

**Electricity
Transmission**

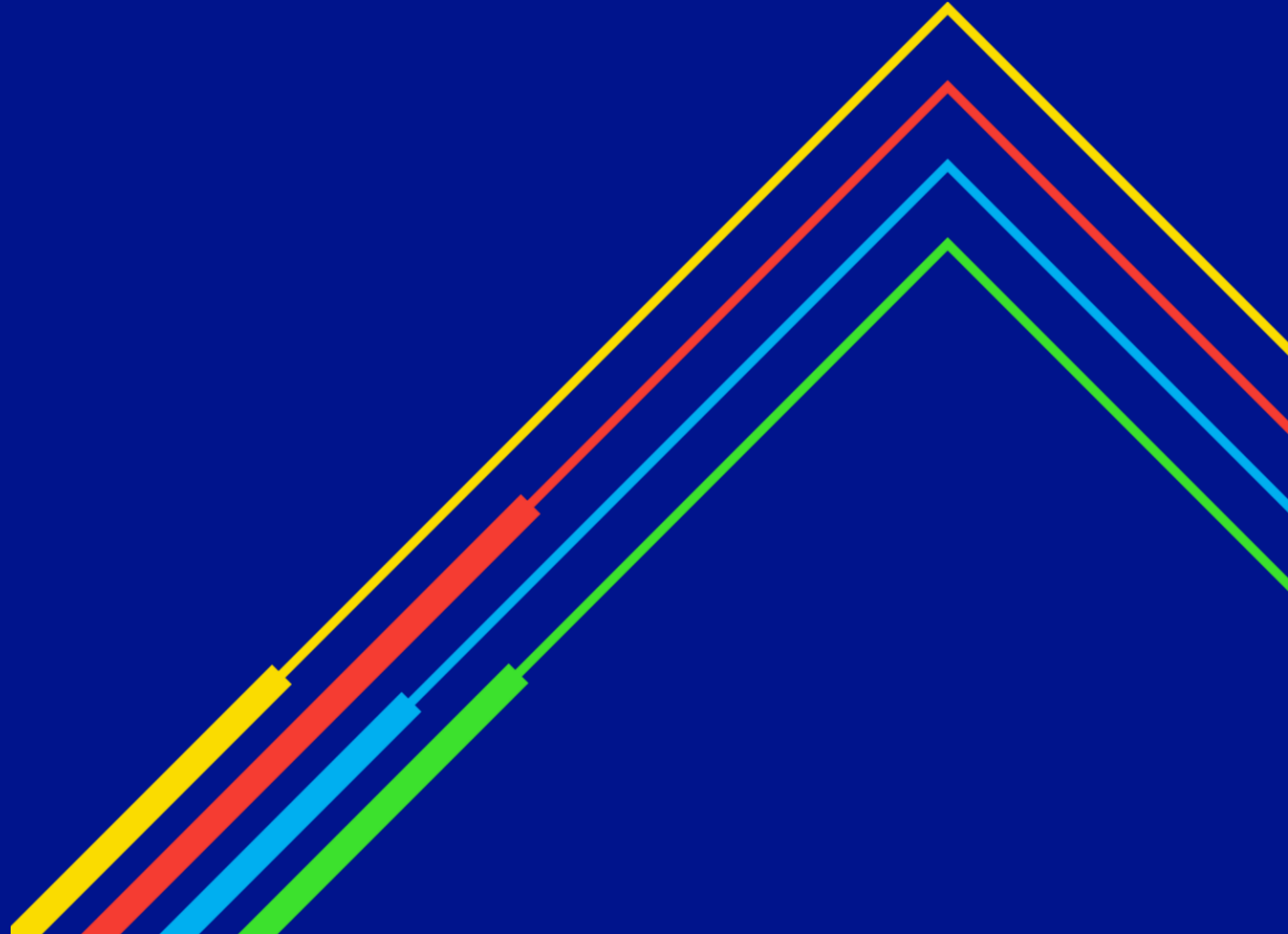
Connection Reform Priorities

**Stuart Jones, Senior
Project Manager
South Wales and the South West**

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Market Context



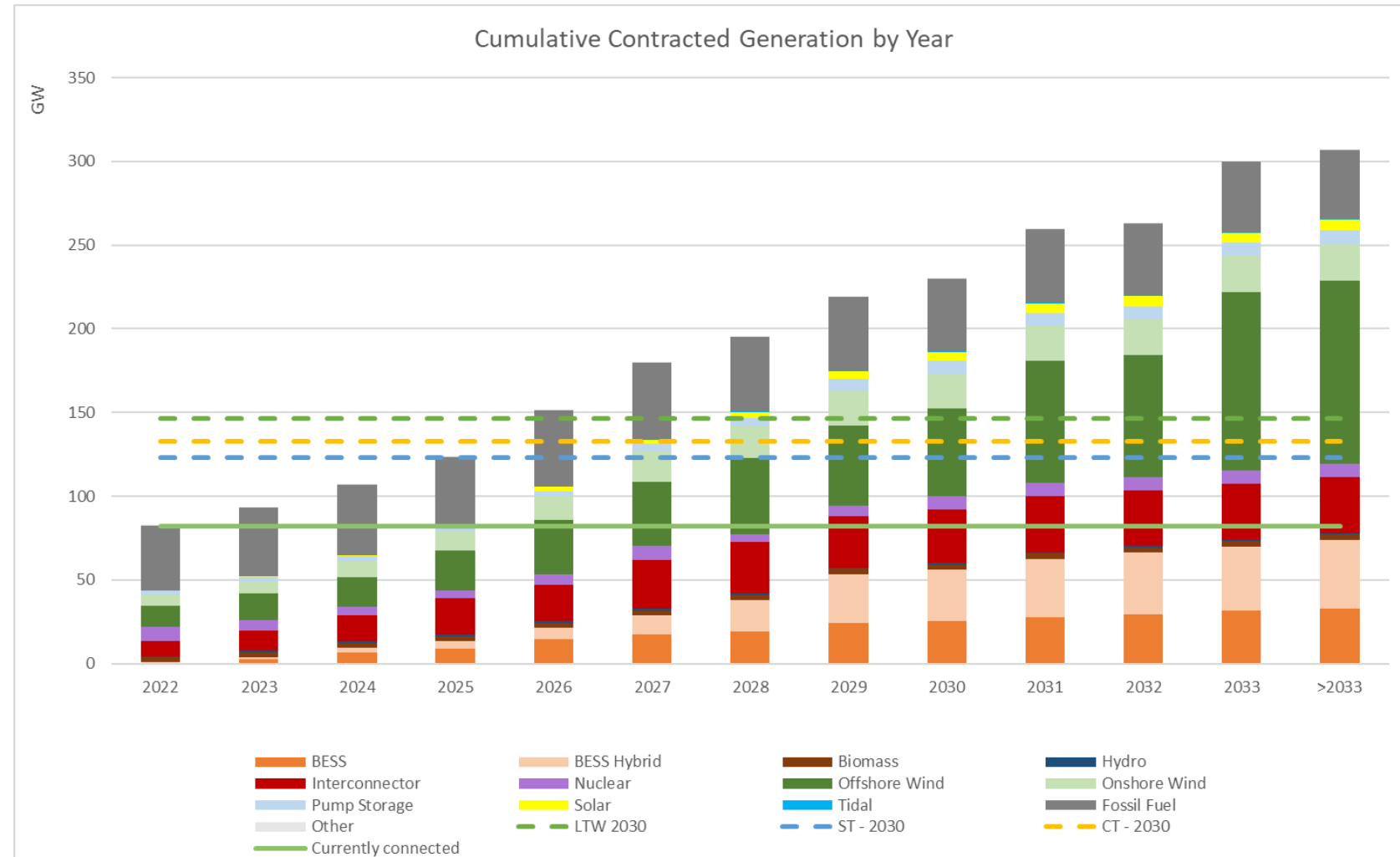
The connections problem is a complex web issues, however it is clear to see; The volume of contracted capacity doesn't match our view of expected need

The ESO's FES scenarios outline the expected Transmission capacity required by 2030.

By 2030, the volume is approximately three times what is currently connected.

The nature of the connections process results in an allocated point of connection for each contracted customer, triggering significant requirement for new substations and network reinforcement.

The oversubscription of contracted customers results in uncertainty for network investment required.



Each customer project requires a bespoke physical connection to the transmission system



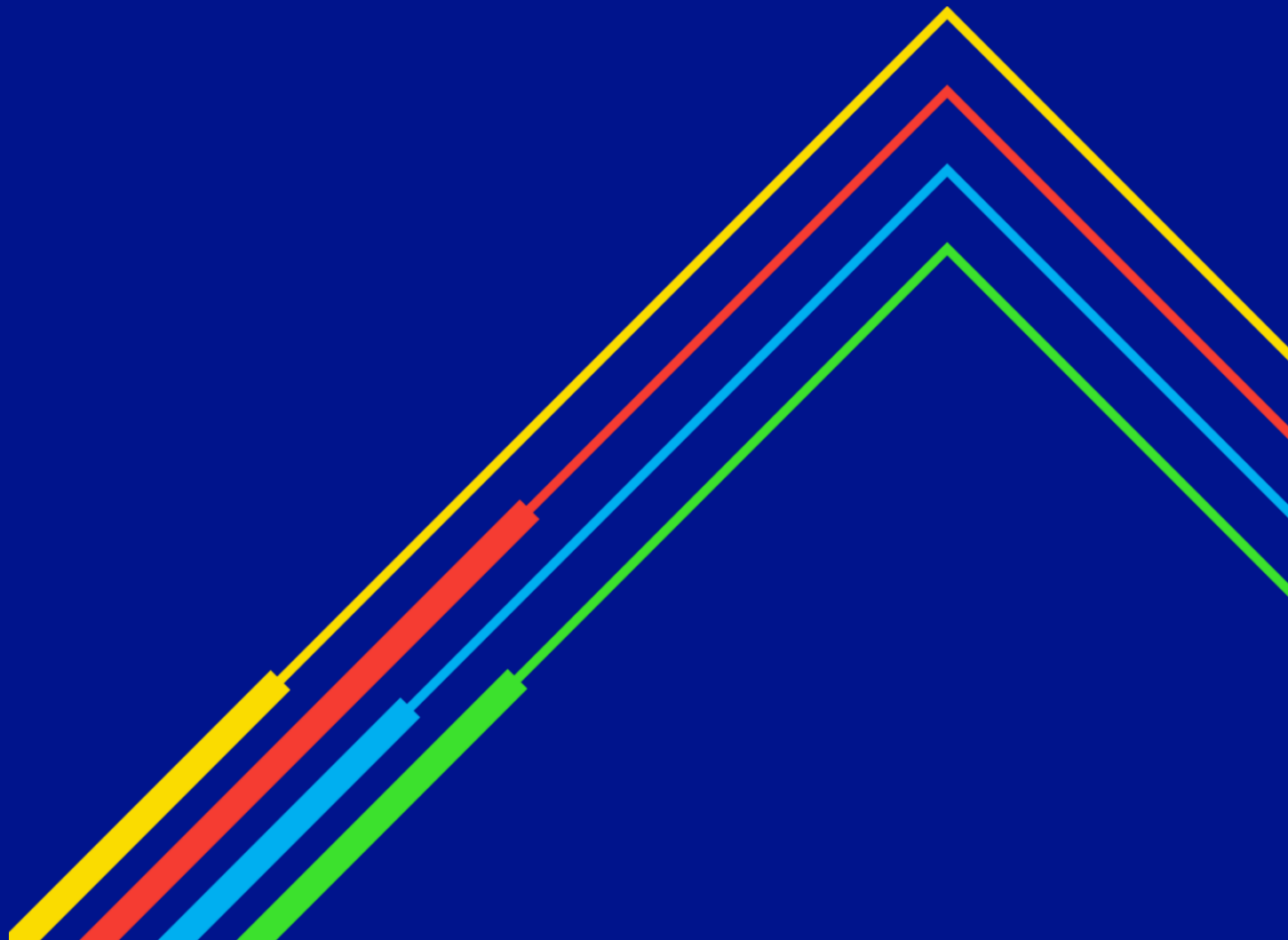
Connection contracts today detail a physical point of connection for customers. We are obligated to do this under the framework (i.e. a point of connection within a substation)

The nature of oversubscription with the contracted background therefore drives the need for additional substations to be built to allocate points of connection to each customer.

The first come first serve queue methodology means that both real and speculative projects can co-exist in existing and new substations.

The need for a prioritised Plan

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High volume of unconstrained applications and insufficient contractual obligations are driving inefficient allocation of physical works and delays

Three components to connections:



Market



Contract



Physical works

- | | | | |
|---------------------|---|---|---|
| Description: | <ul style="list-style-type: none"> • Open market for generation and demand customers to seek a connection to the grid • Low barriers to entry | <ul style="list-style-type: none"> • The detailed connection arrangements are captured in a contract (Connection Agreement) • Treated equally on a first-come-first-served basis | <ul style="list-style-type: none"> • A physical connection point (a bay in a 'substation') to 'plug-in' to the grid • It <i>could</i> include increasing the size, or number of wires behind the connection point to support increased capacity • Contracts require a bespoke offering |
| Issue: | <ul style="list-style-type: none"> • Oversubscribed pipeline of customers contracted to connect: receiving more applications to connect than is forecast to be needed • Analysis shows circa 20-30% of projects progress to connect creating huge uncertainty | <ul style="list-style-type: none"> • Lack of contractual disciplines: very few obligations on customers to demonstrate their likelihood to proceed or need for their works. This creates potential blockages in the pipeline for other participants to connect. | <ul style="list-style-type: none"> • Inefficient allocation of works: combination of unconstrained market and limited contractual disciplines can result in forward plan of physical works that is uncertain and inefficiently allocated • Creates backlog and delays for all |

A two-step process to address the connections issue



Step 1: Rationalise the pipeline of contracted connections to **create a realistic view of the future**

- Customers to reassess desire / ability to progress to connect
- Re-modelling of storage will enable faster connections
- Facilitate faster distribution connections
- Reallocate capacity

Step 2: Enable future connections through network investment, innovation and reform of the connections process

Current actions: With Industry and Ofgem we are already taking action to address some of these issues

ESO's 5 point plan to accelerate connections

1. **TEC Amnesty until April 2023** – allowing developers to terminate contracts without charge
2. **Updating modelling assumptions** – to reflect current connection rates
3. **Changing treatment of storage** – allowing them to connect faster and freeing up capacity
4. **Development of new contractual terms** – to manage the pipeline of connections more efficiently
5. **Interim option for storage projects** – enabling more non-firm connections sooner

- To help implement this plan, from 1st March 2023 applications received in England and Wales will implement a new 2-step offer process
- It will importantly provide a temporary freeze to additional connection requests being layered on top of a largely speculative pipeline of contracted connections
- The 2-stage process creates space and control to materially redesign the current process and product offering, enabling us to take the further action required

Further action is needed in two key areas:

Step 1. Rationalising the pipeline of customers contracted to connect

← Immediate priority

Step 2. Enabling future connections through network investment, innovation and reform

← Future focused (policy paper/ESO consultation)

Step 1: There is an urgent need to rationalise the pipeline of contracted connections to create a realistic view of the future

- We have broken down the pipeline to better understand where action needs to be taken.
- The volume of contracted MW from some technologies, such as wind, are roughly aligned to NetZero requirements
- Action is needed to address specific areas of the pipeline
 - Solar applications are 4x the volume of NetZero requirements
 - There remains a significant volume of gas plant within the pipeline to connect. Whilst it may be required for security of supply in the short term, these may inevitably be phased out in line with Government's renewable ambition
 - Storage and embedded generation need to be remodelled to understand its actual impact on the transmission network.
 - DNOs should have the ability to manage their own connections

Step 2: Our ambition to enable future connections through network investment, innovation and reform of the connections process

We need a **regulatory framework** that enables **building ahead of a specific customer trigger**.

'Anticipate and Invest'

Design and offer a **new connection product** that can be **used by many** rather than bespoke for one.

Develop and sell– 'Plug and Play'

ESO's reform of the connections process needs to ensure that **only credible projects can access connections** - ideally using **strong commercial signals allowing market dynamics to work** rather than centrally determined.

Tighten market entry threshold

ESO's reform must also ensure that where a customer cannot progress, they cannot be allowed to hoard capacity or block other connections – **they must Connect or Move**.

'Connect or Move'

Next Steps and timeline

ST changes within existing frameworks

Implement two stage offer process and optimisation

TEC Amnesty output known

Understand optimisation capacity required and strategy to implement

Queue Management decision sought

Updated contracts to reflect HND, CPA, Treatment of Batteries

Optimisation of two stage offers

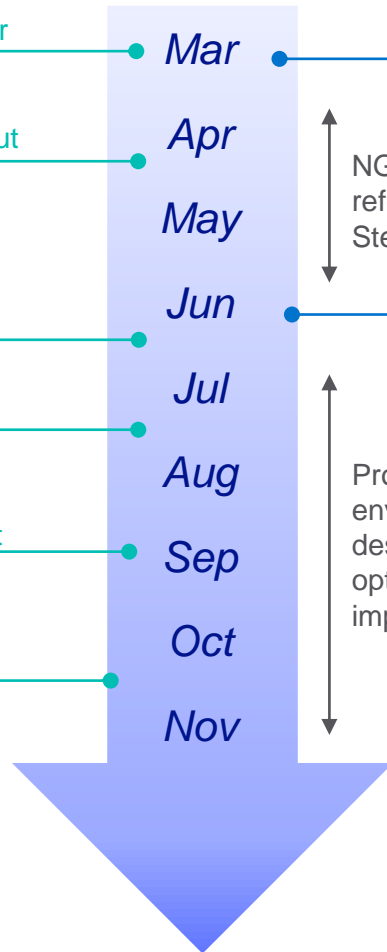
Wider connections industry reform

NGET stakeholder engagement to develop options

NGET representation at ESO reform design / challenge . Steering groups

ESO Consultation on connection reforms options

Programme is TBC, but we envisage further work to design a recommended option through to implementation of the option



- Strategy today is focused on enabling short term changes within the existing framework and developing proposals on wider reform to the connection process which will fix the root cause.
- Short term change objectives:-
 - Implement a new Construction Planning Assumption that enables the potential acceleration of contracted customers.
 - Different treatment for batteries that decouples them from the impact of triggering wider system reinforcements.
 - Strengthening the contractual tools through the implementation of queue management.
- Wider connections Industry reform:-
 - Provide a recommendation for a connection process that is fit for delivering at the pace for net zero.
 - Projects that are ready are prioritised.

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