

Open Networks Project: Whole System FES (WS1 P5)

Comment	Response
<p>How long would it take to get the Whole System FES framework in place if you went for option 2?</p>	<p><u><i>Bless Kuri (SSEN)</i></u></p> <p>This particular product is looking to develop the framework by the end of this year. The implementation of that framework may, depending on the recommendation, also require changes to processes - those would have to run their course. However, there's nothing stopping efforts starting right away, in terms of the transition process. I would be doubtful that we would be able to have the framework in full-swing for the next future energy scenarios, which would be published in July next year. But I would expect that the year after, we should have made significant inroads to working in this way.</p> <p><u><i>Alex Haffner (National Grid)</i></u></p> <p>I think there will be a gradual evolution as well, so I would have thought that the level of collaboration between the DNOs and the SO will be increased in FES 19. Even if we can't move to the full Whole System FES, we will certainly be moving in that direction.</p>
<p>How do you move from your building blocks and levers to installed capacity?</p>	<p><u><i>Mary Black (Northern Powergrid)</i></u></p> <p>I think that's a good question. The answer is that it has to go through the model. National Grid have already developed their model for future energy scenarios - I'm hoping that Alex will come in on this questions as well - so we get all the building blocks. There's no constraints, just if there's a very high lever, for example, solar, you'll end up with lots of solar generation encouraged in the area where further generation is possible. So they do have some information on the regional limits based primarily on where the sun is available, where wind is available - they know their model better than I do. I think, once you've got all those building blocks, there's no reason why other consultancies couldn't build models as well, if they wanted to. It makes it very transparent. We all know what assumptions are going in. We hope the different models all came out with similar answers to the same building blocks. It's a good way to test the robustness of the model in terms of the</p>

	<p>maths side of it and I think there's a lot of work to do on the regional or the bottom up side of it. The FES at the moment comes down to your grid supply point, but I think that National Grid would be the first to admit that they need more information at post code level to understand more about how it's distributed across the distribution networks, and that's where the modelling we do at our level can help supply the FES at the grid boundary so that we get the distribution of what goes to which supply point. But the basic answer to the question is - it has to go through the model, there is a model available - it might not be the only model, but as long as the answers make sense compared to the inputs and the more models you have to test the robustness the better.</p>
<p>Why do you need a forecast in an excess of five years?</p>	<p><u><i>Ian Povey (ENWL)</i></u></p> <p>I think one of the reasons we have a forecast that extends to that length is so that we can identify the optimal solutions. If, for example, you get a low-growth in just five years and that was to stop, you'd have a reinforcement or a service solution that lasting for those five years. If you see a continued growth or growth in an adjacent area, you may end up deciding to invest in a more expensive solution but a cheaper one in the whole life as the load grows. That's why we need a forecast in excess of five years.</p> <p><u><i>Bless Kuri (SSEN)</i></u></p> <p>If you're looking at potential asset solutions as possible solutions, among others, these are capital intensive with fairly long lead times, particularly with transmission. So, in some cases, you're talking seven years from identifying the requirement to agreeing the needs with Ofgem for some of the larger projects and to the actual construction. It is important that there is clarity, right at the beginning of the process, even for the regulator, to agree and for us to know what we are embarking on is an economic solution - it's important to have that clarity of the longevity of the need that the future energy scenarios will be showing you. If all your scenarios are indicating that you need to progress and find a solution, then you do that in a timely fashion, which is quite important. But the key point is - network assets tend to have a long life, you're talking 45-50 years, and the time to build the project is quite lengthy, so 5 years is not</p>

	<p>really that long when considering things from that perspective.</p> <p><i><u>Alex Haffner (National Grid)</u></i></p> <p>We also have a need to look out for the 2050 carbon targets as well and sometimes it's important to look slightly further out to take that sort of thinking into consideration as well.</p>
<p>How many building blocks do you expect will be required? As new technology is developed and the way in which technology is used changes, I expect that more building blocks will be required. How will the framework address additional building blocks in future there are some national drivers e.g. government directives which could have a similar impact across all regions, and could be introduced or withdrawn at short notice. How would this be approached in a Hybrid FES world?</p>	<p><i><u>Mary Black (Northern Powergrid)</u></i></p> <p>There are three questions there, I'll pick up the middle question on the building blocks. I totally agree that as new technology is developed the building blocks will change. What we decided to do as a working group is to take the existing building blocks for the agreement, because they exist in terms of what we're discussing and analyzing and checking, but the whole framework that we're proposing is one that would accommodate additional building blocks because every year we would have to discuss it with each other and update the methodology. So the collaboration would actually help us to make sure we visit new technologies that come along. I think it's accommodated in the framework, but we're going to need more building blocks. Also, we might find that some of the existing building blocks are not so relevant as we thought they were, so we're open to that change.</p> <p><i><u>Ian Povey (ENWL) [in reference to the last question]</u></i></p> <p>I'm looking at this thinking that this is going to be an annual process of update and the time we formulate or put together the forecast, if that government directive is in place we will include it. If it's withdrawn in short notice then that would be picked up on in the following year's forecast.</p> <p><i><u>Mary Black (Northern Powergrid)</u></i></p> <p>That's how I see it as well. I think as an example, the internal combustion engine, because we actually had built a forecasting model that included the National Grid scenarios and some scenarios from our consultancies and our own scenarios. As soon as we finished our models, they were already out of date because of the announcement of the phasing out of the internal combustion engines. We've tried to make our own model that we've used recently as flexible as possible so that we can actually change most parameters, but it's</p>

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	<p>not the most robust solution - it helps us plan or take away from the plan in between the annual process. Change is happening and change is happening quite fast, so it's a very important part of our mechanism.</p>
<p>Do you believe we can adopt and manage option 2 across T & D, or does it require a trial first, either through ON, NIA or the DSO related NIC projects?</p>	<p><u><i>Bless Kuri (SSEN)</i></u></p> <p>I've got to be frank, I don't see it as a NIC project. Talking from experience, I work for the transmission side of the business and engage with the Electricity System Operator quite heavily on providing input on FES. It does take some resources, but once you engage - and we are also in the process of producing our own scenarios on the Transmission side, which take future energy scenarios as a starting point - so, providing all network companies need to do similar exercises, which I would expect to be the case, I would see this as something that can be adopted fairly quickly.</p>
<p>Given the need to develop a set of common building blocks for gas/electricity for RIIO2 - is it not worth working on a fully whole system set of building blocks now?</p>	<p><u><i>Alex Haffner (National Grid)</i></u></p> <p>Definitely yes - that's what this working group in the Open Networks project is doing.</p>
<p>Is using "FES" the correct term when the current FES seems to be a different thing for a different purpose? How "whole system" will the scenarios be - gas? Thank you Mary Though you have made it clear that this is being developed for electricity, are you likely to consider the blocks for gas and other cross vector requirements as may be required by RIIO2? Will DNO's be expected to publish "standard" or "best view" scenarios?</p>	<p><u><i>Alex Haffner (National Grid)</i></u></p> <p>This is definitely something that we've come across and I think if it's something to be 'true' whole energy system, it needs to include gas as well, so I think we need to do a little bit more work on the terminology and I think at the moment we're looking at the whole electricity system FES. I think future energy scenarios is a decent enough term to be using in general - when we start talking about whole system, we probably need to be a little bit more careful that we talk more about whole electricity rather than whole energy, in this context, so that we make it clear that at the moment, a lot of the work isn't involving gas in the Open Networks Project.</p> <p><u><i>Ian Povey (ENWL) [regarding the second question]</i></u></p> <p>Yes that will be the case.</p> <p><u><i>Mary Black (Northern Powergrid)</i></u></p> <p>I'd like to add that, though in some ways there are implicit assumptions being made. For example, if you're expecting a big increase in gas heating, you are going to have a decrease in electric heating and vice-versa. Although there are some dependencies, there's some of</p>

	<p>that already inherent in the scenarios that we're not looking at as an Open Networks group. We're looking at where we interface between DNO and transmission supply point, which is very electric focused. So yes, there's more work to be done on the 'whole' end.</p> <p><i><u>Alex Haffner (National Grid)</u></i></p> <p>Just to be clear, when I said we weren't considering gas, what I meant was that the group looking at the work doesn't involve representatives at the present from National Grid Gas or from the gas distribution networks.</p>
<p>Are you following a PESTEL (political, economic, social, technology, environmental and legal) approach for the WS FES? How would the proposals for hybrid systems (RES+storage) be accounted for projections of renewable and storage projections.</p>	<p><i><u>Alex Haffner (National Grid)</u></i></p> <p>It's not something that has been discussed much at the workgroup, but it was something that was originally used in the National Grid SO FES, that's how we came up with a lot of the assumptions and levers that form the basis of SO scenarios. That question also talked about 'How would the proposals for hybrid systems (RES+storage) be accounted for projections of renewable and storage projections'. I guess it would be interesting to hear what the panellists say on this. That may have to form an additional lever to be absolutely clear, rather than merge it with existing ones.</p> <p><i><u>Bless Kuri (SSEN)</u></i></p> <p>I would agree with that. The framework itself does not actually limit you as to the number of blocks you can have. Those will be produced to meet the requirement for the technology and appropriate operating regimes that they come under.</p>
<p>Will DNO's be expected to publish "standard" or "best view" scenarios? Is hydrogen (as storage or production for de-carbonisation of heat and transport) being considered as a building block(s)? H2 seems to have the potential to require that gas and electricity networks forecast scenarios together in the not too distant future. Not a question but generally I think the regional variance is extremely important in the FES and so I support this.</p>	<p><i><u>Bless Kuri (SSEN)</u></i></p> <p>I don't think it's a direct requirement at the moment, and going forward, I don't think it will be a requirement. What I'm aware of though, is there is a requirement for DNOs and TOs in particular to demonstrate how they have taken into account stakeholder feedback in their plans for developing the system and in demonstrating that, one of the things may be to engage stakeholders to develop those scenarios and, as part of this story, say 'this is how we arrived at what we need to develop on the system' - those scenarios would be able to be published for transparency. This would also show where the requirements are coming from and the proposed</p>

	<p>solutions. But I don't believe there's a direct obligation to publish scenarios.</p> <p><i><u>Mary Black (Northern Powergrid)</u></i></p> <p>Once these are published, people often talk about the DNO only having one scenario or a 'best view' scenario, and that's not necessarily the case because there's uncertainty. We consider a whole range of scenarios, so there might be a scenario for planning, or you might have your own 'best view' which you'll probably communicate to stakeholders, which you would have to justify. Suggesting whichever scenario, whether you have one or three or five, that as long as you can express it in a common language of building blocks, it means that everybody can understand it and it makes it possible for people to compare the different regions in a way that we can't at the moment as we don't have a common language.</p> <p><i><u>Ian Povey (ENWL)</u></i></p> <p>Also, to go back to one of the previous questions, about a multi-vector forecast - I've been informed that as part of the Whole System Workstream part of Open Networks for next year, a forecasting heat and transport option will be picked up. So, that is being looked at next year as part of Open Networks.</p>
<p>Have OFGEM provided anymore clarity on the development of a single scenario for all network companies?</p>	<p><i><u>Mary Black (Northern Powergrid)</u></i></p> <p>I only know information from speaking to people who go to the regulatory working group. I wouldn't want to steal their thunder by speaking for them. People are beginning to ask 'are we going to have a single scenario'. I still think that what our group is developing as the Open Networks project is, when we talk about scenarios, we don't talk about one scenario, we talk about all the scenarios. In general, if they're planning scenarios, they're in the middle of the range.</p>
<p>UKPN have recently launched they Flexibility roadmap where they are including storage as an alternative to network reinforcement, would other DNOs follow this approach and is this going to be reflected in the WS FES when forecasting storage capacity?</p>	<p><i><u>Bless Kuri (SSEN)</u></i></p> <p>I would expect storage to feature in the DER and it would, in the analysis of the system with the distributed energy resources, it could then affect the reduced need for the network reinforcement. The assumptions used in how it's actually utilised [in regards to the modelling], so I think the quick answer is 'yes, it would like any other DER'.</p>

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<p>The regime in which distributed energy resources are used, which may partly depend on consumer behaviour or behaviour in response directly to the market or any other requirements they may have.</p>	<p><u><i>Mary Black (Northern Powergrid)</i></u></p> <p>From a DNO perspective, yes DNOs are looking at storage and demand side response and all sorts of customer flexibility solutions and network reinforcement. I think that's already captured in terms of flexible solutions by the future energy scenarios. We're having discussions as to whether the assumptions being made are realistic and this is where - when we talk about the bottom up knowledge we've got about what's happening in our area, there's a lot of room for discussion at the GSP (Grid Supply Point) interface about the amount that we think is - this is one of the areas where grid and DNO needs to have a discussion with each other about what's achievable. Everyone's looking at alternatives to reinforcing the network.</p>
<p>Is hydrogen either as storage or production for decarbonisation of heat or transport being considered as a building block? Hydrogen seems to have potential to require electricity and gas networks forecast scenarios together in the not too distant future.</p>	<p><u><i>Alex Haffner (National Grid)</i></u></p> <p>Hydrogen is captured in the SO FES, especially because of a lot of the work that's been done on more of the gas side and so there are levers in place around hydrogen. I definitely agree that it's going to take electricity and gas networks working closer in the future.</p>