

ESO Technology Advisory Council

TAC-15

Date: 07/06/2024	Location: Virtual
Start: 09:00	End: 12:30

All material from the meeting can be found on the ESO Technology Advisory Council website: <https://www.nationalgrideso.com/who-we-are/stakeholder-groups/technology-advisory-council>

Participants

Attendee	Organisation
Eric Brown (Chair)	Independent
Chris Dent	University of Edinburgh
Alex Waslin (AW)	BP
Alastair Martin	Flexitricity
James Houlton	Mesh-AI
Shubhi Rajnish (SR)	ESO
Cameron Shade (CS)	ESO
Joseph Stepney (JS)	ESO
Naomi Baker	Energy UK
Jim McOmish	Scottish Power Energy Networks
Simon Pearson (SP)	Independent
Anthony Riding	Elexon
Kate Garth	RWE Renewables
Fred Drewitt (FD)	Shell
Andy Hadland	ARENKO Group
David Sykes	Octopus Energy
Jo-Jo Hubbard	Electron

For specific agenda items

Attendee	Organisation
Nisha Bhamidimarri	ESO

Darren Holyoake	ESO
Robyn Jenkins	ESO
Darren Smith	ESO
Simon Evans	ESO
Carolina Tortora	ESO
Craig Pinhorne-Smy	ESO

Apologies

Attendee	Organisation
Teodora Kaneva	TechUK
Alvaro Sanchez Mirales	STEMY Energy

Agenda

#

1. Welcome & Apologies
2. Minutes of last meeting and matters arising
3. Feedback from the last meeting
4. Connections
5. Energy Data Domains
6. Data sharing infrastructure – Pilot Phase
7. Open Balancing Platform update
8. Subgroups update
9. Next meeting
10. AOB

Actions

ID	Action Description	Owner	Due	Status	Date Opened	Comments
A02	Investigate whether teams can be used as an offline communication method with TAC members.	JS	07/06/2024	In progress	01/03/2024	
A03	Organise September meeting in person	CS	06/09/2024	In progress	01/03/2024	
A06	Work with SP and FD to organise a session with another sector	Chair	06/09/2024	In progress	01/03/2024	
A07	Organise a session between MAC and TAC Chairs and tech secs.	CS	12/06/2024	New	07/06/2024	

A08	Send out vote for September location	CS	21/06/2024	New	07/06/2024
A09	Ask for OBP topics TAC would be interested in seeing in the future	CS	01/08/2024	New	07/06/2024
A10	Ask Control Room of the future chair to confirm date of the next subgroup	CS	01/08/2024	New	07/06/2024
A11	Draft 2 pages on what the ESO would like to discuss with Telecoms director	SR / JS / CS	01/07/2024	New	07/06/2024

Discussion and details

#	Topics discussed
1.	Welcome & Apologies The chair led introductions for new attendees
2.	Minutes of last meeting and matters arising <ul style="list-style-type: none"> • Comments on the previous minutes were asked for, none were given and they were accepted. • Updates were given on the actions, with further discussion during AOB.
3.	Feedback from the last meeting A summary was given of the actions taken since the presentations last month.
4.	Connections Darren, Robyn and Cameron presented what the Connections space is, what is being worked on and gave a demonstration on the new Connections 360 application.

Discussion

- Robyn explained what Connections is, how it was designed for an energy industry in a different situation 20 years ago, how it looks today and what the scope of the problem is.
- The Connections portal was described including the journey from 200 initial users internally and externally to the 1000 it has today.
- TAC asked what Queue management was in this context.
 - Queue management is being introduced to help active management of the queue for projects not progressing but holding up positions for others.
 - This was the biggest deployment in the Connections portal since the initial release.
- TAC asked about Distribution connections and the issue of being unable to communicate with ESO or the local TO to understand any problems with connecting, what visibility can distribution connections get of queue management options and timescales?
 - ESO suggested some answers to this question will be given later in the presentation with Connections 360.
 - There is also a lot of work happening in this space with the Electricity Networks Association (ENA) especially looking to increase transparency in this area.
 - Robyn offered to discuss this further offline if that'd be of interest.
- TAC followed up with a question regarding any method of prioritising work in the queue specifically designed to alleviate pressures by removing constraints.
 - Currently this is not possible but it is something Connections Reform is looking to address via improvements such as a move away from first come first connected to first ready first connected or designations for connections of strategic importance.

These are in discussion currently with the code groups so are not definitely going to be delivered. The perception must not be that ESO pick favourites as that is not the case, but options are being considered to work on the problem. There are opportunities for those not involved in the code work groups to get engaged in the process.

TAC pointed out a lot of new flexibility at distribution level is being designed around connection agreements and wondered how ESO are thinking about the interconnection between Connections and Markets and the implications that has on the technologies being designed.

- There are active conversations within the organisation when useful information in one part may be of use in other parts. As well as integration between different applications to remove the need for a person to be aware of this useful information and ensure it is available in different places automatically.
- TAC and ESO share a worry that new connections going through IDNO's due to them being faster and cheaper stop consumers being part of the flexibility markets without being aware of it.
 - ESO are beginning a forum with IDNO's to increase transparency and information flows.
- TAC suggested if you work to make a process easier the outcome will actually be a bigger queue but the work done to make it more efficient has been good. It'd be good to understand overall product goals and outcomes.
 - ESO clarified that in parallel to this work there is a lot of policy work in progress for the connection queue as the queue itself being large isn't the problem, it's the speed of connection and the lack of opportunity to jump the queue. There are many pieces coming together, many detailed in the connections charter for what ESO want to deliver this year to improve the queue and the customer experience.
 - ESO pointed out all of this work is based on what we know today and reform will likely bring new opportunity for improvement.
- TAC asked what the fundamental issue with connections is.
 - ESO responded that it's down to the size of the queue and how there is only so much capacity on the network that can be built at a time and limited amounts of capacity. This isn't necessarily going to be addressed by what the ESO is doing as it's a large holistic problem that needs working on across the industry. ESO is working on transparency of information to allow people to make informed choices. At the same time ESO is working with Ofgem, the DNO's and TOs on the network build and capacity to see what we can do to ease those things.
- TAC suggested queue management should be first needed first out which can be revealed by the new SSEP role.
 - ESO is looking at how that will work, continuously having conversations with the SSEP team but the SSEP journey is very new, where all these teams and problems align is being worked on internally but Connections being an immediate problem could not wait without being worked on.
- TAC highlighted a problem that once prioritisation is in place everyone will write large documents on why their projects are strategic, compelling and most needed. ESO will be in the position of needing to pick between them and will be scrutinised for all of those decisions which will be really difficult to manage.
- TAC recognised there is a difference between resolving the connections problem and creating capacity to help decision making that solves the problem. What is in discussion today is providing the tools, the data and so on to enable the policy decisions.
- Connections securities was briefly covered, where ESO is working on speeding up the process by removing manual steps and improving data quality.
- Connections 360 was described as a way to visual the TEC register on the map of the UK providing information for the industry to make informed decisions. This is going into a beta phase where developers can access it and feedback which had a lot of interest from the TAC members.

TAC expressed this looks extraordinarily useful and couldn't have been a simple thing to do.

As well as being keen to get access to Connections 360 multiple members asked if they could get access to the data.

ESO shared how data is published on the portal but it isn't enough, ESO can do more with API's but it has to be along side the correct policies such as Ofgem best practice which is making data available if ESO has the consent and then the ability to share it.

- TAC was keen to understand how they'd identify how valid or how old the data is
 - This depends on how often ESO is given updates from the projects which should be more frequent once queue management is in place.
- TAC wanted to understand what the blockers were to getting distribution onto this as connecting at the distribution level is challenging in demand constrained areas.
 - This is being worked on in the long term. The action in the Connections Action Plan is to produce a single Digital view of connections for the UK. Each DNO is working on this as individual organisations. The hope is to continue conversation in this space and demonstrate value with Connections 360 to help that.
 - TAC is keen to assist in anyway it can, ESO will discuss within the Connections team and consider if there may be any way to help.
- TAC fed back that ENA have been working on a Digital platform for a number of years where standardisation is key across the DNO's allowing single platforms that can integrate with each other. There are also common platforms in development to show network outages rather than the current situation of going into 7 different applications.
 - ESO pointed out later in the discussion there is a topic on data sharing infrastructure which could start addressing this issue, not purely for connections but the start of a wider industry conversation on how we share data.
- TAC suggested that is a challenge with scalability, Transmission talks about thousands of connections but at distribution there are hundreds of thousands. Heat maps and capacity information already exist down to secondary substations that could have 500,000 secondary substations across the whole of the UK. Getting access to all of this in one location may not be helpful for stakeholders, it could be different platforms for different purposes for different customers.
- TAC asked for SSEP / RESP to be a topic in a future TAC.
- Robyn explained Connections Reform. How the intention is to move from the current first come first served to a more managed first ready, first connected and summarised the short term initiatives that haven't been enough to resolve the problem. How there are proposals currently going through codes to implement an MVP of Connections Reform.
 - Decision on the proposals is not due until November but will be expected to go live in January, development is beginning now to ensure it is ready in time.
 - ESO has further ambition for more automation and integration with other systems.

5. Energy Data Domains

Craig described the new ESO Data Domain Taxonomy, why it is important, what the benefits are and his ask for feedback from the TAC.

Discussion

- ESO clarified the move to NESO has given an opportunity to look at data policies and instead of lifting and shifting they have been assessed based on the NESO ambition and a wider more industry whole system and industry context.
- TAC commented it's great to see the Taxonomy as everyone can attest to how better things go and how less confused everybody becomes when these disciplines are imposed consistently. However the guidance was to not create those standards without talking to the people who supply the data.

ESO explained they are at the stage of identifying those stakeholders and candidates for domain and sub domain data owners which hasn't extended outside of ESO yet. To get this right that is the next stage to gain that understanding from external stakeholders.

TAC asked for confirmation as to whether this was a map of the primary system data lives or a map of the data lake / data warehouse architecture and analytic systems

ESO answered this was derived by functional purpose of data not where it lives. It is agnostic of where we can use it. Customer is an example where everyone would have their own views.

- TAC commented that made sense but asked how would ESO handle cross domain products. Especially when teams build useful things across domains.
- ESO responded this is a logical model in regards to how it matches the business areas. When areas come together that data product will have a different set of ownership. Lower level data models underneath it relate to the data lake. This is to help general understanding.
- TAC feedback that the view is nice and clear. The responsibilities are clear internally but are there any responsibilities regarding sharing data wider outside of ESO for interoperability.
 - ESO's general stance is to share data as much as possible however as much of the data comes from third parties the data cannot be shared without fully understanding the lineage.
- The TAC raised a point regarding data itself might not be enough when sharing as some people will assume data is suitable for purpose based on if it is correct or not, however context such as how data was produced can be very important as part of the documentation.
 - ESO clarified that data though the Data and Analytics Platform (DAP) is being documented with sources of information including any transformations so there is clear lineage and descriptions of data processes enabling ESO to share data with confidence.
- TAC highlighted this looks great if building from scratch if you didn't have to worry about tonnes of existing data it would be easy. This however has been addressed as this is conception and there is detail underneath on how we get from one place to another.
- TAC warned people shouldn't confuse measured data with what is modelled forecast or estimated.
 - ESO agreed its not necessarily that people don't understand the difference but in practice you should have the guide rails much more clearly.
 - Data practitioners across organisations and wider will understand the nuances. If you make that data available internally or across industry not everyone will understand those differences and all of those frames and detail need to be brought to a level of non practitioners which can be quite daunting.
- The TAC asked where Spatial data would be in the Taxonomy.
 - This led to a discussion where it was previously represented however it was removed as it can be associated across the taxonomy. The decision was taken to include it in relevant sub domains.
 - ESO is happy with the model as it is but will confirm if it works as more talks take place and the roll out begins of policies and controls
- TAC brought up a similar conversation regarding environmental and supply chain data.
 - ESO agreed they are all good questions to explore as well as the ESO to look more outside for feedback on the Taxonomy as it is currently very internally focused.

6. Data sharing Infrastructure – Pilot Phase

Simon set the scene with the virtual energy system to create the ecosystem of connected digital twins to answer high value questions we're unable to answer today. The Data sharing infrastructure is the first step on achieving that goal. Simons presentation discussed what Data sharing infrastructure is, how it will be achieved and the timelines.

Discussion

TAC commented that over the years this has taken great shape and from an operational side of ESO data sharing is moving quite effectively, are there specific use cases which require this extra level of work and are there plans to pull those existing data sharing uses cases into this infrastructure in the long term?

ESO confirmed other uses cases across the organisation will not be touched, this is another mechanism put in place for bilateral data sharing. This should be complementary to existing sharing methods not conflicting.

- Further comment from ESO explained as a system operator there are ways to exchange data but this is data sharing infrastructure for the entire industry where everyone can exchange data amount themselves.
- The idea is not to merge tech too much as this needs its own independence.
- TAC challenged that there is a lot of data sharing already and by 2028 that will be foundational to how the industry operates and asking people to redesign that may be difficult.
 - ESO explained that across the industry people are at different stages of that journey. Some will say the timeline is too long as they are already doing it but other organisation will say it is too fast. ESO is trying to find the sweet spot and there is a lot of debate related to it. The idea is not to hold anyone back but to make it not too painful for the advanced and not painful for those behind.
- TAC asked how ESO will convince people to be part of this and whether DNO's will be mandated to do this.
 - ESO explained this is really an industry change program rather than a technology change programme and need to do this with the sector not to the sector. ESO are being proactive in engagement, talking about this as much as possible but it is also part of RII03.
- TAC asked how do we make this not be viewed as an ESO ask for data and only seen as the regulated side of the industry are going to use it?
 - The inclusion in RII03 can takes away from the intent which is to create something powerful enough for people to want to use it but Ofgem are supporting this which ties in with the regulatory part of the industry via the funding for doing things like this. The ESO want to encourage organisations to think about independent use cases.
 - Similarly to earlier there are two different audiences, some who understand the vision and will put the investment behind it and others who will wonder how does it fit into their digital investment, data and interoperability.
 - The second group may be missed in the slides but not in the intent, ESO will take this away to resolve.
 - This is not the first time ESO have had these questions. ESO is working with the National Digital Twin as their remit is specifically cross sector. There have been good discussions with the Water sector and the transport sector.
- ESO wants to accelerate the timelines and asks the TAC to help reiterate the messaging and start building some pace to this.
- TAC questioned the ask to embed containers in other people's deployments.
 - ESO explained this was an option for those who didn't want to build it themselves. The API specifications will be available if you want to build it but some organisations who don't have that ability may want the plug and play option.
 - This was designed to speed up adoption and open up the capability for a marketplace for people to provide solutions for each other.

7. Open Balancing Platform Update

Nisha presented the latest update to the OBP roadmap and the reasons for them, what Fast Dispatch is as well as graphs demonstrating types of instructions since the OBP go live.

Discussion

- The OBP roadmap has changed to reprioritise some features over others. Nothing has been removed.
- There was a presentation on battery and small BMU instructions since the go live in December followed by an explanation on the OBP release schedules.
- ESO asked for feedback on the frequency of communication with the industry and given OBP present each quarter have suggested ESO will ask what updates TAC members will find interesting going forward.
- The TAC asked how OBP handles constraints.
 - This is being improved iteratively. Starting with seeing the constraints followed by optimising within a constraint and eventually optimising across all constraints.

8. Subgroups

- Digital and Data Strategy meeting was held 12th April with the next meeting planned 12th July
- The Control Room of the Future had a meeting 17th May focused on refreshing the meeting. Date of the next session is TBC but will be before the main TAC in September.

9. Next meeting

- 6th September 2023, 09:00 – 12:30 location to be confirmed.
- Discussion was had regarding potential locations. A suggestion was put forward for a possible location. A poll will be sent out for voting with the aspiration to have a location decided within 4-6 weeks to give members a chance to organise any travel.

10. AOB

- AOB was discussed prior to the Next meeting as there was an update on engaging with other sectors.
- A discussion was had on engaging with other sectors. A TAC member has contacts within the telecoms industry who would be happy to talk to ESO and share experience in large transformation over the last 25 years.
 - The Control Room of the Future Chair has been contacted in case this is useful for operations and control room teams and TAC members will work on a 2 page document on what they would like to discuss with the telecoms industry.
- Other TAC members have contacts within National Air Traffic Services and can organise engagement at different forums