Connections Reform

June 2023

ESO

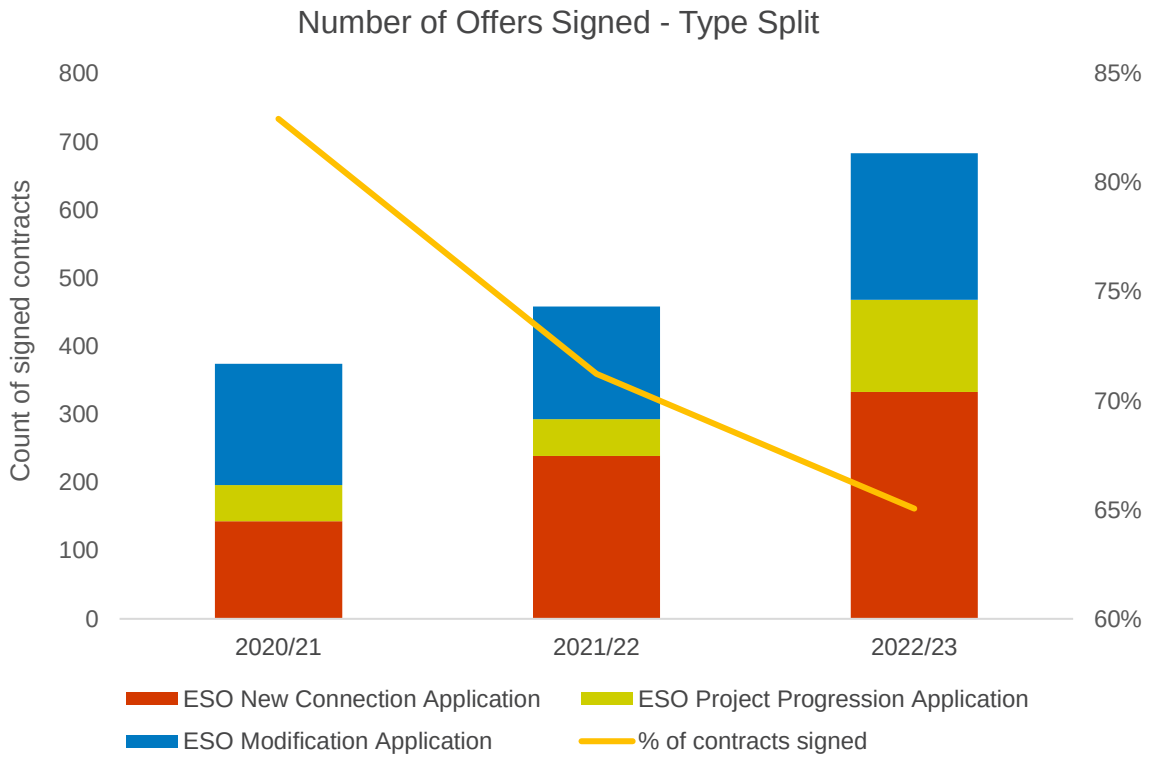
Context

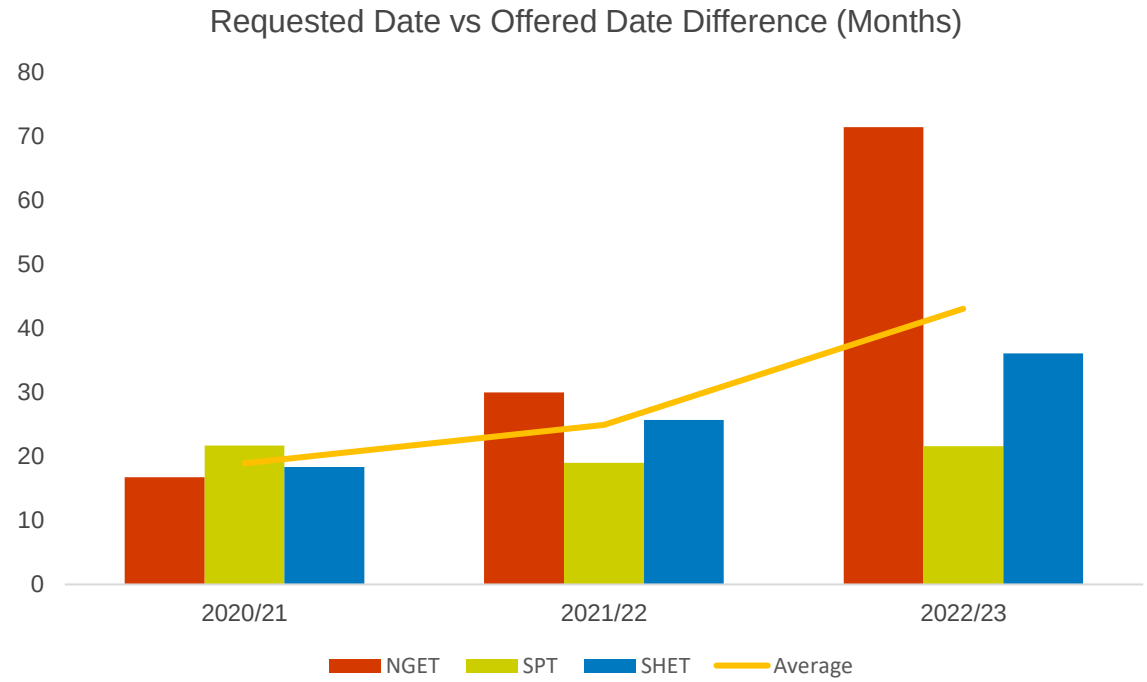
James Norman &
Susana Neves e Brooks

Acceptance Volumes

We are experiencing a greater volume of applications and acceptances with later connection dates.

The volume of new applications grew nearly **2.5x in three years** – driven mostly by storage.



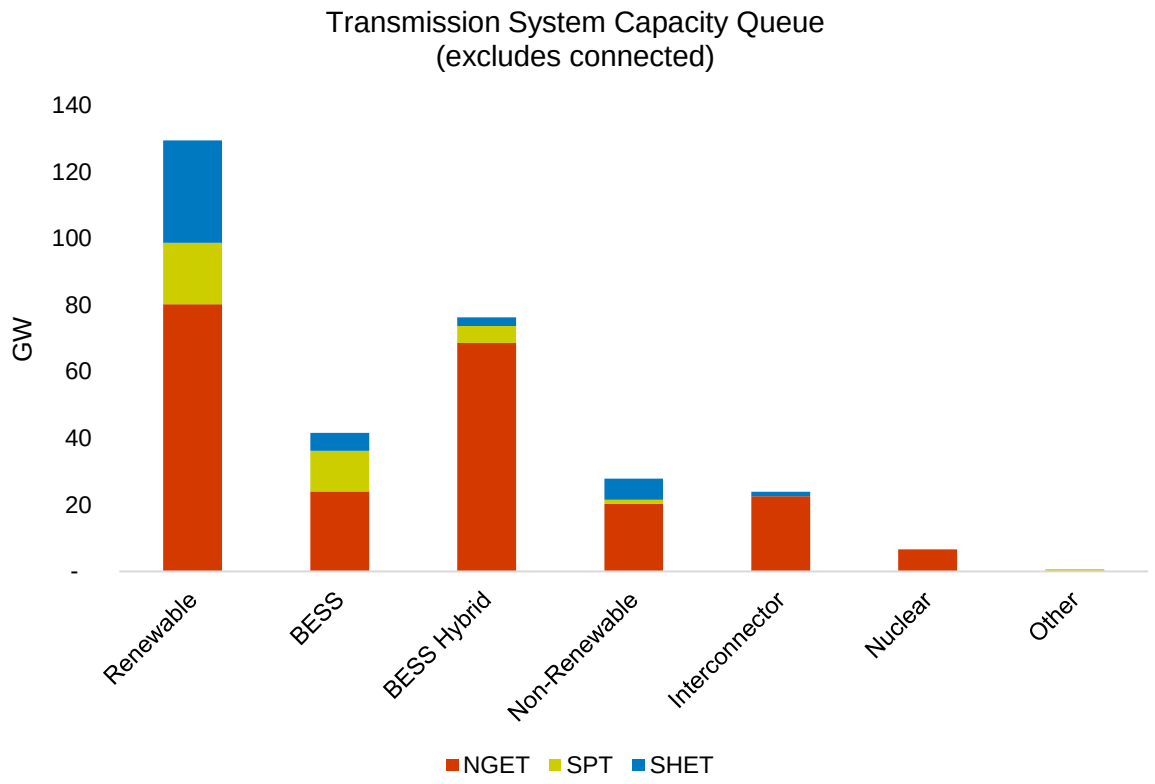


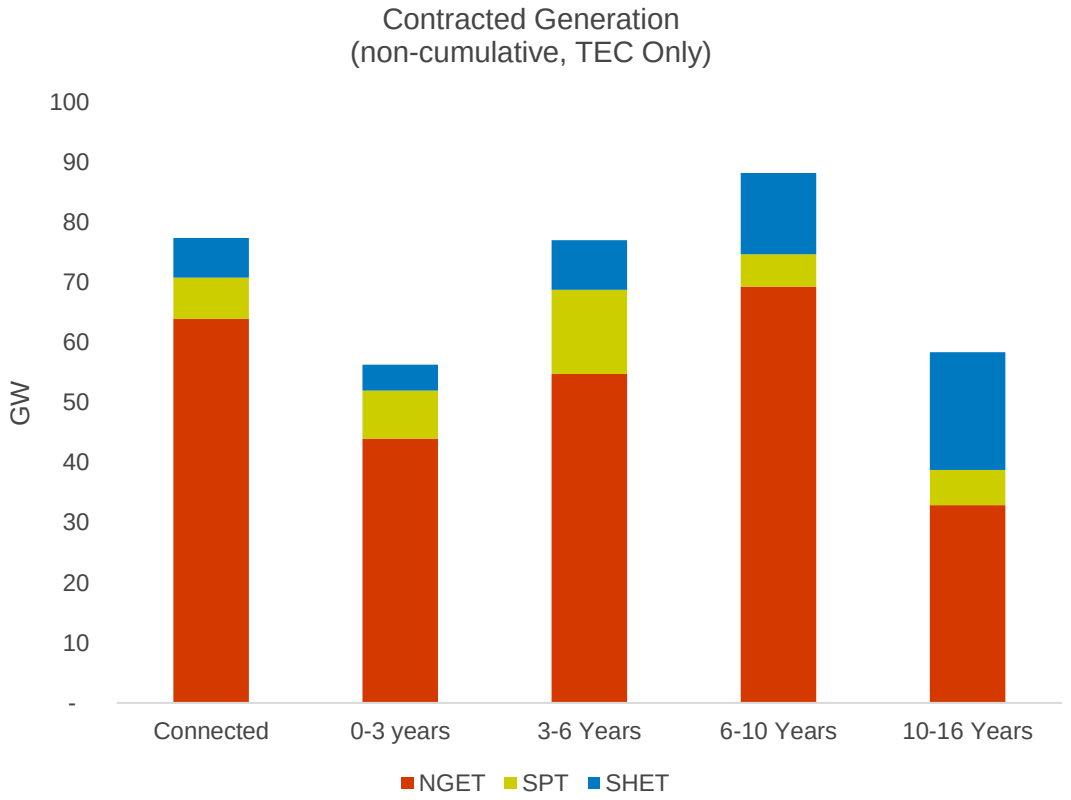
All charts based on data as of 31st March 2023

Connections Queue

The contracted background is still growing, with more applications offsetting a falling acceptance rate to result in a process with more wasted effort.

Over **306 GW** of generation projects are currently seeking to connect to the electricity transmission system, yet our data shows that up to **70%** of those projects may never be built.





Our 5-Point Plan

Our 5-Point Plan is helping to manage some of these immediate challenges

1. TEC Amnesty

This was the first TEC Amnesty since 2013. We received a total of 8.1GW of applications and are currently working with Ofgem to allow the termination/reduction of TEC process from connection agreements.

2. Construction Planning Assumptions Review

We are reducing the assumptions around how many projects in the queue will connect. We expect this will allow some connection dates to be brought forward and reduce works in existing agreements.

3. Treatment of Storage

We are revising the way storage connections are modelled using insight resulting of a better understating of its behaviour. These changes will allow storage to connect quicker and support unlocking more capacity to connect others.

4. Queue Management

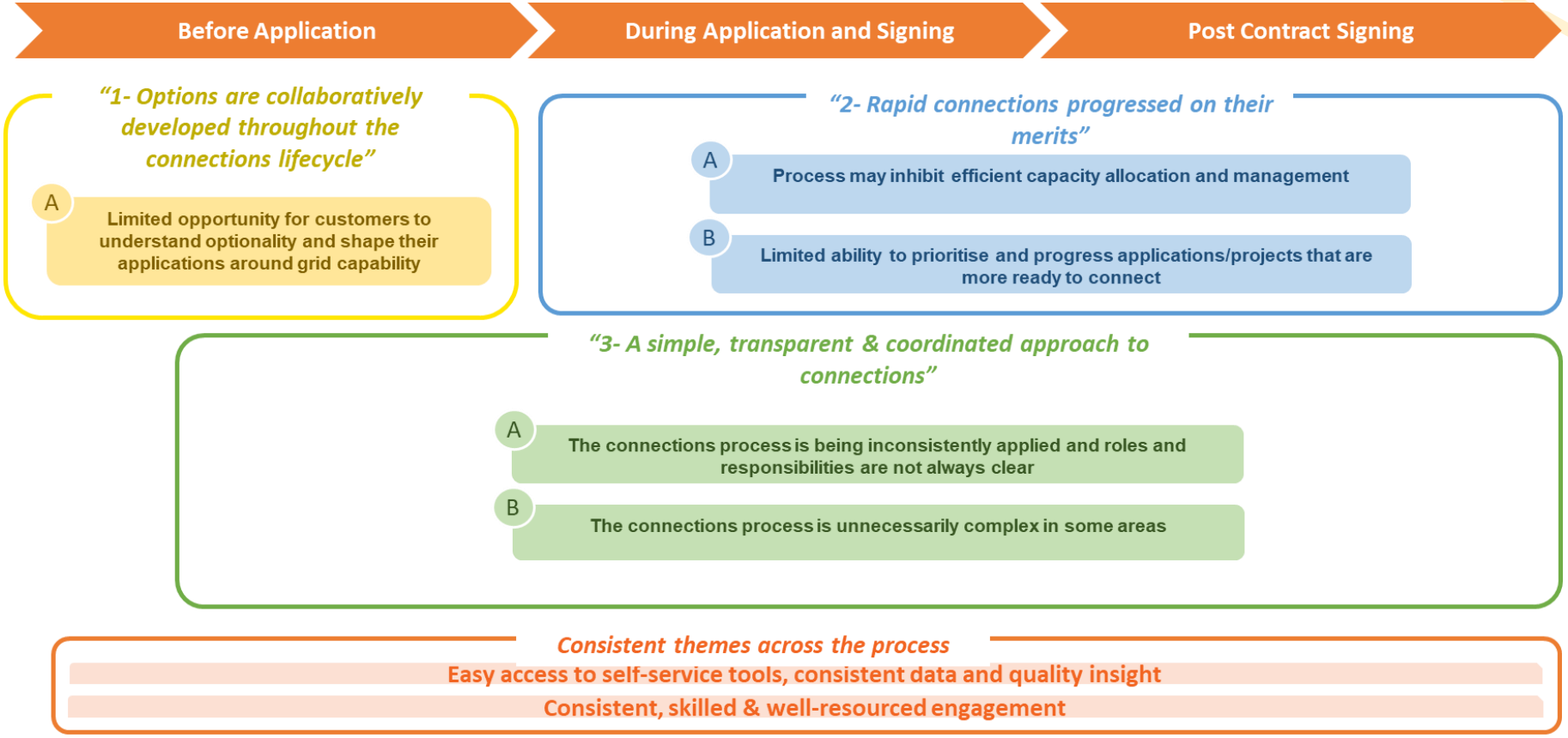
There is currently no mechanism in the CUSC to terminate projects that are not progressing. If changes are approved, it would allow us to terminate projects that are not progressing against their contracted milestones and agreed timescales.

5. Non-firm Offer Development

The policy aims to accelerate the connection of energy storage projects by removing the need for non-critical enabling works to be complete before they connect. We continue to look at the opportunity to roll out this approach to other connections.

Phase 1 Summary

Phase 1 focussed on developing the case for reforming the connections process and so developed core themes (for a reformed process) based on stakeholder feedback.



The Phase 1 Case for Change can be found on our website here.

Initial Recommendations

James Norman

ESO

Phase 2 Structure Summary

We considered a wide range of feedback from industry as part of Phase 2

The method of creating the options was;

1. Gather industry ideas and prioritise these ideas.
2. Evaluate the priority ideas collaboratively with industry.
3. Test and recommend evaluated ideas with project governance.

- ESO developed initial Objectives and Criteria as part of Phase 1
- Project governance refined the Design Objectives and Design Criteria to create a final set used to evaluate what ‘good’ was in Phase 2.

Design Objectives	Design Criteria	Reference
Creates a more coordinated and efficient GB transmission system and network design	Better informs when and where to connect	1
	Enables economic, efficient, coordinated network design	2
	Delivers more efficient use of network capacity	3
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Consistent, skilled and well-resourced engagement	Provides coherent customer experience across networks	16
	Skills and capabilities matched to responsibilities and customer needs	17
Future proof process	Adaptability to changes in the market landscape	18
	Supports greater investment certainty across the industry	19
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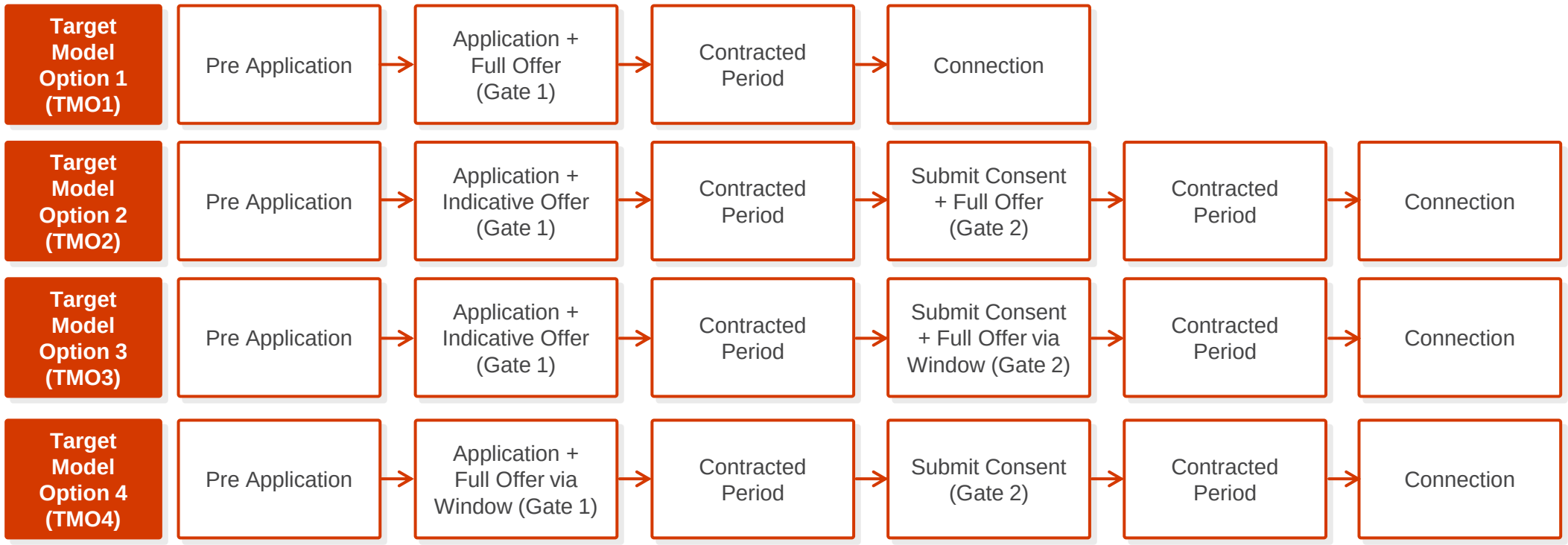
Better cost outcomes for the end consumer	Reduces overall costs to end consumers	21
	Can be implemented in a timely and efficient manner	22
	Environmental and community impacts are avoided, minimised or mitigated by the network design	23

More readable versions of these charts will be later in the presentation and Walk the Walls session

Options Summary

This feedback and evolution led to 4 Target Model Options (TMOs) being developed

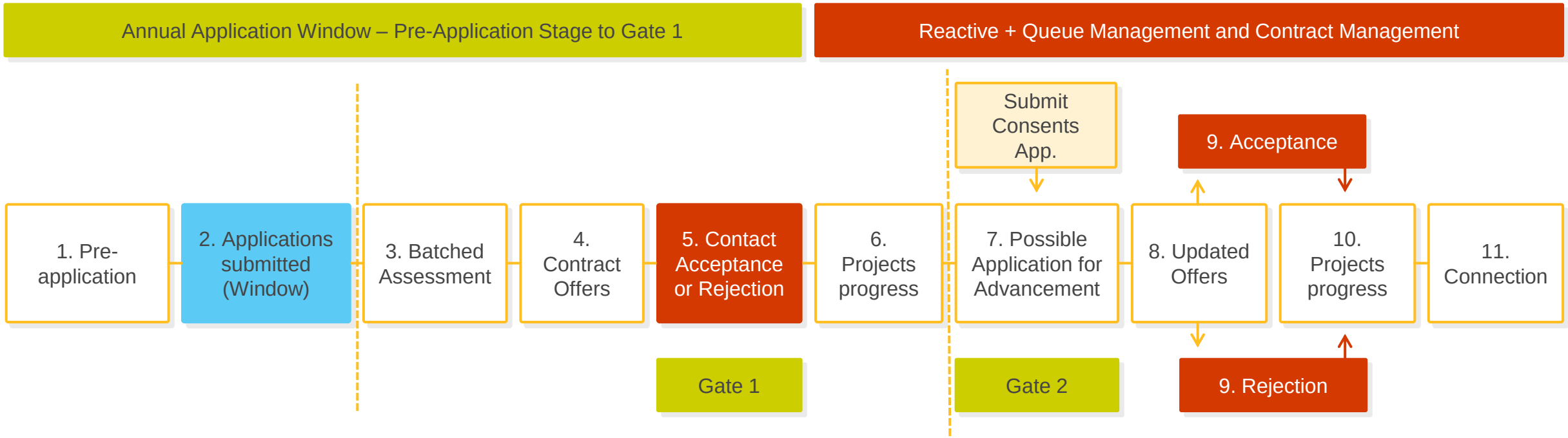
- Each TMO consists of a core process and a selection of changes from **18** add-on categories.
- Other core processes were considered but not progressed (e.g. more / later gates and multiple window processes).



Initial Recommendation Summary

Our initial recommendation is for Target Model Option 4.

- It has an early window for coordinated network design and a later gate for potential acceleration of progressing projects.
- Various other improvements throughout the process based on feedback.



Initial Recommendation Summary

Our initial recommendation is for Target Model Option 4.

- Scored highest of all the options against the Design Criteria when assessed by the ESO.
- This recommendation has various positive attributes; however, it also has a series of challenges to be addressed in detailed design.

Design Objectives	Design Criteria	Reference	TMO4
Creates a more coordinated and efficient GB transmission system and network design	Better informs when and where to connect	1	
	Enables economic, efficient, coordinated network design	2	
	Delivers more efficient use of network capacity	3	
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Advantages and Challenges

TMO4 does have its strengths and challenges to be managed in detailed design.

- Largest potential for customer and consumer benefit through coordinated design of an anticipatory invested network.
- Dedicated preapplication time allows data and specialised engagement session for preapplications.
- Updated contracts are simpler and provide greater certainty for investment without limiting acceleration options.
- Far greater scope to include applicant's views in the design of their connection.
- Harmonises process across all customer groups, especially onshore and offshore.

- Time required for the batched assessment may limit the number of application windows per year.
- Time required to implement the solution (including time for detailed design).
- Significant amount of secondary processes / effects to be analysed in detailed design.

The following slides explain how we got to this initial recommendation, what the initial recommendation contains and our next steps and implementation

More readable versions of these charts will be later in the presentation and Walk the Walls session

Consultation Deep Dive

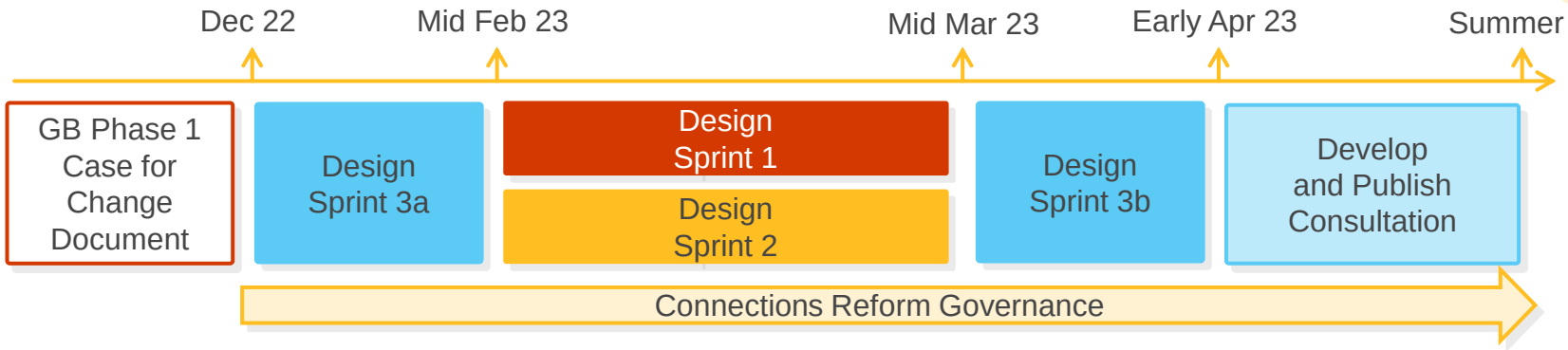
Mike Oxenham

ESO

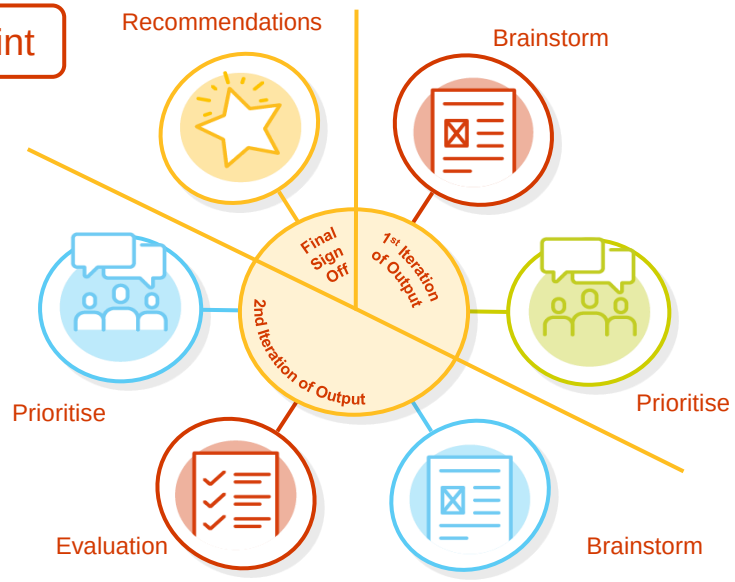
Our Phase 2 Approach

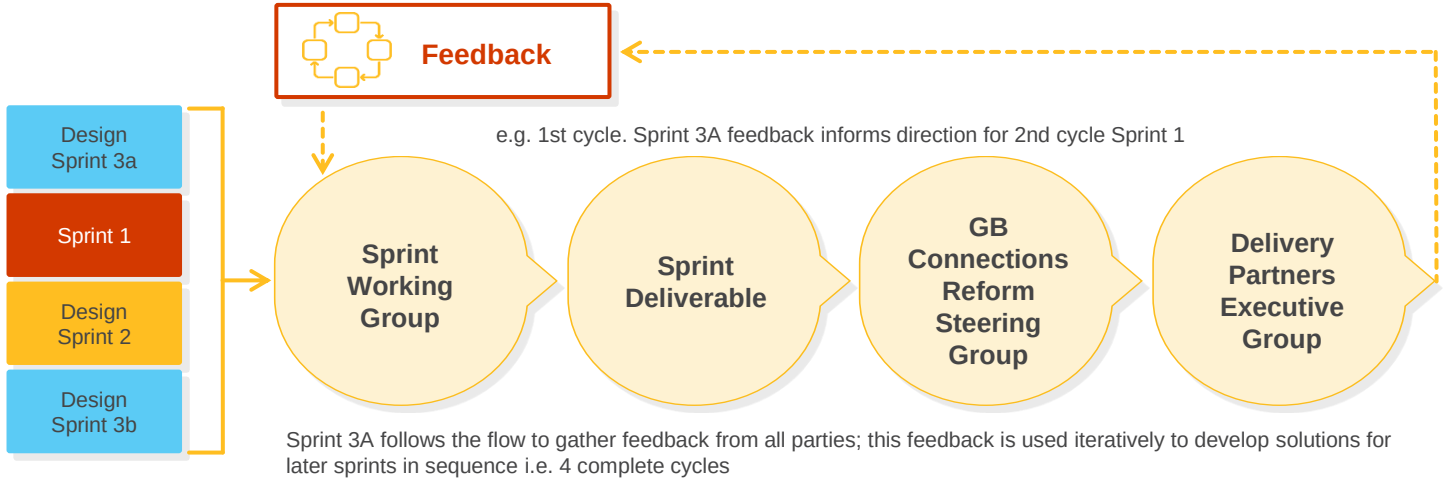
Phase 2 was structured based on the work and learnings from the case for change

Sprint Structure



Intra Sprint



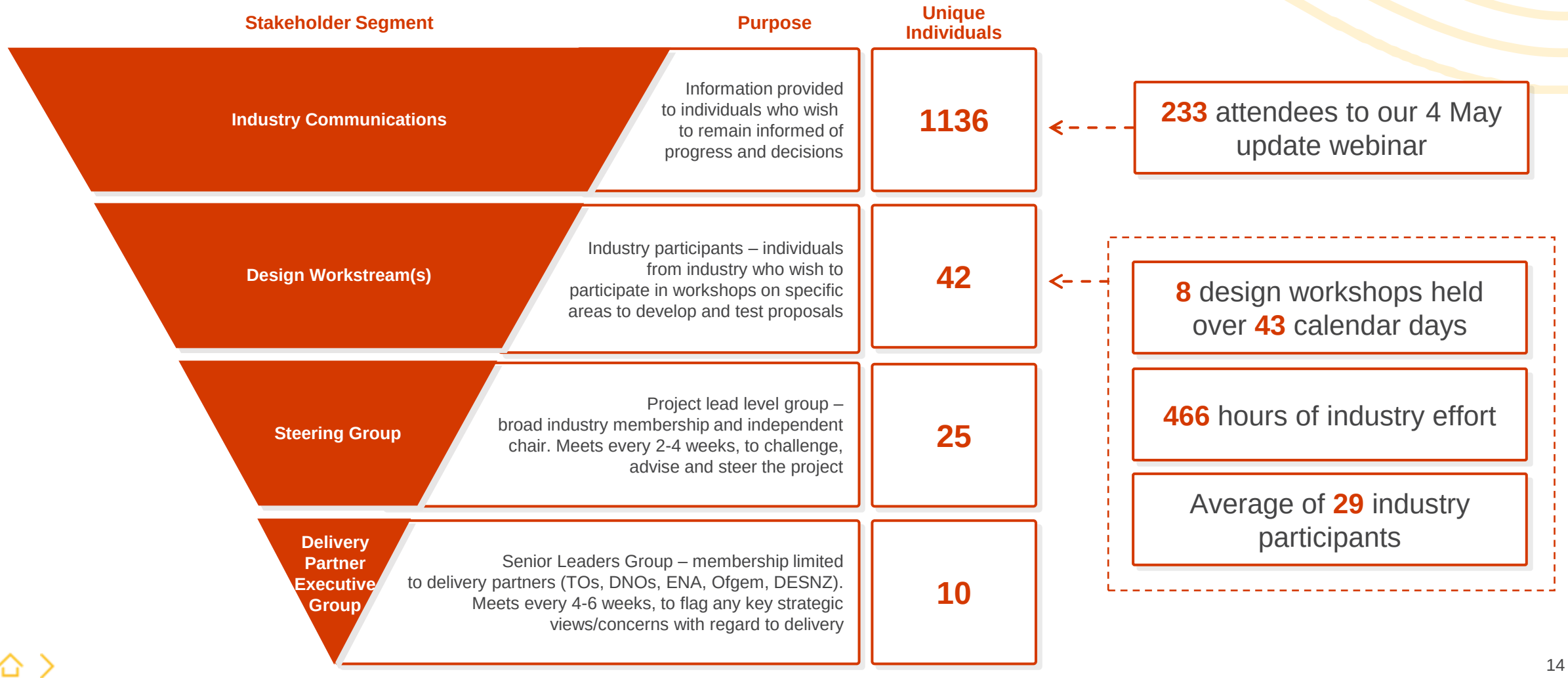


Sprint 3A follows the flow to gather feedback from all parties; this feedback is used iteratively to develop solutions for later sprints in sequence i.e. 4 complete cycles

Inter Sprint

Governance and Engagement

Engagement has been key to the development of our recommendations.



Phase 2 Design Criteria

To support in developing options, we created a series of Design Objectives and associated Design Criteria with the support of the Steering Group.

Design Objectives	Design Criteria	Reference
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Key Features

Some of the key features considered in the options are described below;

1. Gate – A filter in the process to restrict progress if specific criteria are not met and/or provide benefit once they are.
2. Window – A formal process to batch projects (potentially at a similar development stage) together into a group.

Regardless of which Target Model Option is chosen, there are several improvements that can be progressed

Features Not Progressed

The following features were considered and not progressed at this time. Others can be found in the consultation.

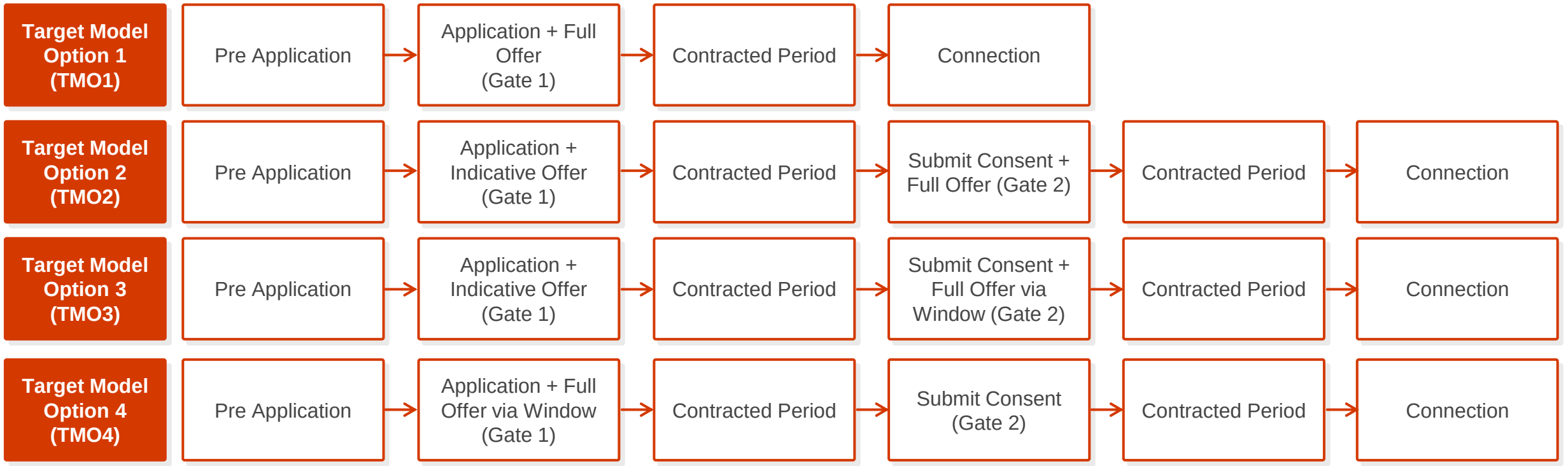
This does not mean these cannot or should not be progressed in the longer term.

Feature not progressed	Description	Rationale
Applications direct to the TO	Applicants would apply to the TO directly and not the ESO.	This would address a symptom of the current process issues not the underlying cause.
Scope of Customer Delivered Works	Determining what scope of transmission works can be delivered contestably by the applicant.	Work already under way in this space and does not fundamentally affect the core process.
Separation of connection and capacity	Separate out the processes of requesting a network connection from requesting capacity.	Significant change and close dependency to REMA – wait for REMA outcomes.
'Centrally planned' process	A process whereby an entity directs what capacity is available in each location.	A broader decision is required in this space and our core process can be future proofed in relation to that decision.
A bespoke process for 'X' customer group	An entirely separate, bespoke process specifically for a given customer group e.g. offshore, embedded, etc.	Believe the recommended process can be adapted to suit all customer groups and so is not required.
Enabling works changes	Further changes to the classification of reinforcement works as enabling works over and above the 5-Point Plan.	Until the impact of the 5-Point Plan is known it is too early to make a recommendation on further changes.
Unconstrained queue management	The ability to advance projects ahead of other projects to the detriment of those other projects and/or consumers	Greater risks and issues when compared to our more balanced proposals on queue management

The Target Model Options

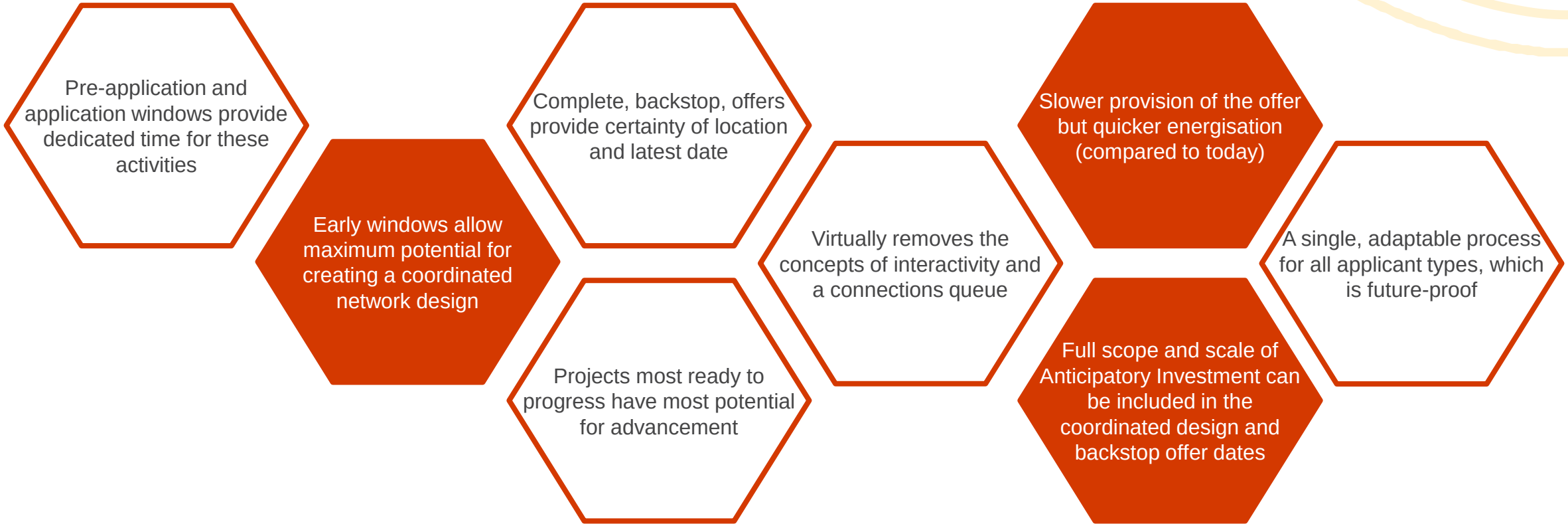
Feedback and evolution led to 4 Target Model Options (TMOs) been developed

- Each TMO consists of a core process and a selection of changes from **18** add-on categories.
- Other core processes were considered but not progressed (e.g. more / later gates and multiple window processes).

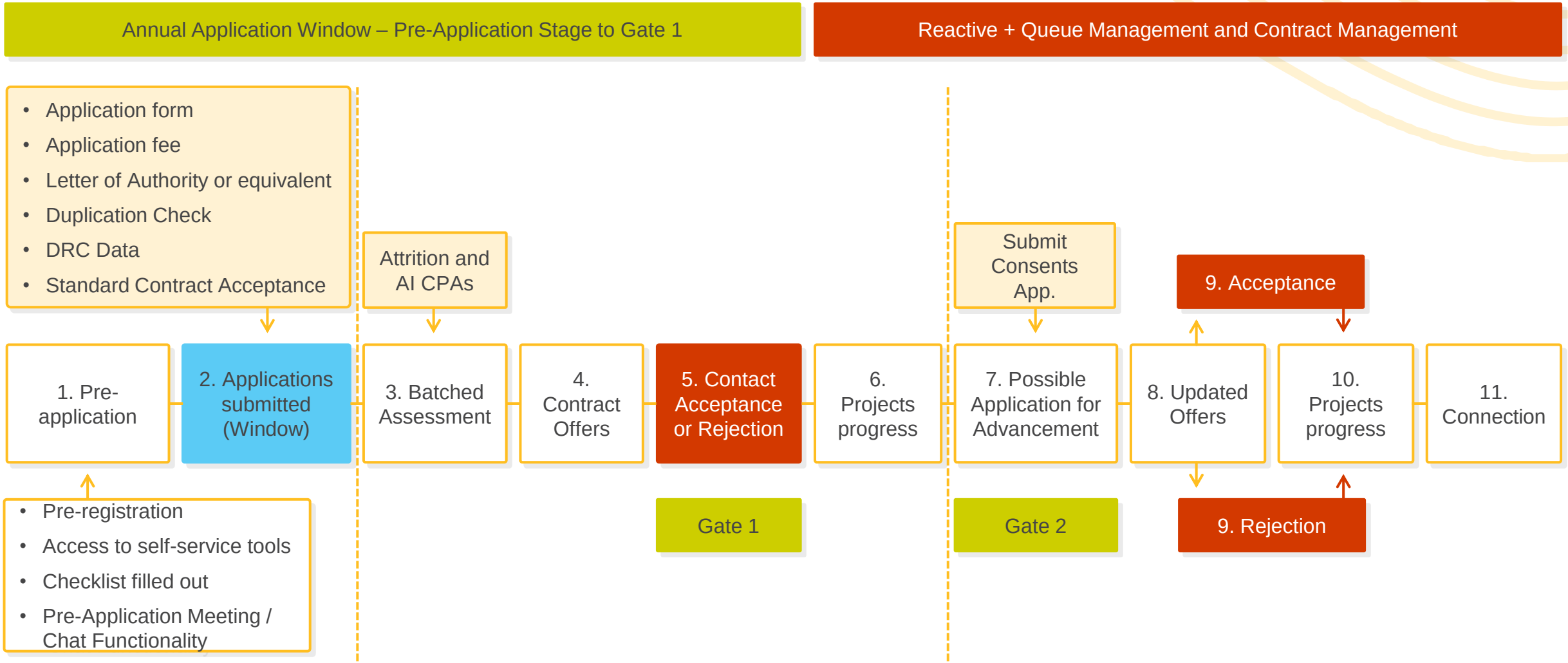


TMO4 Key Features

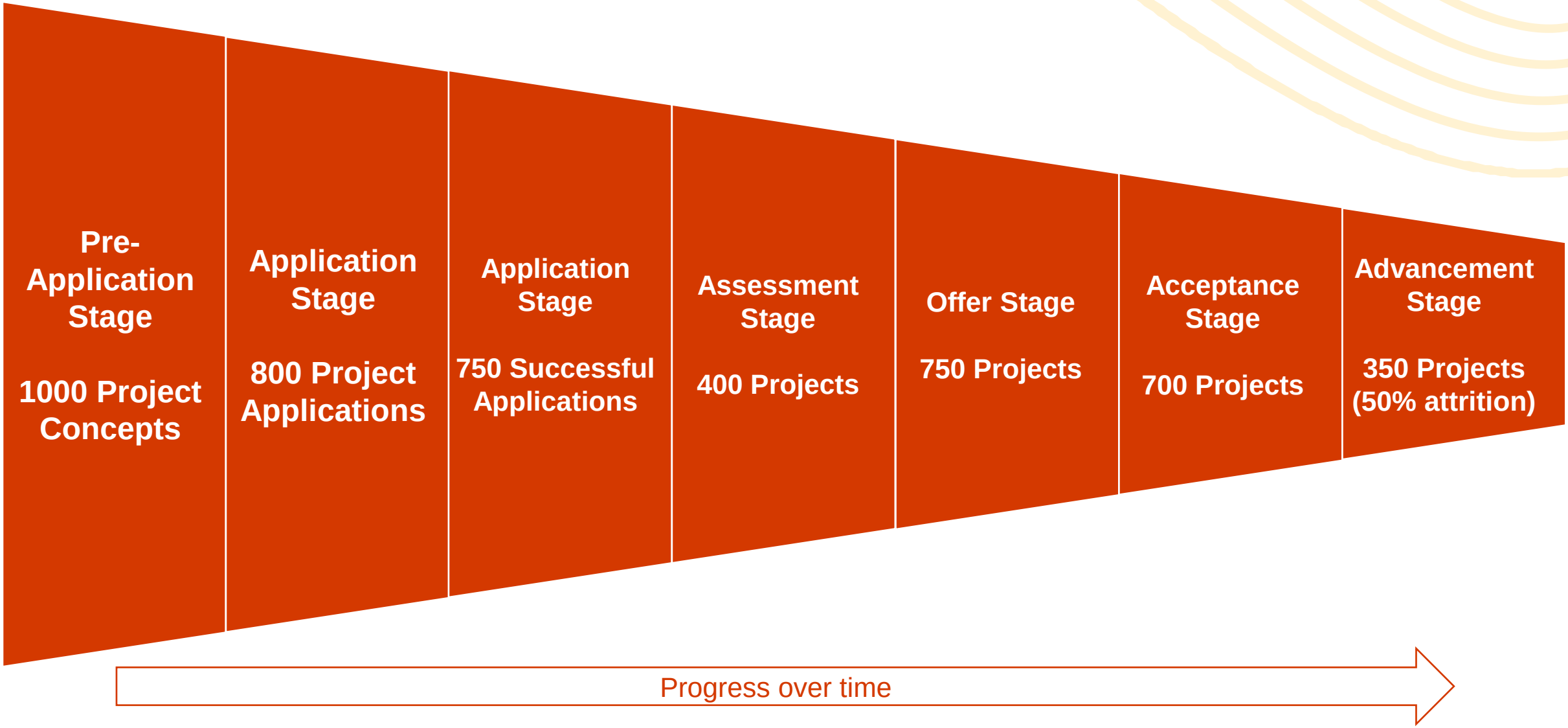
The key features of the initially recommended option are.



The Initial Recommendation – TMO4



TMO4 Example



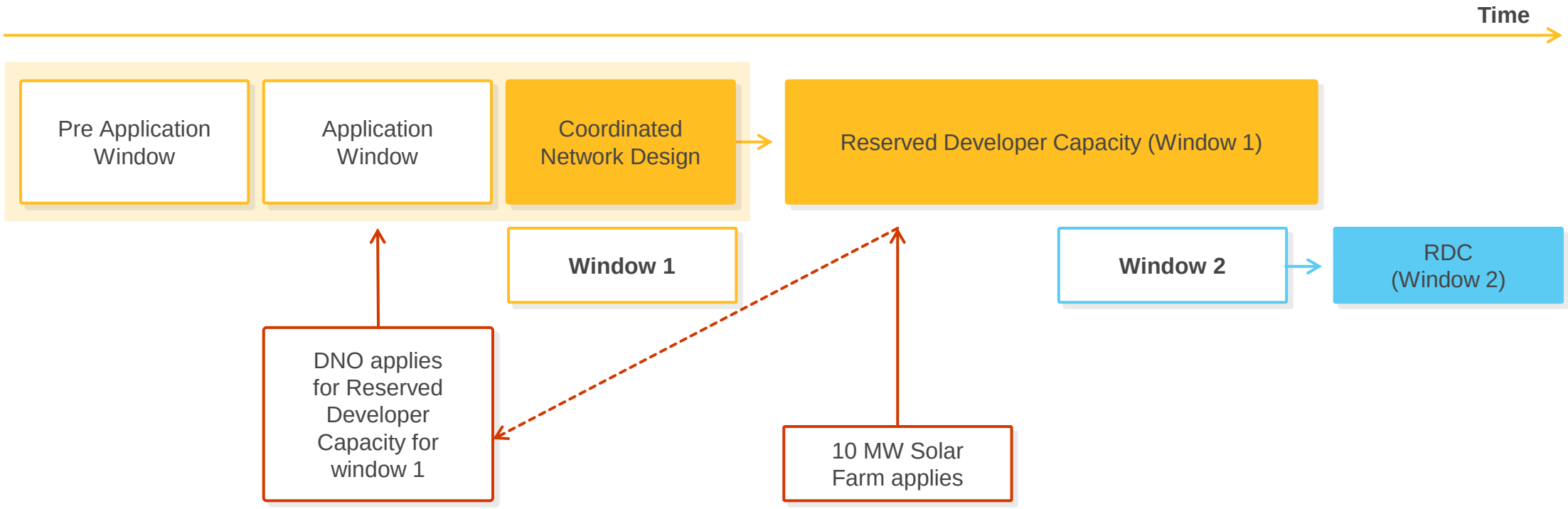
* Values listed are for illustrative purposes only

T-D Interface

Feedback stated a windowed process would potentially only be viable if there were multiple windows a year, especially for smaller projects.

Reserved Developer Capacity (RDC) may be a solution for small (and medium) embedded projects.

1. During Window 1, the DNO applies for the RDC it needs for prospective applications which may be received in parallel to Window 2.
2. The DNO can then provide full, firm offers to those new applications as if those applications were received in time for Window 1.
3. The DNO can use this RDC until it is used up or it expires at the end of Window 2, at which point it is refreshed by the RDC requested in Window 2.



Other considerations

The following are additional elements that will require consideration in detailed design.

Transmission Demand

- Electrification will lead to more demand connections to the transmission system.
- We considered whether directly connected demand should follow the recommended process.
- Despite specific considerations that are needed, we believe a single process is appropriate.

Offshore Transmission

- We considered whether offshore generation and interconnection, including Multi-Purpose Interconnectors (MPIs) should follow the recommended process.
- Only the recommended process aligns with progress made by the Offshore Transmission Network Review.
- Similar principles could be applied to projects not subject to seabed leasing rounds.

Network Competition

- Potential interaction between the connections process and competitively appointed parties.
- The recommendation provides the most time to identify network options to be competitively tendered.
- Differences in commercial and regulatory arrangements need to be considered in detailed design.

Advantages and Challenges

TMO4 does have its strengths and challenges to be managed in detailed design.

- Largest potential for customer and consumer benefit through coordinated design of an anticipatory invested network.
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TMO4 Assessment

The ESO's assessment of the 4 options against the design criteria:

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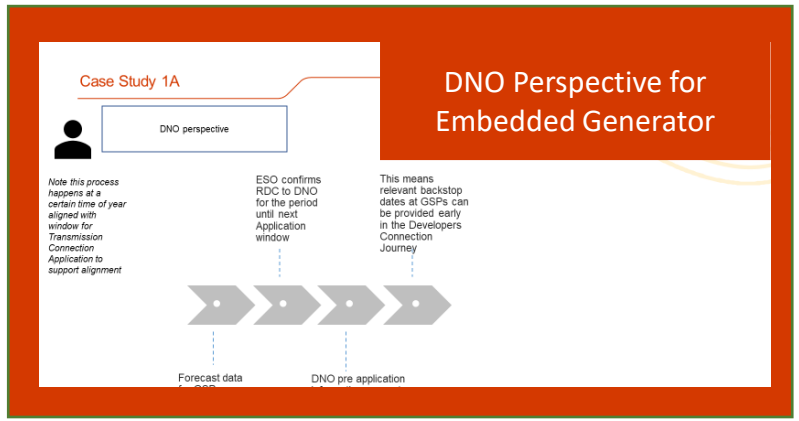
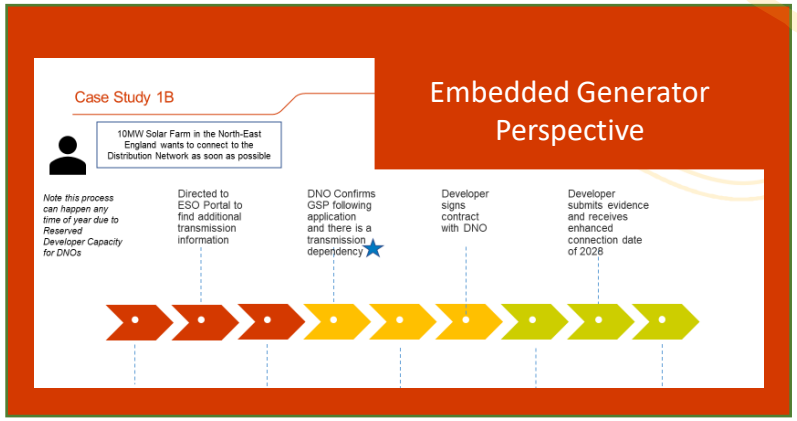
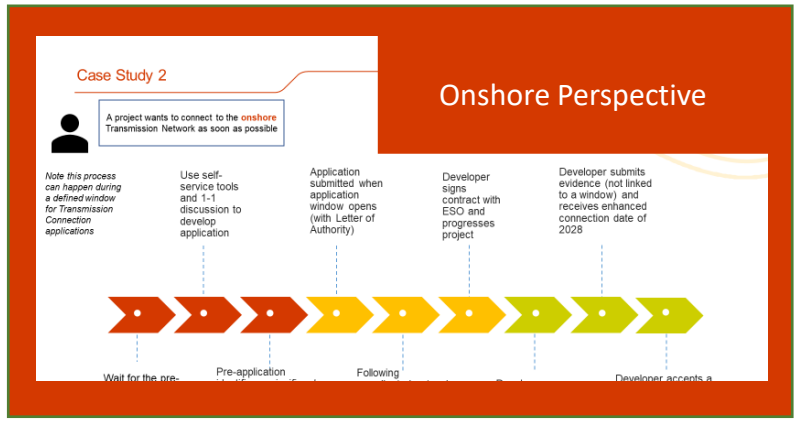
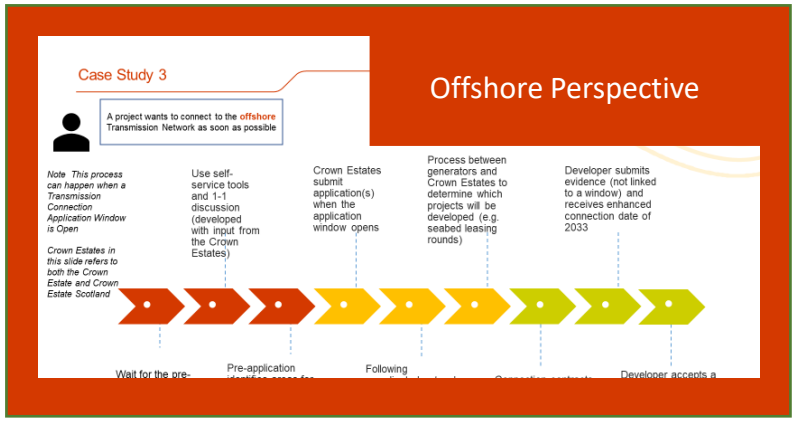
Case Studies

We have a series of case studies to illustrate how the recommendation could work.









Appendix 5 of the consultation and Stand 3 of our Walk the Walls contain details of these case studies

Implementation and Next Steps

James Norman

ESO

Implementation

There are a variety of factors that will affect the implementation of reform.

These options are high-level designs that need detailed discussions to resolve outstanding questions.

Licence, code and process changes all need to be fully defined, progressed and implemented.

People and training materials (for all stakeholders) needs to be created.

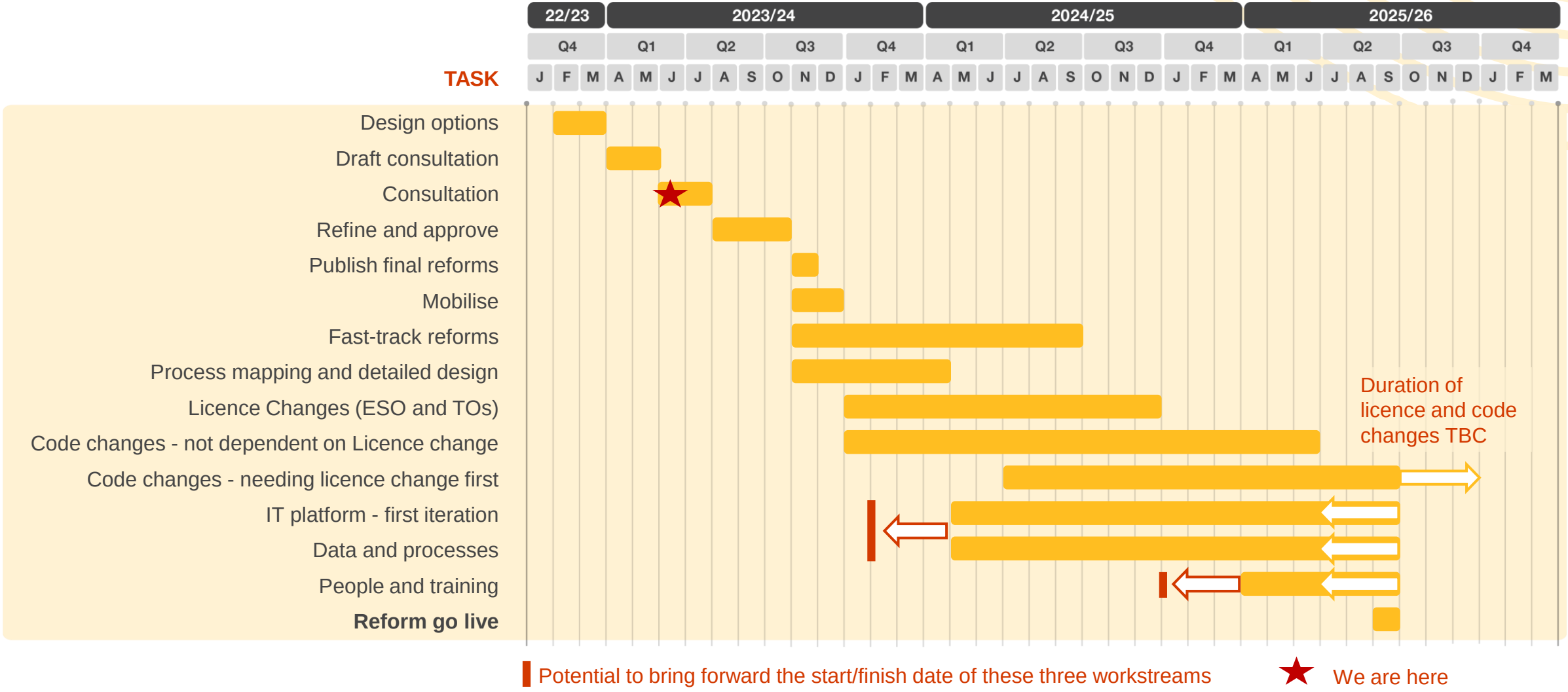
IT changes to be designed, tested and implemented.

Transitional arrangements (for all of the above) to be determined.

This will all take time but should not delay progressing potential ‘quick wins’ as part of Phase 3.

Potential Timeline

This is our indicative implementation plan – pending consultation feedback.



How do we get there

ESO 5-Point Plan

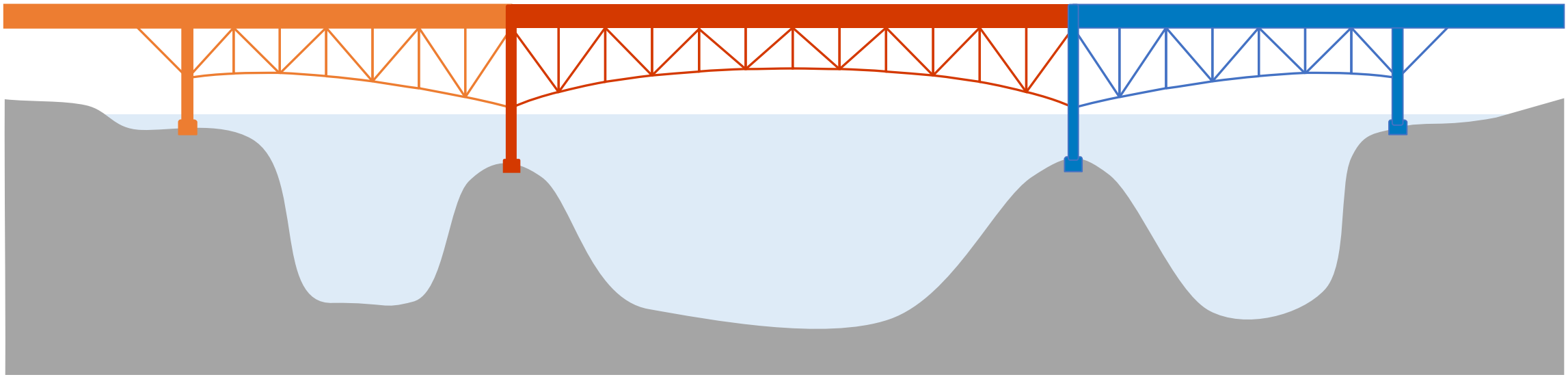
Tactical initiatives designed to alleviate as much of the pain as possible and introduce improvements, which are aligned initiatives coordinated by others e.g. SCG

Implementation and Transition

Implementation of the reformed process, including potential phasing / quick wins and any transitional activties required to move between the current and future process

Reformed Process

Ultimate solution in place fully reflected in relevant licences, codes, policies and procedures with steady state changes possible through enduring change mechanisms



Next Steps

The Connections Reform Consultation can be found on our website here and will be open until **Friday 28 July** for formal feedback.

Get in touch to share your views!

Email us

Box.connectionsreform@nationalgrideso.com

Consultation Link

Summary Link

Feedback on this event specifically can also be provided here.