired into their DNA.

The companies must use innovation to play their part in capturing the benefits of a smarter, more flexible system for consumers.

They should also see innovation as a benefit to their own business, as a source of new revenue streams, and as a way to offer new products and services.

Finally, I have set out why affordability and value for money for customers on innovation, and all network costs, is so important.

Ofgem continually looks at ways to lower the costs of the networks for customers, and we expect all network companies to do the same.