



NETWORKS

A decorative graphic consisting of two overlapping, wavy lines that flow from left to right. The top line is a solid blue, while the bottom line is a gradient transitioning from blue to green to yellow.

# SMARTER HV & MV CUSTOMER CONNECTIONS INNOVATION PROJECT CLOSE-OUT REPORT

PROJECT OWNER: Ivan Codd

DATE OF REPORT: 17<sup>th</sup> May 2021

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PROJECT START DATE: Q2, 2018

PROJECT END DATE: Q1, 2021

Additional Contributors: Neassa McCabe

Table of acronyms used in this document			
BAU	Business as Usual	DSSPS	The Distribution System Security and Planning Standards
CRU	The Commission for Regulation of Utilities (the regulator in Ireland)	HV	High Voltage
DCC	Demand Connection Code (EU Network Code on Demand Connection (EU/2016/1388))	IGB	Innovation Governance Board
DCRP	The Distribution Code Review Panel	MV	Medium Voltage
DER	Distributed Energy Resources	NFA	Non-Firm Access
DG	Distributed Generators	NWA	Non-Wires Alternatives
DNO	Distribution Network Operator	PR	Price Review
DSO	Distribution System Operator	TSO	Transmission System Operator
PR5	Price Review 5		

## 1. PROJECT DESCRIPTION AND SCOPE

### Project Description:

Under the ‘*Smarter HV and MV Customer Connections – New Approaches to Distribution Planning & Security of Supply Standards*’ Innovation Project, the methods used by ESB Networks to determine how to connect our customers to the distribution system, namely the ‘Distribution System Security and Planning Standards’ (DSSPS), also referred to in this report as the ‘Planning Standards’, were fundamentally reviewed in collaboration and consultation with stakeholders and consultants to establish how the Planning Standards needed to evolve to meet the changing needs of our customers in a lower carbon future.

To ensure best practice, ESB Networks carried out a comprehensive review and critique of existing Planning Standards and new innovative approaches to distribution network development, both here in Ireland and internationally.

A key deliverable from the innovation project was the development of new Planning Standards, and their implementation into Business as Usual (BAU). The new Planning Standards take account of the requirements of binding National and EU Energy Directives and Network Codes, whilst cost effectively maintaining a safe, secure, and reliable distribution system.

### Project Scope:

The project scope included:

- The review of ESB Networks’ DSSPS;
- Engaging with stakeholders and gathering stakeholder opinion and suggestions to establish how the Planning Standards needed to evolve to meet the changing needs of our customers in a lower carbon future;

- A peer review comparison of other Distribution Network Operators (DNOs) / Distribution System Operators (DSOs) in other relevant jurisdictions considering their Planning and Security of Supply Standards and best practice methods; and
- The making of recommendations for amendments and additions to the ESB Networks' DSSPS.

Also included in the scope was:

- The development of a 'Load Indices Approach' for use by ESB Networks which provides a loading level profile for HV Stations allowing ESB Networks to use this as an indicator for identifying and prioritising work for Price Review (PR) 5 and beyond; and
- The assessment of the EU Network Code on Demand Connection (Commission Regulation (EU) 2016/1388) (referred to as DCC) requirements and the incorporation of DCC requirements into the Irish Distribution Code and internal network planning processes.

Consultants were appointed to support and assist with the review project and to ensure the provision of an independent industry perspective.

The project progressed in line with its scope and objectives throughout 2018, 2019, 2020 to completion in 2021.

Milestones:

The following key milestones were met during throughout the project:

2018 key milestones	
Q2	<ul style="list-style-type: none"> <li>• Stakeholder Engagement workshops began and continued throughout the project.</li> </ul>
Q3	<ul style="list-style-type: none"> <li>• Two public consultations (including a joint consultation with Eirgrid) launched on relevant DCC non-exhaustive parameters and requirements.</li> </ul>
Q4	<ul style="list-style-type: none"> <li>• Opened a tender enquiry for consultancy support for the project.</li> </ul>
2019 key milestones	
Q1	<ul style="list-style-type: none"> <li>• Issued Terms of Reference, Project Plan and Stakeholder Engagement Plan for public consultation.</li> <li>• <a href="#">Terms of Reference</a>, <a href="#">Project Plan</a> and <a href="#">Stakeholder Engagement Plan</a> approved and published on the ESB Networks' website.</li> <li>• EA Technology appointed as Consultants.</li> <li>• Ongoing interaction with consultants throughout 2019 (&amp; 2020) with meetings, workshops, and calls.</li> </ul>



**FIGURE 1: PROJECT WORKSHOP WITH EA TECHNOLOGY (7 MARCH 2019)**

L-R: Conor Molloy, PR5 Technical Lead, ESB Networks; Paul Morris, EA Technology; James Brennan, Strategic Planning Manager, ESB Networks; Mark Sprawson, EA Technology; Ivan Codd, Distribution Planning Standards Manager, ESB Networks; Neassa McCabe, Distribution Planning Standards, ESB Networks

- Stakeholder Engagement workshop and update.
- Completion of the development of a 'Load Indices Approach'.
- A paper entitled '[Stakeholder Engagement in the Revision of ESB Networks' Planning & Security of Supply Standards](#)' (by Ivan Codd & Neassa McCabe) was accepted for the CIRED 2019 Conference, (Madrid, 3-6 June 2019). This paper described the project overview and objectives, highlighting the interaction with stakeholders, including stakeholder engagement workshops, meetings, and public consultations. The paper was included and presented in Poster Session 5 (Planning of Power Distribution Systems) at the CIRED 2019 Conference, and published in the conference proceedings: <https://www.cired-repository.org/handle/20.500.12455/305>

Q2



**FIGURE 2: CIRED 2019 PAPER & POSTER PRESENTATION (JUNE 2019)**

L-R: Ivan Codd, Neassa McCabe, ESB Networks, with CIRED 2019 Conference poster

Q3	<ul style="list-style-type: none"> <li>Public consultation launched in August 2019 on '<a href="#">ESB Networks' Load Indices Proposal</a>' DOC-120819-FCI seeking feedback and comments on the proposal.</li> </ul>
Q4	<ul style="list-style-type: none"> <li>Public consultation launched in November 2019 on '<a href="#">Smarter HV and MV Customer Connections – New Approaches to Distribution Planning &amp; Security of Supply Standards</a>' DOC-041119-FFN seeking feedback and comments on:               <ul style="list-style-type: none"> <li>the proposed new content in the DSSPS;</li> <li>the new proposal for non-firm access to network capacity for distribution connected distributed generation; and</li> <li>the new proposal for non-wires alternative (flexibility) solutions for investment delay or deferral.</li> </ul> </li> <li>As part of the ESB Networks' Innovation Forum in November 2019, a dedicated break-out session on the consultation facilitated an opportunity for direct stakeholder engagement with the project team.</li> <li>Following completion of the earlier public consultation, introduction of Load Indices embedded into BAU and first use in the Price Review 5 (PR5) preparation and submission.</li> </ul>

**2020 key milestones**

Q1	<ul style="list-style-type: none"> <li>Following completion of the public consultation period (for the '<a href="#">Smarter HV and MV Customer Connections – New Approaches to Distribution Planning &amp; Security of Supply Standards</a>' DOC-041119-FFN) and the review of feedback and submissions received, an updated version of the DSSPS and the development of two associated guide documents were compiled and submitted to the CRU for approval.</li> </ul> <p>The submitted documents included:</p> <ul style="list-style-type: none"> <li>The updated '<a href="#">The Distribution System Security and Planning Standards</a>' DOC-170220-FOM (DSSPS);</li> <li>The new '<a href="#">Non-Firm Access Connections for Distribution Connected Distributed Generators Guide</a>' DOC-190220-FOT (NFA Guide); and</li> <li>The new '<a href="#">Non-Wires Alternatives to Network Development Guide</a>' DOC-140220-FOL (NWA Guide).</li> </ul> <ul style="list-style-type: none"> <li>Ongoing interaction with CRU throughout 2020 during their review of the revised Standards.</li> </ul>
Q3	<ul style="list-style-type: none"> <li>The updated DSSPS, NFA Guide and NWA Guide were approved by the CRU.</li> <li>The updated DSSPS, NFA Guide and NWA Guide were published on ESB Networks' website in September 2020.</li> </ul>
Q4	<ul style="list-style-type: none"> <li>DCC related modifications on Demand Response Provision requirements (Articles 27-30 &amp; 50-55) were accepted by the Distribution Code Review Panel (DCRP), and recommended for CRU approval.</li> </ul>

**2021 key milestones**

Q1	<ul style="list-style-type: none"> <li>• DCC related modification on Operational Notification and Derogation requirements (Articles 31-42) was accepted by the DCRP, and recommended for CRU approval.</li> </ul>
Q1&2	<ul style="list-style-type: none"> <li>• Updated DSSPS, NFA Guide and NWA Guide were progressed and, approved through the ESB Networks' internal document management system and updated on ESB Networks' website.</li> <li>• Some changes are already in BAU, while others will require an implementation phase or trial before fully implementing into BAU.</li> <li>• Additionally, there were a number of other related recommendations from EA Technology and these recommendations have been split into three categories: short, medium and long-term. A forward plan is currently in development to ensure that these recommendations will be considered and further explored in 2021.</li> </ul>

Throughout the project, there was ongoing collaboration with consultants and stakeholders in order to achieve a revised copy of the DSSPS that balances the needs of key stakeholders including ESB Networks, customers and CRU.

This included:

- Ongoing stakeholder engagement via workshops, meetings and conferences
- Quarterly progress reports were completed
- Regular updates delivered to stakeholders via:
  - The DCRP Quarterly Meetings which has a range of industry stakeholders, with details published quarterly on the ESB Networks website
  - Other stakeholder industry events such as Data Centre industry, ISEA and IWEA conferences
- Public Consultations seeking feedback on proposals

Tasks carried out to achieve project completion:

The following outputs were achieved:

- A Load Indices approach was developed for use by ESB Networks.
- An updated DSSPS document was developed.
- A new NFA Guide was developed.
- A new NWA Guide was developed.
- DCC requirements were incorporated into the Distribution Code.

All documents were publicly consulted upon and subsequently approved by CRU and are published on the ESB Networks' website.

Resources to deliver project:

The project team consisted of two people with contributions from consultants and both internal and external stakeholders.



### Project Governance:

The 'Smarter HV & MV Customer Connections Innovation Project' formed part of ESB Networks' [Innovation Strategy](#) and was included under the 'Connecting Renewables' Innovation Roadmap. There was an internal governance process to monitor all of the projects in the Innovation Strategy, consisting of an Innovation Governance Board (IGB) and a Roadmap Sponsor. The IGB owns the Innovation Strategy and it is their role to ensure that the strategy continues to reflect CRU and ESB Networks' priorities, and those of the evolving energy industry.

- Project Owner: Ivan Codd, Smart Distribution Planning Standards & Project Manager
- Roadmap Sponsor: Clare Duffy, Network Development & Electrification Manager

The Terms of Reference were reviewed and approved by the Roadmap Sponsor and published Q1, 2019.

The project was reviewed regularly throughout the project with quarterly updates to ensure that the project was on target for the revised Planning Standards to be ready to be published in Q1 of 2020.

The project team engaged with internal and external stakeholders throughout the project. Consultants were appointed to support and assist with the review project and to ensure the provision of an independent industry perspective.

A public consultation on the proposed Load Indices approach was held in Q3, 2019 ('[ESB Networks' Load Indices Proposal](#)' DOC-120819-FCI).

A public consultation on the proposed new Planning Standards was held in Q4, 2019 ('[Smarter HV and MV Customer Connections – New Approaches to Distribution Planning & Security of Supply Standards](#)' DOC-041119-FFN).

The revised Planning Standards were approved by CRU in Q3, 2020.

In line with ESB Networks' document management system, the new Planning Standards went through an extensive internal review process to ensure that the new Planning Standards comply with ESB Networks' document management system rules and were subsequently approved in Q1, 2021.

## 2. MEASURES OF SUCCESS AND EXPECTED BENEFITS

### New Load Indices Approach:

- Measures of Success:

Included in the scope of this project was the development of a 'Load Indices Approach' for use by ESB Networks which provides a loading level profile for HV Stations allowing ESB Networks to use this as an indicator for identifying and prioritising work for PR5 and beyond.

- Expected benefits from introduction of Load Indices:

The introduction, for the PR5 submission, and the continued use of Load Indices for HV Stations, to provide an overview of HV transformer and general network loading has been

successful. The tracking of the Load Index level overtime will provide trending information, to direct and inform HV investment planning and to provide an input into work programme management.

#### Planning Standards Review:

- Measures of Success:

A key deliverable in this project was the development of new Planning Standards that balance the needs of key stakeholders including ESB Networks, customers and CRU.

- Expected benefits from Planning Standards Review:

Expected benefits from the Planning Standards Review include:

- The publication of further and more detailed information on the applicable planning criteria to allow for a greater understanding of the planning process and rules used in assessment of customer applications and network development.
- The inclusion of the introduction of Non-Firm Access (NFA) connection arrangements for Distribution Connected Distributed Generators (DG) which will facilitate increased Distributed Energy Resources (DER) on the network supporting Ireland's 2030 targets.
- The inclusion of the introduction of Non-Wires Alternatives (NWA) or 'Flexibility' services to maximise the use of existing network assets, reducing the levels of network reinforcement required wherever possible, while also facilitating the lowering of connection charges and costs, and the shortening of connection times.

#### Demand Connection Code:

- Measures of Success:

The key deliverable was the incorporation of the DCC requirements into the Distribution Code.

- Expected benefits from incorporation into Distribution Code:

The requirements on providers of demand response services to ESB Networks are now covered in the Distribution Code, in compliance with the DCC.

### 3. CHANGES TO PROJECT (SCOPE / TIMELINES / DELIVERABLES / BUDGET / RESOURCES)

#### Scope / Deliverables:

There were no scope changes throughout the project.

#### Budget:

There were no budgetary changes during the project.

#### Resources / Timelines:

The project team was down one team member from July 2019 to July 2020 (due to maternity leave).



However, the target date of Q1, 2020 for submission of revised 'Planning Standards' for review, consideration and approval by CRU was still achieved.

## 4. RESULTS

The key results from the project were:

1. A new Load indices approach was developed for use by ESB Networks for PR5 submissions and onwards.
2. Completion of the Planning Standards Review with an updated DSSPS document and the development of two associated new guides (NFA Guide and NWA Guide).
3. Incorporation of the DCC requirements in the Irish Distribution Code.

Further details on the two key results are provided below:

### 1. New Load Indices Approach:

A new Load Indices approach was developed by ESB Networks' through research and analysis, and supported by recommendations from EA Technology. The new approach was developed for use by ESB Networks to provide a loading level profile for HV Stations allowing ESB Networks to use this as an indicator for identifying and prioritising work for PR5 and beyond.

The '[ESB Networks' Load Indices Proposal](#)' DOC-120819-FCI was issued for Public Consultation in August 2019, prior to submission of approach to CRU in October 2019, with first use as part of the PR5 preparation and submission.

The new Load Indices approach was briefed out to Planners and is now in use as BAU.

The introduction, for the PR5 submission, and the continued use of Load Indices for HV Stations, to provide an overview of HV transformer and general network loading has been successful. The tracking of the Load Index level overtime will provide trending information, to direct and inform HV investment planning and to provide an input into work programme management.

This approach was developed in consultation with stakeholders and submitted and presented to CRU.

### 2. Completion of the Planning Standards Review:

Completion of the Planning Standards Review with the following three documents which were issued for Public Consultation in November 2019, prior to approval by the CRU in September 2020:

- i. An updated version of '[The Distribution System Security and Planning Standards](#)' DOC-170220-FOM;
- ii. A new guide document outlining the new proposals for non-firm access to network capacity for distribution connected distributed generation: '[Non-Firm Access Connections for Distribution Connected Distributed Generators Guide](#)' DOC-190220-FOT; and
- iii. A new guide document outlining the new proposals for non-wires alternative (flexibility) solutions for investment delay or deferral: '[Non-Wires Alternatives to Network Development Guide](#)' DOC-140220-FOL.

All three documents were published on the ESB Networks' website in September 2020.

The new Planning Standards have been briefed out to Planners and are now being implemented into BAU. Some changes are already in BAU, while others will require an implementation phase or trial before fully implementing into BAU.

### 3. Demand Connection Code:

Distribution Code clause DCC13.2 now details the requirements for customers providing demand response services to ESB Networks, in compliance with the DCC.

The ASM project will progress a trial in 2021 to procure and utilise demand response services as a flexibility measure, whose parameters and requirements will be directed by the new clauses in the Distribution Code.

## 5. LEARNINGS AND RECOMMENDATIONS

### Learnings from Stakeholder Engagement:

The objective of this project was to evaluate existing and new innovative approaches to distribution network development, including the connection of new demand and renewable generation.

These innovative approaches to network planning should enable Ireland's energy policy objectives in a more cost-effective manner while ensuring that the security of supply is equal to, or where appropriate even greater than, what is delivered today.

A key deliverable of this project was the development of new Planning Standards that balance the needs of key stakeholders including ESB Networks, customers and CRU.

It was acknowledged that in order to achieve the objectives of the Planning Standards Review, this project could not be done in isolation. To support the project, a number of engagement activities were completed with stakeholders to validate the objectives and proposed solutions.

Crucially, the project team collaborated with industry through workshops and meetings held with the DG stakeholder group (e.g. IWEA, ISEA, Meitheal na Gaoithe (IWFA), IrBEA), the demand response stakeholder group (DRAI), and the energy storage stakeholder group (IESA). These engagements were used to define the project terms of reference, project plan and associated stakeholder engagement plan for the project, which were published on the ESB Networks' website in early 2019.

Collaborative work throughout 2019 with the appointed technical consultancy support (EA Technology), and a further workshop with the DG stakeholder group in June 2019, led to a detailed consultation document being prepared, entitled '[Public consultation on Smarter HV and MV Customer Connections – New Approaches to Distribution Planning & Security of Supply Standards](#)' DOC-041119-FFN, outlining proposals for fundamentally more innovative ways of connecting customers to the distribution HV and MV systems.

A public industry consultation was held on this in winter 2019. During the consultation period, as part of the ESB Networks' Innovation Forum in November 2019, a breakout workshop was held, giving attendees an opportunity to discuss in detail the main Smarter HV and MV Customer Connections consultation proposals with the project team. The collaborative engagement, both workshops and the

consultation all provided the project team with further opportunities to validate proposed solutions and listen to feedback from stakeholders.

Continuing the consultative process to validate the project's activities, regular updates were delivered over the course of 2018, 2019 and 2020 via the DCRP quarterly meetings which includes a range of industry stakeholders, with details published quarterly on the ESB Networks' website.

This collaborative Stakeholder Engagement was key to the success of this project and learnings from this collaboration were collated into a paper entitled '[Stakeholder Engagement in the Revision of ESB Networks' Planning & Security of Supply Standards](#)' (by Ivan Codd & Neassa McCabe) which was accepted for the CIRED 2019 Conference, (Madrid, 3-6 June 2019). This paper described the project overview and objectives, highlighting the interaction with stakeholders, including stakeholder engagement workshops, meetings and public consultations. The paper was included and presented in Poster Session 5 (Planning of Power Distribution Systems) at the CIRED 2019 Conference, and published in the conference proceedings: <https://www.cired-repository.org/handle/20.500.12455/305>

#### Further Recommendations from Technical Consultants:

During the Planning Standards Review, there were a number of recommendations from EA Technology. It was acknowledged by EA Technology that while some of their recommendations were ready for use as BAU, there were other related recommendations that may require further work or other systems in place before embedding into BAU. These recommendations have been captured and split into three categories: short, medium and long-term. A forward plan is currently in progress and under development to ensure that these recommendations will be appropriately considered for future work areas.

## 6. BENEFITS REALISED AND DISSEMINATED

#### Learnings / Benefits realised to date:

##### New Load Indices Approach:

One of the deliverables from the project was the development of a Load Indices approach which has transitioned to BAU and was used to inform the PR5 submissions to the CRU relating to HV reinforcement.

This approach allows heavily utilised HV Stations to be identified, which can be used as an indicator for prioritising work programmes and investment plans.

It is now established as an informative measure for the relative loading levels for HV Stations and will be used in planning activities, updated annually and changes in Load Indices will be tracked over each PR Period.

The Load Indices approach was developed in consultation with stakeholders and submitted and presented to CRU.

The Load Indices process will be further developed and enhanced and automated, as improved IT systems become available.

##### Planning Standards Review:

A key deliverable from the innovation project was the development of new Planning Standards, and their implementation into BAU. The new Planning Standards were approved by the CRU in September 2020 and are published on the ESB Networks' website and the changes have been briefed out to all Planners. Some changes are already in BAU, while others will require an implementation phase / trial before fully implementing into BAU.

List of changes to the Planning Standards and their benefits:

1. Among the changes to the Planning Standards are increased transparency through the inclusion of more detailed distribution network planning criteria and information, such as security of supply standards, asset loading levels, voltage regulation standards and network development policies. This provides a greater understanding for stakeholders of the planning process and rules used in assessment of customer applications and network development.
2. The inclusion of an introduction to non-firm access for distribution connected DG will help facilitate more renewable energy on the network enabling 2030 targets to be reached. NFA will allow generators to have more cost-effective and faster connection to the distribution system where the generator's network connection will have reduced access to export during network outages, and in return require less conventional network reinforcement. This concept could be available to approximately 80% of the renewable generation connection applications to the distribution system. This will be part of BAU under ECP 2.1.

A separate guide document entitled '[Non-Firm Access Connections for Distribution Connected Distributed Generators](#)' DOC-190220-FOT was developed to provide more information on the NFA approach. This was approved by the CRU in September 2020 and is published on the ESB Networks' website.

3. The inclusion of the introduction to NWA or 'Flexibility Services' (e.g. demand-side response, energy storage, etc.) as an alternative to conventional network reinforcements will maximise the use of existing network assets, reducing the levels of network reinforcement required wherever possible, while also potentially facilitating the lowering of connection costs, and the shortening of connection times. An innovation project (NetFlex) to trial a non-wires solution commenced in 2020, which is now subsumed into the Active System Management project. Results from trials will contribute to the future development of NWA for BAU.

A separate Guide document entitled '[Non-Wires Alternatives to Network Development](#)' DOC-140220-FOL was developed to provide more information on the NWA approach. This was approved by the CRU in September 2020 and is published on the ESB Networks' website.

4. The inclusion of the technical criteria applied during the assessment of Energy Storage facilities (e.g. Battery Facilities) when such sites are providing system services to the Transmission System Operator (TSO). This has moved to BAU.
5. The inclusion, as an interim measure in planning studies, of provision in HV Station capacity for the expected future growth in microgeneration connections. Under the [Climate Action Plan 2019](#), the connection of further microgeneration is strongly supported, including the formalisation of a support scheme for electricity exports, which will also contribute to the achievement of the 2030 targets. This interim measure was subject to further public consultation ('[Provision in HV and MV Capacity for Expected Future Growth in Microgeneration Connections](#)' DOC-110121-FZY) with industry stakeholders, in Q4 of 2020.

#### Summary of Benefits:

These changes and innovative approaches to network planning will ensure that the networks designed today and into the future will facilitate increased DER on our network and flexible NWA solutions for

distribution network development while catering for the changing needs of our customers. This should assist in enabling Ireland’s energy policy objectives to be reached in a more cost-effective manner, while ensuring that the security of supply is equal to, or where appropriate even greater than, what is delivered today.

We are exploring approaches to ensure that the practical application of the new standards and processes are monitored in terms of quality assurance and are consistently aligned with best practice.

See Section 9 for further information on next steps.

## 7. FINAL TIMELINES

The project was delivered on time and the following key milestones were achieved.

Load Indices Approach key milestones	
Q2 2019	<ul style="list-style-type: none"> <li>Completion of ‘Load Indices Approach’.</li> </ul>
Q3 2019	<ul style="list-style-type: none"> <li>Issued ‘<a href="#">ESB Networks’ Load Indices Proposal</a>’ DOC-120819-FCI for public consultation in August 2019.</li> </ul>
Q4 2019	<ul style="list-style-type: none"> <li>Introduction of Load Indices approach into BAU, and first use in the PR5 submission.</li> </ul>

Planning Standards Review key milestones	
Q1 2019	<ul style="list-style-type: none"> <li><a href="#">Terms of Reference</a>, <a href="#">Project Plan</a> and associated <a href="#">Stakeholder Engagement Plan</a> published on the ESB Networks’ website.</li> </ul>
Q4 2019	<ul style="list-style-type: none"> <li>Public consultation launched in November 2019 on ‘<a href="#">Smarter HV and MV Customer Connections – New Approaches to Distribution Planning &amp; Security of Supply Standards</a>’ DOC-041119-FFN seeking feedback and comments on the proposed new content in the DSSPS document and the new proposals for NFA to network capacity for distribution connected DG and NWA (flexibility) solutions for investment delay or deferral.</li> </ul>
Q1 2020	<ul style="list-style-type: none"> <li>Following completion of the public consultation period and the review of feedback and submissions received, the DSSPS document and associated guide documents providing information on the NFA approach and the NWA approach were compiled and submitted to the CRU for approval.</li> </ul>
Q3 2020	<ul style="list-style-type: none"> <li>The updated DSSPS document along with the NFA Guide and the NWA Guide were:               <ul style="list-style-type: none"> <li>Approved by the CRU in September 2020; and</li> <li>Published on the ESB Networks website in September 2020.</li> </ul> </li> </ul>

Demand Connection Code key milestones	
Q3 2018	<ul style="list-style-type: none"> <li>Issued public consultation papers on non-exhaustive parameters, as required by DCC:               <ul style="list-style-type: none"> <li><a href="#">Joint ESB Networks / Eirgrid DCC Parameter Consultation Paper</a></li> <li><a href="#">ESB Networks DCC Parameter Consultation Paper</a></li> </ul> </li> </ul>

2019	<ul style="list-style-type: none"> <li>Considerable and detailed interaction with CRU and Eirgrid on progression of DCC issues.</li> </ul>
Q4 2020-Q1 2021	<ul style="list-style-type: none"> <li>Distribution Code modifications #46, #48, #51 accepted by DCRP and recommended to CRU for approval.</li> </ul>

## 8. FINAL COSTS

There were no CAPEX costs associated with this project.

There were time and expenses costs for ESB Networks Staff and Consultants.

## 9. NEXT STEPS – BAU / TRANSFER OF OWNERSHIP

As mentioned above, some of the recommendations and changes in the Planning Standards are already embedded in BAU, while others will require an implementation phase with further development or a trial before fully implementing into BAU.

A trial to test NWA is currently underway through the Active System Management project. Results from this trial will contribute to the future development of NWA for BAU.

A public consultation on the [‘Provision in HV and MV Capacity for Expected Future Growth in Microgeneration Connections’](#) DOC-110121-FZY was launched in Q4 of 2020. A review of the responses is underway to determine the most appropriate method for consideration of microgeneration connections in planning studies going forward and this is expected for completion in time for further rounds of ECP.

Work is ongoing to enhance the Load Indices process and this is expected for completion in 2021.

The revision of the Disturbing Load Policy is due for completion in Q2 of 2021.

During the Planning Standards Review, there were a number of recommendations from EA Technology. It was acknowledged by EA Technology that while some of their recommendations were ready for use as BAU, there were other related recommendations that may require further work or other systems in place before embedding into BAU. Those recommendations which were ready for use as BAU have been embedded in BAU and the other recommendations have been captured and split into three categories: short, medium and long-term. A forward plan is currently in progress and under development to ensure that these additional recommendations will be appropriately considered for future work areas.