



# **Electricity Authority Work Programme**

**Report for the period**

**1 July 2017 – 31 October 2017**

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## Key to colour symbols used in this report

 Project milestones and/or deliverables achieved or on track to be achieved	 Project milestones and/or deliverables are at risk	 Project milestones and/or deliverables not achieved or not able to be achieved
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## Executive summary

The Authority's work programme details the major projects we intend to progress during the 2017/18 financial year. The work programme sets out:

- **Priority 1—Key projects:** These are strategically important projects. Key regulatory projects (projects in **blue text** in Table 1) may result in new Code amendments, or market facilitation initiatives. Projects in **red text** are key implementation and operational projects.
- **Priority 2 and 3—Other projects:** These include priority 2 and priority 3 regulatory projects, projects to deliver operational efficiencies, and compliance projects.

**Table 1: Summary of priority 1 projects**

#	Project	Programme	Code completed in 2017/18 year?	Existing or new project?	Status
A1	Enabling mass participation in electricity markets	A: Evolving technologies and business models	Not applicable	Existing	Completed
A2	Multiple trading relationships	A: Evolving technologies and business models	No	Existing	On track
A3	Data and data exchange	A: Evolving technologies and business models	No	Existing	On track
B1	What's my number	B. Consumer choice and competition	Not applicable	Existing	On track
C1	Transmission pricing review	C. Pricing and cost allocation	No	Existing	On track
C2	Distribution pricing review	C. Pricing and cost allocation	Not applicable	Existing	On track
C3	Spot market settlement on real time pricing	C. Pricing and cost allocation	Possible	Existing	On track
D1	Introduction of hedge market cap products	D. Risk and risk management	Not applicable	Existing	At risk
D2	Review of market systems resilience to adverse events	D. Risk and risk management	Not applicable	New	On track
D3	Extended reserve implementation	D. Risk and risk management	Not applicable	Existing	Not able to be achieved

## Introduction and purpose

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This is a progress report against our 2017/18 work programme<sup>1</sup>. The ‘traffic lights’ used in this report relate to overall progress against the project milestones, which may go beyond 30 June 2018. All milestones are for the end of the financial year unless otherwise stated.

The work programme is our internal planning document. It represents a full commitment of Authority staff resources and the available project budgets. We review and update the work programme on a regular basis.

### Overall performance standards for the year

The tables below include key milestones or deliverables for the financial year. It should be noted that for all relevant projects the milestones have been set out as if a Code amendment is required. Projects may be ended or a different path decided upon (such as market facilitation measures) at a number of points in the process, in particular after an initial investigation and cost-benefit analysis (CBA) has been completed. It is not practical to set out the range of possible alternative paths for each project in the following tables. We have therefore set out the potential process and timetable as if Code amendment is required. All Code amendment milestones should be read as if “if required” were included in the text.

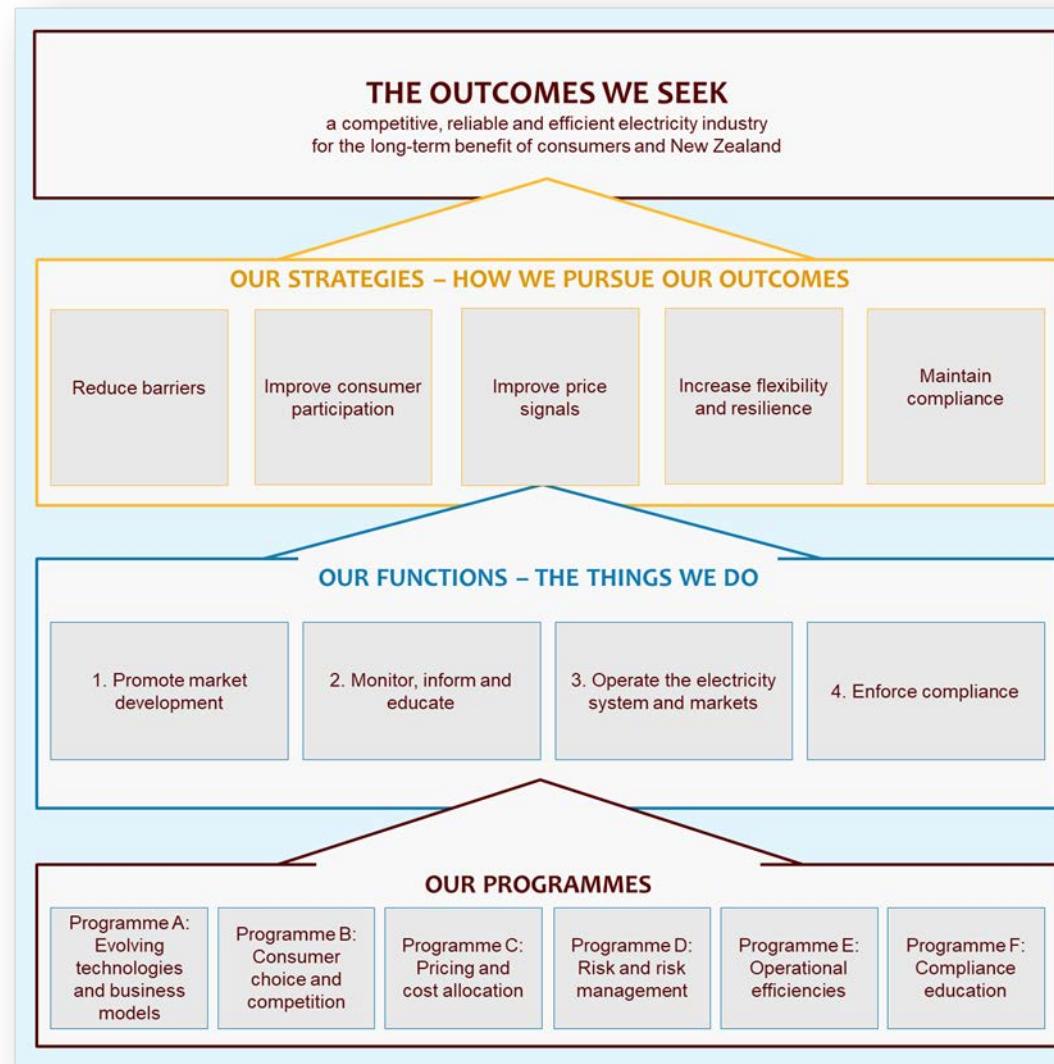
### Changes during the year

We remain flexible and responsive in the management of this work programme. Reprioritisation takes place as required during the year, for example if new projects are started, or if new information becomes available about a specific project.

This report includes amendments made to the work programme as a result of reviews completed during the year. These amendments are shown as ~~tracked changes~~ tracked changes revisions. New projects initiated during the financial year are *italicised*.

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<sup>1</sup> The work programme is available on our website at <http://www.ea.govt.nz/about-us/corporate-projects/201617-planning-and-reporting/>

**Figure 1: Our 2017/18 strategic framework and the programmes covered in this document**

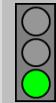
## Programme A: Evolving technologies and business models

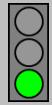
This programme covers initiatives to reduce inefficient barriers to the development and use of evolving technologies and business models across the supply chain. This includes reducing inefficient barriers to:

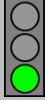
- any consumers purchasing directly from the wholesale electricity market or directly from local generators
- mass-market demand response (DR) and aggregators of mass-market DR
- mass-market distributed energy resources (DERs) and aggregators of mass-market DERs. DERs include traditional distributed generation, batteries, micro-grids and 'prosumer' situations.

This programme aligns with our *reduce barriers* strategy in the SPE.

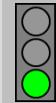
Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
A1	<b>Enabling mass participation in electricity markets</b>	1	This project is aimed at identifying any areas missing from our work programme relating to inefficient regulatory barriers to greater participation and uptake of technology in electricity markets. The projects that are identified will be addressed, as necessary, through existing or new projects.	Removing barriers to mass participation will allow innovation and new business models to develop for the long-term benefit of consumers.	Complete consultation on an issues paper.  Decide next steps, including whether to start new projects to address inefficient regulatory barriers identified through consultation.		<p>This milestone and project are now complete. A paper outlining next steps and decisions was published October 2017.</p> <p>A new project (Equal Access) arises out of and supersedes this project.</p>

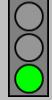
Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
A2	<b>Multiple trading relationships</b>	1	This project explores the issues involved in allowing multiple trading relationships at each connection point.	<p>Consumers are increasingly able to obtain electricity services (including retail, generation, demand response) from multiple suppliers. At present, the Code and industry practices limit consumers' ability to establish relationships with more than one electricity services provider.</p> <p>Allowing multiple trading relationships could promote competition, for example by facilitating development of new business models and services.</p> <p>There is also potential to promote reliability by using diverse, small-scale distributed energy resources.</p>	Complete consultation on an issues paper.		On track as at 31 October 2017. We expect to publish an issues paper for consultation by December 2017.

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
A3	<b>Data and data exchange</b>	1	Review of the data and data exchanges between participants (including service providers).	<p>We want to make sure that data and data exchanges allow for innovation and more participation in the electricity market. We also want to see whether we can use more recent technology to improve the efficiency of data exchange. This could further enhance competition and choice for consumers.</p> <p>The primary focus is to see that the right information is provided at the right times, and at an appropriate level of accuracy, so people pay and are paid the right amount. Doing this could improve the operational efficiency of the electricity industry.</p>	Complete consultation on an issues paper.		<p>This milestone is now complete. An issues paper was published for consultation in September 2017. Submissions close November 2017.</p> <p>A paper outlining decisions and next steps for this project will be published once submissions have been considered.</p>

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
A4	<b>Integration of hosting capacity (New)</b>	2	<p>Hosting capacity is the capacity of distributed generation that a network can tolerate without exceeding its quality thresholds.</p> <p>We need to replace "congestion period" with "hosting capacity" within Part 6. Recent guidelines released by the University of Canterbury makes this work more urgent.</p> <p>Possible changes to Part 1A process to allow distributors to require inverter settings for network protection.</p>	<p>We are seeking to improve competition and efficiency by allowing more consumers to become more self-sufficient, eg, using photo-voltaic and batteries.</p> <p>Allowing distributors to use hosting capacity and to specify inverter settings allows distributors to allocate DG connections efficiently rather than on the current 'first come first served' basis.</p>	Investigate and complete an issues paper for consultation.		Investigation is currently underway and the issues paper for consultation is on track for completion by June 2018.

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
A5	<b>Review of distribution sector (previously called Efficiency of distribution company arrangements)</b>	2	The Authority anticipates that rapid technological change is going to have an increasing effect on electricity distribution businesses (EDBs). EDBs have varied governance arrangements and widely varying sizes. Some have ancillary businesses that are not regulated.	We want a better understanding of the factors that influence the ability of EDBs to respond to technological change.	Develop the scope of the review and begin the review.		Initial scoping for the review has commenced and the project is on track as at 31 October 2017.
A6	<b>Participation of storage technology in the wholesale market</b>	3	Investigate and address any barriers in the Code to the efficient operation of grid scale storage technology in the wholesale market (eg, offer, dispatch, spot price arbitrage and ancillary service market participation).  Note that participation of smaller scale storage technology being investigated as part of the enabling mass participation project.	Removing any barriers to different forms of storage technology in the wholesale market could improve supply side competition, contribute to reliability and potentially improve the operational efficiency of the electricity industry.	Start investigation.		This milestone is complete. The technical requirements for battery-based ancillary services (eg instantaneous reserve) will be investigated by the system operator.

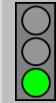
Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
A7	<b>Guiding regulatory principles for demand-response</b>	3	<p>Update the guiding regulatory principles for demand response.</p> <p>There are a number of competing uses for demand response. The guiding regulatory principles set out the Authority's criteria for assessing those uses.</p>	<p>The guiding regulatory principles should improve efficient use of demand response, and evolving technology is likely to materially increase opportunities for demand response.</p>	<p>Publish an updated version of the guiding regulatory principles for demand response.</p>		<p>Preparations for publishing an updated version by June 2018 are on track. A statement of work and contract, enabling commencement of the update, are now in place.</p>
A8	<b>Enabling dispatchable demand at conforming nodes</b>	3	<p>A project to enable aggregators to aggregate load over several conforming GXPs and several retailers. This involves an expansion of the dispatchable demand (DD) regime.</p>	<p>We are seeking to enable more efficient use of dispatchable demand by allowing third parties to contract with loads at conforming GXPs. This will improve competition and reliability.</p>	<p>Start development of a Code amendment consultation paper.</p>		<p>A technical investigation by the system operator is required to enable development of the code amendment consultation paper. This investigation will commence in December 2017.</p>

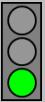
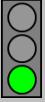
Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
A9	<b>Monitoring for new technologies (New)</b>	3	Investigating and implementing changes to market systems required to monitor and enable new technologies, including any Code changes required to support data gathering.	<p>Supporting the programme of work around enabling new technologies and business models.</p> <p>This will support better policy and market design, better information for public and private investment decisions, better information for government, as well as for the Authority monitoring.</p>	<p>Complete consultation on potential enhancements to the registry and participant's systems (aimed at advancing lower cost and/or simpler enhancements).</p> <p>Develop scope of stages 2 and 3 of this project – that will consider higher cost enhancements and/or potential policy implications.</p>		<p>Consultation on a minor registry change is complete and submissions are currently being reviewed. Code changes that support this project's purpose have been added to other projects where appropriate.</p> <p>A consultation paper to consider more complex or costly system enhancements is under development.</p>

## Programme B: Consumer choice and competition

This programme covers initiatives to promote consumer participation through the retail market. Aspects relating to prosumers and/or consumer participation directly in wholesale markets are covered in programme A.

This programme aligns with our *improve consumer participation* strategy.

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
B1	<b>What's my number (WMN)</b>	1	<p>The WMN campaign promotes to consumers the benefits of comparing and switching retailers using a multi-channel advertising campaign.</p> <p>As part of WMN we partly fund the ConsumerNZ Powerswitch website, which is an independent electricity price comparison website.</p>	WMN encourages consumers to shop around by increasing awareness of possible savings available and that it is easy to switch.	Successful delivery of WMN campaign.		<p>The winter WMN campaign ran between June and August 2017 and was successfully delivered.</p>

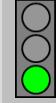
Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
B2	<b>Consumer education programme</b>	2	We will provide information and education to the public about electricity market performance, and the benefits from a competitive market	Improved availability of information will increase consumer awareness, understanding and motivation to participate in both the wholesale and retail markets.	Evaluate the Consumer education pilot and agree programme of work.  Maintain the number of annual visits (15,000) to the consumer section of the Authority website.		The evaluation is complete. Insights from the pilot will inform ongoing development of consumer education materials and the next stage of the Authority's Communications Strategy and programme of work.  Annual visits are on track. As at 31 October 2017 there have been 28,361 page views in the consumer section on our website.
B3	<b>Default distribution agreement (DDA)</b>	2	A review to consider amending the Code to introduce a default distribution agreement. The contractual relationship between a distributor and retailers is set out in a distribution agreement (also known as a use-of-system agreement (UoSA)). The UoSA sets out the terms of the service provided by a distributor to the retailers trading on its network.	A DDA could promote retail competition and efficient operation. A DDA could reduce entry and expansion barriers, reduce the costs of doing business, and enhance innovation in the retail market.  The terms of the relationship between a distributor and retailers are important for retail competition and efficiency.	Board decision on next steps, which could include approving Code amendment.		A decision on the next steps for the DDA will be sought from the Board by June 2018.

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
<b>B4</b>	<b>Saves and win-backs (New)</b>	<b>2</b>	A project to consider whether changes to the Code are required in response to the post-implementation review of the 'saves' Code provisions.	Saves and win-backs are at the crux of competition between retailers. It is important that new entrant retailers have a 'level playing field' for competing for customers. This project is important for promoting retail competition.	Complete consultation on an issues paper.		Drafting of the issues paper has commenced and preparations to complete a consultation by June 2018 are on track.
<b>B5</b>	<b>Spot prices and risks for consumers</b>	<b>3</b>	Review completed in 2016/17. Implementation taking place in 2017/18.	Mass market consumers paying spot prices need access to good information about spot price risks and options for dealing with those risks. This is important for residential consumers who are not hedged.  Competition and reliability may be affected if this is not addressed.	Develop market facilitation measure (MFM) and communicate to retailers who offer spot-price products to residential consumers - by Dec 2017.		Milestone met and project completed September 2017. Now part of BAU monitoring activity.

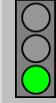
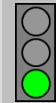
## Programme C: Pricing and cost allocation

This programme covers initiatives to promote efficient pricing in markets and for monopoly services. This programme aligns with our *improve price signals* strategy.

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
C1	<b>Transmission pricing review</b>	1	A review of the transmission pricing guidelines.	We want to get operational and investment efficiency in the transmission sector. This will also contribute to efficiency in the broader electricity market. More efficient transmission pricing will promote more efficient use of the transmission network and more efficient investment in the transmission network and by parties using the transmission network.	Board decision on the next steps for the TPM review.		New Board members have received extensive briefings since June 2017. The project is progressing well relative to the track established by the Board in June 2016. A decision about next steps will be reached by June 2018.

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
C2	<b>Distribution pricing review</b>	1	<p>Reforms to the pricing of distribution services to address the implications of evolving technologies affecting the electricity sector.</p> <p>We are pursuing an industry led approach.</p>	<p>We want to make sure distribution prices signal efficient investment in and use of evolving technologies.</p> <p>More efficient distribution pricing will promote more efficient use of, and investment in, the distribution network. Prices that are service-based and cost-reflective will contribute to efficiency in the broader electricity market</p> <p>This will promote efficiency and competition by providing consumers with improved pricing information that enables consumers to make better decisions.</p>	Complete consultation on revised Distribution pricing principles and Information disclosure guidelines.		<p>Development of the consultation paper is currently underway and on track for presentation to the Board by March 2018. Preparations to complete a consultation by June 2018 are on track.</p>

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
C3	<b>Spot market settlement on real-time pricing</b>	1	<p>Further developing the settlement on real-time pricing initiative.</p> <p>Specifically:</p> <ul style="list-style-type: none"> <li>Settlement on dispatch-based real time prices</li> <li>Re-offer within the trading period.</li> </ul>	<p>We want to reduce barriers to retail competition and new technologies for demand response arising from current spot market arrangements.</p> <p>Enhancements to the spot market pricing arrangements have the potential to increase competition in the hedge and retail markets, and improve reliability and operational efficiency through greater technology adoption and demand responsiveness to spot market prices.</p>	Complete analysis of submissions on first round of consultation on comprehensive Code amendments.		<p>The first round of consultation closed in October 2017 and analysis of submissions is currently underway. The next steps for the project will be decided once submissions have been considered.</p>
C4	<b>Review of spot market trading conduct provisions</b>	2	Review of trading conduct provisions in light of events that have tested these provisions. Take into account any findings from case studies, performance reports and compliance reports.	Improved wholesale market competition by ensuring the trading conduct provisions are practicable and well understood.	Start preparation of an issues paper.		<p>Initial preparations have commenced. The Market Development Advisory Group will consider a draft scope of work for the project at their first meeting in November 2017.</p>

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
C5	<b>Implementation of distributed generation pricing principles (DGPPs)</b>	2	Implement DGPP decision made in December 2016.	Implementing the approved changes will promote efficient investment in transmission and distributed generation.	Implement according to Code requirements.		DGPP implementation is underway and on track as at 31 October 2017.
C6	<b>Improving accuracy of spot price forecasts</b>	2	Improve the accuracy of prices in the spot market forecast schedules available up to 36 hours in advance of real-time.	We want to reduce barriers to retail competition and demand response arising from current spot market arrangements.  Improving the accuracy of spot price forecasts is expected to encourage more efficient demand-response and generation scheduling, and benefit those parties looking to employ new technology and business models.	Publish decision paper on preferred option(s) for development.  Start development of option(s), initial focus likely to be on improving the accuracy of conforming load forecasts.		This milestone is complete. A decision paper was published in August 2017. The focus will be on evaluating options to improve the system operator's medium-term load forecast.  A technical advisory services project, which will enable options development to commence, has been initiated with the system operator.

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
C7	<b>Enable system operator's EDF implementation</b>	2	EDF refers to electronic dispatch facility. Code amendments are needed to enable the system operator to implement EDF Phase III, which deal with processes for acknowledging dispatch instructions and enable potential improvements to ramp rates.	Improve efficiency and competition in the wholesale market by lowering entry and operational costs for dispatch and enabling potential new features. EDF Phase III is regarded as a key enabling project for settlement on real-time pricing.	Start review of the Code to determine what, if any, Code amendments are required to enable go-live of EDF Phase III.		Preparations for the review are on track as at 31 October 2017 and the Code review is scheduled to commence in late November 2017.
C8	<b>Review of wind generation offer provisions</b>	2	This project will review the offer and dispatch Code provisions for wind generators.	To review the offer provisions covering wind generators to ensure they promote reliability and efficiency for the long-term benefit of consumers.	Publish Code amendment consultation paper.		This milestone is now complete. The consultation paper was published in September 2017 and consultation closes November 2017.  We are currently considering submissions and preparation a decision paper.
C9	<b>TPM operational review (New)</b>	2	Operational changes proposed by Transpower to the existing Transmission Pricing Methodology within existing TPM guidelines.	Transpower can propose operational changes to the existing TPM. We are required to consider their proposal.	Consider Transpower's proposal and respond, as required.		As at 31 October 2017 the Authority has received no further update on whether Transpower intends to conduct an Operational Review on the TPM. A decision is expected after the November 2017 Transpower Board meeting.

## Programme D: Risk and risk management

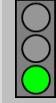
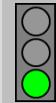
This programme covers initiatives to promote efficient management of capacity and energy risks. This programme aligns with our *increase flexibility and resilience* strategy.

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
D1	<b>Introduction of hedge market cap products</b>	1	<p>Introduction of exchange traded cap products to provide more transparent pricing of supply risks and encourage the provision of infrequently dispatched generation plant. Aiming to have both energy (lower strike price) and capacity (higher strike price) products listed.</p> <p>Ensuring the Electricity Contracts webpage is able to record cap transactions.</p>	<p>We seek to improve retail competition and security of supply by giving market participants greater certainty about forward price expectations.</p>	<p>Listing of exchange traded cap products.</p> <p>Monitor and report on trading performance once caps are listed.</p>		<p>The listing of New Zealand cap futures products was delayed due to the ASX having to work through a range of issues including the setting of initial margins in line with international best practice risk mitigation requirements.</p> <p>Trading performance cannot be monitored until the caps have been listed.</p>

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
D2	<b>Review market systems resilience to adverse events</b>	1	<p>Review the resilience to adverse events of the market systems provided by our market operation service providers (MOSPs).</p> <p>Work with other agencies to plan an industry-wide cybersecurity exercise.</p>	<p>We want to ensure that our MOSPs provide services that are resilient to adverse events.</p> <p>We want to ensure that the industry provides a coordinated response to an adverse cybersecurity event.</p>	Complete review of MOSPs' business assurance audits for cybersecurity arrangements.		<p>This milestone is complete. Review of MOSP cybersecurity audits has been completed and the remaining remedial actions are on track.</p> <p>The Authority will maintain a "watching brief" on the management of an industry led cybersecurity exercise.</p>
D3	<b>Extended reserve implementation</b>	1	<p>The Code was amended in June 2014 to provide for efficient procurement of extended reserve. Implementation includes establishment of a service provider role.</p> <p>Extended reserve is currently provided via automatic under-frequency load shedding (AUFLS). Replace current 2-block AUFLS scheme with a 4-block extended reserve scheme.</p>	<p>We are seeking more efficient provision and use of extended reserve – the reserve that is operated only in major under-frequency events.</p> <p>Contributes to the efficiency and reliability limbs of the Authority's statutory objective.</p>	<p>Complete the selection of demand units and planning for their implementation.</p> <p>Commence transition from the old 2-block AUFLS scheme to the new 4-block extended reserve scheme.</p>		The extended reserve selection process is on-hold pending a decision by the Board on next steps.

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
D4	<b>Review the treatment of contingent storage in the security of supply arrangements</b>	2	<p>The security of supply forecasting and information policy (SOSFIP) includes a description of how the system operator must calculate hydro risk curves (HRCs), which currently excludes contingent storage in hydro lakes. As the SOSFIP was last reviewed in 2013, this project is to consider how best to treat contingent storage in the SOSFIP and if necessary, in other security of supply arrangements.</p> <p>A key component involves the system operator reviewing whether a change in the treatment of contingent hydro storage is warranted, and, if so, follow the Code process for proposing amendments to the SOSFIP.</p>	<p>If contingent storage in Lake Pukaki becomes available at lower levels of supply risks (eg, at the 4% HRC rather than the 10% HRC) then it may alter the way the market responds to extended dry events and responds to current security of supply policy. A full review of the treatment of contingent storage is needed to ensure market participants have clarity about future dry year events.</p>	<p>If the system operator proposes changes to the SOSFIP, within 6 months issue a decision paper on that proposal or a consultation paper.</p>		<p>As at 31 October 2017 no changes had been proposed to the SOSFIP.</p>

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
D5	<b>Wholesale market information</b>	2	<p>Review the wholesale market information disclosure exclusions in Clause 13.2A of the Code.</p> <p>Evaluate and progress as appropriate other Wholesale Advisory Group recommendations to improve wholesale market information.</p>	<p>We seek to facilitate the wholesale market including an active hedge market by enhancing the disclosure of information that influences wholesale market and forward prices.</p> <p>A more active hedge market enhances retail competition.</p>	Complete Code amendment consultation and update guidelines.		<p>Consultation closed in October 2017. Submissions are currently being considered and we are on track to complete a decision paper by May 2018.</p>
D6	<b>Offsetting of prudential requirements for exchange traded, spot, OTC and FTR markets</b>	2	<p>This project investigates whether and how the clearing manager could take exchange traded positions into account when assessing a wholesale market participant's prudential security requirements.</p>	<p>A more integrated offsetting across the various components of the wholesale market has the potential to improve the efficiency with which market participants manage their working capital.</p> <p>This improvement in financial efficiency will enable a greater level of competition in the retail market.</p>	<p>Publish evaluation paper on whether to progress with greater offsetting of prudential requirements.</p> <p>If assessed to be a net benefit, start more detailed design of preferred options.</p>		<p>This milestone is complete. Consultation on the evaluation paper closed in October 2017 and submissions are currently being reviewed.</p> <p>The net benefits of progressing with greater offsetting are currently being assessed.</p>

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
D7	<b>Normal frequency management strategy</b>	2	Develop arrangements to improve the generator governor asset owner performance obligations to maintain effective frequency management.	Provide stable frequency of an acceptable quality to consumers at the lowest long-term cost - a productive efficiency improvement for the long-term benefit of consumers.	Begin developing proposals to improve the generator governor asset owner performance obligations.		A proposal for a new governor response service is to be developed. Proposal development can commence once the procurement requirements for the new service have been clarified by the system operator. This work is on track as at 31 October 2017.
D8	<b>Instantaneous reserve market review</b>	2	A review of the instantaneous reserve markets to reduce barriers and enhance performance.	Current arrangements may create barriers for some types of instantaneous reserve. We will consider options to reduce unnecessary barriers.  This will contribute to increased competition and efficiency.	Publish an information paper closing out investigations completed to date.		Development of the information paper is currently underway and on track as at 31 October 2017.

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
D9	<b>Enhancement of FTRs</b>	3	Consider Financial Transmission Right (FTR) market enhancements that would: <ul style="list-style-type: none"> <li>• better integrate FTRs with other forward contract types, e.g. over-the-counter and ASX Futures and Options</li> <li>• enable overseas traders to participate</li> <li>• facilitate the secondary trading of FTRs</li> <li>• facilitate more reliable settlement day prices for prudential security assessments.</li> </ul>	We seek to improve retail competition by providing market participants with improved risk management products that facilitate greater certainty about forward price expectations. This will also promote reliability and efficiency.	Publish a consultation paper that evaluates detailed options to enhance the FTR market.  If assessed to be a net benefit, start more detailed design, consultation and implementation of options.		This milestone is complete. A consultation paper was published in March 2017 and submissions closed in May 2017.  Submissions are currently being reviewed and preparation of a decision paper regarding design, consultation and development options is currently on track.
D10	<b>Refinements to customer compensation scheme (CCS)</b>	3	Address minor improvements to the CCS that arose out of the 2016/17 review.	We want to ensure the CCS is continuing to deliver efficient levels of security of supply.	Publish a decision paper prior to winter 2018.		The scope of the decision paper has been clarified and development has commenced. Preparations to publish a decision paper by winter 2018 are on track.

## Programme E: Operational efficiencies

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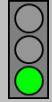
Initiatives to increase the efficiency of electricity market operations. In particular, we look at refining processes set out in the Code and initiatives to improve market systems. This programme primarily aligns with our *ensure fit-for-purpose market services* strategy and also contributes to other strategies.

Code improvements include removing barriers to efficient operation and interaction, including via data exchange.

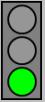
Market systems are provided by market operations service providers (MOSPs) and the system operator. We want these services to deliver effective market operation, increase market efficiency, and facilitate market development.

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
E1	<p><b><u>Review of the winter security margins</u></b></p> <p><b><u>Review of the Security Standards Assumptions Document (SSAD) (New)</u></b></p>	2	<p>Security of supply <u>Winter security</u> margins (energy and capacity) are mandated in the Code. <u>The security margins in clause 7.3(2) of the Code have not been reviewed since the clause was amended in 2013.</u></p> <p>The Authority also has an assumption document <u>publishes a Security Standards Assumptions Document</u> (SSAD) given to <u>for</u> the system operator to base their assessment <u>Annual Assessment of Security of Supply</u> on. <u>The SSAD</u> was last reviewed on 14 November 2012.</p> <p>This project is to review <u>the</u> both the margins and the SSAD.</p> <p>The Security Standards Assumptions Document (SSAD) specifies numerous assumptions that the system operator must use in its preparation of the Security of Supply Annual Assessment (ASA).</p> <p>The review of the 2016 ASA identified a number of opportunities for improvement in the SSAD. This includes remodelling wind contribution factors using the latest data for actual wind performance. Completion of a revised SSAD by October 2017 will enable inclusion of the latest assumptions to be used by the system operator in its ASA for 2018.</p>	<p><b><u>More accurate and meaningful security margins will improve our ability to monitor whether economically optimal investment in generation capability is occurring</u></b></p> <p>Maintaining the currency of the SSAD is important for maintaining the credibility of the ASA and the security of supply regime more broadly.</p>	<p>Complete a review of the Code mandated security margins and the SSAD.</p> <p>Update of the Code security margins, if required (Code amendment).</p>		<p>The project completion date has been revised from June 2018 to October 2018. Project outcomes are unaffected by this change, as the system operator does not require the margins and SSAD until November 2018.</p> <p>Prior to these changes, the 2017/18 target included "an update of the Code security margins, if required". The amber status reflects the fact that this aspect of the original target will not be achieved in 2017/18.</p>

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
E2	<b>Operational review of metering and registry processes</b>	2	A review of the operational elements of Part 10 of the Code to ensure efficient operation of the metering, registry and the related processes. We will also review related sections in other Parts of the Code.	The new Part 10, which came into effect in 2013, introduced a number of new obligations and processes relating to metering, switching and the registry.  The operation of the market has continued to evolve since that time. We want to make sure these processes are as efficient as possible.	Complete an analysis of the submissions on the issues paper (closes June 2017).  Board approval of a Code amendment consultation paper for relevant issues (if necessary).		This milestone is complete. The analysis of submissions on the issues paper has been completed. Some relevant issues were identified, for which we have sought external technical review.  A Code amendment consultation paper expected early 2018.
E3	<b>Review of switching process (New)</b>	2	Work was previously carried out and consulted on in 2014/15 on possible improvements to switching processes. At the time participants were not supportive as the implementation costs were considered high compared to benefits. Participants have recently indicated they wish this to be revisited.	We are seeking to improve the efficiency of the switching process.	Investigate and complete issues paper for consultation.		External expertise is required to progress the development of the issues paper. A technical working group is to be established, and a briefing document for the working group is currently being prepared. Expressions of interest will be sought in December 2017 and the group will hold their first meeting in February 2018.

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
E4	<b>Review of register content codes</b>	2	<p>Register content codes are used by participants to describe the characteristics of the electricity supply from a metering installation. The codes allow the accurate allocation of tariffs to consumers.</p> <p>This project will review the principles, structure and rules for the creation of register content codes to ensure they are fit-for-purpose with ongoing changes to industry.</p>	<p>Remove any unwarranted barriers to innovative tariffs that are starting to emerge as a result the time-of-use functionality of AMI metering.</p>	<p>Begin implementing changes from 2016/17 review, which is due to finish in June 2017.</p>		<p>The consultation paper was issued in late July 2017 (originally expected in June 2017). There was considerable interest and complex submissions which have taken longer than expected to review and may require a second consultation. This is likely to delay implementation of changes until April 2018. The amber status indicates the increased risk from this delay, however implementation may still commence prior to July 2018.</p>
E5	<b>Reconciliation loss factor methodology</b>	2	<p>The methodology is an industry guideline that prescribes how distribution losses should be calculated and managed for use in the reconciliation process.</p> <p>We will publish our intended approach to the monitoring of the use of the guidelines.</p>	<p>We want to improve the accuracy of the reconciliation process through the more accurate determination of distribution losses.</p>	<p>Complete an analysis of the submissions and publish the finalised guidelines.</p>		<p>Analysis of the submissions will commence February 2018. Finalised guidelines are on track to be published by June 2018.</p>

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
E6	<b>Review of trader default arrangements for direct consumer participants</b>	3	<p>The final part of implementing the new settlement and prudential security arrangements:</p> <ul style="list-style-type: none"> <li>Work with relevant networks (including Transpower) and direct consumer parties to ensure that disconnection provisions in the trader default arrangements can be fulfilled in a default event.</li> <li>Consider any applications for a shortened post-default exit period.</li> </ul>	<p>We want to make sure the new settlement and prudential security regime works as intended when the Code was drafted.</p> <p>The Code provides for participants to apply to the Authority for a shortened post-default exit period.</p>	<p>Achieve assurance that the necessary disconnections are in place and practical, or identify and prepare draft "urgent Code changes" necessary to enable this assurance to be achieved.</p> <p>Consider and make decisions on any applications for a shortened post-default exit period.</p> <p>Review the post-default exit period provisions (this will only be undertaken once at least one application has been considered).</p>		<p>Process development work, to ensure more effective disconnection instructions, is progressing.</p> <p>We have completed a review of the Code for barriers to disconnection in certain circumstances and are considering options to achieve assurance that the disconnection provisions are fit for purpose.</p> <p>No applications received as at 31 October 2017.</p> <p>No applications received as at 31 October 2017.</p>

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
E7	<b>Livening and energisation guidelines</b>	3	<p>This project is to complete participant guidelines for the livening and energisation of ICPs. The development of the guidelines was commenced under the project to implement the new Part 10 of the Code but was not completed as other projects had higher priority.</p> <p>Includes a review of terms throughout the Code in relation to connection and energisation.</p>	<p>We want relevant participants to understand their Code obligations for livening and energisation of ICPs. The guidelines are intended to increase compliance with the relevant areas of the Code.</p>	<p>Re-consultation on the amended guidelines.</p> <p>Finalise and publish the guidelines by June 2018.</p> <p>This timeframe is subject to successful completion of Code amendments related to Code definitions scheduled to go to the August 2017 Board meeting.</p>		<p>Consultation on the amended guidelines will commence in early 2018.</p>

## Programme F: Compliance education

This programme includes initiatives to improve participant compliance with the Act, regulations and Code. This programme aligns with our *improve compliance* strategy.

Our compliance function plays an integral role in ensuring the integrity of the electricity market by enabling compliance by the industry with the Act, regulations and Code. We take a risk-based and proportionate approach to compliance.

We recognise that most industry participants want to meet their obligations voluntarily, or can be encouraged or induced to do so. We provide information, education and assistance. However, serious compliance matters are formally investigated and may be subject to enforcement action.

Project No.	Project	Priority	Description	Why we are doing this project	2017/18 target	Status	Comment
F1	<b>Information for participants (previously Participant education)</b>	2	Provide easily accessible information for participants on the operation of the Code, the market, and market systems and processes.	We want participants to be able to get the information necessary to enter and participate in the market. This information needs to be accurate and easy to interpret.	Complete the development of the participant education web portal and make available publicly via the Authority website.		The web portal is on track to being made publically available by March 2018. An agreement with the provider is currently being finalised.

## Glossary and abbreviations

A detailed glossary is available at [www.ea.govt.nz/glossary/](http://www.ea.govt.nz/glossary/)

<b>Act</b>	Electricity Industry Act 2010.
<b>ACOT</b>	Avoided cost of transmission. Part of distributed generation pricing principles.
<b>AEMO</b>	Australian Energy Market Operator.
<b>AOPO</b>	Asset owner performance obligations.
<b>ASX</b>	Australian Securities Exchange.
<b>AUFLS</b>	Automatic under-frequency load shedding. Part of the reserve management system. This is being reviewed in our extended reserve project.
<b>Authority</b>	Electricity Authority.
<b>CBA</b>	Cost-benefit analysis
<b>Code</b>	Electricity Industry Participation Code 2010.
<b>Consumer</b>	Any person who is supplied with electricity other than for resupply.
<b>DD</b>	Dispatchable demand.
<b>DDA</b>	Default distribution agreement. The relationship between a distributor and retailers is set out in a distribution agreement (also known as a use-of-system agreement (UoSA)). The UoSA is important for retail competition and efficiency. We are considering whether to introduce a default distribution agreement to achieve the benefits from more standardisation of use-of-system agreements. The Authority considers that more standardisation of use-of-system agreements will enhance retail competition and lead to more efficient operation of the electricity industry.
<b>DER</b>	Distributed energy resources. DERs include traditional distributed generation, batteries, micro-grids and 'prosumer' situations
<b>DGPP</b>	Distributed generation pricing principles. Covered in part 6 of the Code.
<b>DR</b>	Demand response.
<b>DSBF</b>	Demand-side bidding and forecasting.

<b>ERM</b>	Extended reserve manager. A new service provider engaged to develop, implement and run the new extended reserve regime.
<b>ESB</b>	Enterprise service bus. An enterprise service bus (ESB) implements a communication system between mutually interacting software applications.
<b>Extended reserve</b>	Extended reserve is a means by which to manage situations where the frequency of New Zealand's electrical system falls too far below 50 Hertz without the fall being arrested by normal existing reserve products. Extended reserve responds if the frequency continues to fall after the normal reserve products have responded to prevent such a drop in frequency that could lead to catastrophic power system failure. Currently the only mechanism available is automatic under-frequency load shedding (AUFLS), which automatically disconnect blocks of load at specified frequency and time settings.
<b>Frequency keeping</b>	The frequency of the New Zealand grid is normally maintained at 50 Hertz, which is the number of cycles per second. Frequency keeping refers to the process used to keep the frequency of the grid within its normal band. Frequency-keeping power stations are used to increase or decrease generation within a set band to ensure that supply equals demand on a second-by-second basis. The system operator purchases frequency management services to maintain frequency within the prescribed tolerances.
<b>FTR</b>	Financial transmission right. A financial risk management product that protects against price risks arising from transmission losses and constraints.
<b>Hedge market</b>	A market through which hedge contracts are bought and sold. A hedge contract is a financial risk management product or contract for sale and purchase of electricity that shifts the price risks associated with the spot price of electricity. For example, a common hedge contract is a contract for differences (CFDs). CFDs set a price at which a buyer will purchase a specific quantity of electricity at a specified node for a set period. The buyer of the CFD pays this price regardless of whether the spot market price is higher or lower than the set price.
<b>HVDC</b>	High Voltage Direct Current. The HVDC link is the high voltage transmission cable that transports electricity in both directions between the North (Haywards Substation) and South Islands (Benmore Substation). The rest of the transmission network runs on alternating current (AC).
<b>ICP</b>	Installation control point. An ICP is a physical point of connection on a local network or an embedded network that the distributor nominates as the point at which a retailer will be deemed to supply electricity to a consumer. Each ICP is assigned an ICP identifier, which has the attributes set out in clauses 1 to 6 of Schedule 11.1 of the Code.
<b>MBIE</b>	Ministry of Business, Innovation and Employment. MBIE is the policy adviser to Ministers on energy matters. MBIE also acts as the purchase adviser to the Minister of Energy and Resources regarding the Electricity Authority.
<b>MOSP</b>	Market operation service provider. For details see <a href="http://www.ea.govt.nz/operations/market-operation-service-providers/">www.ea.govt.nz/operations/market-operation-service-providers/</a>
<b>OTC</b>	Over-the-counter hedges. These are hedges traded off an organised exchange.

<b>Participant</b>	A person, or a person belonging to a class of persons, identified in section 7 of the Act as being a participant in the electricity industry. These include generators, Transpower, distributors, retailers, other lines owners, consumers directly connected to the national grid, buyers of electricity from the clearing manager and service providers.
<b>RAG</b>	Retail Advisory Group. Advisory groups contribute to our work. For more information about advisory groups, including recent changes, see <a href="http://www.ea.govt.nz/development/advisory-technical-groups/">http://www.ea.govt.nz/development/advisory-technical-groups/</a>
<b>Service providers</b>	See MOSP. We contract third parties to manage the electricity system (system operator) and market services, as described in Part 3 of the Code..
<b>SOI</b>	Statement of Intent. Prepared in accordance with the Crown Entities Act 2004.
<b>SPE</b>	Statement of Performance Expectations. Prepared in accordance with the Crown Entities Act 2004.
<b>UoSA</b>	Use-of-system agreement. Agreements between distributors and retailers. We are working on a possible default agreement – see DDA.
<b>WAG</b>	Wholesale Advisory Group.
<b>WITS</b>	Wholesale information trading system. One of our service providers.

END