Questions answered during the webinar

Question

Noting that all states will compete for hydrogen plant loads and the associated industry - what is Powerlink doing to gain these major loads that is different to other TNSPs? How is this being represented in the TAPR?

Answer

We are aware of the Government's hydrogen strategy. Our expectation is that hydrogen would appear towards the back end of the 10-year forecast but at this moment the projects aren't at a stage that would have us include them in our forecast. We are working with Government to attract loads that would benefit the Queensland economy and consumers.

Question

What, specifically, is Powerlink doing to support the Renewable Energy Zones development?

Answer

The Queensland Government has made a couple of announcements. There was a $145 million and then also $500 million to support renewable energy zones. The Government is actually going through an Expression of Interest process at the moment to look at what generation there is right across Queensland and they've had a very, very good response to that. We'll be working with them closely doing some market modelling and looking at the various options for renewable energy zones both in central, southern and northern Queensland. We're hoping to get that modelling done early next year. So we'll provide a fuller update at that time.

Question

AEMO is currently consulting on scenarios for 2022 ISP. Will Powerlink change its chosen three ISP scenarios and if so when?

Answer

Yes, we're always updating our inputs and we're also a party in AEMO's consultation on scenarios at the moment through the Forecasting Reference Group. So next year's TAPR will no doubt refresh all the forecasts and we'll select the most appropriate scenarios to publish. That will be incorporated in next year's TAPR.

Question

TAPR says peak demand continues to increase yet capex is mostly re-investment in existing network i.e. not in augex.

Answer

This is, I suppose, more of a statement and I agree. Whilst there is some growth in demand, it is still generally flat and the capex that we are spending is mostly on reinvestment. So, yes, there are no material projects in the outlook period triggered by maximum demand.

Question

How does AEMO's eight Queensland REZs and the Queensland Government's three Queensland REZs impact on the Powerlink's TAPR?

Answer

We have a chapter in the TAPR called Chapter 7 Strategic Outlook. In that chapter we do recognise the impact of the transition that is occurring in the industry. So the development within REZs has the potential to impact the utilisation and performance of our major grid sections. We do look carefully at the changes that are occurring and those that are forecast to occur. Also, we do rely on the ISP and we aim to use all the inputs that are available to us in our holistic planning approach (where we consider both load driven, market driven and reinvestment).

Question

How will the costs of additional system strength especially in Nth Qld be shared between consumers and generators?

Answer

When you are actually looking at issues surrounding system strength, there are basically two components to it. For the renewable generators connecting to the network, they have to do so by 'doing no harm'. So that means that if they're connecting in a part of the network where there isn't enough system strength, they actually have to bring their own system strength remediation which is typically in the form of a synchronous condenser. The other part of system strength is AEMO also looks to make sure there is enough system strength to keep the network secure and if there's not enough then they actually then issue a system strength shortfall. That's to keep the system stable and hence all the electricity consumers benefit from that. So when a system strength shortfall is called by AEMO, then the cost of remediating that will be borne by customers.

Question

What is the approx value of the refit of 275 KV lines from Ross to Chalumbin to Woree?

Answer

Please refer to pages 86 and 87 of the TAPR. Depending on the solution identified, it is anticipated to be between $85 to $165 million.

More refinement of these costs will occur as part of the detailed analysis undertaken as we embark on the RIT-T process.

Question

Will refit of 275 KV lines from Ross to Chalumbin to Woree be a contingent project in Powerlink's Regulatory Proposal?

Answer

No, my understanding is that it's business as usual for us and it is appropriate to have this project in what we call the bottom-up revenue forecast.

Question

So what are the key challenges specific to transmission?

Answer

It is quite challenging to find the key ones – there are so many of them. I think the pace of the transition is the one that is challenging us the most - answering all the enquiries and the applications and doing all the system modelling.

Minimum demand as well. Minimum demand is going to create challenges on the coal-fired generators to stay on and if they do come off, we've also started to observe dispatches that we haven't seen in recent history. We are reliant on that traditional dispatch so looking at those minimum demand issues is a key challenge for us as well.

If you look at the challenges across say transmission in the electricity industry, it's fundamentally I think more about opportunities over the next 10 years as we transition across. There are going to be some great opportunities as we move towards more renewables. It will also have some challenges when we come to connecting renewable generators. Over the last couple of years there have been challenges for which the experts have come up with some great solutions. I'm sure there will be more challenges for us as we go through. Perhaps we've resolved system strength but all of a sudden then we'll be thinking about frequency or inertia or the challenges of black start. So, I'm sure there will be many technical challenges for us to work through over the next 10 years.

One of those, as Enrique said, we've got a close watch on here in Queensland, is minimum demand. We've seen that in South Australia and Victoria where minimum demand is more of an issue at the moment. So, we're watching very closely what those jurisdictions are doing. They're looking at things like the controlling rooftop solar as it is thought that this is contributing significantly to the challenge of minimum demand. There are other options though, as storage becomes more cost effective, and does that allow us to move some of that demand from the evenings into during the day. Then, similarly, is there any type of tariff reform or incentives that we can provide customers the benefits of the cheaper electricity that we will have during the day. So there are a number of options available to us in that space.

Question

Will there be the potential for reclassification which could impact transfer capability due to weather conditions if single circuit transmission lines are rebuilt as double circuit.

Answer

In Queensland we have a number of double circuit lines and what we make sure we do is build them with enough shielding (and low footing resistance) for lightning. Typically we are alright. In that space we do get a few challenges and there's a few of our lines in northern Queensland that, when we have lightning in the area, do get reclassified to a credible contingency.

AEMO does have a process in terms of the re-classification of double circuit lines. So we have many double circuit lines that are not considered vulnerable. To be considered vulnerable, in other words, to be able to be reclassified, they need to have a history of having a double circuit, three pole trip on both circuits. So just because we have double circuits, it doesn't mean that they are going to be part of that vulnerable risk.

Question

In planning the network, is maximum or minimum demand a bigger issue?

Answer

We can't take our eye off maximum demand but I suppose at the moment it is minimum demand that is really taking our focus. When planning the network consideration has to be given to both minimum and maximum demand. The challenge for us is to do it in a way or propose solutions that meet system security and reliability as well as being low cost solutions.

Question

What have you done to resolve system strength issues?

Answer

Certainly Powerlink has been working very closely with AEMO and industry experts working through the system strength challenges, particularly in north Queensland where a number of renewable generators have connected. Things that we've done over the years - we've actually been tuning some of our SVCs and power electronic equipment. We have been working closely with the manufacturers of inverters both from the wind space and in the solar space to look at how we actually tune those inverters. What we've found is that by tuning inverters and stopping the interactions, it is far more effective than for example, introducing synchronous condensers.

Another aspect is synchronous condensers and we're looking at system strength as a service for some of the generators looking to connect in northern Queensland. System strength as a service is basically economies of scale from larger synchronous condensers and what we we're doing is allowing generators to tap into those economies of scale to get better cost effective solutions for electricity consumers.

Question

ISP mentions that if New England REZ is expedited through NSW gov funding, QNI might have to do the same, what timing do you think you will consider for QNI medium upgrade?

Answer

If you end up with a lot more generation in New South Wales, we have to question what flow of energy do you need across the QNI? When we've done our modelling we've been seeing a lot of flow from Queensland down into New South Wales. We would have to go through the modelling and understand the recent policy by the NSW Government. QNI goes across two jurisdictions, so we need to take into account both jurisdictions' needs and planning requirements and the RIT-T will be the right instrument to inform what the optimal timing for that will be. We'll also be feeding into the ISP and the ISP will help inform that as well.

Question

Is Powerlink going to have more unregulated assets e.g. proposed new $180 million Kidston transmission line and synchronous condensers? Is TAPR about regulated and unregulated assets?

Answer

Certainly we've got quite a number of non-regulated and regulated assets and that will continue to morph as we have more and more connections and we develop the regulated network as well. Fundamentally

the TAPR is looking at a 10-year outlook for Queensland. It doesn't really show the difference between non-regulated and regulated, rather looking at our network and network capability.

Question

What is the status of the proposal to provide system Strength as a service to generators?

Answer

We have been engaging with renewable generators who are looking to connect to Powerlink's network. If it is in an area where we believe that they will need to bring their own system strength solution, then we'll be working with those individuals. So certainly very well advanced in northern Queensland but we're obviously keeping a very close eye on opportunities right across Queensland.

Question

When does Powerlink expect to initiate the RIT-T process for the larger QNI upgrade options?

Answer

As part of the final ISP that was released in July this year, Powerlink was tasked to provide preparatory activities for three projects. QNI was one of them. What those preparatory activities entail effectively is to better define the inputs that are used in the ISP modelling. So we are working on those preparatory activities and we will report back by the 30th of June as requested. We expect that those inputs will then be taken on board by AEMO and will then be part of the 2022 ISP. We'll take guidance as to the economic case for a QNI medium or large from that. There is an 'actionable project' status now that the ISP can give projects. So that could be an avenue to trigger a larger QNI upgrade.

Question

Is Powerlink anticipating any impacts from the proposed Copperstring project?

Answer

Certainly we are very aware of that project and are looking to connect basically Mt Isa in the north-west mineral province to the National Electricity Market and we are working with a number of parties. The Queensland Government has also provided about $14.5m for that project to help them work through the next steps. So we're working very closely with all parties in that space to look at how to make that happen.

Question

To what extent has Powerlink explored (with major customers) the flexibility of the major Qld smelter and gas processing loads to manage loading of PQ assets on the NQ-CQ-SQ corridors? (as per the co-ordination on the generator side with solar farms for system strength)

Answer

Fundamentally we are looking at both introduction of larger loads on to the network and similarly, if other loads were to come off the network, and what would be the potential impact. So it's something that we are keeping a very close eye on and as you are indicating, it's becoming more and more complex with opportunities with the renewable generators coming on right across the Queensland network.

When considering the need for future regulated investments on the transmission network, any increase on NQ-CQ-SQ corridors (or any non-urgent and longer term regulated requirement for system strength) would naturally go through the RIT-T process as the appropriate vehicle. This provides transparency to customers in our investment decision making and also maximises the opportunity to draw out potential non-network solutions more broadly, ensuring an equitable treatment of all potential non-network and network options. We actively encourage proponents to come up with solutions to better manage loading of these corridors as a more cost effective option compared to network investment.

Questions taken on notice in relation to the Demand Management Innovation Allowance Mechanism (DMIAM)

Question (a)

What is the Powerlink proposing in demand management programs i.e. Demand Management Innovation Allowance (DMIAM) expenditure for rising peak demand and increasing minimum demand?

Question (b)

It is proposed transmission companies will have DMIAM in the future. How would Powerlink use DMIAM to reduce rising demand and increase minimum demand?

Answer to (a) and (b)

The Australian Energy Regulator (AER) is still developing DMIAM with a draft DMIAM to be released in January 2021. In its earlier DMIAM Issues Paper (August 2020) the AER suggested a likely allowance of 0.1% of Maximum Allowed Revenue (MAR). For Powerlink this is expected to total around $3.4m in the 2023-27 regulatory period. We also expect the DMIAM will require that eligible projects be based on new original concepts or involve technology or techniques not previously deployed in the National Electricity Market or focus on a market segment not previously targeted. Given these likely requirements the exploration of more strategic operation of storage technologies to directly address emerging network needs related to minimum demand levels is one avenue we could consider.

Question (c)

Will Powerlink work with Distribution Network Service Providers on DMIAM?

Answer

In our earlier submission to the AER we stated our preference for the DMIAM to be structured so that multiple Network Service Providers can collaborate and pool funding to jointly fund demand management projects, and that this should include both Transmission Network Service Provider/ Transmission Network Service Provider collaboration and Transmission Network Service Provider/ Distribution Network Service Provider collaboration. The AER's preliminary position is that pooling of funding to jointly fund demand management projects should be allowed. While we have not developed any firm proposals we may look to collaborate with other Transmission Network Service Providers and with Distribution Network Service Providers to establish protocols for the sharing of demand management resources across network boundaries.
