



**The road to net zero electricity markets**  
Code change 2025 Road Map  
Post-event write up

National Grid ESO - Markets

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# Introduction

**This document contains the material presented during the Code Change 2025 Road Map webinar on 24<sup>th</sup> March 2021, as well as summarised responses and discussion from the event.**

The webinar was a deep dive session as part of the Road to Net Zero Electricity Markets event hosted by National Grid Electricity System operator from 23<sup>rd</sup> – 25<sup>th</sup> March 2021. The webinar was attended by 148 stakeholders from across industry who participated in live polls and open forum discussion across a range of topics.

Each page in this document has been labelled as either:

Presented 24.3.21

*Material presented during the webinar on 25 March 2021*

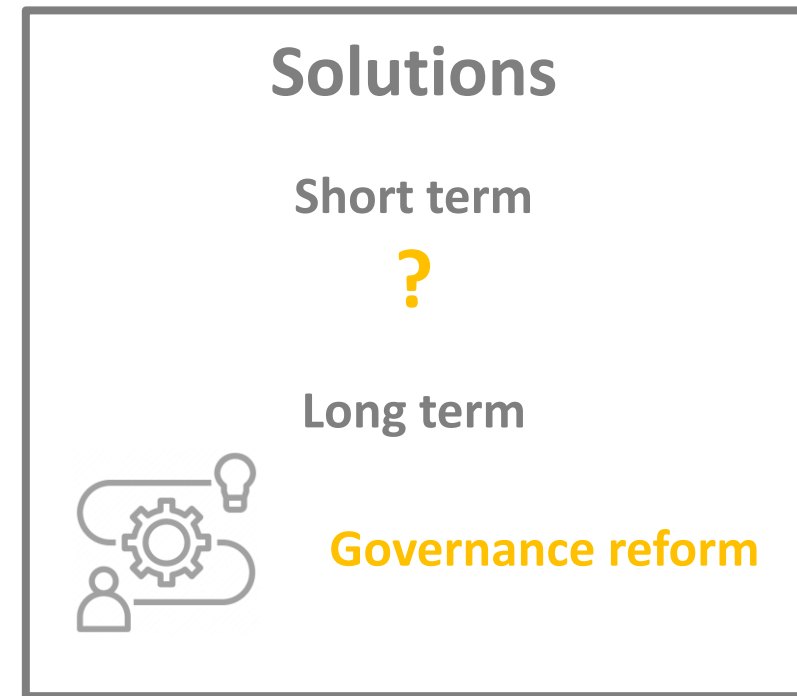
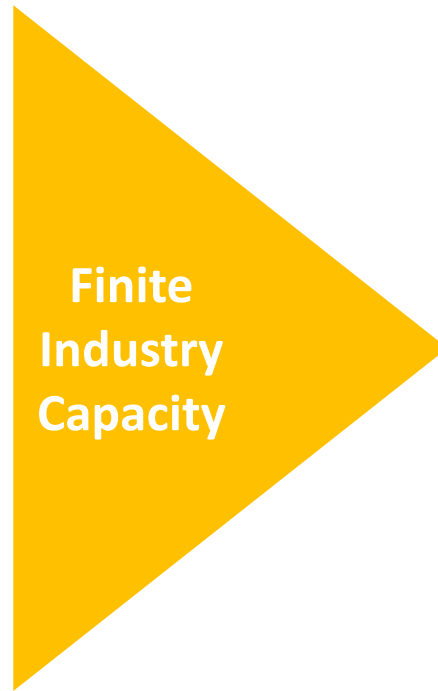
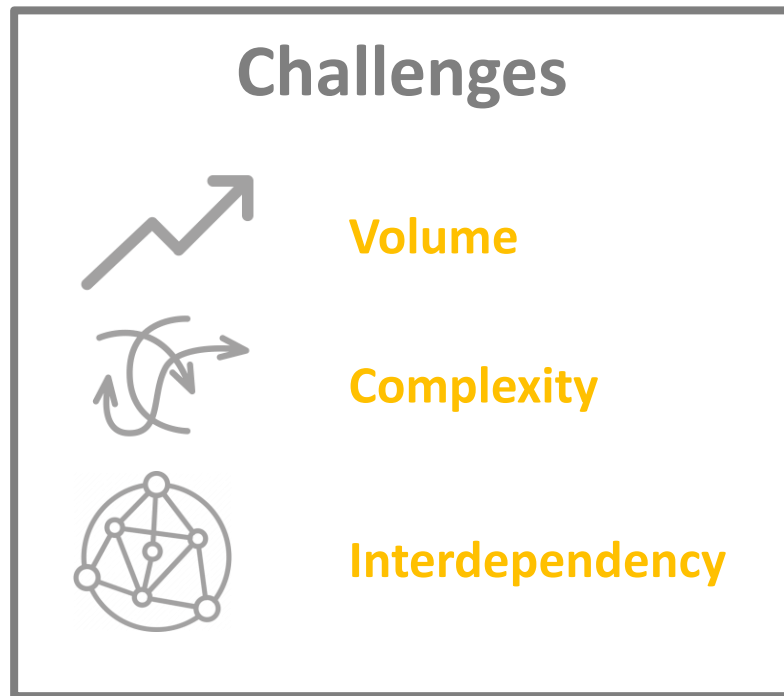
or

Post-event write-up

*Summary of key discussion themes and poll responses. Where relevant, we have also included the ESO view on these themes*

A full recording of the webinar can be found at [this link](#).

# Code change is increasingly challenging



# Today's discussion

## The aim of today is to:

1. Broaden discussion to consider strategic drivers of code change
2. Share a draft view of the roadmap to 2025
3. Start the conversation about how we can navigate this together as an industry

## Today's session aims to progress three questions:

- ? What should code change focus on between now and 2025?
- ? How should industry have strategic discussions which drive coordinated and strategic code change?
- ? What roles / accountabilities are required to ensure that change is delivered?

We will share a **brief report** following today's conversation, including next steps to progress these issues.

# The ESO's role in Code Facilitation

**Administer  
four different  
codes**

**Industry  
Insight points  
to need for  
change**

**RIIO-2 plans  
supported by  
stakeholders**

**Holistic  
solutions  
required**

# Enabling net zero for consumer benefit

Change in the energy system is accelerating as new policy and technology innovation continue to be implemented

## Whole System

By 2030 we could see:

- Decentralised generation providing 73-89% of peak demand
- 4.5x increase in interconnector capacity

## Competition everywhere

- 10x increase in ESO ancillary service market participants
- Over a third of consumers could be providing flexibility services by 2030, increasing to over 80% by 2050

## Carbon free operation

- The ESO aims to be able to operate the system carbon free by 2025
- Annual renewable generation could increase from 41% today, to 80% by 2030 and 96% by 2050

## Scaling up low carbon infrastructure

Trends such as the electrification of transport and heat are expected to drive:

- increase in total GB generation capacity by 30-60% in 2030, and 150-200% by 2050
- offshore wind to 40 GW by 2030 and to over 80GW by 2050

# A move towards strategic code change

Priorities for forward-looking change in codes and charging that anticipates and adapts arrangements in a coordinated way

## Whole System

- Coordination and consistency
- Visibility and engagement
- Potential links to other systems

## Competition everywhere

- Reducing barriers to entry
- Enabling market access for more participants
- Improving access to information

## Carbon free operation

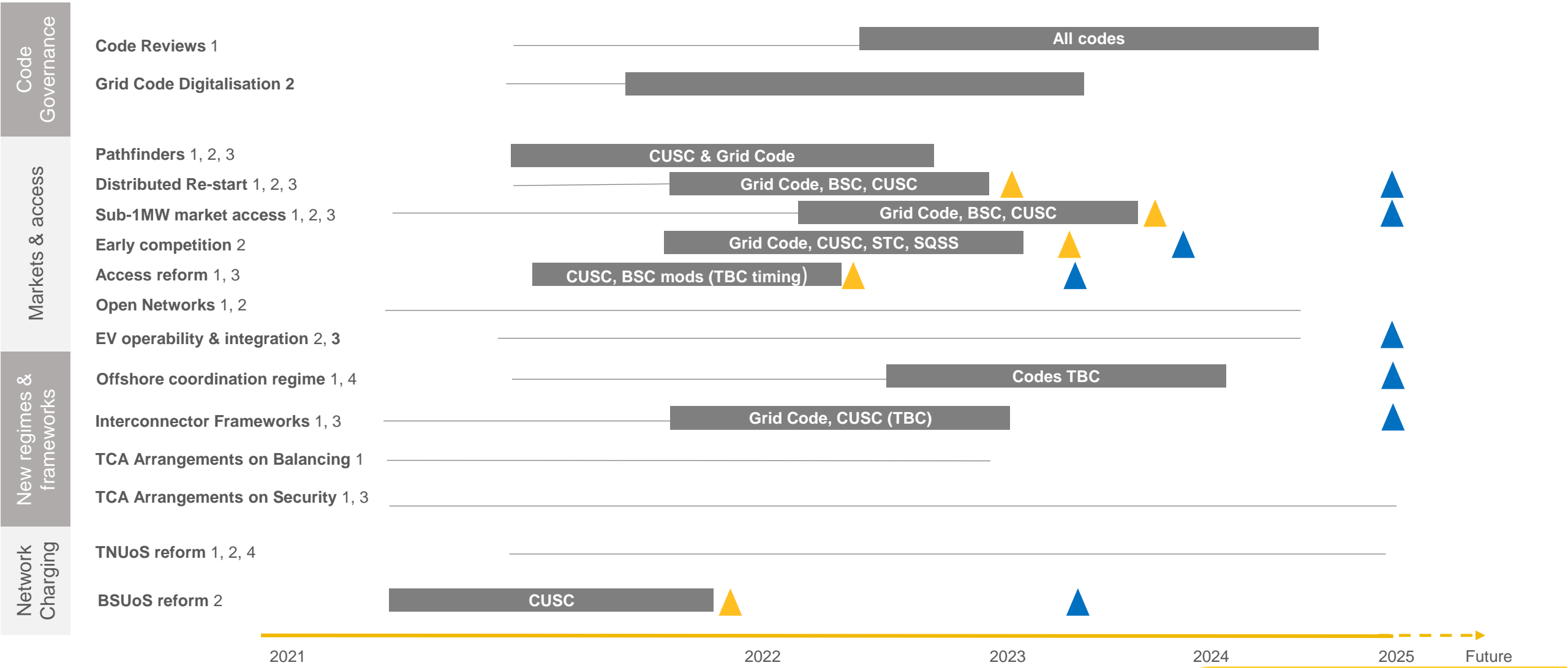
- Supporting new markets and services
- Enable increased system flexibility
- Enable increased interconnection

## Scaling up low carbon infrastructure

- New connections & infrastructure arrangements
- Efficient commercial signals in network charging

# Strategic programmes will require increasing levels of code change

DRAFT FOR ILLUSTRATION



**Key**

- Industry engagement
- █ Code mod process
- ▲ Ofgem decision on mod
- ▲ Go live

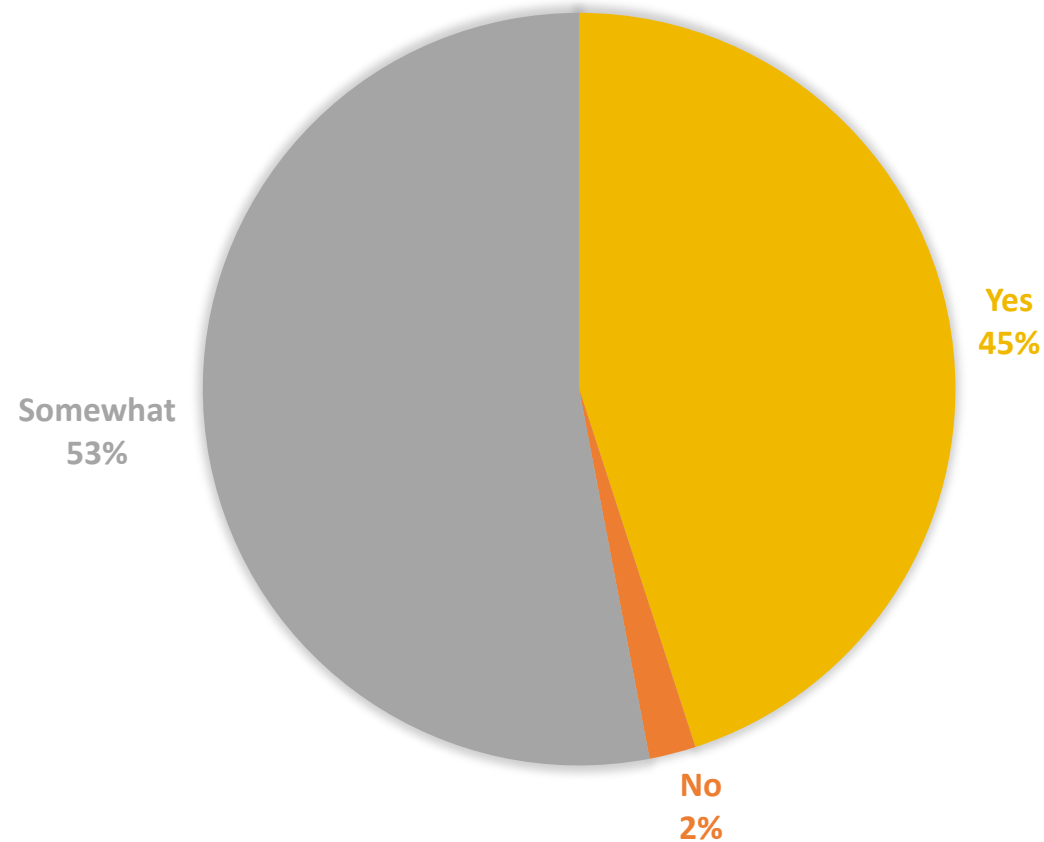
**Drivers**

1. Whole System
2. Competition everywhere
3. Carbon Free Operation
4. Scaling up of low carbon infrastructure for net zero

Presented 24.3.21



# There is broad consensus that a more strategic approach to code change is required



A sli.do poll asked, “Is this (i.e. 4 coloured boxes) a useful approach to take in considering strategic code change?”

Of 53 poll participants only 2% responded that a more strategic approach was not useful.

# Are there any areas you disagree with?

Themes from the discussion points include:

## 1. Whole System

Discussion covered the need to consider the whole electricity / energy system including within GB and international, the need to start by defining how the overall system should work and question over who should decide what the future looks like.

**ESO view** – We agree with all of the points above and believe that systems thinking will be critical in reaching net zero. Engagement is required across the electricity industry and more widely in order to ensure the increasing complexity and interdependency is considered as our codes change. We will continue to bring together various areas of work relating to Whole System when developing the future code roadmap.

## 2. Net Zero

Discussion included the need to prioritise net zero as the key focus area and that flexibility is required as net zero could be achieved in different ways.

**ESO view** – We agree that net zero is an important ambition, and we would seek strategic policy direction from BEIS / Ofgem on the role of competitive markets in achieving this with the most benefit to consumers. We also believe that flexibility is required in the codes, as technologies and changes in the electricity system can develop at different paces

## 3. Participation in the codes process

There were mixed views on different stakeholders engaging in the codes process. Some saw significant benefits in smaller parties being able to participate more easily in the code process, with others raising concerns on what that would mean for the speed of the code process. Other comments included the need for greater consumer representation.

**ESO view** - We feel passionately that the codes process should be accessible to all parties and this is something that we are looking to improve. We will also look to ensure this is a key concept in the Energy Codes Review

## 4. General support for the approach set out

Feedback received that the drivers approach to future code change works well, with next steps suggested as a rationalisation, grouping detailed code changes by theme or long term vision for 2030 and net zero 2050.

**ESO view** - We appreciate the feedback, and agree that the slides set out a starting point, which we will engage further on to develop over the coming months.

# Is there anything that you think is missing?

Themes from the discussion points include:

## 1. Code change process

Discussion suggested that digitalisation of the codes will help, but that more fundamental change to approval mechanisms or currently complex arrangements are needed. That industry requires advanced notice to prepare for change, the number of codes needs to reduce and participants need to change as well as the way codes are administered.

**ESO view** – We agree that fundamental reform to the code process is required and look forward to fully engaging in the next stage of the Energy Codes Review to support this. In the interim, we will pursue no-regret improvements within the existing frameworks in collaboration with our stakeholders. These will include initiatives such as digitalising codes to improve accessibility, and longer term planning to improve coordination and prioritisation.

## 2. Clear overarching principles and objectives are required

Discussion included the need to align with Ofgem's strategy to reduce send backs. Noted the need to focus on customers of the future rather than just those today. Net zero is important, but it isn't the sole driver for change and we need to be clear what the balance is between priorities.

**ESO view** – We agree, clear principles and a shared view of the future state of the network is important, so we can collectively ensure that the codes are fit for purpose.

## 3. Resilience / cyber

It was noted that an increased focus is needed on cyber security in the codes.

**ESO view** – We agree that cyber security isn't currently a focus area in the codes. As the energy sector continues to digitalise there is value in considering how codes might be able to play a role in managing some of the associated risks and obligations.

## 4. Storage

There was discussion on whether there is a need to make the role of storage more explicit in the codes – ranging from storage being treated as interconnectors, generators or as a new and separately defined category.

**ESO view** – The storage theme was raised throughout the discussion, and we agree that a more specific conversation is required about storage and what potential future reforms may be of value.

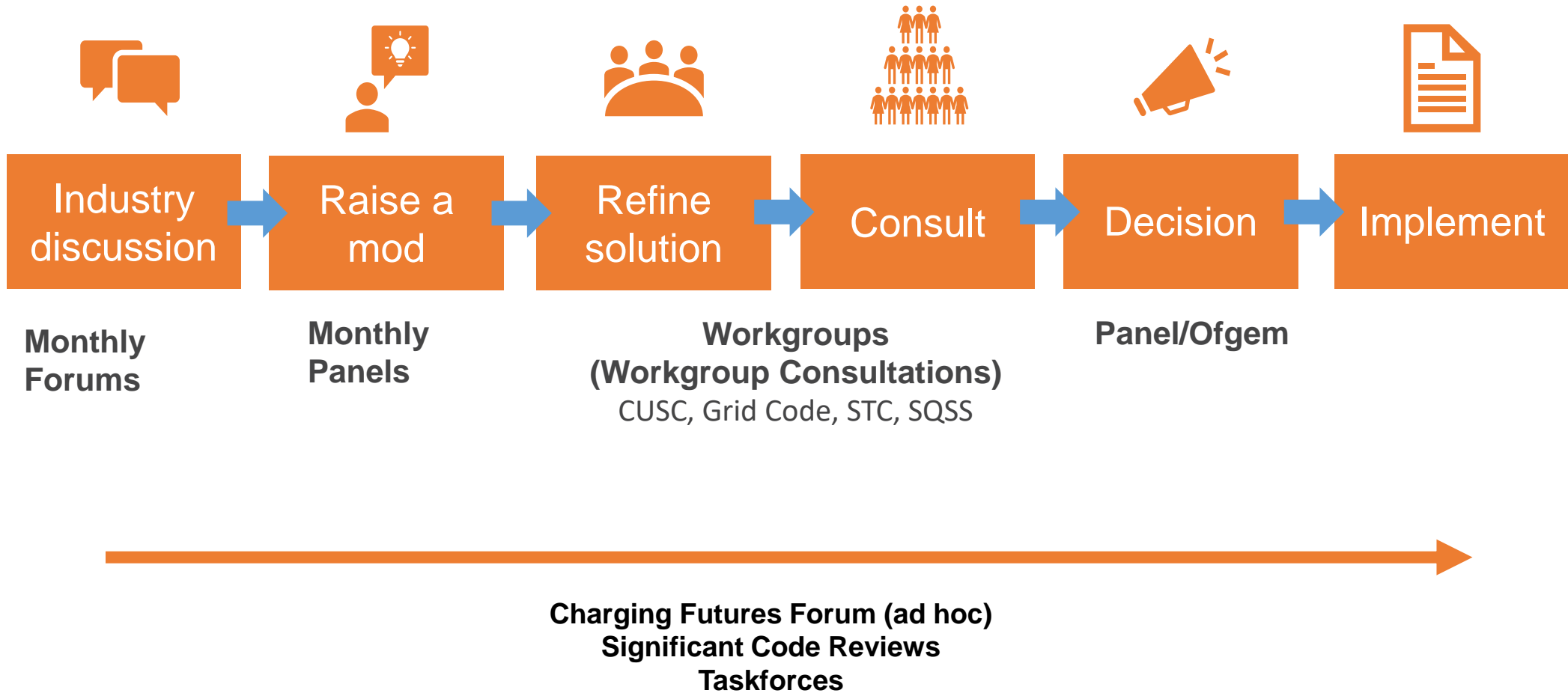


# The code change process

#R2NZ3

New ways of engaging with strategic code change

?



# Discussion topic: Where should we be having strategic discussions?

Themes from the discussion points include:

## The need for more joined up discussions in code change

Feedback from the majority agreed that joined up discussions around code change would be helpful. It was noted that cross-code forums to help to scope and identify issues with mods is useful. The benefits of having cross-code Panel conversations was also seen to be a benefit by many.

**ESO View:** There is benefit in reviewing the various forums as they stand to ensure that they offer the best platform to discuss code change at the early stages and to ensure that all parties can get involved.

## Examples of best practice

There was some specific ideas around seeking best practice on how to have more strategic conversations. For example, having a neutral body paid for by the industry to provide advice (eg a system architect), or using a model such as an overarching project piece such as ENA Open Networks which was noted to have worked well.

Best practice from other countries was also noted, including the Australian market model. i.e. AEMO. the coordination around EU Network Code implementation, and to consider other countries /regions who are transitioning eg Ireland, Australia, Texas, California, Nordics.

**ESO View:** We will look into these specific examples and ensure they are incorporated in future thinking about how and where strategic discussions take place.

## Do you have any suggestions for facilitating the future code change framework?

A lot of the discussion noted that it would be helpful for more insight from Ofgem/BEIS early on which would help provide steer to the conversations.

Having more technical expertise within the Code Administration function was noted as well as the suggestion of having independent Chairs.

There was support for there to be a strategic decision making body, some noting that the ESO could take this position. Having this body in place would help drive these conversations in the right direction.

There was support for more active involvement of trade associations to represent their members more.

**ESO View:** We want to encourage more opportunities to discuss and debate change in the codes framework and are committed to exploring these options as well as offering other potential avenues such as workshops with stakeholders to help shape the future of code change.

# What roles / accountabilities are required to ensure that change is delivered?

Themes from the discussion points include:

## Current roles and accountabilities to deliver code change

Attendees noted that more resource both for BEIS and for the ESO Code Administrator would improve the current change process. It also noted that more involvement and support around Panels would be beneficial. Also noted that more involvement from an Ofgem expert for each modification would be helpful and to keep the same expert for the duration of the modification.

**ESO View:** The ESO Code Administrator is increasing resource levels as part of RII02 commitments. There is also a need to review the whole process to ensure that more parties can engage with code change and that we make it as simple to engage with code change as possible. We also support having more expertise in workgroups from Ofgem.

## Suggestions for changes to existing or new, roles and accountabilities to improve code change in the future?

Increase in resource was noted, as was the benefit of having early guidance from Ofgem. It was also noted that any new or changed roles & responsibilities should focus on making it more accessible for all of industry. However, some comments disagreed with this sentiment and felt that it was not necessary for everyone to have involvement.

**ESO View:** We are appreciative of the views expressed. There was clearly a division in thought on this issue with the audience. It is for the ESO to consider all viewpoints, ensuring that further changes will deliver an improvement for code parties and to progress continuous improvement ahead of larger scale reforms. The Code Administrator will continue to enable any party to be able to access the code change process and remove any barriers.



# Next steps

We'd like to thank you for all of your contribution to date. We're keen to make sure your feedback is used to shape where we go next. With this in mind, we are committed to doing the following:

- Engage with industry through a second webinar in early summer 2021 to share progress made through further collaboration with stakeholders in the interim.
- Further develop the strategic code change roadmap to include a broader range of projects and a greater level of granularity. Please contact us if you would like to provide input to this work or be more closely involved more generally.
- Build out more detailed thinking with you on specific topics before and during the next webinar. Based on your feedback, we suggest that the treatment of storage in codes would be a helpful first deep dive. If you have any further suggestions please contact us.
- Code Administrator to continue making incremental changes to improve BAU processes, in consultation with industry
- Supporting BEIS, Ofgem, and industry to explore and progress fundamental code reform that champions accessibility, flexibility, and strategic direction through the Energy Codes Review
- Engage with Ofgem, BEIS and industry about how net zero and other strategic priorities are reflected in licences and codes

If you have any further comments or would like to be involved in developing this thinking in future, please get in touch at [commercial.operation@nationalgrideso.com](mailto:commercial.operation@nationalgrideso.com)

#R2NZ3

## Contact us:

Via your account manager, or email:

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