

ESO Technology Advisory Council

TAC-11

Date: 02/06/2023 **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 |
|-----------------------------|---------------------------------------|
| Vernon Everitt (Chair) | Greater Manchester Combined Authority |
| Chris Dent | University of Edinburgh |
| Andy Hadland | Independent |
| Fred Drewitt | Limejump |
| Alvaro Sanchez Mirales | STEMY Energy |
| Alastair Martin | Flexitricity |
| Kate Garth | RWE Renewables |
| Melissa Stark | Accenture |
| Shubhi Rajnish | ESO |
| Cameron Shade (Facilitator) | ESO |

For specific agenda items

| Attendee | Organisation |
|------------------|--------------|
| Gary White | ESO |
| Bernie Dolan | ESO |
| Sangeeta Agrawal | ESO |
| Lyndon Ruff | ESO |

Apologies

| Attendee | Organisation |
|----------------|--------------|
| Teodora Kaneva | TechUK |

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|--------------------|--------------------------------|
| Randolph Brazier | Energy Networks Association |
| David Sykes | Octopus Energy |
| Jo-Jo Hubbard | Electron |
| Simon Pearson | Independent |
| Natalia Kroutikova | BP |
| Jim McOmish | Scottish Power Energy Networks |
| Naomi Baker | Energy UK |
| James Houlton | Amazon Web Services |
| Peter Stanley | Elexon |

Agenda

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1. **Welcome & Apologies**
2. **Minutes of last meeting and matters arising**
3. **Feedback from the last meeting**
4. **Responses to TAC survey**
5. **Digital Strategy update**
6. **Ways of Working**
7. **Artificial Intelligence Centre Of Excellence**
8. **Open Balancing Platform Update & Roadmap**
9. **Subgroups update**
10. **Next meeting**
11. **AOB**

Discussion and details

Topics discussed

1. **Welcome and Apologies**
 - The chair welcomed everyone to the meeting.
 - The chair summarised the Agenda.
2. **Minutes of last meeting and matters arising**
 - The minutes from the last meeting are out for circulation and will be uploaded to the website in the next couple of weeks.
3. **Feedback from the last meeting**
 - The feedback received at the last meeting on the Digital strategy, the reporting framework, the open balancing platform and the data analytics platform were summarised.

4. Responses to TAC survey

Cameron Shade gave a summary of the feedback received by the TAC survey including 17 members have decided to continue supporting the ESO as members of the TAC.

Discussion

- The chair thanked everyone for their feedback and renewed participation.
- The Chair and Cameron to regroup offline and reflect on feedback in particular building out other representation for the TAC.

5. Digital Strategy update

- Gary White gave an update on the Digital strategy including timelines, the FSO transition and investing in people to make a Digital first mindset work.

Discussion

- Challenge on the slides by the TAC that zero carbon operability is not a UK Energy industry target it's an ESO target.
- TAC suggested the ESO could get caught short due to the rest of the industry utilising AI already leading to the ESO unable to respond to things in real time.
 - Suggestion that working with catapults or universities to drive results would help working towards requirements in the 2030's.
 - Further comment that although a lot of technologies exist in many industries it's the speed of implementation delaying it.
 - TAC comment that in the energy industry the timeline is set externally by society requiring the pace to get quicker.
- TAC highlighted currently the ESO can freeze the people they are working with and deal with them in a methodical way due to the gate that exists. That may change in the future due to the rules of the energy market. That gate may no longer exist in the future and this needs to be considered as the ESO proceeds.
- TAC feedback that in dealing with the ESO the people at the implementation level are not working in the same way as these slides.
- TAC comment that utilising AI rather than manual systems is actually less code and a framework could be used to assess the level of automation required.
- Suggestion that generative AI could be utilised that's not hands on but can watch what is happening and create circuit breakers to stop anything before it happens and alert people. Means people do not need to be in the detail but can get visibility.
- TAC comment that its important to utilise AI in designing the capacity markets however it's likely not discussed in policy as to do that we need to know what's possible and right now we don't. This needs to be tried while we're designing the markets.
- ESO response that the challenge is transformation to meet ambitions and outcomes must be balanced beside maintaining operational stability today and continual development of new services beside them.
 - Comment that in hindsight some of the change in delivery is taking longer than expected and a subgroup might be useful in doing a deeper dive into some of the areas and where things can be accelerated.
 - On a positive note, in some areas people are self-serving, not having to rely on IT to deliver change by utilising the data provided from IT systems which often were a blocker. This is positive and to be encouraged but there are still whole areas very dependent on IT.
- Chair suggested a Digital subgroup to understand how other organisations have handled this transition.
- ESO question on how we train people to adopt a digital mindset and what worked in their organisations.

- TAC suggestion that the best way of doing that is providing the tools, supporting people and allowing them to do their jobs, its not always the big programmes that enable this but allowing people to get on with it.
- TAC feedback that the slides were good and a great practice to see.
- Change like this can scare people into disengagement.
- The best thing to do is identify those who want to make it work and build teams around them to achieve it.
- ESO considering how we could utilise AI for our customers such as making grid codes more accessible.
 - TAC gave some contacts who might be helpful for this.
- TAC suggestion to utilise AI to look for slow parts of code and improve efficiency.
 - Further comments asking to be careful utilising AI for code scanning and only doing it internally due to security concerns.
 - ESO comment that Digital strategy is happening in parallel to our security, working very closely together especially with cyber security.
- ESO to share more of the strategy to get further insights especially gaining outside perspective on the personas.

6. Ways of Working

- Sangeeta Agrawal presented the goals of the ways of working team to increase the pace of implementation and the framework being utilised to deliver it.

Discussion

- TAC comment that colleagues with experience in this area have confirmed this is absolutely the way to go.
 - The challenge is how deep does this go into the company.
 - The ESO strategy to achieve this is to tackle one thing at a time starting with engineering processes and identifying champions with the right skills and mindset.
- Many comments that the TAC liked the plans.
- TAC question regarding what ESO means by multi-disciplined team.
 - How often do the developers sit in the control room for instance and vice versa?
- TAC suggestion on utilising performance and reward to reinforce this.
 - ESO plan is to put the engineering practices in place first as its too early to measure and reward people against it. That is a step for further down the line.
- Comment that the slides are honest and creating a no blame culture is difficult. It needs to come from the top.
 - Automation and measuring are easier as there is no emotion involved.
 - Need to find the people with deep knowledge and work on the best way to share that. It's difficult.
 - ESO intention is to create communities of practice to encourage this knowledge sharing.
 - Good example of this is Connections where the ESO created space for the team to work out how they could work differently and supported them in doing it.
 - TAC suggests identifying people with the common language between the current practices and the new digital side to help with the transition.
- TAC comment that the most important thing is delivering value and processes like this can draw out for a long time.
 - ESO explained the Digital strategy Gary presented is the medium/long term future but the ways of working presentation is the now and demonstrating value in live programmes currently.

7. Artificial Intelligence Centre Of Excellence

Lyndon Ruff from the AI COE presented what the AI COE is, the challenge with maintaining data science, AI skills, capabilities and the ESO's suggestions on resolving it by creating an AI workforce for the energy industry.

Discussion

- TAC comment that the AI COE has some solutions to AI challenges previously mentioned in the session.
- TAC has some contacts that could be included in the list of Global AI experts and are keen to sign up to knowledge sharing.
 - Another TAC member has suggested contacting the AI COE to the Global power system consortium.
- TAC excited this is happening as they've wanted it for some time.
 - Comment that to make this work the ESO needs to be prepared to compete on Salaries with the likes of Google Deepmind.
 - To attract and keep this level of talent they can't be a separate innovation team, they need to be in TechOps working with people like the OEMs.
 - TAC feedback is it is a good direction overall and they hope it gets some traction.
- TAC offered to put ESO in touch with the Royal Academy of engineers as they have a Digital stream.
- TAC suggestion to utilise AI to identify needed skills in different industries. Example given was the Houston Hydrogen centre who did this.
- TAC suggested the ESO purpose needs rebranding to attract engineering talent who currently all want to work in Formula 1
- ESO recognise the value proposition needs to be considered.

8. Open Balancing Platform Update & Roadmap

- Bernie Dolan provided an update on OBP and the previous PI(7).

Discussion

- OBP request to come back to the TAC for advice on release 1.1 (March 24) as the optimiser will get new functionality such as wind units and that is difficult to forecast.
- The chair thanks Bernie for the update
- TAC suggests that making wind forecasting accurate is possible stating Italy pairing wind with batteries to ensure the forecast is achievable even if the weather changes.
- TAC questions regarding what penalties exist for incorrect forecasting to encourage people to get it right.
- TAC comments that the issues with power available are known and suggest a conversation with the power available group.
 - Could be that its not the forecast being inaccurate but the data the ESO is receiving.
- TAC comment on renewables that there are strong business cases for solar battery combinations.
- TAC wanted to understand the small BMU zone and whether how it worked was going backwards.
 - This isn't the case it has a dedicated desk that can instruct a lot more of them quickly in the future with that functionality rolling out further as the open balancing platform progresses. Discussion to be held offline to answer any further questions
- TAC comment that in Romania they declare forecasts 24 hours in advance which makes it inaccurate. ESO needs to consider how they measure accuracy as if someone was accurate previously it doesn't mean they always will be.

TAC discussed issues in North America integrating optimisation methods and what to do in different scenarios. Suggested the TAC could organise a group of people to discuss optimisation or scheduling under uncertainty if it would be of assistance.

- Bernie will bring further content to the TAC in the next quarter or potentially the control room of the future sub group.
- TAC questioned if release 1 of OBP would be big bang.
 - Response is that it's going to be gradual.
- TAC challenge that the data capture on skip rate is not good enough for the ESO to have reliable analysis to measure properly how things have changed.
- TAC to provide research offline and ESO to ensure it gets looked at internally.

9. Subgroups

- There have been no sub-group meetings since the last TAC.
- The Chair and Tech secretary to coordinate restarting the sub-groups.

10. Next meeting

- 1st September 2023, 09:00 – 12:30.

11. AOB

- The chair passed on his thanks for the papers, the people who prepared and sent them in advance and the active participation from the TAC members.