

ESO RIIO-2 Open Meeting transcript

Please note, this is an extract from the ESO's Open Meeting on 13 October. It includes the ESO's presentation and the Q&A session, which has been edited for readability. The official transcript is available on Ofgem's website.

ESO presentation

Speaker: Fintan Slye

Hello, I'm Fintan Slye, Executive Director of the Electricity System Operator.

Thank you for taking the time to join us today. I am joined by my colleagues Ro Quinn, our Chief Engineer who runs the control room, Kayte O'Neill, our Head of Markets and who also leads on our preparations for RIIO-2, Angelita Bradney, who is our Head of RIIO-2, and Richard Allman, our Regulatory Finance Lead.

As a country we've made a monumental commitment to achieve net zero emissions by 2050. That is the right thing to do. It is also the smart thing to do. It promises a greener, more sustainable society – more jobs, more growth and more investment which will put the UK at the forefront of low-carbon technology.

That is the future I believe we all want. The issue is *how* we get there. There is much that needs to change – it's a big job – and we need to make sure that it is delivered in way which is fair to all and keeps bills affordable.

At the ESO we are committed to achieving net zero. It is the cornerstone of our RIIO-2 Business Plan – a plan developed in consultation with over 900 stakeholders, customers, and consumer representatives, with their priorities woven throughout.

But it's not just a plan for net zero or reliable system operation – it is also a plan which looks to deliver fairly and affordably – promoting competition everywhere, actively seeking out value for consumers. For our internal costs, all of our proposals have been subjected to a robust cost-benefit analysis and in terms of consumer bills, while the ESO will cost each household £1.80 on their annual bill we will deliver benefits of over two and a half times that amount.

There is much to be optimistic about. However, this clean future should not be taken for granted. This is a seminal moment – the framework put in place now will determine whether we set the UK energy system on a path to net zero or we fail the challenge and merely play around the edges.

This is what we want to talk to you about today. About how the ESO can be that critical enabler of our low carbon future. How it can drive competition, and value for consumers, right across the industry value chain. But this does require some changes to the draft determinations.

The changes that must be made are neither difficult nor costly – but they are symbolic of a new approach:

- an approach that recognises that what got us here will not get us there;
- an approach that understands that to be world leaders in addressing climate change requires innovation, flexibility and agility;
- an approach that enables change and prioritises consumer value; and
- an approach established by the CMA as appropriate to a system operator.

We have made good progress with the Ofgem team on some of the areas highlighted in our response to their draft determinations. However, there is one area where there remains a significant gap – this is on the financial package for the ESO and ensuring that it is fair and that it appropriately reflects the inherent nature of the ESO business. If we don't get this right, then the ESO will be perpetually in survival mode, unable to innovate, or to drive the transition to net zero and seek out value for consumers.

We know what changes are needed and we have calculated how much these changes will cost, and as I said earlier – they are neither costly nor difficult. But before we walk through this in detail, we want to talk to you about our ambition and what we are proposing to do to decarbonise our energy system and why it is important – and I will now hand over to Ro, our Chief Engineer, to tell us more.

Speaker: Roisin Quinn, Chief Engineer and Head of National Control, ESO

All the energy companies are talking about net zero, and the action they are taking in RIIO-2. You'll hear it at the forthcoming open meetings for the network companies, I'm sure.

But there's an important sequencing point here. All the renewable generation, all the new flexibility and storage technologies that are being developed, all the new network being built to connect these new assets – none of that will have its full impact if the ESO cannot operate a zero-carbon grid.

The ESO needs to go first, to move fast, so that system operability is not a blocker to low carbon development across the electricity system.

That's why being able to operate a zero-carbon system by 2025 is a cornerstone of our RIIO-2 Business Plan.

It is not an easy task and requires us to solve engineering and market challenges.

On the engineering side, we are re-designing how we operate the power system. We are developing new process, new products - frequency response, inertia - looking at total system stability. And buying these products from a growing pool of providers in a way that offers confidence in the market and drives competition. Many of these providers are new, highly innovative start-up companies developing cutting edge technology.

Our RIIO-2 plan includes a highly ambitious roadmap so we will have in place this range of new contracts to manage the stability of the entire system – not just frequency – by 2025.

No other system operator in the world is pushing all these things at once.

We are not just rising to the engineering challenge. We are also addressing a markets challenge, which aligns with another of our 2025 goals: competition everywhere.

A range of studies have demonstrated the value to consumers of flexibility in a decarbonised energy system. And flexibility can and will be found right across the system, from how you

charge an electric vehicle, to supermarkets managing refrigeration to locating a battery beside a wind farm.

But in order to unlock this value, new markets must be created in new places. These markets need to be coherent, operable and understandable – if consumers are to benefit. This requires innovation, technology to provide us with visibility of actions across the system at real time, shared data, shared process, shared market and contract design; coordination across network operators, government and service providers and others. The ESO has a critical role to play here.

Again, this is an area where we are at the forefront.

We can't afford to fall behind.

If we don't rise to these challenges, the UK will miss out on a significant portion of the billions of pounds of low carbon investment that must be made in the UK by 2030.

Jobs and growth will suffer, particularly in those areas that stand to benefit most from renewable energy investment. The country risks missing out on the tens of thousands of new jobs in offshore wind alone. And ultimately consumers will pay more.

We, the ESO, need to show leadership, innovation and agility if we are to deliver our shared ambitions for RIIO-2.

Once we talked about an upper limit to the amount of renewable generation we could have on the system. Now we are taking away that limit. To do this, the right regulatory conditions need to be in place. Which brings us onto the framework that Ofgem has proposed for us in RIIO-2.

I will now hand over to Kayte to say more.

Speaker: Kayte O'Neill, Head of Markets, ESO

The ESO's first price control is a rare opportunity to design and put in place the right framework – setting the ESO up for success to deliver net zero.

The good news is that in principle the regulatory framework that Ofgem has proposed has the right building blocks to do this. It's a major departure from RIIO-1. It protects consumers, by designing out the potential for windfall gains driven by macroeconomic factors rather than company performance. It has the potential to encourage the right behaviours from the ESO: the innovation, agility and proactivity needed to deliver net zero.

However, the unfortunate reality is that the package as it stands will have the opposite effect to what is intended - because when you put the building blocks of the ESO price control together you see that they fundamentally fail to recognise the key characteristics of the legally separate ESO business. Asset light, service focused, delivering first-of-a-kind outcomes in rapidly changing landscape.

So where does the package go wrong? For me it comes down to two clear problems: First, the ex post evaluative incentive scheme is not the best way to drive strong performance. We are working with Ofgem to develop improvements that can sharpen the scheme, being clearer on what excellent performance by the ESO would look like and how this would be judged. The incentive scheme needs to be clear and credible if it is to drive the levels of ambition, risk taking and ultimately performance that we all agree is essential.

The second area that needs changing is financeability. If there is one thing that I would like to change as a result of this meeting, this is it. Ofgem's proposals do not deliver a financially sustainable business.

Under the current package, one decision, judged with hindsight to have been wrong, could lead to an incentive penalty or disallowance that wipes out the ESO.

The financial package that Ofgem has proposed means the £5 million annual returns for the investments we make and the services we provide do not even cover the annual incentive downside at £6 million. And if one item is disallowed, this could wipe out, fivefold, the profit for the year.

If that happens – and there is precedent for Ofgem reaching such decisions – the sustainability of our business would be in question. Even if we kept going, we would be in survival mode – in no position to show the kind of ambition needed to lead and accelerate to journey to net zero.

So what kind of impacts could that have?

We are currently leading the thinking on how to develop a coordinated offshore grid - crucial for our net zero ambition. An integrated grid requires far fewer assets to be built. As well as saving consumers money, it reduces the impact on the environment and on coastal communities. Our initial analysis shows that the costs that consumers pay could be up to 18 per cent lower than if we do nothing. Consumer benefits could be £6 billion up to 2050.

Without a flexible framework, we won't even be able to investigate opportunities such as this, let alone push hard to drive such benefits for consumers, or to innovate and invest in new activities that have no precedent. Similar examples exist throughout our plan.

With the funding model and incentive scheme as currently set out in draft determinations, there are investments that we simply cannot get going on without reassurance from Ofgem that there won't be a penalty or disallowance.

The way Ofgem's proposals will pan out is that they will require us to seek agreement as we go. We will have an Oliver Twist price control: we'll have to return over and over to ask for more. The result? Industry wide delays.

If we are unable to invest to operate a zero-carbon system by 2025 then other parties will be constrained in their own deployment of low carbon technologies – failing to unlock the economic value and growth that Ro talked about earlier.

This is not a model for the type of business that stakeholders want us to be. That Ofgem wants us to be.

No business would do it for the package that is on offer.

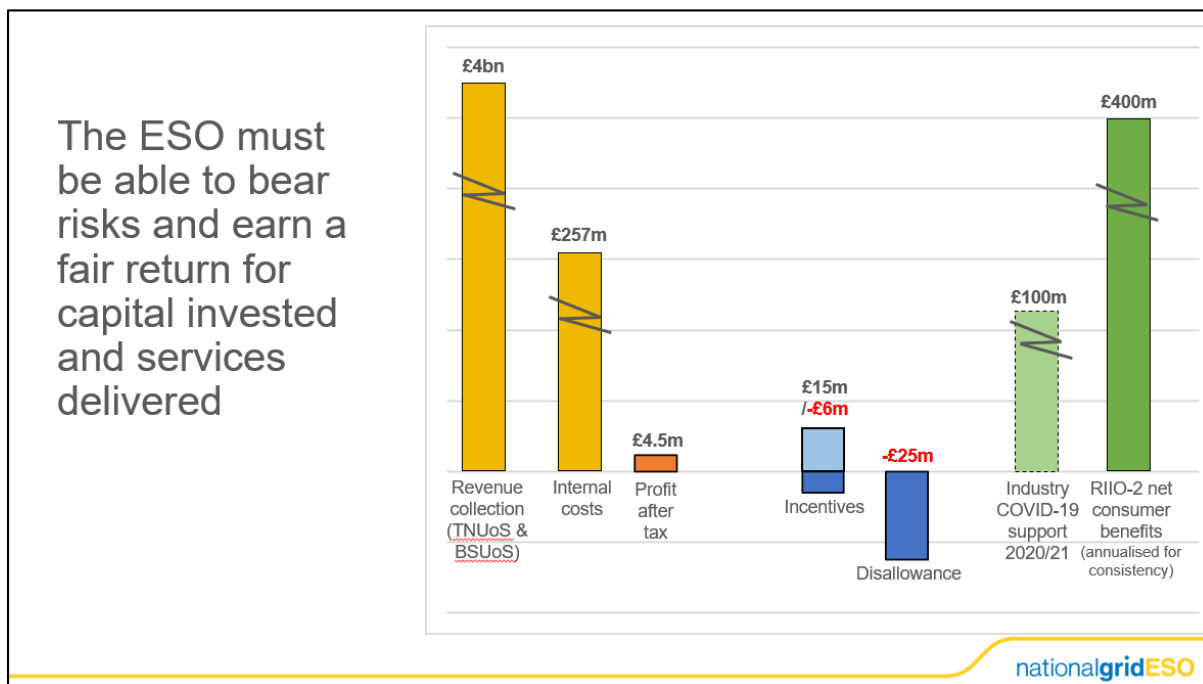
The funding model and incentive scheme must not penalise innovative proposals. They should allow us the financial headroom to take risks and invest when required without the fear that an incentive penalty or disallowance will wipe out the business.

I'll now hand back to Fintan to close.

Speaker: Fintan Slye, Director, ESO

I said earlier that the changes needed are neither difficult nor costly. In a nutshell, we need an overall framework appropriate to the business that promotes the right behaviours and

outcomes. It surely should not be the case that one decision, for example on a first of a kind IT system, judged with hindsight years later, jeopardises the very existence of the business.



This slide of the ESO’s financials in the first year of RIIO-2 illustrates just how precarious the financial position is.

The bar on the left represents the £4 billion cash we handle each year in the form of network and balancing use of system charges. The consumer benefits we deliver in RIIO-2 – shown in the green bar on the right – amount to £2 billion over a five-year period. £400 million a year. While our internal costs are £257 million a year.

And £4.5 million profit after tax is what Ofgem proposes as the return for the services we provide, all we invest in and everything we do for industry and consumers.

As an example, this year we are providing up to £100 million support to the industry as a result of COVID-19.

The £4.5 million doesn’t even cover our incentive downside, let alone any disallowance risk, which Ofgem has proposed could be up to £25 million in any single year.

Such a financially precarious position will drive risk-aversion and bureaucracy. We’d be trying to drive the road to net zero with the handbrake on – we would be always in survival mode, never getting to ambition mode.

I said at the beginning that I’d tell you how much it would cost to change this and adopt a financial framework in line with regulatory precedent that appropriately recognises and reflects the risks the ESO holds and is faced with. Well now I’ll tell you.

Ten pence.

The change to the financial package to enable the business to deliver the £2 billion of benefits we have set out, will cost just ten pence per year on consumers bills.

Ten pence out of an overall cost of around £1.80 for the ESO on consumer bills.

However, this requires a recognition that the ESO is not your standard asset-heavy utility where a metric based on the size of the asset base is the core of the price control, but that the ESO is more like a service company and that therefore, other metrics and other regulatory constructs and precedents need to be properly factored in.

These include two recent CMA reviews, one for the Northern Ireland System Operator, our closest comparator, and the most recent initial findings on the PR19 water company price controls.

While Ofgem's draft determination for the ESO appears to have all the required elements – it does not properly recognise this change in the nature of the business and as such runs the risk of being a halfway house of neither one thing nor the other.

To pick up the earlier analogy, we need to release the handbrake and enable the ESO to accelerate the transition to net zero and deliver the literally billions in consumer value.

I want to conclude by bringing it back to what we're trying to achieve. A clean, sustainable, affordable and reliable system – one which delivers on the net zero future we all want – that's our vision as ESO, and we have a plan to get there.

The changes needed to Ofgem's proposals are neither difficult nor costly, but the benefits are huge. As an innovative, agile and proactive ESO, we can create the conditions for an effective energy transformation at an efficient cost to consumers.

There is a lot at stake here. This is the first price control for this new business. It is critical we get it right. We have the required elements, we now need to put them together in a way that will drive the right behaviours and outcomes to deliver a positive, sustainable future for our planet.

Thank you.

Q&A session

Question 1

Speaker: Jonathan Brearley, Chief Executive, Ofgem

Fintan and team, first of all, thank you for your presentation. The first question we have really is on what you will do to take a whole system view of the energy landscape. So, you talk about delivering new competitive processes, both asset and non-asset based solutions to meet system need, the ambition for your role in shaping network development around that, but also tell us how that's evolved from your ESO experiences today? In particular, I'm keen to see what you are doing above and beyond some of the pathfinders and fifteen discrete projects you've already launched, and really how we get to that compelling vision that you described.

Speaker: Roisin Quinn, Chief Engineer and Head of National Control, ESO

Absolutely. So, Jonathan was asking about whole system and I think what are we doing beyond just the discrete activities, how do we make sure that we're thinking right across the board and really unlocking that value? So, absolutely, pathfinders, the regional development programmes, a lot of our work on IT. There are a number of pieces to this. We would see it as there is work that we need to do, but this kind of wider strategy is needed to really unlock it. We think we have a critical role in this area to pull it together. We don't think we've a role to do this alone. I think, as the other presentations mentioned as well, there are roles for other people involved in that.

Part of what that needs to look like as well then is how do we move to do more information around policy. So, how do we identify the big decisions that are coming up? So, using that analysis, that expert analysis, to inform where are the areas that we should prioritise thinking and how do we then use evidence to help inform those decisions. We would recognise that we would need to engage with different parties. We will need to target particular expertise to really inform that decision-making. So, when we think about whole system, there is the immediate activities around looking at transmission boundaries, there is all of the work around bringing flexibility into market design so that wherever you are, you are getting the right signal for despatch. There is all the technical work in the RDPs, underpinned and informed by that wider strategic thinking around how does policy shape up and how people understand the consequences of decisions.

Question 2

Speaker: John Crackett, Non-Executive Director, GEMA

I wanted to go back to the issue of IT. Now, great presentation from the company, thank you for that. As has been alluded to, IT is a major component of this work that you're going to do in the next few years. In fact, if we look at the run rate of the expenditure you've asked for, which has gone up more than 50 per cent per annum, most of that is to fund IT projects. Now, you don't necessarily have the finest experience with some of these IT projects – I'm thinking perhaps of the EBS system which, as you know, ran late, you ended up in a dispute with the supplier and it only delivered a fraction of the benefits it was supposed to. I think we're very keen to hear what you're doing now to make sure that you actually have the capabilities and the skills and the processes that will make a success of delivering what are quite ambitious and stretching IT projects in the next control period?

Speaker: Fintan Slye, Director, ESO

Thanks, John. Perhaps I will start and then I will maybe hand over to Ro to say a few words about the specifics that you talked about, John. I think we absolutely recognise how central IT is to our success over the course of RIIO-2, and that is why we spent a lot of time working with Charlotte and the ERSG around the IT delivery model and indeed working with Eleanor and the Ofgem team on that as well.

I think looking back over the history of the ESO over the last number of years in terms of delivering IT projects, what we sought to do is try to learn from when projects haven't gone as well as we would have liked, where there have been issues. We have looked to put in place changes and learn from those issues. So, the EBS system which you talked about is currently deployed in the control room. It provides scheduling advice up to four hours ahead for our control room engineers. What we found, though, was that the market in the UK is so complex that actually trying to solve that in real time minutes ahead on an ongoing basis as part of one large algorithm is just not possible and hence, we needed a new approach around how to chunk that up and to deliver it.

So, going forward, through RIIO-2, two things to say. We have looked at the IT delivery model and how do we make sure that we have the capability within the ESO to deliver on the very ambitious plans that are there, and, two, how do we make sure that we learn from past successes, and failures as well, because there have been some great successes over the past, most recently things like the despatch desk for small renewables, the wider access API. So, we have continued to make progress and learn from those. Ro, is there anything you'd like to add to that?

Speaker: Roisin Quinn, Chief Engineer and Head of National Control, ESO

I think I would probably just add in terms of what that learning looks like. We have introduced the Technology Advisory Council which will help us bridge between our plans and the engagement and the transparency stakeholders need. We realise that our efforts were not hitting the bar in that space. We are also moving away from big programmes towards a

modular approach where you will have interactions and integration that are easier to manage because of how those modules will come together, all sitting in a really clear data infrastructure, and that will enable us to make change at a faster pace. The key to most of our programme is learning how to do that for this year, so going into RIIO-2 we will understand what that looks like in detail. We know what the capabilities are and what the ways of working will be to allow us to deliver those big IT programmes going through RIIO-2.

Question 3

Speaker: Eleanor Warburton, Deputy Director ESO and Gas Systems, Ofgem

Fintan and I think Kayte, you both mentioned concerns about barriers to investment and I would like to just unpick that a little bit more, if I may. As John said, you have quite a step up in expenditure for RIIO-2 and whilst we have a lot of discussion ongoing about exactly how that is assessed, I think there is a general consensus where the money needs to be spent, it should be spent. Assuming you get the cost benchmark you need and you have this money on a pass through basis, so you have that upfront certainty, it is a pass through cost, and it is at most one factor among a number of others within the incentives, so it is outweighed by the factors around the delivery, realised consumer benefit, strong stakeholder feedback. Does that give you the certainty you need to invest? Because you've got the money, you can spend it without any overrun costs and you have a very qualitative efficiency challenge which will absolutely take account of the benefits you will deliver for consumers and will be outweighed by that, so it would be good to unpack how far that would give you comfort and how far you think risks really still remain and where they are?

Speaker: Fintan Slye, Director, ESO

Thanks, Eleanor. Sorry, there's a delay coming off mute, so I apologise about that. That's an excellent question. So, I think one thing for me, I would just take a step back and say at its highest level, the ESO does two kind of things. For example, you talk about making investment, Eleanor, so I think typically we default to that means investing in an asset. For ESO that is an IT system, so we would invest potentially in a new auction management system that could deliver, say, benefits to consumers by having a more effective auctioning of frequency products, for example. But the other investment that we often do is investment of time and resources and expertise into a lot of the things that were pulled out as really important earlier, such as whole system thinking, co-ordination. A great example of this is the recent report we did on co-ordination of onshore connections. So, identifying £6 billion in consumer value out of that. But, unfortunately, the price control just does not attach any value to that investment. It focuses the ESO, it says if you can create an asset, will you get a return on the equity? All we can do on the other one is actually lose money. So, if in hindsight you decide that we spent a little bit too much getting expert advice on the current technology state of HVDC breakers, we would lose money.

So, we are really, really concerned. We think we should do both. We think a good ESO needs to do both, it absolutely needs to have modern IT systems that will enable the control centre to visualise a very different system, to control it in a really different way. But we also think it is equally important that the ESO invests in whole system thinking, leadership, new ways of planning and managing the system, and at its highest level our concern is that the control focuses on one and not on the other, and we need a hybrid type of control that recognises the ESO does these two different type of things at its highest level.

So, that's my concern, Eleanor, is that if your question is about investment in a box that does a whizzy auction faster and better and delivers value to consumers, I can see how the price control stacks up the elements associated with it. But if it is how do you get that £6 billion worth of benefits for consumers to 2050, there I struggle with how the price control properly remunerates and rewards that.

Question 4

Speaker: Simon Wilde, Senior Financial Advisor Director ESO, Ofgem

ESO colleagues, you have asked for material amounts of additional remuneration. Can I just check three things? One is to what extent has your request changed over the last two years, ideally in millions of pounds? Secondly, how does your request relate to the 10 pence that Fintan indicated and, thirdly, how are those additional revenues tied to the consumer benefits that you are correctly identifying as important?

Speaker: Fintan Slye, Director, ESO

Simon, we have sought to actively work with you, with our Challenge Group around what the price control should look like, and through all of that our view has changed because it has been informed by our stakeholders and our customers and indeed by feedback that you and the team have given us, and at times the direction you have pointed us in to look to explore different avenues. Undoubtedly our request has changed. Our view of it has changed. I think that what we consistently have tried to say, though, is that what matters is when you stand back and look at the ESO as a business, does the sum total of all of the bits add up to something that is financially sustainable? We have tried to stay away from drawing red lines around any part of it because we believe that that's not constructive to getting to a solution, but rather to try to work with our customers, our stakeholders, you, your team, Eleanor and her team, to try and do it. But, absolutely, our request has changed, indeed as it should have, I think.

You asked how does that relate to the ten pence? The ten pence is a conversion of that to the customer bill, so the ESO's costs we reckon, as outlined in our business plan and our response to your draft determination, is £1.80. The changes that we think are needed equate to ten pence of that £1.80, so that's how they relate.

I think your other question just broke up a little bit, but I think was how is that remuneration tied to consumer benefits if I picked you up rightly – you are nodding. So, it's linking directly to it to ensuring that the ESO does have the capacity and the capability to invest in those things that are important, be they looking at a blueprint for how do we connect offshore wind and save £6 billion for consumers, to how do we look at how distribution and transmission should co-ordinate better across that interface, to what is the right set of frequency products in order to manage the system. So, across all of those things, making sure that ESO actually has the capability to go after them.

Richard, I don't know whether you wanted to add anything around the specifics of Simon's request or anything there?

Speaker: Richard Allman, Head of Regulatory Finance, ESO

Sure. In terms of our request for non-RAV funding, as I think your question suggests, Simon, yes, the ask has evolved during the course of this process. What we have sought to do through the business plan submission and then through to our draft determination response is to present a series of different data points and evidence to support that non-RAV funding request. It has evolved, as I say, and what we have effectively got now in our draft determination response is a request which we summarise as £15 million, and that £15 million we have done in several ways.

We have done it applying the methodology that your own consultants and yourselves applied and effectively working with that same approach. We've also done it applying this from a top down benchmark where, if you look at other service providers – and the ESO is a service provider – if you look at other service providers, then an EBIT margin in the region of about 10 per cent is what you might expect to be getting, and that 10 per cent, you can look at a variety of different benchmarks within there, but for example balancing the system, you've got the London Stock Exchange at 13.9 per cent, and then we've got other benchmarks in there like professional and commercial services, IT services, all of those kind of things.

So what we have tried to do effectively is work with a regulatory approach, like you have done in your draft determinations, but we've also done this from a top down approach and with an EBIT margin approach to see what a competitive margin might be if you actually look at other comparators out there for similar risks. That's how we have come by the figures that we have got.

Speaker: Simon Wilde, Senior Financial Advisor Director ESO, Ofgem

If I can just ask one clarificatory question – can you hear me? Just one very brief clarificatory question. Richard, you mentioned £15 million but I heard from Fintan 10 pence per customer and if there are 25 million customers, isn't that £2.5 million? You might want to take that offline, but I just want to ask about that.

Speaker: Richard Allman, Head of Regulatory Finance, ESO

We used the methodology which Ofgem themselves use, so what that methodology does is take BSUoS charges, which is where this would show through, of which 50 per cent is reflected in demand in the domestic bill. We then take that 15 million and you divide it by the total demand and then there is a loss factor that gets applied. Again, this is all using Ofgem's own methodology, and then we multiply by the average household demand, which is the figure that again Ofgem would themselves use in their domestic bill calculation. When you do that, effectively £15 million goes in as an input and what comes out of the other side of the equation is 10 pence per annum.

Question 5

Speaker: Jonathan Brearley, Chief Executive, Ofgem

Given the time, just ask one question firstly, but then go to questions from our stakeholders and, Fintan, the one question we have got left around financeability, which you have raised as an issue, was just to ask you your view on the new credit rating issued by Moody's. Now, clearly following our draft determination, they upgraded you to A3 from Baa1, reflecting a marked improvement in its business risk profile and as a result of the changes proposed and made to the regulatory framework. Do you want to just give us a view on that given that you have raised financeability as a key issue?

Speaker: Fintan Slye, Director, ESO

Sure. One thing I would say is that the key thing here is that it also relies on the ESO being part of the National Grid Group, so you need to reflect that, but maybe Richard has a much better appreciation of the ins and outs of these credit ratings and how they work. Richard, do you want to talk through that one?

Speaker: Richard Allman, Head of Regulatory Finance, ESO

Yes, thanks, Fintan. You are right, what I would say is that Moody's and other rating agencies assess this purely from a debt perspective, so what would the debt markets think in terms of the creditworthiness of an organisation? As I hope was quite clear from the presentation we gave earlier on, ESO's concerns are not about the debt perspective. They are about the equity proposition, both in terms of the allowed return on equity not being sufficient and not adequately considering regulatory precedent and the risks that the ESO faces, and the non-RAV funding where again there are risks which are not related to the size of the RAV, but the ESO has got, particularly when it comes to the asymmetric disallowance risk and the revenue collection role which at the moment are not factored into that. Moody's wouldn't be worrying about the equity side; they focus on the debt side.

Question 6

Speaker: Jonathan Brearley, Chief Executive, Ofgem

That's great. Thank you. I'm now going to open up to two questions from our Stakeholder Group. First of all, from Stu Horne, Citizens Advice. Does the price control provide enough

scope for the ESO to take on a system architecture role needed to deliver major projects under way, including offshore wind co-ordination at early stage competition? Matched to that, you might as well answer this question at the same time from Andy Manning, who says would the business plan look different if done today given the challenge balancing the system this summer and the commitment to 40 gigawatts of offshore wind?

Speaker: Fintan Slye, Director, ESO

I will say a little bit about them and then maybe Ro will say a little bit more about just balancing the system this summer. I think the question about scope for that system architect role that Stu raises, it's a really good question. It goes to the heart of what I was saying in response to one of Eleanor's questions earlier, is that the current way the price control is put together, and Akshay talked at the start about how all of the required elements are there and we agree with that, but they are just not put together in a way that actually recognises some of those things that the ESO does which are so incredibly important to UK PLC, such as how do we ensure whole system thinking, how do we think about co-ordination of offshore development with onshore development. You can't tie any of those back to an asset base and therefore work out a return based on them, and yes, they are desperately important that we do them and we get them right and they are important and add value for consumers. That goes, I think, to the heart of our point, which is we need to think about how the framework gets put together and adopt a more hybrid approach which recognises that, yes, the ESO will have to invest in IT assets and indeed in RIIO-2 it is significantly more than it was in RIIO-1, but we also need to invest in how we think about whole system thinking, thought leadership, and really for the ESO it is about challenging the status quo –how do we make change in an industry that is inherently resistant to change? We need to step up and take a leadership role, and that is my concern around that piece.

The question about whether the price control would be different now based on what we learnt over the summer, I will let Ro talk a little bit about the summer, but what I would say is I am concerned that the price controllers we're looking at it today doesn't have the flexibility that would enable us to do some of the things that we did this summer and would leave the business highly exposed in a financial context if we were to try to do some of the things under RIIO-2 that we did this summer.

Ro, would you like to say a little bit more about some of those things we did this summer?

Speaker: Roisin Quinn, Chief Engineer and Head of National Control, ESO

Absolutely. So this summer we saw an unprecedented low demand for electricity, which has been seen by some as a taster of a low carbon system. There was a taster of a low carbon system without all of the work in our plan to make sure that we could operate that system securely and at least cost to consumers.

The things I would reflect on in terms of the business plan, it reinforced our need to really understand the physics of the network, the deep engineering to make sure we had that baseline to be able to jump to solution mode. It reinforced the importance of responding quickly. We saw demand start to plummet as soon as lockdown was announced, with Bank Holiday weekends approaching upon us, so the need for fast response and to be able to bring a pool of technical people with deep expertise together, cross-skills was really, really vital. I think I would also say the collective response of the industry and that where there is leadership and where there is transparency you can achieve a huge amount, and we relived our ambitions around greater transparency.

How it would change the business plan, it would probably reinforce a lot of what we need in terms of innovation, being able to respond quickly, the benefit of transparency and the benefit of leadership and innovation as we look towards a low carbon system.