



Electricity Authority Work Programme

Report for the period

1 July 2016 – 30 June 2017



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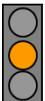
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Key to colour symbols used in this report

	Project milestones and/or deliverables achieved		Project milestones and/or deliverables partially achieved		Project milestones and/or deliverables not achieved
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Executive summary

The Authority's work programme details the major projects we intended to progress during the 2016/17 financial year. This is a year-end report against those plans. The work programme sets out:

- **Priority 1—Key projects.** These are strategically important projects listed in our Statement of Performance Expectations (SPE). Key regulatory projects (projects in blue text in Table 1) may result in new Code amendments, or market facilitation initiatives. These projects can involve significant input from providers and stakeholders. 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 key projects from SPE (priority 1) and work programme

#	Priority	Project	Programme	Code completed in 2016/17 year?	Existing or new project?	Result
1.1	1	Consumer access to markets covering data exchange, multiple trading agreements and other barriers to mass-market participation in electricity markets	A: Evolving technologies and business models	Not applicable	New	Achieved
1.2	1	Distribution pricing review	A: Evolving technologies and business models	No	Existing	Achieved
1.3	1	What's My Number campaign	B. Consumer choice and competition	Not applicable	Existing	Achieved
1.4	1	Spot market refinements	C. Pricing and cost allocation	No	Existing	Partially achieved
1.5	1	Transmission pricing review	C. Pricing and cost allocation	Yes	Existing	Not achieved
1.6	1	Implement extended reserve	D. Risk and risk management	No	Existing	Partially achieved
1.7	1	Review of security measures	D. Risk and risk management	No	Existing	Achieved
1.8	1	Hedge market development	D. Risk and risk management	Not applicable	Existing	Partially achieved
1.9	1	Registry service provider tender	E. Operational efficiencies	Not applicable	Existing	Achieved

Introduction and purpose

This is our final report against our 2016/17 work programme¹. The ‘traffic lights’ used in this report relate to overall progress against the project milestones, which may go beyond 30 June 2017. 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.

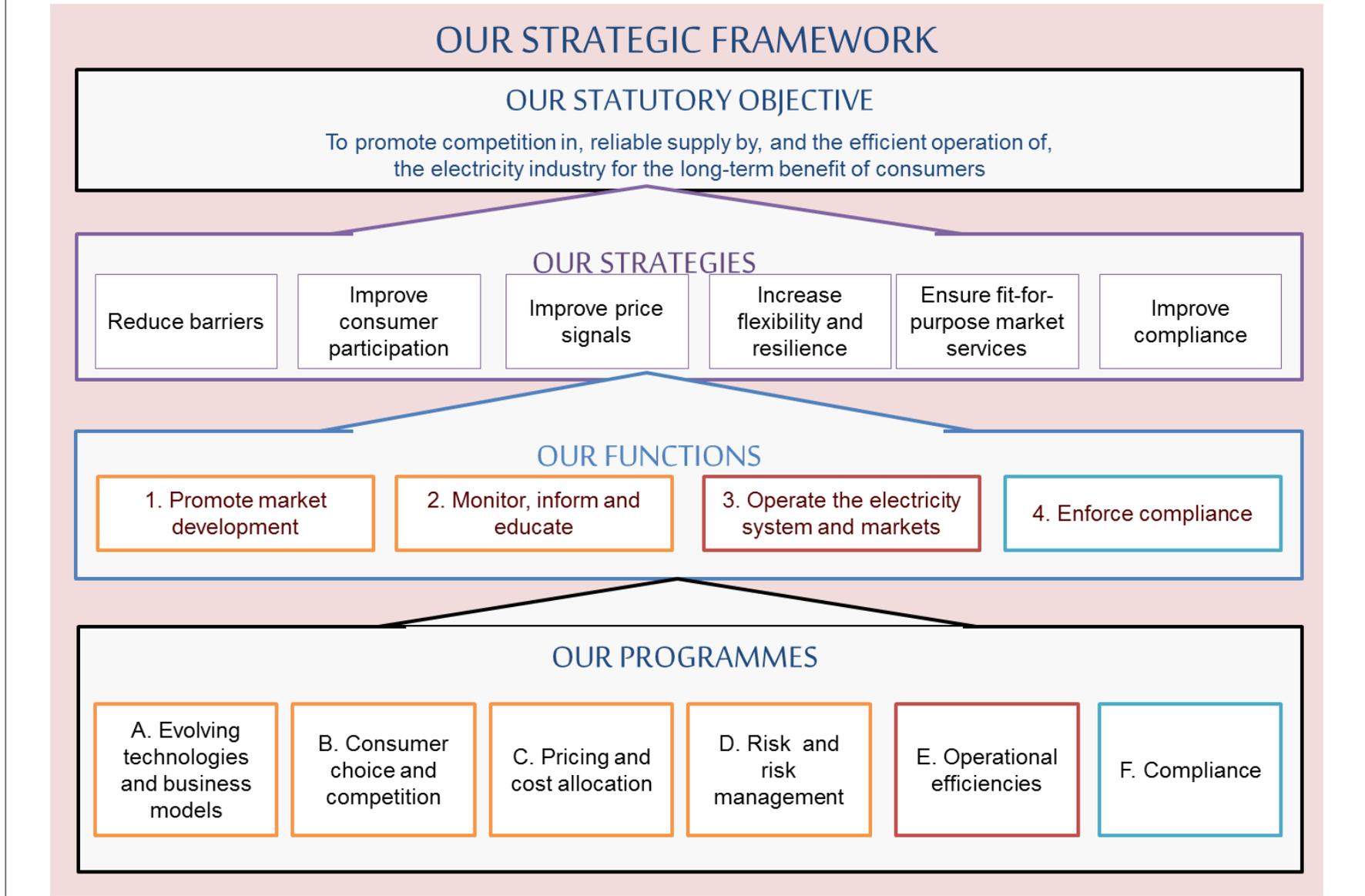
Changes during the year

We remain flexible and responsive in the management of our 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 revisions. New projects initiated during the financial year are *italicised*.

¹ 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 strategic framework and the programmes covered in this document



Programme A: Evolving technologies and business models

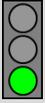
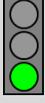
This programme covers initiatives to reduce inefficient barriers to development and use of evolving technologies and business models across the supply chain. This includes reducing inefficient barriers to:

- 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. Work streams within this programme are:

- 1) work stream: reducing barriers to new technologies and business models arising from market trading arrangements
- 2) work stream: reducing barriers new technologies and business models arising from industry contractual arrangements, such as with distributors.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
1	1.1	Data and data exchange A 1	Review of the data and data exchanges between participants (including service providers). The right information needs to be provided at the right times, and at an appropriate level of accuracy.	We want to make sure consumers benefit from changes in the retail market. The changes include greater diversity of participants, high penetration of 'data-rich' smart meters, new retail products, greater diversity of customer service expectations, and new market initiatives such as our retail data project. Some stakeholders have strongly argued that improving data exchange could greatly reduce transaction costs. Better data and data exchange has the potential to promote retail competition and efficient market operation.	Scope problem definition and issues prior to developing consultation paper.		We have scoped the problem and issues. We have developed a consultation paper and expect to consult on the issues in the first quarter of the 2017/18 year.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
1	1.1	Multiple trading arrangements at an ICP A 1	Only a single trader can currently be responsible for an ICP. This project will look at the feasibility and options to allow for multiple traders at an ICP.	Allowing multiple traders to operate at an ICP would create an opportunity for new services (eg, community-owned, and other small scale generators) to enter the market without requiring commercial arrangements with parties they are likely to be competing against.	Identify issues and scope potential options.		The issues have been identified and options scoped. An issues paper is being developed and is expected to be published in the 2017/18 year.
3	3.1	Dispatchable demand: conforming nodes A 1	A project to enable an aggregator to aggregate load over several GXPs and several retailers. This involves an expansion of the dispatchable demand (DD) regime.	We are seeking more efficient use of DD, which will also promote competition in the spot market and efficient reliability of supply.	Confirm feasibility and priority of project.		The feasibility of the project has been confirmed through an initial evaluation which involved, inter alia, a report from the system operator evaluating technical options for implementing the proposal. A priority 3 project in the 2017/18 work programme.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
1	1.2	Distribution pricing review A 2	A review to investigate the implications of evolving technologies for pricing of distribution services	We want to make sure distribution prices signal efficient investment in and use of evolving technologies. Prices that are service-based and cost-reflective will contribute to efficiency in the broader electricity market.	Hold a conference in August 2016 to discuss the work so far and results of the 2015/16 consultation. Decide next steps by the first quarter of the 2017 calendar year.		Conference held. Next steps were approved by the Board in October 2016: <ul style="list-style-type: none"> - We have set a monitoring framework and communicated to participants. - We have asked for clear information regarding how distributors are moving towards more efficient distribution pricing, including the publication of 'roadmaps'. We will be responding to distributors with what we expect to see next. This will be published in the second quarter of the 2017/18 year. - We will be consulting on the review of distribution pricing principles and associated information disclosure guidelines in the second quarter of the 2017/18 year.
1	1.1	Barriers to mass-market participation in electricity markets A 2	We will examine other options to facilitate mass-market participation in electricity markets such as reducing barriers from distributor contracts.	We want to remove any contractual barriers to small scale providers of energy and demand-response.	Identify issues and determine next steps.		The issues have been identified and the next step was undertaken, which was the release of an issues paper in May 2017.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
3	3.2	Guiding regulatory principles for demand response A 2	Finalise the draft guiding regulatory principles for demand response. This should assist distributors and other parties to adopt efficient approaches to contracting for DERs.	There several competing uses for demand response. The guiding regulatory principles should improve efficient use of demand response.	Finalise the guiding regulatory principles.		Project was put on hold due to resources being focussed on other projects.

Programme B: Consumer choice and competition

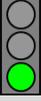
This programme covers initiatives to promote consumer participation through the retail market. Aspects relating to prosumers and/or consumer participation directly in wholesale markets are covered in programme A. This programme aligns with our *improve consumer participation* strategy. Work streams within this programme are:

- 1) work stream: improving awareness, understanding, motivation and action by mass-market consumers, eg, the What’s My Number campaign, the retail data project etc
- 2) work stream: increasing choices available to mass-market consumers by further enhancing competition. This work stream covers pro-competition initiatives that are not already covered in programme A.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
1	1.3	What’s My Number B 1	This campaign promotes the benefits of comparing and switching retailers.	We seek to increase retail competition through increased consumer awareness of possible savings from shopping around for electricity, and that it is easy to switch.	Successful programme delivery, as indicated by the annual survey for the 2016 calendar year.		The 2016/17 campaign was successfully delivered in two phases. Phase 1 was launched on 26 March 2017 for a period of three weeks. Phase 2 was launched on 11 June 2017 and will run until 20 August 2017. The 2016 survey results show that the campaign continues to raise awareness of the benefits of comparing and switching retailers, and that consumers value an independent website for this purpose.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
2	2.1	Consumer education programme B 1	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.	Increase information available to consumers via the Authority website. Increase the number of visits to the consumer section of the Authority website by 5%.		A pilot consumer education programme was launched in late 2016. The results were presented to the Authority in March 2017 and the insight from the results will inform future communications strategies. New web content was created to help inform consumers about topics such as why prices can go up in Winter and the risks associated with spot price contracts. Visits to the consumer section of the Authority website increased by 214%.
2	2.2	Retail data B 1	Consider options to promote retail competition by improving consumer's access to retail data. Phase 2: access to retail tariff data and connection data Phase 3: access to retail monitoring data.	Better access to information will increase consumer engagement and lead to more vigorous competition and innovation. Improving access to retail data will enhance price comparison, products. It also assists with developing innovative services. Better data will also support market analysis and monitoring.	Complete voluntary file format for generally-available tariff data by December 2016. Continue to engage with potential third parties to promote provision of information to consumers.		Voluntary file format for the provision of generally-available tariff data was completed by December 2016. We are continuing to engage with potential third party providers and retailers to promote the provision of information (especially consumption information) to consumers (and their agents) and to monitor how it is working.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
2	2.3	Spot prices and risks for consumers B 1	A project to consider arrangements for explaining spot price risk to mass-market consumers, especially residential consumers exposed to the spot market.	Mass-market consumers paying spot prices need access to good information about spot price risks. This is important for residential consumers who that are not hedged. Competition and reliability may be affected if this is not addressed.	Next steps decided by December 2016.		The next steps were decided in December 2016. The Authority has decided to further engage with retailers offering spot price products to residential consumers with the intention of introducing a market facilitation measure (MFM) that outlines our expectations on these types of retailers. We intend to make a formal announcement of the MFM in the first quarter of the 2017/18 year.
3	3.3	Why prices matter B 1	A paper describing the importance of electricity pricing for consumers: how prices are formed, why prices should reflect costs, and the implications of inefficient price signals.	This project is expected to support all pricing work we are doing by describing the importance of promoting efficient pricing from a consumer perspective.	Finalise background paper on why prices matter and determine next steps by September 2016.		Project reviewed in August 2016. A decision was made to deliver the project via our ongoing communications programme.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
2	2.4	Default distribution agreement (DDA) B 2	A review to consider amending the Code to introduce a 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.	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.	Decision to proceed with further development of a DDA. Second consultation on DDA template.		The Authority decided to proceed with the development of a DDA in October 2016. The DDA is being revised following consideration of submitter's comments from the first consultation. Release of the second consultation on the DDA template was delayed because it took longer than expected to consider the submissions on the earlier consultation.
3	3.4	Review of secondary networks B 2	Retail Advisory Group (RAG) project to consider the competition, reliability and efficiency effects of secondary networks.	We want to remove unnecessary barriers to retail competition in secondary networks and promote efficient operation of the industry.	Advisory group advice on appropriate scope of Authority's regulatory activities relating to secondary networks. Advisory group advice on competition, reliability and efficiency issues.		The RAG's advice on these matters and the Authority's responses, were released in May 2017.

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. Work streams within this programme include:

- 1) work stream: improving market pricing mechanisms, eg, real-time pricing, wind offers, demand forecasting
- 2) work stream: improving administered prices and cost-allocation methods, including the transmission pricing review, general distribution pricing, distributed generation pricing principles, cost-allocation of ancillary services.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
1	1.4	Spot market refinements C 1	Further develop specific initiatives identified in the 2014/15 review of the spot market. Specifically: - settlement on real time pricing - improve inputs into forecast spot prices -some form of an hours-ahead market.	We want to reduce barriers to retail competition and demand response arising from current spot market arrangements. 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 demand responsiveness to spot market prices.	Real-time pricing: complete consultation on Code amendment proposal, if required. Improve inputs into forecast spot prices - Hours-ahead market: complete assessment of options and decide whether to develop a Code amendment proposal. Start development of Code amendment proposal, if required.		Real time pricing: Delayed because of: <ul style="list-style-type: none"> our request that the system operator re-test and verify its initial cost estimate for RTP the decision to have the proposed design assured by representatives from PJM Interconnection, an internationally recognised authority. A consultation paper with a detailed Code amendment proposal was approved by the Board and will be published in July 2017. Hours-ahead market: Achieved. We released a consultation paper that assessed options to improve inputs into forecast spot prices in February 2017. In June 2017 we decided not to develop a Code amendment proposal (decision paper to be released July 2017).

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
2	2.5	Offer and dispatch: wind generation offers C 1	This project will review the spot market offer and dispatch Code provisions for wind generators.	We want to review whether wind generators should be able to economically withdraw their plant when prices fall below operating costs.	Wholesale Advisory Group (WAG) information paper expected to be published in July 2016. Consult on Code amendments and assess submissions.		The WAG information paper was published in July 2016. However, the consultation paper on a proposed amendment was delayed because the Authority developed a more sophisticated proposal with higher net benefits than the one proposed by the WAG. This was possible because more information became available, which resulted in a lower cost estimate for the more sophisticated option. A consultation paper, proposing Code amendments was approved by the Board and will be published in July 2017.
2	2.6	Dispatchable demand: constrained on/off payments C 1	A project to ensure the correct incentives in the spot market for dispatchable demand (DD) constrained-on/off payments. We also want to look at rules for DD when forecast spot prices are infeasible.	We want to encourage the efficient use of DD.	Price infeasibility: review submissions and make Code amendment by December 2016.		Project completed. The targets were met with a decision made in September 2016. Implemented in WITS.
2	2.7	Implement gate closure and the bid and offer revision provisions C 1	Reduce gate closure from 2-hours to 1-hour before the trading period.	Reduced gate closure times will lead to more efficient use of resources and increased levels of wholesale market competition.	Reduced gate closure will go live on 29 June 2017.		Project completed. Reduced gate closure went live on 29 June 2017.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
3	3.5	Transpower demand response protocol management C 1	Incorporate Transpower's demand response (DR) platform into the spot market. We also want to facilitate the completion of other elements of the Transpower demand response protocol.	We are seeking to increase the efficiency of market outcomes to Transpower's DR initiatives. This will also increase competition for peaking plant. Greater demand responsiveness will also reduce risks of inefficient rationing to achieve reliability outcomes.	Start development of options to incorporate Transpower's DR platform into the spot market.		We have begun investigating options to incorporate Transpower's DR platform into the spot market.
1	1.5	Transmission pricing review C 2	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.	Finalise transmission pricing guidelines. Issue decision and reasons paper.		The 2016/17 target was not completed because the CBA for the Authority's proposal (prepared by Oakley Greenwood), was found by the Authority to contain computational flaws and weaknesses in the implementation of the methodology used to estimate costs and benefits. We decided the errors identified were sufficiently serious that we could no longer reasonably rely on the existing CBA as a basis for our decision-making on the TPM guidelines. The new Board members are familiarising themselves with the TPM before deciding on next steps.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
2	2.8	Part 6 distributed generation pricing principles (DGPP) C 2	A review of Part 6 of the Code pricing principles, to ensure consistency and alignment with distribution pricing principles. We will look at whether the DGPPs are achieving outcomes consistent with our statutory objective.	We will review the pricing principles to ensure that they do not prevent distributors from pricing and charging on a cost-reflective basis. The objective is to promote efficiency.	Complete Code amendment.		Code amendment completed and gazetted in December 2016. The amendment came to effect on 9 January 2017. The project is now in the implementation phase.
2	2.9	Instantaneous reserve event charge and cost allocation review C 2	Improve the efficiency in allocation of instantaneous reserve costs and the event charge. Includes consideration of the costs of commissioning new generation.	Provide efficient price signals and encourage efficient use and supply of instantaneous reserve. We want to ensure costs are allocated to causers broadly in line with the harm they impose.	Advisory group recommendations provided to the Board.		The Wholesale Advisory Group (WAG) provided its recommendations to the Board in May 2017.

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. Work streams within this programme are:

- 1) work stream: improving management of capacity and real-time operational risks
- 2) work stream: improving management of energy risks (ie, dry year security of supply risks)
- 3) work stream: further evolution of the hedge market to support the physical markets in work streams D1 and D2.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
1	1.6	Implement extended reserve D 1	The Code was amended in June 2014 to provide for efficient procurement of extended reserve. Implementation includes establishment of a service provider role.	We are seeking more efficient provision and use of extended reserve – the reserve that is operated only in major under-frequency events. Extended reserve is provided via automatic under-frequency load shedding (AUFLS).	Complete consultation on selection methodology. Complete consultation on technical requirements schedule. Complete consultation on draft procurement schedule. Complete consultation on operational Code amendments.		The status of the consultations are: <ul style="list-style-type: none"> • Completed consultation on selection methodology - November 2016. • Completed consultation on technical requirements schedule - November 2016. • Consultation on draft procurement schedule off target on timing. Planned to be released in September 2017. • Completed consultation on operational Code amendments - February 2017.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
2	2.10	Review of frequency keeping services D 1	Review future frequency keeping service requirements.	Technical requirements for frequency keeping have changed with the introduction of frequency keeping controls. Depending on the volume of national frequency keeping needed, there may still be benefits in introducing a national market for frequency keeping and/or introducing incentives for governor response.	Publish an information paper and consider submissions. Develop arrangements for incentivised governor response.		An information paper, including options for incentivised governor response, was published in March 2017. Submissions closed in May 2017 and we are evaluating next steps and developing arrangements for incentivised governor response.
2	2.11	Instantaneous reserve market review D 1	A review of the instantaneous reserve markets to reduce barriers and enhance performance.	Current arrangements create barriers for some types of instantaneous reserve. We will consider options to reduce unnecessary barriers. This will contribute to increased competition and efficiency.	Report from the system operator to test findings with stakeholders. Develop and publish a consultation paper on high-level options if the system operator's report shows net benefits.		The system operator's proof-of-concept report was received. It recommended that none of the options for potential reform of the instantaneous reserve market should be pursued. As a result, an information paper closing out investigations will be published in the 2017/18 year.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
2	2.12	AOPO: fault ride-through D 1	A review of low and high voltage fault ride-through Asset Owner Performance Obligations (AOPOs). We want to make sure these are fit-for-purpose with the changing generation mix.	We're concerned that current arrangements may be creating uncertainty for asset owners. This has the potential to harm reliability.	Complete Code amendment recommendations by July 2016.		Project completed. Code amendment completed and gazetted in October 2016. The amendment came to effect on 24 November 2016.
2	2.13	Comparison of distributor reliability performance D 1	Analysis comparing distributor performance with New Zealand and other countries.	We want to develop an objective view of reliability performance among New Zealand distributors.	Complete and publish report by 30 June 2017.		The analysis of distributor performance was completed but publication was delayed to the second quarter of the 2017/18 year due to the pre-election period.
2	2.14	Implement national market for instantaneous reserve D 1	Enable the transfer of instantaneous reserves from one island to the other via the high-voltage, direct current (HVDC) link.	This initiative has enhanced wholesale market competition through optimising instantaneous reserve requirements at a national level, and provided efficiency gains through reduced total procurement requirements.	Go live by 1 November 2016.		Project completed. National market for instantaneous reserve went live in October 2016.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
1	1.7	Review of security measures D 2	In 2015/16 we carried out a high-level review of regulatory arrangements for security of supply. Two mechanisms that are to contribute to security of supply were identified for review- the customer compensation scheme and the stress test regime.	We want to ensure that the customer compensation scheme and the stress test regime are continuing to deliver efficient levels of security of supply.	Consult on and complete decision on review of the customer compensation scheme. Consult on and complete decisions on review of the stress test regime.		Consultations on the review of both measures closed on 6 December 2016. The Board considered the issues raised in submissions. Final decisions were made and will be released in the 2017/18 year.

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
1	1.8	Hedge market development (top priority projects) D 3	Enhancements to the hedge market to ensure that it continues its upward momentum.	We seek to improve retail competition by giving market participants greater certainty about forward price expectations. This will enhance decision-making. It will also promote greater reliability and efficiency. We have a continuing programme of initiatives to enhance the hedge market.	<p>Work with Australian Securities Exchange (ASX) to design and set up cap products with robust and frequent pricing.</p> <p>Evaluate if ASX positions can offset energy market prudential security requirements.</p> <p>Decide enhancements to arrangements for ASX products.</p>		<p>Cap products: Achieved. The Authority has worked with the ASX to design and set up two cap products for listing – strike prices of \$130 and \$300 respectively. We expect the ASX to list the cap products by 31 December 2017.</p> <p>Prudential offset: Achieved. NZX (clearing manager), ASX and the Authority have undertaken work on evaluating if ASX positions can offset energy market prudential security arrangements. The evaluation was completed within 2016/17, with publication expected in the first quarter of the 2017/18 year.</p> <p>ASX enhancements: On hold. Project was put on hold because it became apparent it was important to get the caps listed before further enhancements were made to exiting products.</p>

Priority	2016/17 Number	Project and work stream	Description	Why we are doing this project	2016/17 target	Result	Comment
2	2.15	Wholesale market information D 3	The WAG is reviewing the wholesale disclosure information exclusion list. As a secondary priority, start work on improved public access to fuel information via market facilitation measures.	We seek to facilitate an active hedge market by enhancing the disclosure of information that influences the forward price curve. A more active hedge market enhances retail competition.	Complete work on information disclosure. Start to prepare an information paper on options for fuel information (for publication in 2017/18).		Delayed because there has been insufficient time since the WAG's February 2017 recommendations to the Board to complete the work. Work on an information paper on options for fuel information has begun.
3	3.6	Hedge market development (lower priority projects) D 3	We will progress enhancements to the hedge market on an ongoing basis. Planned work for 2016/17 includes: <ul style="list-style-type: none">- financial transmission right (FTR) market enhancements- develop standardised over the counter (OTC) and intermediating contracts- provide transparency around ASX development activity.	We seek to improve retail competition by providing market participants with greater certainty about forward price expectations. This will also promote greater reliability and efficiency.	FTR: Prepare consultation paper, if changes are warranted. OTC: Begin the process of developing standardised OTC contract templates for a consultation paper, to be published in the 2017/18 year, if warranted. ASX development: Start regular publication of ASX work programme updates.		FTR: Achieved. Consultation paper published in March 2017. Submissions closed 9 May 2017, and have been published. OTC: Achieved. The process of developing standardised OTC contract templates has begun. ASX development: Achieved. ASX published the first development report prior to 30 June 2017.

Programme E: Operational efficiencies

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.

Priority	2016/17 Number	Project	Description	Why we are doing this project	2016/17 target	Result	Comment
1	1.9	Registry service provider tender	The supply of the registry system and services is being tendered as the existing contract will expire in April 2017.	<p>We want to ensure that services cope with evolving market requirements.</p> <p>The services also need to be value-for-money, and be able to be developed in a timely and cost-effective manner. The services need to continue to be resilient to potential system failures and outages.</p>	<p>Negotiations with the preferred tenderer completed by September 2016.</p> <p>New agreement becomes effective in May 2017.</p>		<p>Project completed.</p> <p>The new agreement became effective on 1 May 2017.</p>

Priority	2016/17 Number	Project	Description	Why we are doing this project	2016/17 target	Result	Comment
2	2.16	Clearing manager review of the financial transmission rights (FTR) prudential assessment methodology	The methodology is used by the clearing manager to calculate prudential requirements for FTR participants. The methodology is being revised to improve the calculation of the prudential requirements for FTR products that are not traded frequently enough to be accurately valued.	An urgent methodology change was made in September 2015. The urgent change automatically expires after nine months.	The new methodology, approved in June 2016, is expected to become operational on 1 December 2016. The clearing manager will engage with FTR participants regarding the approach to the calculation of FTR prudential to determine whether a more fundamental review is required.		The new methodology became operational on 1 December 2016. These changes have meant that a more fundamental review is not required at this stage.
2	2.17	System access policies	Preparation of a wholesale information trading system (WITS) access policy that incorporates both the Code requirements and the service provider's use-of-system requirements.	We want to ensure that the rights and obligations of WITS users are clearly defined. We also want to make sure that WITS system performance requirements are not compromised by inappropriate use.	Complete Code amendment that provides for the Authority to prescribe WITS access arrangements and implement the new policy by February 2017.		This project has a low priority and has been delayed during both the Authority's and NZXs' reviews due to higher priority work. It is currently awaiting final approval by NZX before Code amendment documentation can be finalised.

Priority	2016/17 Number	Project	Description	Why we are doing this project	2016/17 target	Result	Comment
2	2.18	Reconciliation loss factor methodology	The methodology is an industry guideline that prescribes how distribution losses should be calculated and managed for use in the reconciliation process. We will also publish our intended approach to the monitoring of the use of the guidelines.	We want to improve the accuracy of the reconciliation process through the more accurate determination of distribution losses.	Complete a review of consultation responses and publish the finalised guidelines.		Project was put on hold due to resources being focussed on other projects. Draft guidelines are available on the Authority's website. This will be progressed as a priority 2 project in the 2017/18 year.
2	2.19	Efficiency of distribution company arrangements	A research project to consider the efficiency of distribution company arrangements.	We want to reduce transaction costs for retailers and distributors.	Develop and consult on scope.		The project has been scoped but consultation was delayed pending clarity on the potential Productivity Commission review of lines companies. We will now consult on the scope in the 2017/18 year.
2	2.20	Review of Code amendment proposals for scarcity pricing	Consultation on a set of Code amendments intended to ensure the scarcity pricing arrangements for the spot market can be operated as intended in all circumstances.	The pricing manager has identified some potential issues with the scarcity pricing Code amendments that came into effect in June 2013. We need to address these issues to ensure they don't prevent the scarcity pricing regime from working in the intended manner.	Complete consultation and make a decision on Code amendments by December 2016.		Project completed. The amendments came into force on 19 January 2017.

Priority	2016/17 Number	Project	Description	Why we are doing this project	2016/17 target	Result	Comment
2	2.21	Review of participant audit arrangements	The review of participant audit requirements in the Code to improve efficiency and align with good practice. Does not include MOSP audits.	We're reviewing audit requirements to improve efficiency and align with good risk management practice.	Complete the implementation including consultation on the guidelines, and start the new regime by 1 June 2017.		Project completed. New regime implemented by 1 June 2017.
3	3.7	Review of trader default arrangements for 'direct consumers'	Operational aspects of the new settlement and prudential security arrangements: - Work with relevant networks (including Transpower) and directly connected parties to ensure that disconnection provisions in the trader default arrangements can be fulfilled in a default event. - Consider any applications for a shortened post-default exit period.	We want to make sure the new settlement and prudential security regime works as intended when the Code was drafted. The Code provides for participants to apply to the Authority for a shortened post-default exit period.	Achieve assurance that the necessary disconnections are in place and practical, or identify any necessary amendments to the Code to enable this assurance to be achieved. Consider and make decisions on any applications for a shortened post-default exit period. Review the post-default exit period provisions (this will only be undertaken once at least one application has been considered).		We have started work with Transpower and affected distributors to develop a required process for effecting an Authority Board direction for disconnection. This may result in a proposal to change the Code to lengthen the 7-day post-default exit period in the 2017/18 year. No applications for a shortened post-default exit period have been received.

Priority	2016/17 Number	Project	Description	Why we are doing this project	2016/17 target	Result	Comment
3	3.8	Review of register content codes	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.	We want to ensure the principles, structure and rules for the creation of register content codes are fit-for-purpose to accommodate the increased use of new, innovative tariffs that are starting to emerge as a result the time-of-use functionality of AMI metering.	Complete the review and make recommendations for change (if any) by June 2017.		The review of register content codes issues and options paper went to the standing data formats group (SDFG) on 22 June 2017. We are planning to release the consultation in the first quarter of the 2017/18 year, with a workshop for the industry on 15 August 2017.
3	3.9	Part 10 operational review	Review operational elements of Part 10 of the Code to ensure efficient operation of the 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 analysis of issues and options. Start Code amendment consultation process for relevant issues (if necessary).		We have completed analysis of issues and options and started the Code amendment consultation process. An issues paper has been finalised (published 4th July 2017). We are open for feedback until the 15th of August.

Priority	2016/17 Number	Project	Description	Why we are doing this project	2016/17 target	Result	Comment
3	3.10	Living and energisation guidelines	This project is to complete participant guidelines for the living and energisation of ICPs.	We want relevant participants to understand their Code obligations for living and energisation of ICPs. The guidelines are intended to increase compliance with the relevant areas of the Code.	Complete consultation on the proposed guidelines (if necessary). Finalise and publish the guidelines by June 2017. Note: this timeframe is subject to successful completion of Code amendments related to Code definitions that were consulted on in October-November 2016 as part of the Code review programme.		Draft guidelines have been consulted on. Draft ready for re-consultation. This project is dependent on the result of consultation on changed definitions which are not yet finalised.
3	3.11	Review of wholesale market trading arrangements	Review Part 13 of the Code relating to trading. This includes the spot market, scheduling, offering, dispatch, pricing, hedge market and FTR trading information. This would include removing unnecessary barriers to new technology.	Provide efficient price signals and increase competition.	Finalise project plan and governance arrangements.		A project plan and governance arrangements have been finalised.

Priority	2016/17 Number	Project	Description	Why we are doing this project	2016/17 target	Result	Comment
3	3.12	Minor Code amendments to improve operational efficiency	Minor Code amendments to address operational or other market efficiency issues that arise during the year.	We need to ensure that the operational aspects of the Code are achieving the most efficient outcomes.	Specific Code amendment proposals will be identified during the year and investigated. Consultation on proposed Code amendments will be undertaken if necessary.		We have identified matters for consultation, and are continuing to develop consultation papers as an omnibus process. The omnibus will be released for consultation in the first quarter of the 2017/18 year.
3	New	Investigate potential reforms of voltage support ancillary service	<i>Assess the current voltage support ancillary service product definition and procurement to determine whether arrangements are efficient and in particular whether they provide opportunities for new technologies.</i>	<i>Changes in generation mix and issues such as North Island voltage stability raise the prominence of voltage support services. Revising the voltage support ancillary service product may enable greater competition from generators and new technology entrants such as storage.</i>	-		This work has been scoped, TASC arrangement signed, and work began in 2016/17.
3	New	Improving visibility of HVDC reserve sharing	<i>Project to arrange publication of 6 additional data elements relating to HVDC in WITS.</i>	<i>Expected to improve the operation of the national market for instantaneous reserve.</i>	-		Project completed. New information now available in WITS.

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.

Priority	2016/17 Number	Project	Description	Why we are doing this project	2016/17 target	Result	Comment
2	2.22	Participant education	Educate 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 participant in the market. This information needs to be accurate and easy to interpret.	Continue development of the participant education web portal that was piloted in 2015/16. Ongoing participant education includes training sessions and workshops on specific topics.		A trial version of the web portal is expected to be made available on the authority web site in the first quarter of the 2017/18 year. Two participant forums were held in February 2017. Two registry training courses were held in Auckland on 21-22 June and 27-28 June 2017.

Glossary and abbreviations

A detailed glossary is available at www.ea.govt.nz/glossary/

Act	Electricity Industry Act 2010.
ACOT	Avoided cost of transmission. Part of distributed generation pricing principles.
AEMO	Australian Energy Market Operator.
AOPO	Asset owner performance obligations.
ASX	Australian Securities Exchange.
AUFLS	Automatic under-frequency load shedding. Part of the reserve management system. This is being reviewed in our extended reserve project.
Authority	Electricity Authority.
CBA	Cost-benefit analysis
Code	Electricity Industry Participation Code 2010.
Consumer	Any person who is supplied with electricity other than for resupply.
DD	Dispatchable demand.
DDA	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.
DER	Distributed energy resources. DERs include traditional distributed generation, batteries, micro-grids and 'prosumer' situations
DGPP	Distributed generation pricing principles. Covered in part 6 of the Code.
DR	Demand response.
DSBF	Demand-side bidding and forecasting.

ERM	Extended reserve manager. A new service provider engaged to develop, implement and run the new extended reserve regime.
ESB	Enterprise service bus. An enterprise service bus (ESB) implements a communication system between mutually interacting software applications.
Extended reserve	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.
Frequency keeping	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.
FTR	Financial transmission right. A financial risk management product that protects against price risks arising from transmission losses and constraints.
Hedge market	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.
HVDC	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).
ICP	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.
MBIE	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.
MOSP	Market operation service provider. For details see www.ea.govt.nz/operations/market-operation-service-providers/
OTC	Over-the-counter hedges. These are hedges traded off an organised exchange.

Participant	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.
RAG	Retail Advisory Group. Advisory groups contribute to our work. For more information about advisory groups, including recent changes, see http://www.ea.govt.nz/development/advisory-technical-groups/
Service providers	See MOSP. We contract third parties to manage the electricity system (system operator) and market services, as described in Part 3 of the Code..
SOI	Statement of Intent. Prepared in accordance with the Crown Entitles Act 2004.
SPE	Statement of Performance Expectations. Prepared in accordance with the Crown Entitles Act 2004.
UoSA	Use-of-system agreement. Agreements between distributors and retailers. We are working on a possible default agreement – see DDA.
WAG	Wholesale Advisory Group.
WITS	Wholesale information trading system. One of our service providers.

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