



Energy Efficiency and
Conservation Authority
Te Tari Tiaki Pūngao



2015/16 Levy-funded appropriations, Electricity Authority work programme, and EECA work programme

Consultation paper

Published on: 29 October 2014

Submissions close: 5 pm 12 December 2014

Executive summary

The Electricity Authority (Authority) and the Energy Efficiency and Conservation Authority (EECA) are funded through a levy on electricity industry participants. This funding covers all of the Authority's functions and the electricity efficiency functions for EECA.

This paper sets out the proposed annual appropriations for the Authority, and those activities of EECA that are funded by the levy on industry participants for the period 1 July 2015 to 30 June 2016.

A summary of the proposed appropriations is set out below. This paper also provides additional information on costs and proposed work programmes.

The proposed appropriations are in line with the baselines previously approved by Cabinet in the 2014 Budget.

Key points of note include:

- **Electricity industry governance and market operations appropriation:** The proposed appropriation is a \$3.801 million increase on the 2014/15 appropriation. This is in line with previous Cabinet-approved appropriations. The increase includes an additional \$1.000 million for facilitating consumer participation approved in Budget 2014, and an increase in system operator costs approved in Budget 2013.
- **Facilitating consumer participation:** As with the 2014/15 financial year these activities fall under the electricity industry governance and market operations appropriation; with \$3.000 million proposed for 2015/16, in line with the amount approved by Cabinet in the 2014 Budget.
- **EECA's** proposed appropriation of \$13 million for 2015/16 is the same amount as this year.

Electricity Authority appropriations	\$ million		
	Actual 2013/14	Appropriation 2014/15	Proposed appropriation 2015/16
Electricity industry governance and market operations	65.799	72.899	76.700
Promoting and facilitating customer switching	2.111	-	-
Security management	6.000 over five years (2012/13 to 2016/17)		
Electricity litigation fund	0.048	0.444	0.444
Total	67.958	73.343	77.144

Energy Efficiency and Conservation Authority appropriations	\$ million		
	Actual 2013/14	Appropriation 2014/15	Proposed appropriation 2015/16
Electricity industry governance and market operations	13.000	13.000	13.000

Once consultation is complete the Authority and EECA will provide separate reports to the responsible Minister recommending appropriations for 2015/16. The recommendations feed in to the Government's Budget process.

The appropriations will be announced in the Government's Budget, which usually occurs in mid-May. Further detail will be published in the Authority's and EECA's statements of performance expectations (SPE).

Glossary of abbreviations and terms

Act	Electricity Industry Act 2010
AOPOs	Asset owner performance obligations
AUFLS	Automatic under-frequency load shedding
Authority	Electricity Authority
Code	Electricity Industry Participation Code 2010
CRE	Competition, reliability and efficiency (components of the Authority's statutory objective)
EECA	Energy Efficiency and Conservation Authority
EIEP	Electronic information exchange protocol
EMI	Electricity Market Information software
FTR	Financial transmission right
Impact	The contribution made to an outcome by a specified set of outputs, or actions, or both. (Definition from section 2(1) of the Public Finance Act 1989.)
MBIE	Ministry of Business, Innovation and Employment
Minister	Minister of Energy and Resources
MOSP	Market operations service provider
MUoSA	Model use of systems agreement
NZEECS	New Zealand Energy Efficiency and Conservation Strategy
NZES	New Zealand Energy Strategy
POCP	Planning outage coordination protocol
RAG	Retail Advisory Group
Regulations	Electricity Industry (Enforcement) Regulations 2010
SME	Small and medium-size enterprise
SO	System operator
SOI	Statement of intent
SOSPA	System operator service provider agreement
SPD	Scheduling, pricing and dispatch model
SPE	Statement of performance expectations
UTS	Undesirable trading situation
WAG	Wholesale Advisory Group
WITS	Wholesale information and trading system

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1. Introduction and purpose

- 1.1.1 Submissions are sought on the proposed 2015/16 annual appropriations for the Electricity Authority (Authority), and those activities of the Energy Efficiency and Conservation Authority (EECA) that are funded by the levy on industry participants. The appropriations cover the period 1 July 2015 to 30 June 2016.
- 1.1.2 The appropriation consultation period commences on 29 October 2014 and submissions are due by 5 pm on 12 December 2014.
- 1.1.3 Your input is requested as part of the Authority's and EECA's processes to request funding from the respective Ministers in early 2015. Please refer to appendix A for the legal context for this consultation.
- 1.1.4 Your submission(s) on respective appropriation proposals and work programmes should be sent individually to each of the Authority or EECA. Please refer to appendix B for information about making submissions and the timetable.
- 1.1.5 In addition to appropriations information, this consultation paper also includes:
- **appendix C:** The proposed Authority work programme.
 - **appendix D:** The proposed EECA levy-funded electricity efficiency priorities.
 - **appendix E:** The EECA *2013/14 annual report on the levy-funded electricity efficiency appropriation*.
- 1.1.6 The Authority's activities are all funded by Crown appropriations. The Crown is reimbursed via the levy on industry participants. The Authority's annual report details all levy-funded appropriations and outputs. The annual reports are available at www.ea.govt.nz/about-us/strategic-planning-and-reporting/annual-report/
- 1.1.7 It should be noted that:
- The Authority and EECA will use input from this consultation to develop their own reports on proposed appropriations to the responsible Minister (targeting early February 2015).
 - The results will be reflected in the Authority's and EECA's statements of performance expectations (SPE) to be published after the Government's Budget is tabled in Parliament in 2015 (usually mid-May).
 - The Authority will publish its work programme, outlining its programmes and projects in more detail, in June or July 2015.

2. Appropriations proposal

2.1 Summary

2.1.1 Table 1 sets out the appropriations being proposed by the Authority and EECA.

Table 1: Appropriations proposal

Electricity Authority appropriations	\$ million		
	Actual 2013/14	Appropriation 2014/15	Proposed appropriation 2015/16
Electricity industry governance and market operations:			
Subtotal - system operator expenses*	36.545	39.596	42.266
Subtotal - other service provider expenses*	10.647	12.505	12.705
Subtotal - facilitating consumer participation expenses**	-	2.000	3.000
Subtotal - Authority operating expenses*	18.607	18.798	18.729
Total electricity industry governance and market operations:	65.799	72.899	76.700
Promoting and facilitating customer switching**	2.111	-	-
Security management	6.000 over five years (2012/13 to 2016/17)		
Electricity litigation fund***	0.048	0.444	0.444
Energy Efficiency and Conservation Authority appropriations	\$ million		
	Actual 2013/14	Appropriation 2014/15	Proposed appropriation 2015/16
Electricity industry governance and market operations	13.000	13.000	13.000

Notes to Table 1:

* See Table 2 for a more detailed breakdown.

** From 2014/15 onwards, costs associated with facilitating consumer participation are included within the electricity industry governance and market operations appropriation. Prior to this, costs associated with these activities were included in a separate appropriation—promoting and facilitating customer switching.

*** The electricity litigation fund appropriation is to provide funding to ensure that the Authority is able to participate in litigation effectively and without delay. This is a Crown expense appropriation, which is drawn on only for major litigation.

2.1.2 Key points to note in the proposed appropriations are:

- **Electricity industry governance and market operations appropriation:**
 - The proposed appropriation is a \$3.801 million increase on the 2014/15 appropriation. This is in line with previous Cabinet-approved baselines. The increase includes \$1.000 million for facilitating consumer participation approved in Budget 2014 (\$2.000 million in 2014/15, \$3.000 million in 2015/16, and \$2.500 million in 2016/17) and an increase in system operator costs approved in Budget 2013.
 - System operator expenses comprise more than half the Authority's total expenditure. These can vary as a result of factors beyond the Authority's control eg CPI increases, the timing and amount of system operator capital expenditure, and costs of capital. Assumptions have been made about the level of these variable costs. If the assumptions prove too low, the Authority may need to seek an increase to appropriations.
 - The Authority is renegotiating the system operator service provider agreement (SOSPA) with Transpower. The intended start date for the new contract is 1 July 2015. The renegotiation may result in a change to the SOSPA fee, details of which are not available at present.
 - The market operations service provider (MOSP) fit for purpose review was undertaken during 2013/14 to inform a decision on whether to re-tender these roles ahead of the expiry of the existing contract terms in April 2016. In the 2014/15 year the Authority will decide whether to proceed with this re-tender. The outcome of any tender process may result in a change to the cost structure of these services, the details of which are not available at present.
 - A new Extended Reserves Manager MOSP is expected to be operational from April 2015. The Authority will shortly release a request for proposal for this MOSP. The establishment of this new role may require additional funding, details of which are not available at present.
 - From 2014/15 onwards, costs associated with facilitating consumer participation are included within the electricity industry governance and market operations appropriation. Prior to this, costs associated with these activities were included in a separate appropriation. Funding of \$3.000 million is proposed in the 2015/16 year, which is the amount approved by Cabinet in the 2014 Budget. These costs, as required by the Electricity

Industry (Levy of Industry Participants) Regulations 2010, are included within the Registry and consumer operations activity and levied at a rate of 50% to retailers and 50% to distributors (other than Transpower).

- The Authority is seeking to hold its own operational costs constant for 2015/16.
- Where the Authority's actual expenditure is lower than appropriated, any underspend will be returned to levy payers following the audit of the 2015/16 financial results.
- **Security management appropriation.** No change is sought to the security management appropriation. This is a multi-year appropriation for the period 2012/13 to 2016/17. This appropriation is limited to the management of emergency events by the system operator, if required. It includes increased monitoring and management responsibilities in the event of an emerging security situation, and planning and running an official conservation campaign. In the normal course of events it is not expected that this appropriation would incur costs. Therefore it will not be included in levy rates that are used for invoicing during a year.
- **Electricity litigation fund:** No change is sought to the electricity litigation fund.
- **EECA's electricity efficiency appropriation:** At \$13 million, the EECA electricity efficiency appropriation proposal remains at the same level as 2014/15. EECA proposes to use the levy to improve electricity efficiency in the following sectors:
 - o The industrial and commercial business sectors, with tailored advice to encourage a strategic and long term approach to energy management
 - o The commercial sector, including NABERSNZ ratings for commercial buildings, standards and labelling for commercial products, and uptake of commercial lighting technologies
 - o The industrial sector, including motor systems, and minimum energy performance standards for motors, pumps, fans and air compressors
 - o The residential sector, including lighting, water and space heating, electrical products and appliances.

2.2 *Breakdown of electricity industry governance and market operations costs*

- 2.2.1 The **electricity industry governance and market operations** appropriation covers the Authority's costs for oversight of the operation and governance of New Zealand's electricity market under the Electricity Industry Act 2010 (the Act), Code, and regulations. The appropriation covers the following outputs specified in the statement of performance expectations (SPE):¹
- market development, including facilitating consumer participation
 - monitoring, information and education
 - operation of the electricity system and markets
 - compliance.
- 2.2.2 Market development is a key function for the Authority, which may result in Code amendments or market facilitation measures. Market development costs are difficult to quantify with certainty until the Code amendment process has been followed. Code amendments may require system and process changes to be made by the Authority's service providers. These costs are met from within the Authority's appropriations.
- 2.2.3 While a detailed budget has not yet been prepared for the 2015/16 year, figure 1 shows the major categories for 2015/16 estimated costs within the **electricity industry governance and market operations** appropriation. Historical comparisons are also provided. Table 2 provides a more detailed indication of the forecast breakdown of major costs.
- 2.2.4 Figure 1 and Table 2 illustrate the Authority's commitment to containing its own operating costs. The Authority expects to contain its own operating costs in the medium term despite continuing the significant development programme outlined in appendix C.

¹ The Authority's SPE contains descriptions and performance measures for each of these outputs and is available from www.ea.govt.nz/about-us/strategic-planning-and-reporting/statement-of-performance-expectations/

Figure 1: Breakdown of historic and forecast electricity industry governance and market operations costs

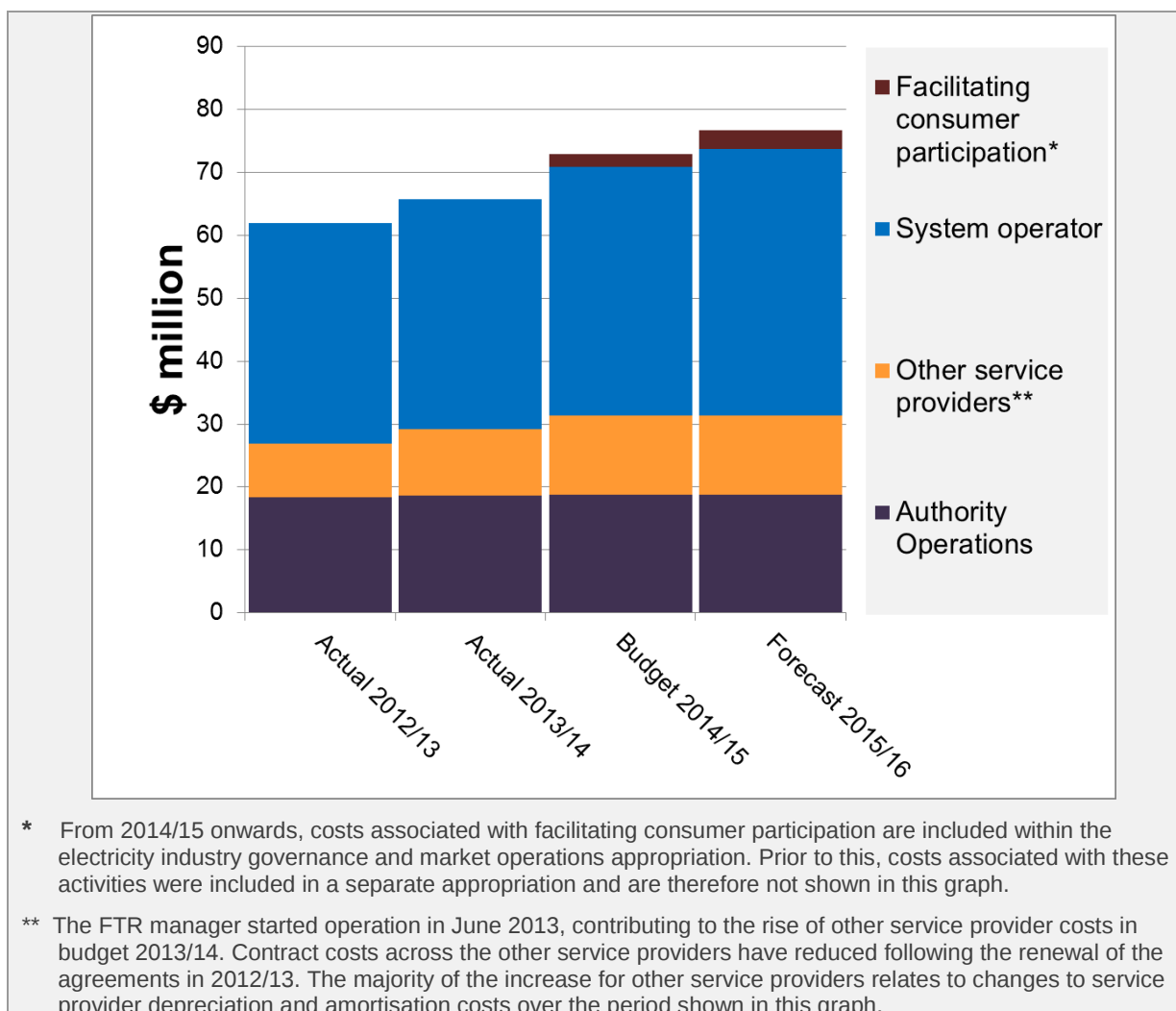


Table 2: Electricity industry governance and market operations appropriation: cost breakdown

Expense type	\$ million			
	Actual 2012/13	Actual 2013/14	Budget 2014/15	Forecast 2015/16
System operator - operating expenses	23.404	23.565	24.251	24.962
System operator - capital-related expenses	11.734	12.980	15.345	17.304
System operator expenses	35.138	36.545	39.596	42.266
Service provider - clearing manager	1.428	1.970	2.085	2.141
Service provider - wholesale information and trading system (WITS)	1.435	1.378	1.418	1.460
Service provider - pricing manager	1.578	1.592	1.606	1.621
Service provider - reconciliation manager	1.320	1.102	1.198	1.233
Service provider - registry	0.436	0.503	0.530	0.547
Service provider - FTR manager	0.082	0.860	0.788	0.812
Service provider - depreciation and amortisation	2.168	3.157	4.741	4.764
Service provider - IT costs	0.118	0.085	0.139	0.127
Service provider - Extended reserves manager*	-	-	-	-
Other service provider expenses	8.565	10.647	12.505	12.705
Facilitating consumer participation expenses	-	-	2.000	3.000
Authority operations - work programme	6.675	6.517	4.965	4.462
Authority operations - personnel	8.258	9.109	10.033	10.332
Authority operations - other operating costs	3.380	2.981	3.800	3.935
Authority operating expenses	18.313	18.607	18.798	18.729
Total expenditure	62.016	65.799	72.899	76.700

* The establishment of this new role may require additional funding, details of which are not available at present.

2.3 Electricity efficiency

- 2.3.1 Section 128 (3) c) of the Electricity Industry Act 2010 provides that EECA can use the levy to fund “a portion of [its] costs in performing its functions and exercising its powers and duties under the Energy Efficiency and Conservation Act 2000 in relation to the encouragement, promotion, and support of electricity efficiency”. The size of the portion of EECA’s costs to be met by the levy is determined by the Minister.
- 2.3.2 EECA proposes to request funding of \$13 million for electricity efficiency programmes aimed at unlocking a range of benefits for businesses and households – including helping consumers to reduce their energy bills, and improving business productivity. More detail on EECA’s priorities, targeted outcomes and their estimated economic value can be found in appendix D of this paper.

3. Indicative levy rates

- 3.1.1 The Crown is reimbursed for the cost of the Authority and the EECA electricity efficiency appropriation by way of a levy on electricity industry participants in accordance with the Electricity Industry (Levy of Industry Participants) Regulations 2010 (the Regulations). The levy is collected by the Authority on behalf of the Crown.
- 3.1.2 Prior to the start of the financial year the levy rates are set for invoicing based on the information available at that time. The final levy reconciliation, after the end of the financial year, takes account of any variations between levies collected and actual expenditure.
- 3.1.3 Table 3 provides indicative levy rates based on the proposed appropriations outlined above. Actual invoicing levy rates will be determined after the 2015/16 budget has been finalised and will be different to the indicative rates.
- 3.1.4 The purpose of providing the indicative levy rates is to support meaningful consultation by assisting participants to understand how the proposed appropriations could relate to the levies they may be asked to pay. The indicative rates have not been prepared for any other purpose. The Authority shall not be liable to any party who uses this information for any other purpose.

Table 3: 2015/16 Indicative levy rates

Participant Class	Generators	Purchasers	Retailers	Distributors including Transpower	Distributors excluding Transpower	Transpower
Activity						
Common quality operations	\$0.1828/MWh	\$0.1819/MWh		\$0.1005/MWh		
Market operations	\$0.4949/MWh	\$0.4926/MWh				
Registry & consumer operations			\$1.4393/ICP		\$1.4399/ICP	
Supply security operations		\$0.0121/MWh				
Transmission						\$0.0458/MWh
Electricity efficiency		\$0.3247/MWh				
Customer switching			\$0/ICP			
Other activities	\$0.0618/MWh	\$0.0615/MWh		\$0.034/MWh		

2014/15 Invoiced levy rates

Participant Class	Generators	Purchasers	Retailers	Distributors including Transpower	Distributors excluding Transpower	Transpower
Activity						
Common quality operations	\$0.173/MWh	\$0.172/MWh		\$0.0952/MWh		
Market operations	\$0.4774/MWh	\$0.4747/MWh				
Registry & consumer operations			\$1.1719/ICP		\$1.1714/ICP	
Supply security operations		\$0.0124/MWh				
Transmission						\$0.0417/MWh
Electricity efficiency		\$0.3241/MWh				
Customer switching			\$0/ICP			
Other activities	\$0.061/MWh	\$0.0606/MWh		\$0.0335/MWh		

Movement

Participant Class	Generators	Purchasers	Retailers	Distributors including Transpower	Distributors excluding Transpower	Transpower
Activity						
Common quality operations	\$0.0098/MWh	\$0.0099/MWh		\$0.0053/MWh		
Market operations	\$0.0175/MWh	\$0.0179/MWh				
Registry & consumer operations			\$0.2674/ICP		\$0.2685/ICP	
Supply security operations		(\$0.0003)/MWh				
Transmission						\$0.0041/MWh
Electricity efficiency		\$0.0006/MWh				
Customer switching			\$0/ICP			
Other activities	\$0.0008/MWh	\$0.0009/MWh		\$0.0005/MWh		

Appendix A Legal context for this consultation

A.1 Section 129 of the Electricity Industry Act 2010 (Act) requires the Authority and EECA to consult on proposed appropriations for the coming year. Section 129 states:

129 Consultation about request for appropriation

- (1) The Authority and the Energy Efficiency and Conservation Authority must, before submitting a request to the Minister seeking an appropriation of public money for the following year, or any change to an appropriation for the current year, that relates to costs that are intended to be recovered by way of levies under section 128, consult about that request with—
 - (a) those industry participants who are liable to pay a levy under that section; and
 - (b) any other representatives of persons whom the Authority believes to be significantly affected by a levy.
- (2) Each Authority must, at the time when the request is submitted, report to the Minister on the outcome of that consultation.
- (3) The Ministry must consult in a like manner in respect of a levy to recover costs referred to in section 128(3)(g).
- (4) This section applies to requests in respect of the financial year beginning 1 July 2011 and later financial years.

A.2 This consultation paper sets out appropriation proposals and the proposed work programme for the full 2015/16 financial year (from 1 July 2015 to 30 June 2016). It covers:

- the Authority's proposed appropriations and work programme
- EECA's proposals for levy-funded electricity efficiency programmes.

Appendix B Making submissions

- B.1 Submissions should be made separately to the Electricity Authority or EECA relating to the appropriations each agency administers, and the more detailed information provided about proposed work programmes.

Making submissions to the Authority

- B.2 Submissions about Authority appropriations and the proposed work programme should be emailed to submissions@ea.govt.nz with 'Consultation paper—2015/16 appropriations' in the subject line.
- B.3 The preferred format of submissions is electronic, in Microsoft Word if possible. It is not necessary to send hard copies of submissions sent electronically. A suggested submission format has been made available on the Authority website.
- B.4 Submissions should be received by 5pm on 12 December 2014. Late submissions will not be considered.
- B.5 If you do not wish to send your submission electronically, you should send one hard copy of the submission to the address below.

By post: Submissions Electricity Authority PO Box 10041 Wellington 6143	By courier: Submissions Electricity Authority Level 7, ASB Bank Tower 2 Hunter Street Wellington	By fax: 04 460 8879
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- B.6 Your submission is likely to be made available to the general public on the Authority's website. Submitters should detail in a covering letter any documents attached to the submission and clearly indicate any information that is provided to the Authority on a confidential basis. However, all information provided to the Authority is subject to the Official Information Act 1982.
- B.7 Information about the Authority and current projects are on the Authority's website at www.ea.govt.nz
- B.8 If you have questions about this consultation paper, please contact Androula Dometakis, General Manager Corporate Services, on (04) 460 8869 or androula.dometakis@ea.govt.nz

Making submissions to EECA

- B.9 Submissions should be made to EECA on the electricity efficiency appropriation and the proposed electricity efficiency work programme (appendix D).
- B.10 Submissions should be sent to levyconsultation@eeca.govt.nz
- B.11 Submissions should be received by 5pm on 12 December 2014. Late submissions will not be considered.
- B.12 If you do not wish to send your submission electronically, you should send one hard copy of the submission to the address below.

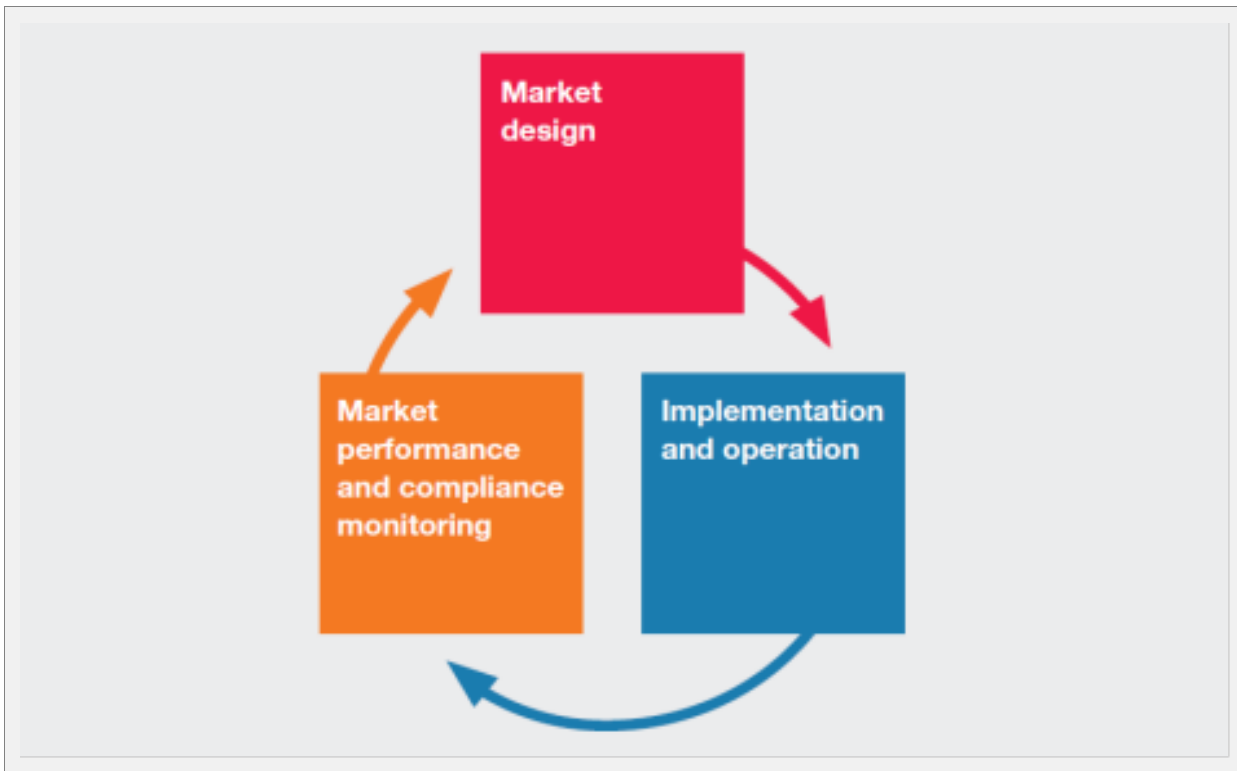
By post: EECA PO Box 388 Wellington 6140	By courier: EECA Level 8, 44 The Terrace Wellington	By fax: 04 499 5330
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- B.13 Your submission will be published on EECA's website. Submitters should indicate any information that is provided to EECA on a confidential basis. However, all information provided to EECA is subject to the Official Information Act 1982.
- B.14 Information about EECA and current projects may be found on EECA's website at www.eeca.govt.nz
- B.15 If you have questions about the EECA component of this consultation paper, please contact Brian Fitzgerald, Senior Adviser Strategy and Programmes, (04) 470 2541 or brian.fitzgerald@eeca.govt.nz

Appendix C Proposed Authority work programme

- C.1 This appendix sets out the Authority's proposals for the 2015/16 work programme. It includes programmes and their key projects. It does not include all potential projects under each programme. The project tables starting on page 20 indicate where projects continue from 2014/15 or where they are a new project for 2015/16.
- C.2 The proposed work programme includes a significant commitment to market development and a continued emphasis on ongoing efficient operation of the electricity system and markets. The market performance and compliance monitoring roles will assist with identification of issues requiring further attention in the market development work programme (see Figure 3).

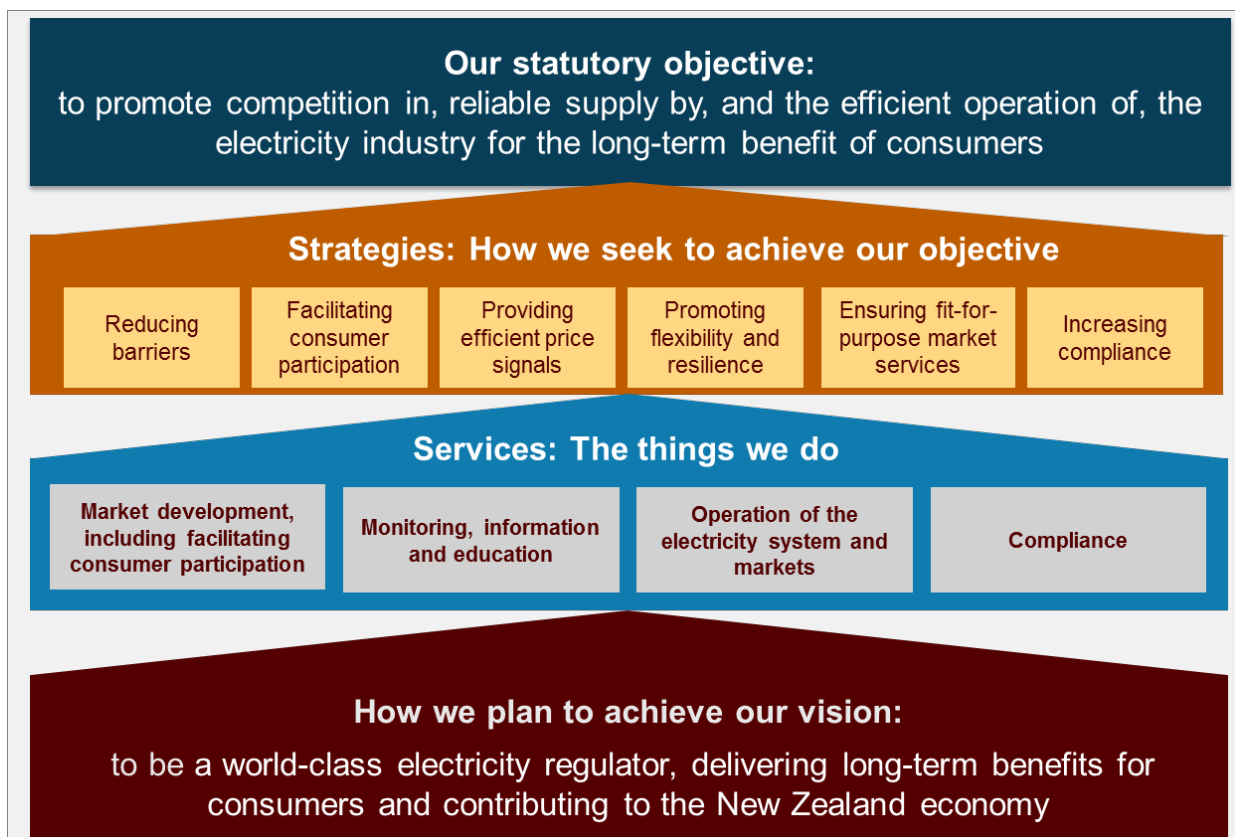
Figure 3: Our market performance cycle



- C.3 The Authority's statutory objective is to promote competition in, reliable supply by, and the efficient operation of the electricity industry for the long-term benefit of consumers. Everything the Authority does must be to further that objective.
- C.4 To explain how the Authority will achieve its objective, we have developed and published a set of 'high-level' strategies. The strategies are shown in the strategic framework diagram below, which shows the linkages

between our vision, the services we provide, our strategies and the promotion of our statutory objective.

Figure 4: Our strategic framework



Market development focus

- C.5 The Authority's 2015/16 work programme will continue the focus in the current work programme on projects to further enhance retail market competition. Consistent with our strategies, we will focus on reducing barriers to entry and expansion into the retail market and facilitating consumer participation.
- C.6 In 2015/16, the Authority will increasingly turn its attention to advancing work to further the strategy of providing efficient price signals. Inefficient prices are 'misleading' prices as they do not inform consumers about the true costs of their consumption of electricity services. Inefficient and misleading prices are not to the long-term benefit of consumers.
- C.7 As is the case in all markets, electricity consumers and suppliers make short-term and long-term decisions on the basis of the prices they face now and prices they expect to face in the future. For consumers, a short-term decision in response to price could be a decision to reduce electricity consumption for a few hours to avoid higher prices. A long-term

investment decision could be to invest in photovoltaics (PV), battery storage or an electric vehicle.

- C.8 For suppliers, the prices they face may influence, for example, the short-term offer behaviour of generators, while the longer-term perspective will influence the timing and type of electricity infrastructure built.
- C.9 For a homogenous product like electricity, prices are particularly important in influencing consumer and participants' decisions. Price signals that do not reflect the costs of consumption and supply decisions will result in inefficient outcomes which could be substantial given the long lives of many electricity assets and the often high costs of electricity infrastructure.
- C.10 The Authority sees that the most pressing area to improve price signals is in the electricity network sector – transmission and distribution. Prices that better reflect the costs of providing transmission and distribution services will enable the owners of these assets to make better short-term operating decisions and, most importantly, long-term investment decisions. Investments in transmission and distribution assets need to be of the right type, right size, in the right place and made at the right time. Otherwise, consumers will bear the cost of inefficient investments for many years.
- C.11 Ensuring prices accurately reflect the cost of providing network services will also encourage users of transmission and distribution services to make decisions that maximise the long-term benefits of consumers as a whole. This is particularly important in the downstream portion of the electricity sector, where technological developments are opening-up more opportunities for consumers to produce their own power through distributed generation (especially PV) and enabling consumers to become more responsive to changes in electricity prices. For individual consumers making long-term decisions about installing PVs it is important they face the correct price signals, especially transmission and distribution prices which flow through to retail prices. Otherwise consumers, without DG will end up subsidising those consumers with distributed generation and there is a risk that high-cost distributed generation will displace lower cost grid-connected generation, which would increase the overall cost of the electricity system.
- C.12 As more consumers use the capabilities of smart meters to access spot market prices, it will be important that the prices they see and make decisions on are the actual prices they are charged. Otherwise, consumers will make poor, inappropriate decisions and lose confidence in market arrangements. A new project has been added to the work programme for 2015/16 to address these concerns, called Demonstrating efficient spot price risks to consumers. The project is listed under the Efficient pricing work programme.

- C.13 There are other areas where the efficiency of prices, or payments, in the electricity system need to be investigated and potentially changes made. In total, there are five proposed projects in 2015/16 whose primary purpose is to achieve more efficient pricing. Two of these, transmission pricing and distribution pricing continue from past years. Three of them are new: Wind generation inputs into final pricing, Frequency keeping cost allocation, Instantaneous reserve event charge and cost allocation review.
- C.14 A description of the Authority's market development programmes and key market development projects follows.

Monitoring focus

- C.15 Increased emphasis is being placed on monitoring the result of the initiatives to date, compliance with the Code, investigating market events, and on general monitoring of market performance. Monitoring work will be actively used to consider further Code or market facilitation initiatives where warranted.

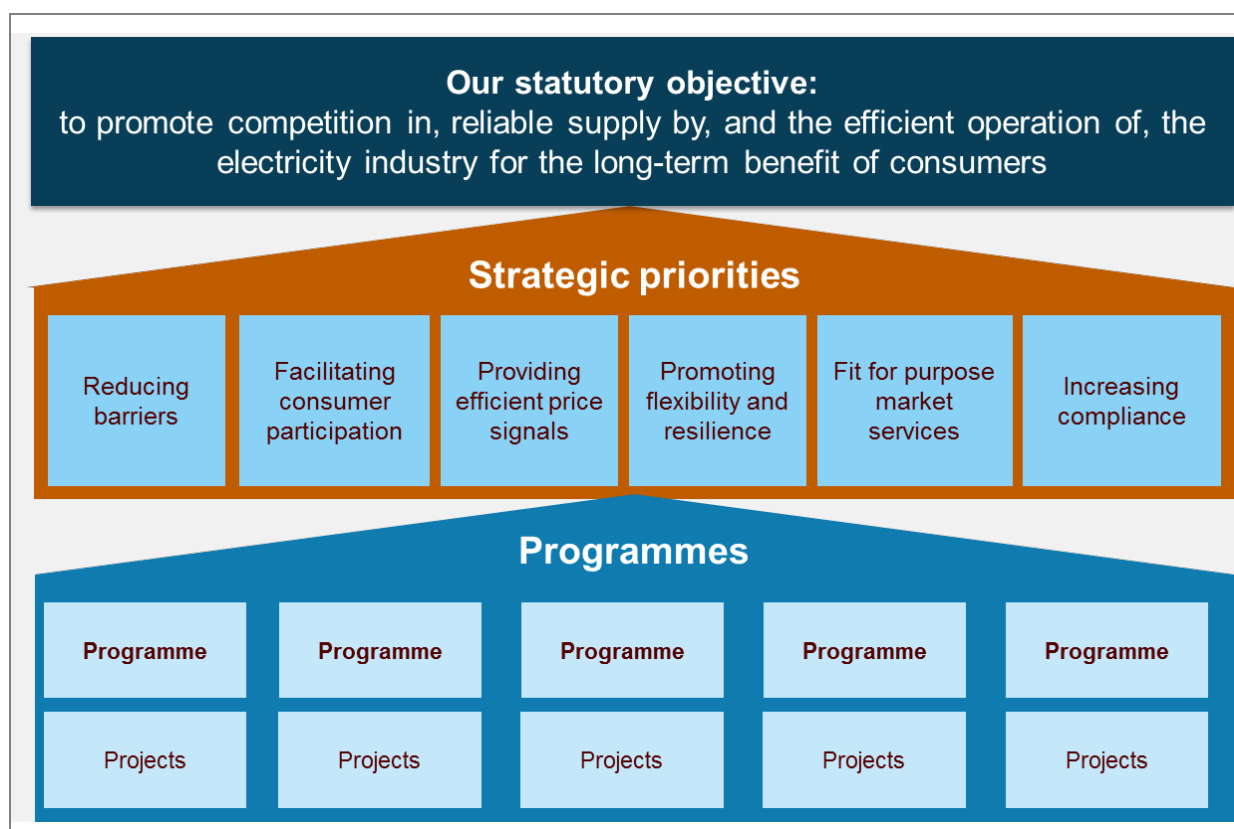
Market services focus

- C.16 A key operational focus in 2015/16 will be implementing any implications of the renegotiated SOSPA (scheduled to come into effect on 1 July 2015).
- C.17 In 2013/14 we also reviewed market operations service provider arrangements to assess whether they were fit for purpose. The results of the review and the next steps are currently being worked through. The impact on funding requirements is unlikely to be material in the 2015/16 year as the current contracts are due to expire in April 2016. Any major variations will be signalled in the 2016/17 consultation process in late 2015.

Strategy-based work programme

- C.18 Our strategic framework has been applied to the development of this proposed work programme.
- C.19 This paper sets out high-level programmes (groups of related projects) and a summary of key potential projects for 2015/16. Our focus is to set out the rationale of our intended programmes of work in terms of the statutory objective, strategic priorities and the impacts we are seeking. Figure 5 illustrates this approach for the work programme consultation.
- C.20 The programme outlined below includes cross references to the 2014/15 work programme, where detail about specific projects is available (including pending projects).²
- C.21 More detail on planned projects will be provided to stakeholders in the finalised 2015/16 work programme, to be published in June or July 2015. At that stage we will have clearer specification of the projects, their timetables and deliverables.

Figure 5: Framework for presenting overall work programme for consultation



² The 2014/15 work programme is available at www.ea.govt.nz/about-us/strategic-planning-and-reporting/our-work-programme/

Coordination with the system operator

- C.22 Coordination is required with the system operator to manage progress across a range of projects. System operator input is required for both the development and implementation of many of the market facilitation measures and Code amendments. The coordination effort spans a range of matters including the level of detail required for the system operator to undertake implementation planning, capacity, and timing of its own initiatives and those required through it being part of Transpower.
- C.23 Our staff work closely with the system operator to develop an agreed timetable and process for managing these initiatives (joint development programme). The ongoing process of coordinating affected projects may impact the prioritisation and timing of Authority projects.
- C.24 Where possible, indicative dates are provided for projects involving system operator input. However, it should be noted that detailed planning is required by the Authority and system operator before more definitive timetables are completed. These will be advised in relation to specific projects, once available.

Notes to the programme information that follows

- C.25 These notes apply to all programmes outlined below.
- **Strategy and impacts:** the programmes contribute to the key strategies and impact measures set out in our SOI.
 - **Initial assessment of programme size:** this provides indicative information only on the estimated Authority resource requirements for 2015/16. The assessment gives an indication of the quantum of overall levy cost and does not include costs to others. More detailed planning will take place to develop more accurate cost information.
 - **Initial assessment of net public benefit:** this provides indicative information only on the perceived net public benefit for the project. High level cost-benefit assessment is carried out as part of project initiation. More detailed cost-benefit assessments are developed during appropriate project stages.
 - **Project numbers:** these are in the first column of the following tables (for example, 1.1) and refer to the project numbers in the published 2014/15 work programme. Where a proposed project is new for 2015/16 this is also indicated in the first column.
 - **Project stages:** the tables that follow include high level indicative information about the stages we expect the project to follow and the general timetable anticipated. These are estimates only at this stage and more detailed assessment and planning will take place as part of development of the work programme. Development of the work programme will include addressing feedback from this consultation.

Market design

Programme: Competition in retail markets

Purpose

This programme includes initiatives to promote retail competition by reducing barriers to entry and expansion of retailers (the supply side) and by facilitating consumer participation (the demand side). Many of the supply side initiatives are in the spot, hedge and distribution segments of the market. The demand side initiatives are primarily about providing consumers with information to make better, more informed and quicker choices between retailers. Part of the work in this area is funded from a new initiative approved in the 2014 Budget, called 'facilitating consumer participation'.

Desired impacts

Strategies	2014–2018 impact measures
Reducing barriers	• A more level playing field for new and expanding retailers. • Reduced set-up costs for new retailers. • Improved spot market risk and risk management.
Facilitating consumer participation	• Increased consumer awareness, understanding and motivation to participate in markets. • Increased consumer participation in both wholesale and retail markets, eg, spot, demand side.
Providing efficient price signals	• Increased range of products or services with prices, eg, risk management products. • Increased accuracy of price forecasts (five-minute prices are increasingly correlated with final prices). • Reduced instances of inefficient prices, including during scarcity events. • More efficient price signals for residential and SME consumers.
Promoting flexibility and resilience	• The customer transfer process works effectively in the event of retailer default.

Initial assessment of size: High

Initial assessment of net public benefit: High

Key projects

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
1.1	Retail data project — consider options to promote retail competition by improving access to retail data.	Poor access to retail data could inhibit consumer decision-making and market monitoring.	Make Code amendment and introduce market facilitation measures for access to consumption data, if necessary, by 30 June 2015. Begin implementation, if necessary. Phase 2: Complete consultation on options for access to tariff and connection data. Commence implementation if desirable.	Phase 2: Implement arrangements for access to tariff and connection data. Phase 3: Explore options for increasing consumer confidence by providing a single source of truth for retail monitoring for prices.
1.2	What's My Number campaign —this campaign promotes the benefits of comparing and switching retailers.	Our evidence indicates that a targeted version of the campaign could further raise consumer awareness, understanding and motivation to participate in the market.	Successful programme delivery as indicated in the annual monitoring report for the 2014 calendar year.	Successful programme delivery.
1.8	Research project: effects of low fixed charges —Retail Advisory Group (RAG) project to investigate the effects of the low fixed charges regulations and their impacts on competition and efficiency.	The current duplication of tariffs and restrictions on some tariffs may be harming retailer innovation and competition.	Scope and approach agreed with the RAG by 31 October 2014.	Report to Authority Board.

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
1.4	Hedge market development— a Wholesale Advisory Group (WAG) project looking at potential improvements in hedge markets, eg, over-the-counter (OTC) hedge trading and futures trading. Includes a consideration of market-making arrangements for new Australian Securities Exchange (ASX) products. Explore if ASX positions can offset energy market prudential security requirements (may require a Code amendment).	To ensure good availability of hedges to ensure a level playing field for all retailers and generators. Any initiatives undertaken in this area are expected to reduce barriers to entry and expansion for retailers.	Complete the WAG review of hedge markets. Consider and, as appropriate, progress WAG recommendations. May involve the development of market facilitation measures and/or Code amendment. Market-making occurring on some new ASX futures products. Progress market facilitation measures to further improve market-making. Develop and review submissions on an issues and options paper. Depending upon outcome of ASX/AEMO design study and its applicability to the New Zealand market, develop any Code amendment required to enable exchange traded futures to offset spot market prudential security requirements.	Continue to develop any market facilitation measures and/or Code amendments resulting from the WAG review. Develop decision paper on improving market making. Depending upon the success of market facilitation measures, the decision paper may recommend the development of Code amendments for incentivised or mandatory market-making. Continue to develop any Code amendment required to enable exchange traded futures to offset spot market prudential security requirements.
2.11	Spot market review— initiation of a review of the spot market to identify potential refinements to its design to enable improved hedge market and retail market competition.	To reduce any barriers to retail competition arising from current market arrangements.	Complete initiation stage of review by 31 December 2014 with recommendations on how to proceed.	Dependent on the outcome of the review, initiate new projects to develop the detailed design and any Code amendments. Outcomes from the project are closely related to the demand side response review.

Programme: Competition in wholesale markets

Purpose

This programme includes projects to:

- improve the process for offer and dispatch in the spot market
- improve the competition and efficiency in instantaneous reserves, frequency keeping, extended reserves and potentially other ancillary service markets.

Desired impacts

Strategies	2014–2018 impact measures
Reducing barriers	• Improved participation in ancillary services markets.
Promoting flexibility and resilience	• Improving the cost and effectiveness of the frequency management regime.

Initial assessment of size: High

Initial assessment of net public benefit: High

Key projects

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
1.5	National markets for ancillary services— frequency keeping: develop a national market for frequency keeping to enhance wholesale market competition instantaneous reserves: develop a national market for instantaneous reserves to enhance wholesale market competition. Update market design to enable the transfer of instantaneous reserves from one island to the other via the high-voltage, direct current (HVDC). Implementation dependent on HVDC bi-pole control systems being fully in service.	To enable parties in the North Island to compete in the South Island and vice versa. We also expect efficiency gains as national markets should reduce total procurement requirements.	Conceptual design for a national market for frequency keeping completed and enabling Code provisions drafted for a national market for frequency keeping by 30 June 2015. Conceptual design for a national market for instantaneous reserves completed and enabling Code provisions drafted for a national market for instantaneous reserves by 30 June 2015. Code amendment made in 2015/16. 'Go live' achieved by mid-2017.	Finalise Code amendment and any market facilitation measures to enable a national market for frequency keeping. May delay making Code amendment given expected go live is during 2018. Complete Code amendment and any market facilitation measures to enable a national market for instantaneous reserves.
1.10	Review of instantaneous reserve markets—undertake a fundamental review of the instantaneous reserve markets to reduce barriers and enhance performance. This is a WAG project.	Current arrangements may create barriers for some types of instantaneous reserve. We will be looking for options to reduce unnecessary barriers to increase competition.	WAG completes its investigation and reports to the Board by 30 June 2015.	Consider and, as appropriate, progress WAG recommendations. Develop conceptual design for any proposed new instantaneous reserves products. May involve the development of market facilitation measures and Code amendment.

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
2.17	Demand side response review —assessment of potential projects to ensure that demand side response is able to be utilised across all relevant markets, with appropriate price signals.	Ad hoc demand side response programmes may undermine efficient pricing in the spot market. It also potentially impacts on reserves (including extended reserves) and ancillary services markets.	Report to the Board with recommendations by 1 May 2015 on potential projects for the Authority's work programme.	Complete review of submissions on the Demand Response Principles paper. Based on this information, prepare a Demand Response road map, a more specific plan for the coordinated development of demand response initiatives. Outcomes from the project are closely related to the Spot Market Review.
New for 2015/16	Wholesale market information: fuel disclosure —improve the timeliness, usability and consistency of fuel information disclosure, particularly focussing on information that may influence forward electricity prices.	Improved access to information that can influence forward prices. Influences investment and risk management decisions, thereby improving wholesale and retail market competition.	NA.	Finalise arrangements for major generators on what information will be released to the public on fuel (by agreement, or Code amendment if necessary). Publish information paper by 30 June 2016.

Programme: Efficient pricing

Purpose

The programme seeks to improve the efficiency of spot market pricing in the wholesale market and develop appropriate arrangements for allocating the costs of transmission and distribution services.

Desired impacts

Strategies	2014–2018 impact measures
Providing efficient price signals	• More efficient price signals for residential and SME consumers, including those contemplating investments in distributed generation. • Improved efficiency in transmission and distribution networks.

Initial assessment of size: High

Initial assessment of net public benefit: High

Key projects

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
1.6	Transmission pricing investigation —review of the transmission pricing methodology (TPM) to promote overall efficiency of the electricity industry.	We are reviewing the current arrangements in order to better promote operational and investment efficiency in the transmission sector and the broader electricity market.	Complete working paper process by 31 December 2014. Release second issues paper by 30 June 2015.	Consultation on second issues paper. Decision on guidelines and implementation.

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
1.9	Review of more standardisation of use of systems agreements (UoSAs) —the objective of this project is to promote retail competition and efficiency in the electricity industry.	The current wide range of UoSAs may inhibit retailer entry and expansion, especially in outlying regions. Some UoSAs may also inhibit retailer entry and expansion within particular networks.	Complete a summary of submissions and decide on approach to UoSA (voluntary or regulated).	Consult on Code amendment, if needed, in 2015/16.
1.11	Distribution pricing review —investigate efficient distribution pricing arrangements.	We will review the current arrangements to achieve better operational and investment efficiency in the distribution sector and the broader electricity market.	Scope and timetable established. Next steps to be determined.	Consultation on options, including a preferred option (subject to Board decision in November 2014 on the scope and timetable).
New for 2015/16	Demonstrating efficient spot price risks to consumers —consider whether further changes are needed to stress test obligations.	Two considerations are driving this review. The first is the emergence of retailers offering spot market prices to residential consumers, which heightens the importance of these consumers being clear about the risks of those arrangements. The second consideration is that it is timely to review whether the current stress test obligations are needed on parties that purchase directly from the spot market (eg industrial consumers).	NA.	Consult on market facilitation measures and/or Code amendments.

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
New for 2015/16	Wind generation inputs into final pricing —wind (intermittent) generation to be loaded as a generation offer rather than negative load. Involves changes to system operator and pricing manager systems.	To obtain more efficient final pricing process by allowing the system operator's systems to optimise wind (intermittent) generation offers in the same manner as other forms of generation.	NA.	Develop and consult on Code amendments.
New for 2015/16	Frequency keeping cost allocation —review the allocation of costs for frequency keeping.	Improve investor certainty.	NA.	Potential project for 2015/16 WAG work plan. If added to that work plan, develop WAG discussion paper and WAG recommendations.
New for 2015/16	Instantaneous reserve event charge and cost allocation review —review the allocation of costs for instantaneous reserves and the event charge.	Improve the efficiency in allocation of reserve costs and the event charge. Improve incentives to minimise instantaneous reserve costs, including any additional instantaneous reserves required for the commissioning of new assets.	NA.	Potential project for 2015/16 WAG work plan. If added to that work plan, develop WAG discussion paper and WAG recommendations.

Programme: Implementation projects

Purpose

This programme covers the effective and efficient implementation of market development initiatives completed in 2014/15.

Each project description identifies the programme from which the implementation project has arisen.

The implementation programme may also include project reviews (against deliverables) where these are considered desirable.

Post-implementation reviews (against impacts sought) of completed major projects are covered in the **Provision of education, models and data** programme on page 34.

Desired impacts

Impact measures are primarily covered in the contributing programmes, primarily the retail and wholesale market programmes.

Strategies	2014–2018 impact measures
Ensuring fit for purpose market services	• Effective implementation of market development initiatives, as measured by case-by-case analysis, including participant feedback. • Cost of significant system changes/enhancements independently reviewed for value for money.

Key projects

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
1.12	Transpower's proposed variation to the current TPM (operational review)—Transpower has started an operational review of the current TPM. We are expecting a proposal from Transpower to change the current TPM. <i>Implementation of a project from the efficient pricing programme.</i>	The Code requires us to consider TPM proposals submitted by Transpower provided there is not more than one proposal per 12 month period.	Assess and consult on Transpower's proposal. Respond and implement a Code amendment (if required) by 30 June 2015.	Implementation.
2.5	Efficient procurement of extended reserves: implementation—efficient procurement of load for extended reserves (automatic under frequency load shedding (AUFLS)). <i>Implementation of a project from the efficient pricing programme.</i>	The new arrangements are expected to result in more efficient provision and use of extended reserves.	Code amendment finalised and gazetted by 1 August 2014. Complete regulations to create new extended reserves service provider role (which will be finalised by MBIE before we select). Technical Requirements Schedule finalised by Transpower by 30 June 2015. Selection methodology completed by 30 June 2015 (dependent on timeframe for establishing service provider role).	Selection methodology completed (if not completed in previous year). Implementation.

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
2.6	Improved market modelling of losses—improve the representation of losses in the system operator's scheduling, pricing and dispatch model (SPD). A Code amendment will not be required. <i>Implementation of a project from the efficient pricing programme.</i>	The improved modelling could reduce dispatch costs, achieving operational efficiency gains.	Complete design stage and publish Authority information paper by 31 December 2014.	Implementation.
2.18	Offer and dispatch: review of gate closure—review of gate closure for offers and bids (energy and instantaneous reserves). <i>Implementation of a project from the efficient pricing programme.</i>	Reduced gate closure times should lead to more efficient use of resources and increased levels of wholesale market competition.	Cost benefit analysis completed by 31 December 2014. Consultation on CBA and Code amendment by 30 June 2015.	Implementation.
2.19	Offer and dispatch: industrial co-generation—modify the Code and market system for market participation by industrial co-generators. <i>Implementation of a project from the efficient pricing programme.</i>	To reduce barriers to market participation by industrial co-generators.	Code amendment consultation paper by 31 December 2014. Code amendment completed by 30 June 2015.	Implementation.

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
2.20	Allocation of constrained-on costs—review the calculation and allocation of constrained-on costs. <i>Implementation of a project from the efficient pricing programme.</i>	To ensure constrained-on costs are allocated more efficiently.	Code amendments completed by 30 June 2015.	Implementation.
2.21	Asset owner performance obligations (AOPOs): fault ride-through—implementation phase - Update low voltage fault ride-through AOPOs. <i>Implementation of a project from the reliability programme.</i>	We are updating low voltage fault ride-through AOPOs to ensure they are fit for purpose with the changing generation mix (for example, significant wind generation). This should provide a clear definition of what all generators, including intermittent plant, is to do (how it will operate) and hence improve certainty for investors.	Code completed by 31 December 2014.	Implementation.

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
2.22	Asset owner performance obligations: normal frequency—review of the frequency AOPOs. Investigation reports produced by the system operator in 2011. Further system operator investigation required—implications for software. <i>Implementation of a project from the reliability programme.</i>	We are reviewing the frequency AOPOs to determine if they are fit for purpose. This should improve efficiency and reliability of the electricity system by placing appropriate incentives on the system operator and asset owners.	Complete consultation process and review submissions by 31 March 2015. Code amendment completed by 30 June 2015.	Implementation.
New for 2015/16	FTR Allocation Plan 2015—implement improvements identified in the FTR manager's annual allocation plan review <i>Implementation of a project from the competition in retail markets programme.</i>	The FTR manager undertakes an annual review of the allocation plan. As this is a new market it is possible that further system enhancements will be proposed.		Implement any approved changes into the FTR system.

Monitoring, information and education

Programme: Provision of education, models and data

Purpose

In addition to the business as usual monitoring, investigations and reports, this programme includes work we are carrying out to improve the transparency of industry processes. This includes provision of data and models that enable replication of pricing calculation, counterfactual analysis, and rapid assessment of structure, conduct, and performance of the various markets that make up the electricity industry.

Provision of information and models will build confidence and reduce concentration of technical expertise and intellectual property that works against competition in the electricity markets, including markets for technical services.

This programme also includes post-implementation reviews (against impacts sought) of completed major projects. These are carried out once the changes have been in place sufficient time to bed-in and for the desired impacts to be able to be appropriately assessed.

Desired impacts

Strategies	2014–2018 impact measures
Reducing barriers	Improved information availability. For example, through publications and the web.

Initial assessment of size: Medium

Initial assessment of net public benefit: High

Key projects

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
2.23	Consumer education programme —undertake consumer education on the electricity market to help encourage participation and understanding. This work includes identifying and implementing any changes to improve consultation and consumer engagement.	We have an ongoing function of providing information. Improved information and understanding aims to increase consumer awareness, and motivation to participate in both the wholesale and retail markets.	Project plan/programme completed by 31 August 2014. Complete at least 75% of 2014/15 targets for the consumer education programme.	Complete at least 75% of 2015/16 targets for the consumer education programme.
	Post-implementation reviews	Post-implementation reviews will look at whether the new Code or market facilitation measures (MFM) are delivering the expected impacts and outcomes.	2014/15 reviews planned are: - Part 10 (metering) Code amendments - multiple frequency keeping in the North Island.	Specific reviews to be identified, but could include: - demand side bidding and forecasting - FTR market - stress testing.
	Ad hoc market performance reviews	Ad hoc reviews of market performance or specific events will be carried out as required.	Reviews are identified during the financial year. Approximately six reviews can be expected in a financial year.	Reviews will be identified during the financial year. Approximately six reviews can be expected in a financial year.

Market Services

Programme: Fit for purpose market services

Purpose

This programme covers the services provided by the market operations service providers (MOSPs) and the system operator. These companies provide systems and services that ensure effective market operation, increase market efficiency and facilitate market development. In addition to the business as usual work in relation to operation of the electricity system and markets, we are carrying out projects to improve fitness for purpose and operational efficiency.

Desired impacts

Strategies	2014–2018 impact measures
Ensuring fit for purpose market services	• Market services are resilient to adverse events, as measured by case-by-case analysis. • Participants consider services meet their needs.

Initial assessment of size: Medium

Initial assessment of net public benefit: Medium

Key projects

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
2.26	System operator service provider agreement (SOSPA) review—a wide ranging review of the SOSPA arrangements, including: - alignment of SOSPA objectives with s15 of the Electricity Industry Act 2010 - development of a wider range of performance measures - addressing the capital plan - renegotiation of SOSPA.	We are reviewing the SOSPA to ensure that its arrangements bring normal commercial disciplines to the services being provided. We are also seeking to improve the system operator's strategic alignment with the Authority's statutory objective and market development programme.	Complete the review of the SOSPA for implementation effective at 1 July 2015.	Agree performance measures and establish reporting framework.
2.27	Market operations service provider (MOSP) review—the review was completed in 2013/14. Next steps are being developed.	We want to ensure that services and systems remain suitable for evolving market requirements, can be developed in a timely and cost-effective manner and are suitably resilient to potential systems failures and outages.	Make decision on whether to re-tender for MOSP roles and make any selection by 31 July 2015.	In the event that a re-tender is completed: Establish new agreements by 31 October 2015. Plan transition arrangements by 30 April 2016. Commence transition.

Programme: More efficient market operations

Purpose

This programme involves increasing the efficiency of electricity market operations through refining processes set out in the Code.

Desired impacts

Strategies	2014–2018 impact measures
Promoting flexibility and resilience	The customer transfer process works effectively in the event of retailer default.

Initial assessment of size: Low

Initial assessment of net public benefit: Medium

Key projects

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
2.31	Review of participant audit arrangements — review audit requirements in the Code. The project does not include MOSP audits.	We're reviewing audit requirements to improve efficiency and align with good risk management practice. This has the potential to increase compliance and provide efficiency savings.	Complete a review of audit requirements, and report to Board by 30 June 2015, if required.	Implement any changes as a result of the review.

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
New for 2015/16	Operational Review of Part 10 —implement any changes required from the Metering (Part 10) impact review, the metering certification and metering records accuracy audits (projects 2.32 and 2.33), and a review of various operational provisions such as statistical sampling.	The Metering (Part 10) impact review and the audits are expected to identify Code amendments that are needed to make the metering market operate more efficiently. Additionally there are some provisions of Part 10 that have already been identified as needing review to operate more efficiently.	NA.	Consult on issues and changes, and implement required Code amendments

Compliance

Programme: Compliance

Purpose

Compliance plays an integral role in ensuring the integrity of the electricity market by enabling compliance by the industry with the Act, regulations and the Code.

We take a risk-based and proportionate approach to compliance recognising that most industry participants want to comply with their regulatory obligations voluntarily, or can be encouraged or induced to do so. Our focus is on facilitating voluntary compliance by providing information, education, encouragement, and assistance. However, serious compliance matters are formally investigated and may be subject to enforcement action.

Desired impacts

Strategies	2014–2018 impact measures
Increasing compliance	• Downward trend in frequency of non-compliance (same type of event, same participant). • Downward trend in the number of serious breaches.

Initial assessment of size: Low

Initial assessment of net public benefit: Medium

Key projects

2014/15 WP No.	Project name and description	Why we're doing the project	2014/15 deliverables	2015/16 deliverables
2.32	Review of enforcement regulations —review completed in 2013/14. The report was provided to the Ministry of Business, Innovation and Employment (MBIE). Progress is now dependent on MBIE's work programme and priorities as regulation changes require Cabinet approval.	We consider that an update of the regulations will assist with achieving best practice compliance processes and systems. This will lead to improved compliance outcomes.	There may be a need for our support to MBIE's process if this is pursued in 2014/15.	There may be a need for our support to MBIE's process if this is pursued in 2015/16.
2.33	Meter certification audits —to ensure that meter equipment providers (MEPs) have recertified interim certified category 1 metering installations in accordance with Code requirements. Forms part of the compliance plan for the new Part 10.	We want to ensure that all category 1 metering installations are appropriately certified, to support the efficient operation of market reconciliation processes.	Review of the state of the industry and its ability to meet April 2015 deadline: Board paper for 2 September 2014. Complete at least one audit and report to Board by 30 June 2015.	Complete the remainder of the Audits, report the results to the Board, and pursue any Code amendments necessary to address identified issues.
2.34	Metering records accuracy audits —to ensure the metering information in the registry is aligned between MEPs, distributors, and traders in accordance with Code requirements. Forms part of the compliance plan for the new Part 10.	To ensure there are accurate and reliable metering records to help ensure efficient switching and the efficient operation of market reconciliation processes.	Complete at least one audit and report to Board by 30 June 2015.	Complete the remainder of the Audits, report the results to the Board and pursue any Code amendments necessary to address identified issues.

Appendix D Proposed EECA priorities

Why electricity efficiency matters

Electricity accounts for around a quarter of all the energy used in New Zealand, and New Zealand households and businesses spend an estimated \$6.7 billion each year on it.

By promoting and achieving electricity efficiency, we can obtain greater service out of our electricity resources, and make better use of our electricity system.

‘Electricity efficiency’ can be achieved by using less electricity to deliver the same services (eg, through use of efficient appliances), or by changing behaviours to reduce electricity wastage (eg, turning off lights or appliances that are not in use).

Promoting electricity efficiency is important because it delivers a range of benefits to businesses, households, and New Zealand as a whole.

The most obvious benefit is cost savings: when businesses and households reduce electricity use, they receive an immediate reward in the form of reduced costs for the same, or higher, level of service.

Reducing electricity costs for businesses means they can invest the savings, creating a competitive advantage.

Reducing electricity costs for households means that essential electricity services such as heating are more affordable. This leads to better health outcomes – especially for those most vulnerable to illnesses caused by cold, damp housing conditions: children, the elderly, and people on low incomes.

In general, improved electricity efficiency can unlock a range of benefits across the economy. Electricity cost savings contribute to a stronger economy – through improved productivity, reduced health costs, and greater participation in work and education. Reducing demand across the network also results in:

- Deferred investment in new generation plant – which in turn puts downward pressure on future wholesale prices
- Reduced costs of network infrastructure and maintenance
- Reduction of peak demand, relieving pressure on both transmission and generation capacity
- Reduced greenhouse gas emissions (because even though 75% of New Zealand’s electricity is sourced from renewables, 25% remains fossil-fuelled).

Trends in electricity use

In 2013, electricity use accounted for about 26% of New Zealand's total energy use. About a third of this was used in homes, a third in industry, and a quarter in commercial buildings (with the remainder in agriculture).

Demand for electricity is now growing at a slower rate than the economy.

In 2013, electricity use by households decreased for the third year in a row. Technological energy efficiency improvements (such as insulation and more efficient products) and changes in household behaviour have contributed to this fall.³

There remains significant untapped potential to improve the electricity efficiency of businesses and households. EECA estimates that of the estimated \$6.7 billion that consumers spend on electricity each year, more than \$600 million a year could readily be saved by further electricity efficiency measures.

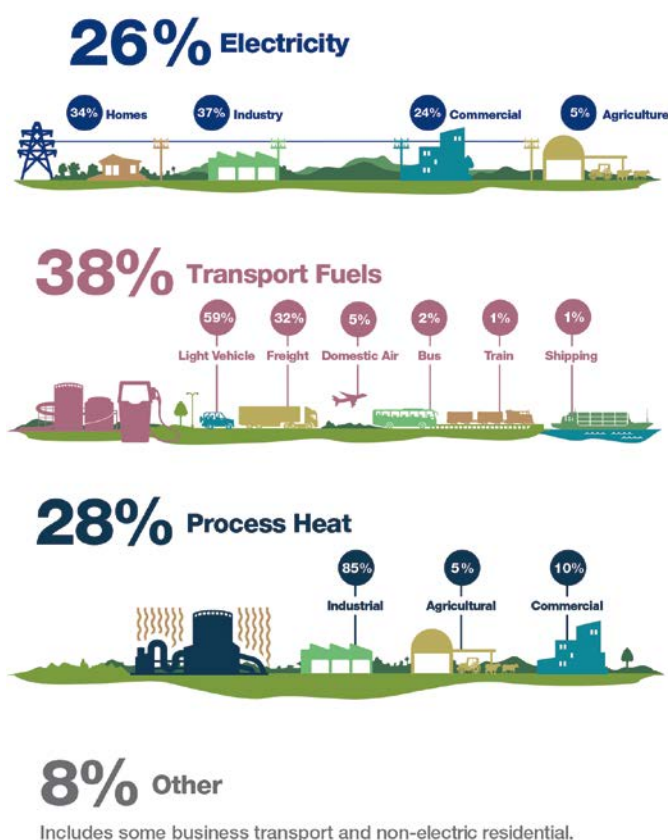
EECA's role in electricity efficiency

EECA has a role to play in improving the electricity efficiency of businesses and households where there is a net national benefit in doing so, and where they will not otherwise take action. Some of our electricity efficiency activities are funded through the levy.

We work with businesses to identify energy (including electricity) efficiency opportunities, develop energy management plans, prepare business cases for decision-makers, develop standards and labels on the energy performance of electrical machinery, and demonstrate new and under-used energy-saving technologies.

We help households save electricity by advising them on improvements to the thermal envelope of their home (eg, through use of insulation⁴ and double-glazing), the best-

Figure 6: Energy use in New Zealand



³ See *Energy in New Zealand 2014*, published by the Ministry of Business, Employment and Innovation, July 2014, at page 56.

⁴ Our Warm Up New Zealand programme to deliver insulation grants is not funded through the levy.

performing water and space heaters, appliances and products, and energy-saving behaviours (such as turning off lights and heating when a room is not in use).

Section 128 (3) c) of the Electricity Industry Act 2010 provides that EECA can use the levy to fund “a portion of [its] costs in performing its functions and exercising its powers and duties under the Energy Efficiency and Conservation Act 2000 in relation to the encouragement, promotion, and support of electricity efficiency”. The size of the portion of EECA’s costs to be met by the levy is determined by the Minister. In recent years, the Minister has authorised EECA to call on the levy to fund \$13 million of the costs of its electricity efficiency activities.

The benefits of EECA’s levy-funded activities to date

We estimate that, since 2006, our levy-funded activities have delivered:

- cumulative electricity savings of 1497 GWh per annum
- peak demand reduction of 541 MW⁵
- present value of savings estimated at \$872 million

at a cost of \$124 million.

All EECA’s levy funded programmes deliver national benefits at a total cost less than the marginal cost of new generation⁶, and are delivered at about 0.6c per kWh saved. The results from 2013/14 are as follows:

Programme Area	2013/14 Levy Spend (\$m)	Estimated Electricity Savings (GWh)	Estimated cost to the levy (c/kWh)
Business: Commercial	5.5	23	3.6
Business: Industrial	2.4	38	0.9
Products	2.5	183	0.2
Lighting/Residential	3.1	83	0.4
Total	13.5⁷	327	0.6⁸

The following graph summarises EECA’s levy-funded activities over time.

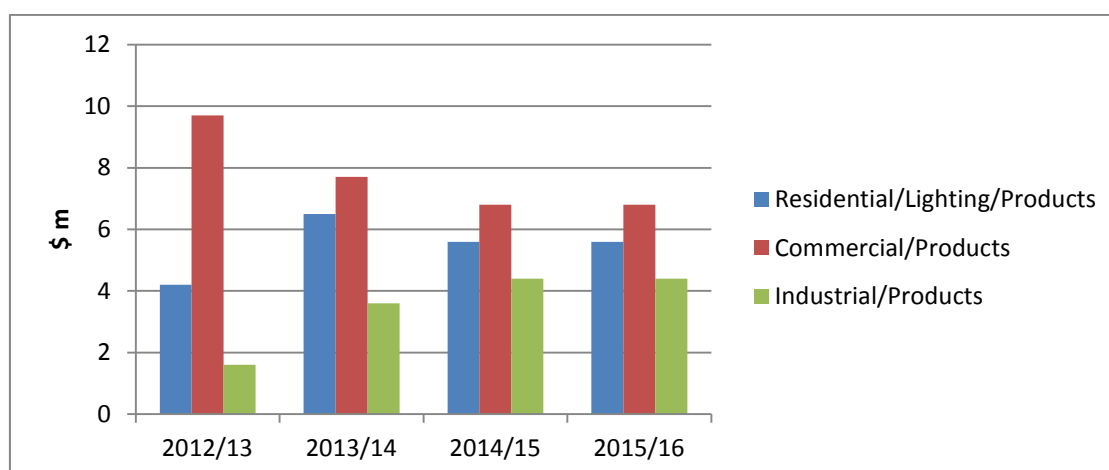
⁵ EECA applies the KEMA calculation across nearly 500 technologies in thirty industrial, commercial and residential sub-sectors proportioned across winter and summers peaks and off peak periods. This number changes over time.

⁶ EECA uses the (MBIE provided) long-run marginal cost of generation (8.79c per kWh) as the proxy for the industrial electricity price.

⁷ This includes \$13 million drawn from the Levy, with some additional EECA baseline spend.

⁸ For the sake of continuity, EECA has maintained the reporting convention used by the former Electricity Commission to calculate the cost to the levy. This involves using the annual savings to derive electricity savings based on a 10 year declining model.

Figure 7: EECA's levy-funded activities over time



The changing focus of EECA's activities with businesses

In 2013, EECA conducted a thorough review to clarify our strategic direction, ensure we have the right programmes to deliver on our strategic priorities, and that our programmes provide best value for money.

Our business programmes were a key focus of this review. We wanted to better understand why so many businesses are not taking advantage of energy efficiency opportunities that would yield a high return on investment and immediate energy cost reductions – and make sure we had the best programmes in response.

As part of the review we recognised that the biggest and most cost-effective opportunities lie with large energy users – the 'top 200' large energy users are responsible for about 70% of non-transport (stationary) energy use by all New Zealand businesses.

A pilot study confirmed that the main barriers to action by these large energy users are a lack of awareness by senior managers of how energy efficiency relates to the strategic objectives of their business and what the benefits are; and a lack of operational capacity to realise those benefits. We have revised our programmes to provide a customised response to these issues for the largest energy users.

We will continue to support other energy-using businesses through our programmes with delivery partners, industry associations, and sector groups; and to provide information on energy efficiency to businesses of all sizes.

Our revised programme for 2015/16 reflects this new model for engaging with businesses – as detailed further below.

What we're proposing for 2015/16

In 2015/16, as in recent years, EECA proposes to spend \$13 million on levy-funded activities. At this level, levy funds will comprise 21% of EECA's total budget for the year. If grants for insulation retrofits are excluded, the levy will fund almost 40% of EECA's overall programme. The table below shows how this compares to 2014/15 and future years (according to current funding allocations).

	2014/15		2015/16		2016/17		2017/18	
	\$000	% of funding	\$000	% of funding	\$000	% of funding	\$000	% of funding
Non Departmental Output Expenses								
Energy Efficiency and Conservation	16,584	26%	16,584	27%	16,584	55%	16,584	55%
Implementation of the Home Insulation Programme (WUNZ:HH)	2,500	4%	2,500	4%		0%		0%
Electricity Efficiency	13,000	20%	13,000	21%	13,000	43%	13,000	43%
Non Departmental Other Expenses - Multi Year Appropriations								
Warm Up New Zealand:Heat Smart		0%		0%		0%		0%
Home Insulation (WUNZ:HH)	32,500	50%	27,500	45%	-	0%	-	0%
Deployment of Marine Energy Devices	-	0%	949	2%	-	0%	-	0%
Total OPEX appropriations	64,584	99%	60,533	99%	29,584	99%	29,584	99%
Other Income	450	1%	450	1%	450	1%	450	1%
Total Operational Funding for the Year	65,034	100%	60,983	100%	30,034	100%	30,034	100%

Electricity efficiency programmes for businesses

In 2015/16, our business-focused programmes will reflect our new approach of engaging with businesses according to the scale of their energy use. We will group our activities around three 'sizes' of energy users:

- Large users (the 'top 200' energy-using businesses)
- Medium users (the next 1,000)
- Smaller users (the remaining 200,000+ businesses).

Our work with the large energy users will involve one-on-one partnerships to identify electricity savings opportunities and support them in creating a tailored plan to realise those opportunities.

This new approach is already delivering results. Early partnerships created through this model have led to 'group-wide' energy management plans across multiple sites (and collaboration agreements for large single sites) of some of New Zealand's biggest companies, including Auckland International Airport, Talley's, and AFFCO. Nine partnership agreements have already been signed, and another five are currently under negotiation. In combination, these agreements have the potential to save more than \$10 million in energy costs per annum. We will look to build on these results with new partnership agreements in 2015/16.

Engagement with other businesses will be led by delivery partners, industry associations and sector groups. EECA will run further programmes to target priority sectors (such as meat and dairy, commercial buildings) and provide information-based support to a wide range of businesses, including:

- energy performance standards (MEPS) and labels for business products such as electric motors and refrigerated display cabinets
- NABERSNZ, launched in June 2013 – a system for rating the energy performance of commercial buildings to encourage building owners and tenants to invest in energy efficient technology
- design advice for new and refurbished commercial buildings, with a particular focus on 'locking in' future energy savings as part of the Christchurch rebuild
- 'continuous commissioning'⁹ of installed heating, ventilation and air conditioning (HVAC) systems in commercial buildings
- targeted information provided on our ENERGYWISE and EECA Business websites, and through information campaigns (such as Rightlight).

⁹ Continuous commissioning is a long term process of ensuring that a building performs according to its design intent and the needs of its owners and occupants, overcoming the natural degradation of building performance that arises when the original building management systems are not updated and successive occupants make un-coordinated changes to the use of space and appliances within the building.

Electricity efficiency programmes for households

Our residential programmes are designed to raise awareness of opportunities to make electricity savings at home, and help householders convert that awareness to action.

We use minimum energy performance labels and MEPS to encourage the purchase of energy efficient appliances – and to remove the worst performers from sale.

We also show households how they can reduce their energy costs through more efficient space heating – complementing the non-levy funded insulation programme Warm Up New Zealand.

In 2015/16, our levy-funded activities will be focused on residential lighting, water heating and space heating opportunities, alongside the long-running product efficiency programme (see below).

Improved electricity efficiency of products

We propose to use levy funds to cover a larger portion of our performance standards programme for electrical products in 2015/16. Five standards for products used in the home will be revised or updated in 2015/16, along with two standards for products used by industry or in commercial buildings. This work is very cost effective and is expected to result in a further improvement in the overall return on levy payers' funds.

Summary of EECA's proposed levy-funded programmes for 2015/16:

Programme area	2015/16 est. levy spend (\$m)	Potential programme mix	Estimated electricity savings (GWh)	Estimated cost to the levy (c/kWh)
Business: - Top 200 energy users - Medium energy users - Small energy users	3.0 3.6 1.0	Group wide energy management: - Tailored energy management advice programmes to encourage a strategic and long term approach to energy management. Technical demonstration projects: - Co-investment in demonstration projects for innovative and emerging technology where there is a large potential for replication and where it faces clear barriers to adoption. Commercial sector: - Providing advice and building industry capability through building management training, the NABERSNZ building rating programme, and commercial lighting efficiency information. - Training to improve electricity management and efficiency in the refrigeration, air-conditioning and heating services industry focusing on systems components, and new technologies. - Providing co-investment for monitoring and targeting projects, continuous commissioning projects, and audit services. - Building design advice, with a focus on the Christchurch rebuild. Motor efficiency: - Providing businesses with information to make economically-sound decisions on repairing or replacing motors. - Providing information and advice on cost-effective efficiency improvements to motor systems (compressed air, pumps, fans and industrial refrigeration).	72	1.6
Products	1.2	Commercial/Industrial: - Delivering, updating and enforcing standards and labelling programmes for products used in the commercial sector, such as computer equipment (including data servers and monitors) and lighting products. - Introducing and updating minimum energy performance standards for pumps and fans, refrigeration chillers, distribution transformers and industrial air conditioning.	78	0.37
	2.8	Residential: - Developing and updating standards for identified products with potential for significant energy savings such as electric storage water heaters, heat pump water heaters, air conditioning units (including portable units), standby power in home appliances and whiteware efficiency. - Providing information and product labelling to improve consumer decisions when purchasing electrical appliances. - Implement product standards developed in 2013/14. Focus on education and information to ensure products newly brought into the programme meet required standards.	105	0.37
Lighting	0.75	Rightlight: Complete the wind down/exit of the Rightlight information campaign.	89	0.34
Residential	0.65	Residential: Providing consumer information, advice and guidance on electricity efficiency opportunities including hot water heating, space heating, lighting, and appliances¹⁰.	27	2.0
	13.0 m		371 GWh	0.6 c/kWh

¹⁰ Details of this programme are yet to be agreed. Performance measures will be developed as part of programme design.

Criteria for programme design and performance

In refining the design of our electricity efficiency programme for 2015/16, we will apply the following tests on new initiatives:

- **The opportunity is understood** – we can identify the sectors, technologies and practices across New Zealand where there is realisable potential for electricity efficiency improvements that will deliver national benefits
- **The barriers are understood** – we examine the barriers to investment by households and businesses to realise this potential. We intervene only where they will not otherwise act and where there is a role for EECA in doing so
- **The programmes will be effective** – we develop cost-effective electricity efficiency programmes that achieve measurable and sustainable electricity savings to address the opportunities and barriers
- **The programmes will deliver long term benefits** – we 'lock in' savings through use of performance-based contracting and improved product standards and labelling on electrical products.

EECA invests levy funds across a broad range of sectors and areas of New Zealand that provide differing rates of return. This is due to the need to engage with as many sectors as possible through targeted investment. For example, investment in minimum performance standards for products in the industrial and commercial sectors affects appliance choices for schools, hospitals and rest homes. Investment in lighting has an impact on all electricity-using sectors in New Zealand.

Forecast performance from levy funded measures

With the additional benefits anticipated from the programmes proposed above, EECA is forecasting that, by the end of 2015/16, EECA's levy-funded activities will have delivered:

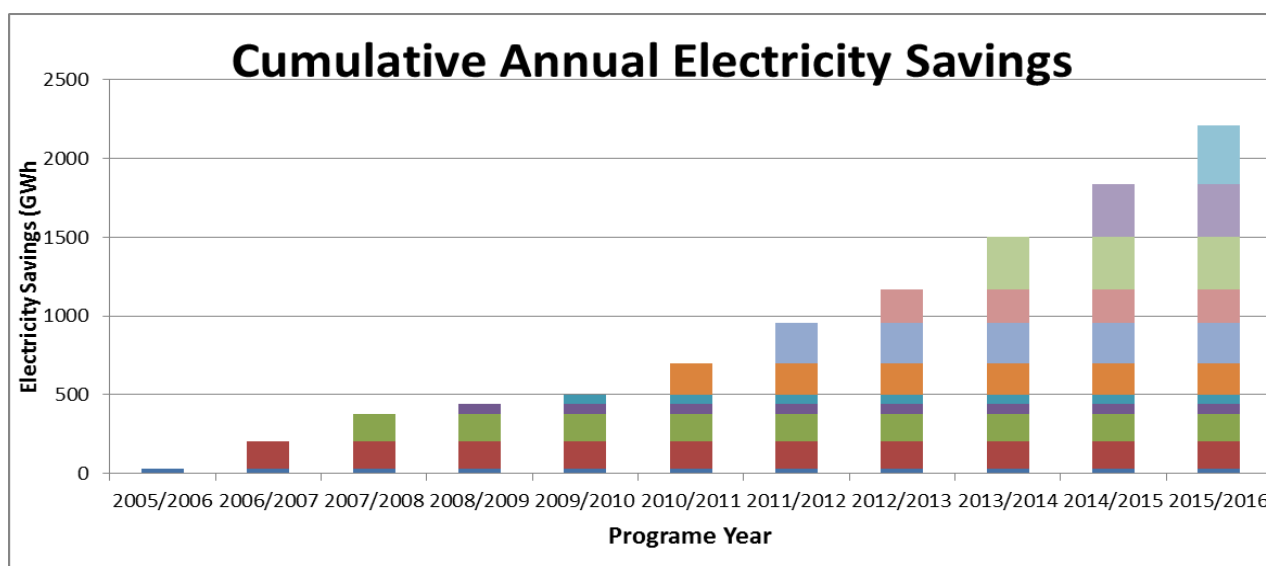
- cumulative annual savings of 2195 GWh
- 742 MW reduction in peak demand
- present value of savings of around \$1278 million

at a cost to the levy of about 0.6c per kWh saved.

The cumulative impact of our levy-funded activities are summarised in the table and graph below.

Levy Year	Levy Spend (\$m)	Estimated Cumulative Electricity Savings (GWh)	Estimated cost to the levy (c/kWh)
2013/2014	13.0	1497	0.6
2014/2015 estimate	13.0	1824	0.6
2015/2016 consultation	13.0	2195	0.6

Figure 8: Cumulative impact of EECA's levy-funded activities



Note: each coloured band represents a year, to indicate the impacts of savings on a cumulative basis.

Emerging opportunities to improve electricity efficiency of businesses and households

As they become increasingly cost-competitive, emerging technologies such as solar photovoltaics, electric vehicles, and LED lighting have the potential to significantly impact on electricity demand – and on patterns of energy use across the energy sector.

Electric vehicles are likely to play an important role in New Zealand's future energy efficiency, as they are at least four times more efficient than conventional vehicles. As electric vehicles become increasingly cost-effective, and we see more of them on our roads, we need to make sure we have the right infrastructure and systems in place to maximise benefits across the network.

Improvements in lighting technology offer opportunities to cost effectively reduce energy costs in a range of activities. A number of local authorities are already considering switching their road and street lighting to LEDs, as a means of saving money long term, as well as improving light quality and reducing maintenance costs.

Irrigation systems throughout New Zealand consume large and increasing amounts of electricity. EECA is currently investigating options for more efficient use of large-scale irrigation infrastructure, and significant efficiency gains are likely to be realisable in this activity.

Finally, we want to help households take the next step – after insulation – to improve the energy performance of their homes. Since it began in 2009, EECA's (non levy-funded) Warm Up New Zealand insulation programme has played a key role – alongside other information programmes such as the Energy Spot TV campaigns and our product labelling schemes – in raising households' awareness of the benefits of energy efficiency. We want to build on this by helping people identify and invest in the next best

thing for their home – including insulation (where this is still needed), double-glazing, and upgrades of lighting, heating, and appliances.

EECA will continue to look across these and other emerging opportunities to assess whether there is a role for EECA in addressing barriers to uptake and securing net benefits for New Zealand – and whether the levy could help fund this work.

Appendix E EECA 2013/14 annual report on the levy-funded electricity efficiency appropriation

The Electricity Efficiency Appropriation

ANNUAL REPORT

2013/14 Financial Year



**Energy Efficiency and
Conservation Authority
Te Tari Tiaki Pūngao**

From the Chief Executive

I am pleased to report to you on the outcomes of EECA's levy-funded activities for the 2013/14 year.

Our electricity efficiency initiatives are designed to deliver value for money – we aim to achieve the greatest national benefits for every dollar spent. This year we have delivered a total of 327 GWh in electricity savings through initiatives to improve the efficiency of lighting and products, commercial buildings, industrial motors, and motorised systems. Since 2006, the electricity efficiency programme has delivered cumulative annual savings of 1,497 GWh.

Additionally, these energy savings will reduce peak demands on generation and transmission lines and systems by approximately 96 MW. This has helped avoid the need for investment in new generation capacity, and maintained downward pressure on electricity prices for all consumers.

EECA will continue to apply rigorous standards to the delivery of all of our programmes.

I would like to acknowledge the importance of the levy to the overall operation and performance of EECA. I would also like to thank the industry for the constructive manner in which consultation was carried out last year, with submissions from a range of industrial, manufacturing, product suppliers and residential customer groups.

We look forward to your continued interest in our programme.



Mike Underhill
Chief Executive

Introduction

Every year, electricity users pay a levy that helps fund some of the activities of the Energy Efficiency and Conservation Authority (EECA). This report describes what was funded and delivered in the 2013/14 financial year.

Section 128 (3) c) of the Electricity Industry Act 2010 provides that EECA can use the levy to fund “a portion of [its] costs in performing its functions and exercising its powers and duties under the Energy Efficiency and Conservation Act 2000 in relation to the encouragement, promotion, and support of electricity efficiency”. The size of the portion of EECA’s costs to be met by the levy each year is determined by the Minister. EECA is allocated funding at budget time to deliver the programme, and the Crown is reimbursed from levy monies collected.

In late 2012, EECA consulted with electricity users on a proposed electricity efficiency delivery programme for the 2013/14 year. This resulted in the Minister approving \$13 million to fund EECA’s electricity efficiency programmes in 2013/14.

Expenditure on levy-funded activities in 2013/14

As described in the table below, a total of \$13.5 million in levy funds was spent in the 2013/14 year, which included \$4.3 million of contracted commitments from the previous year. A further \$3.8 million of commitments were contracted in 2013/14 and carried over to the 2014/15 year.

In the time between consultation (in late 2012) and budget setting, several changes were made to the distribution of funds across EECA’s electricity efficiency programme for 2013/14.

While staying within the broad guidelines of levy spend, funding for the commercial buildings programme was reduced from \$8.2 million to \$5.9 million, and funding for the industrial programme decreased from \$2.8 million to \$2.4 million. The balance of funding was allocated to the efficient lighting and products programmes. This reallocation enabled accelerated investment in the Rightlight programme, widening the range of energy efficient bulbs, and building the profile and communication strategy for LEDs. These structural programme changes enabled a shift to an earlier programme exit in 2015.

These changes are summarised in the table below:

Delivery area	Funding Available			Expenditure	
	Funding commitments at 30/06/13	2013/14 Funding		Work completed	Work committed ¹¹
		Requested	Allocated		
Commercial buildings	\$2.2 m	\$8.2 m	\$5.9 m	\$5.5m	\$2.6 m
Industrial motors and motorised systems	\$1.2 m	\$2.8 m	\$2.4 m	\$2.4 m	\$1.2 m
Efficient lighting and products	\$0.9 m	\$2.0 m	\$4.7 m	\$5.6 m	–
Total	\$4.3 m	\$13.0 m	\$13.0 m	\$13.5 m	\$3.8 m

¹¹ Work committed represents contracted grant expenditure for eligible electricity efficiency programmes where completion and payment milestones fall after 30th June 2013

EECA's electricity efficiency programme

EECA designs its programmes to focus on economic and achievable savings across all sectors of the New Zealand economy.

In 2013/14, the key programmes focused on:

- Commercial buildings – through energy management advice, grants for capital improvements, advice on 'continuous commissioning' (to optimise the efficiency of buildings' installed heating, ventilation, cooling and lighting systems), audits of energy use and savings opportunities, information campaigns, training of building managers, advice on energy management systems, NABERSNZ certified ratings (for building owners and tenants), and design reviews for proposed new buildings or retrofits.
- Industrial motors and motorised systems across the industrial sector – through information campaigns, training and accreditation of specialist experts, electricity efficiency audits, and targeted grants for capital works.
- Efficient lighting and products:
 - Lighting: commercial and residential sectors – advice on efficient lighting products and lighting systems controls
 - Efficient products – setting minimum energy performance standards (MEPS) and labelling/information (MEPL and ENERGY STAR®) to help businesses and households make informed purchase decisions that take account of running costs.

Programme outcomes in 2013/14

EECA's levy-funded activities in 2013/14 have resulted in the following benefits to electricity users and generators:

- annual electricity savings 327 GWh
- annual reduction in peak demand of 96 MW
- \$191 million worth of savings (at present value)

achieved at a cost to levy payers of about 0.6 cents/kWh.

Since 2006, EECA's levy funded programmes are estimated to have provided the following benefits:

- electricity savings of 1,497 GWh
- peak demand reduction of 541 MW
- \$872 million worth of savings (at present value).

Programme benefits accrue not only to those who are using electricity more efficiently (via direct cost savings), but to all consumers of electricity. This is because reduced demand maintains downward pressure on wholesale electricity prices and reduces the need to build new generation capacity.

Key achievements from EECA's 2013/14 electricity efficiency programme

The following tables detail the key achievements of EECA programmes in the 2013/14 year using the levy appropriation.

Programme	Description	Key achievements for 2013/14
Commercial buildings—heating, ventilation, air conditioning and refrigeration systems. Estimated energy savings for 2013/14 23 GWh	Reducing the barriers to energy efficiency improvements in commercial buildings and businesses by: - Building the capability of energy specialists, facilities managers, real estate agents and valuers to identify, advise on, and implement improvements. - Providing information and financial incentives to the commercial building sector to uptake economic opportunities.	<i>Information and capability</i> Capability building and training of service providers and industry stakeholders provided training to 321 individuals in 2013/14. We also supported industry training organisations to deliver high quality training to over 60 commercial building energy specialists and facilities managers, who will go on to identify, advise on, and implement improvements in commercial buildings. In conjunction with the New Zealand Green Building Council, NABERSNZ – an energy rating scheme for buildings – was launched in June 2013 and promoted to major building owners and occupants throughout 2013/14. 35 certified ratings were completed or begun, and over 350 self-assessments were completed using an on-line tool. This scheme is based on the highly successful scheme which has been running in Australia for some years. <i>Financial incentives to overcome cost barriers</i> The Energy Management Advice programme helped organisations design and implement their own energy management systems, including developing savings-funded internal energy management strategies and implementation plans. The Building Design Advice programme provided reviews of design proposals for new buildings and retrofits. With a strong focus on the Christchurch rebuild, EECA approved projects to provide energy efficiency advice on building designs covering more than 790,000m² of commercial office space. Since the programme began in 2012, \$6.8m of annual energy efficiency savings have been identified. Co-investment was made available for three types of projects: - monitoring and targeting projects - continuous commissioning projects - audit and works projects. 198 Commercial projects were contracted in the 2013/2014 year. Committed projects are contracted and will be paid out in subsequent years pending the delivery of the contract milestones.

Funding Available			Expenditure	
Funding commitments at 30/06/13	Requested levy funding	Funding allocated in 2013/14	Work completed in 2013/14	Work committed to in future years
\$2.2 m	\$8.2 m	\$5.9 m	\$5.5 m	\$2.6 m

Programme	Description	Key achievements for 2013/14
Industrial motors and motorised systems Estimated energy savings for 2013/14 38 GWh	The programme aims to reduce market barriers to electricity efficiency improvements in industry, with particular emphasis on motors and motorised systems (pumping, fan and compressed air systems). The principal barriers to uptake are: • lack of information • service provider capability • financial constraints or inefficient capital rationing.	<i>Information and capability</i> Information on electricity saving opportunities was provided to key personnel across target sectors, such as large industrial energy users. Training courses were provided to 235 attendees to assist with their identification of electricity efficiency opportunities. Capability-building of energy efficiency service providers to industry continued, with professional development courses and webinars being delivered by the University of Waikato. <i>Financial incentives to overcome cost barriers</i> Co-investments were made in energy audits for industrial sites and some (capital) co-investment was allocated to projects to improve the efficiency of motorised systems (pumps, fans and compressed air systems) and dairy sheds for industrial consumers. Two new projects were launched this year: • Group-wide Energy Management (GEM) projects – which help companies to undertake a systematic review of their energy use profile, under the framework of ISO 15001, which can be applied across a number of an organisation's multiple-sites • Technology Demonstration projects – which support the uptake of proven but as yet under-utilised energy saving technologies by showcasing (through case studies) their potential to operate cost effectively in NZ. Ten technology projects were agreed to be supported over the next year.

Funding Available			Expenditure	
Funding commitments at 30/06/13	Requested levy funding	Funding allocated in 2013/14	Work completed in 2013/14	Work committed to in future years
\$1.2 m	\$2.8 m	\$2.4 m	\$2.4 m	\$1.2 m

Programme	Description	Key achievements for 2013/14
Efficient Lighting and Products Estimated energy savings for 2013/14 266 GWh Split: 83 GWh Efficient lighting 78 GWh Commercial & Industrial (Business Products) 105 GWh Residential products	Reducing barriers to installation of efficient lighting through: • Training programmes for lighting engineers, electricians and retail staff • Lighting controls (best practice guidelines) • Information and education (RightLight marketing campaign) to demonstrate financial advantages to businesses and householders. • Introducing minimum energy performance standards (MEPS) and labelling/information (MEPL and ENERGY STAR®) to help businesses and households make an informed purchase decision about whole-of life costs of products. Programme included updating methodology to assess savings and introducing MEPS on CFLs, TVs, Computers and Monitors.	EECA supported Road Lighting 2014, a conference which promoted awareness of and information on available technologies and issues to over 200 participants – including engineering and lighting consultants, lighting suppliers, and local government. Work commenced on a lighting “best practice guide” which will support improvements in retrofit lighting solutions and options for commercial buildings. The RightLight marketing campaign targeted householders and retail sales staff to reinforce the message that compact fluorescent lamps (CFLs) and LED lamps & fittings use less electricity than their equivalent incandescent bulbs, and are a more cost-effective choice in most situations. Sales of efficient bulbs for the year ending April 2014 were up by 13% on the previous year, with nationwide supermarket sales volumes estimated at 2.8 million. 25 Products or product groups are now subject to labelling or minimum standards New standards were introduced for computers and monitors Revised product standard includes multi-split air conditioners Water heaters (electric and electric heat pump), standby power, battery chargers and digital video recorders advanced through stages of regulation.

Funding Available			Expenditure	
Funding commitments at 30/06/13	Requested levy funding	Funding allocated in 2013/14	Work completed in 2013/14	Work committed for future years
\$0.9 m	\$2.0 m	\$4.7 m	\$5.6 m	Nil

2013/14 Summary

Funding Available			Expenditure	
Funding commitments at 30/06/13	Requested levy funding	Funding allocated in 2013/14	Work completed in 2013/14	Work committed for future years
\$4.3 m	\$13.0 m	\$13.0 m	\$13.5 m	\$3.8 m

Funding for the 2013/14 Year

In late 2012 EECA consulted with levy payers on the 2013/14 levy programme. It was subsequently agreed with the Minister to retain a \$13 million programme focussed on commercial and industrial opportunities, lighting opportunities, and the Products programme.

Case Studies

EECA produces case studies to illustrate how our programmes benefit different sectors of the economy. Summaries of selected case studies are included below. Further summaries are available on the EECA Business website

Or go to this page - <http://www.eecabusiness.govt.nz/case-studies>

Case study 1

CASE STUDY

COMMERCIAL LIGHTING

Modernised lighting creates warm welcome and cuts energy use by 72%

Upgrading the lighting at Auckland Airport's International terminal has improved the check-in environment for passengers and staff, cut energy and maintenance costs by more than \$80,000 a year, and won a lighting award along the way.

Check-in upgrade to meet high standards

Rated among the top three international airports of its size, customer experience is paramount for Auckland Airport. So when the old lighting at international check-in wasn't up to par it took prompt action to improve travellers' comfort, and demonstrate its commitment to sustainability.

The resulting upgrade uses occupancy and daylight sensors to ensure light levels meet the varying needs of staff and customers, and technically advanced controls have dramatically cut energy and maintenance costs. The airport is now rolling out the energy-saving technology in other parts of the airport.



EECA contributed approximately \$117,000 towards the overall costs of about \$470,000 for this project (ie, about 25%).

This initial support provided the evidence base to enable the wider adoption of this advanced technology in other parts of the airport.

Case study 2

Innovative lighting cuts energy use, CO₂ emissions and brings bottom line rewards

State-of-the-art lighting controls are helping Progressive Enterprises meet tough sustainability targets, while delivering huge benefits to the bottom line. The home-grown technology is a New Zealand first, and is now being trialled in Australia.

Lighting automation via wireless

In two of Progressive Enterprises' Auckland and Christchurch distribution centres, forklifts are fitted with wireless devices that activate LED lights, illuminating work areas as they move around the site. The high-tech project has eliminated over-lighting and improved safety, while also cutting annual energy costs to the tune of \$494,000. It's put Progressive in a great position to not just meet, but exceed its corporate CO₂ targets – despite increasing store numbers and the size of its distribution centres.

Corporate drive to cut energy use

Progressive Enterprises owns and operates 166 Countdown supermarkets throughout New Zealand. Owned by Australian parent company Woolworths, it's tasked with meeting corporate sustainability targets to reduce its carbon footprint by 40% by 2015.

However, growth meant that in 2011 the company had to open a fourth distribution centre in Wiri, Auckland, adding 30,000sqm to its logistics network. It also expanded its Christchurch distribution centre, which was badly damaged in the earthquakes. With growing energy demand, meeting the ambitious CO₂ target needed creative solutions.

Innovative technology to cut over-lighting

In 2011, Progressive decided to close the smaller of its two Christchurch distribution centres and expand the larger Hornby centre by 10,000m². This was a perfect opportunity to improve lighting efficiency in the expanded site.

Digital Light Solutions, working with Auckland-based LED manufacturer Compuspec, proposed a solution using cutting-edge technology:

- highly efficient 120-watt LED lights in high-bay fittings
- daylight sensors to make the most of available natural light
- motion detectors on lights – switched on via wireless emitters on forklifts.

The innovative design effectively has lights and forklifts 'talking' to each other – when a forklift approaches, the area lights up – and when it moves away, lights switch off again.



Progressive cut their annual energy costs by \$494,000 through state-of-the-art lighting controls

✓ Key features

- 120-watt LED lights installed in Auckland and Christchurch distribution centres
- Daylight sensors measure natural light, dim lights accordingly
- Motion detectors turn lights on in 40m radius of forklift zone
- 2.5 month payback on LEDs in Christchurch extension
- Electricity saved more than entire annual consumption of new 30,000m² Wiri distribution centre
- Safety controls added to forklifts

✓ Key benefits

- 2,906 MWh electricity saving per year
- CO₂ emissions reduced by 375 tonnes/year
- Total cost saving \$494,000 a year
- On target to reduce CO₂ emissions to 2006 levels by 2015
- Improved site safety

✓ Sector applicability

- Commercial Lighting
- Most office environments

Case study 2 (continued)

CASE STUDY

COMMERCIAL LIGHTING

Three-month trial enabled fine-tuning

Before committing to the project, Progressive ran a three-month trial at the Hornby centre. In particular, they were keen to see whether the technology interfered with the existing wireless network used for orders. Technically the controls worked well, and the trial helped set the optimum lighting area. Initially set to illuminate a 25m area in front and behind the forklifts, this lit area proved uncomfortably tight for operators; the distance was widened to 40m and staff were happy.

Less than three-month payback in extension

Following the trial's success, the Hornby fit-out got the green light, and was complete by May 2012. Although LEDs have a higher upfront capital cost than other types of lighting, installing them in the new extension from the outset proved surprisingly economic.

The cost for LEDs was around \$110,000 more than using T5 fluorescents. But the revised design meant many building costs could be removed, and there was no need for a C-Bus system to run the lights. This eliminated the need for around \$100,000 worth of kit – meaning the LEDs effectively paid for themselves in less than three months.

Auckland gained further savings

The Mangere distribution centre in South Auckland was next to be retrofitted, with the project completed in February 2013. Nearly twice the size of Christchurch, Mangere has achieved 41% electricity savings - 1,770MWh per year.

These energy savings have more than off-set the extra energy use of the new 30,000sqm distribution centre in Wiri, Auckland – putting Progressive on track to comfortably reach its CO₂ emissions target.

	Hornby, Christchurch	Mangere, Auckland
Site size	30,000m ²	56,000m ²
No. of LEDs installed	595	1,041
Electricity reduction / yr	1,136 MWh	1,770 MWh
Energy cost reduction	51%	41%
Energy cost savings / yr	\$159,000	\$230,000
Maintenance savings / yr	\$30,000	\$75,000

Safety and maintenance benefits

As well as improved efficiency, the new LED lights are longer-lasting, saving on maintenance costs. According to National Facilities Manager Jared Day, the LEDs have an expected life of 100,000 hours – but they're not running at 100%, so they won't need maintaining for a staggering 14 years. This compares to an average two-year life for the fluorescent tubes and metal halide bulbs they replaced to maintain operational lighting levels. The project also enabled a side safety initiative: safety vests issued to site visitors are fitted with wireless emitters. These work in conjunction with forklift hoists, making a distinctive beep when someone approaches – minimising the chance of accidents.

Key personnel

Dave Reid, Director - Digital Light Solutions dave@digitallightsolutions.co.nz

Jared Day, National Facilities Manager - Progressive Enterprises www.progressive.co.nz



Innovative lighting

Dave Chambers, Countdown Managing Director

"Progressive has a very strong commitment to improving our environmental performance, so trialling and installing new lighting technology when we had the chance, was a good fit with our vision. We're delighted with the result - this project alone has cut our annual CO₂ emissions by around 375 tonnes, not to mention strong financial savings and safety benefits. We're better equipped to service the needs of our suppliers and customers and we're well positioned for growth.

"The lighting technology in our distribution centres is a first in New Zealand – making them the most energy efficient facilities of this type in the country. This Kiwi-designed and manufactured product is now being trialled by other Woolworths businesses in Australia. It's market-leading technology."

JULY 2013/EEC2890