

1 DECEMBER 2022

**ECOBULB®**

**169MW PEAK REDUCING 2023 RESIDENTIAL LED PROJECT**  
Submission to Electricity Authority's "Driving efficient solutions to promote consumer interests through winter 2023" Consultation



## EXAMPLE NEWS RELEASE – EARLY 2023

### Government Lights Up \$880 Million Power Savings with Free Ecobulb light bulbs

A world first new Government LED project is set to light up New Zealand homes and save them \$880 Million on their power bills by 2030.

All New Zealand homes will receive a letter from the Government during a staggered rollout over the upcoming months.

Inside the letter will be a voucher for households to get ten free, latest generation Ecobulb LED energy saving light bulbs. These Ecobulbs last up to 50 years and use up to 90% less electricity than the inefficient light bulbs they will replace.

*“The average New Zealand home could save up to \$1,650 on their power bills over the next 10 years simply by swapping ten of their most frequently used, inefficient light bulbs to Ecobulb LEDs,”* Energy and Resources Minister Dr. Megan Woods said.



*“This would cut the electricity network’s winter peak load by 169MW, increasing the security of electricity supply”,* she said.

Energy Efficiency and Conservation CEO Andrew Caseley says *“This project would also deliver a large climate change reducing win by reducing carbon dioxide emissions by 736,000 tonnes through to 2040,* he said.

A report by leading energy consultancy Concept Consulting calculated a \$725 Million *“Net Present Value”* to New Zealand from this LED project.

Ecobulb Managing Director Chris Mardon congratulated the Government for their leadership of this initiative.

*“The Concept Consulting report highlights the remarkable savings to New Zealand from the simple action of changing our light bulbs”,* he said.

ENDS

**For more information, contact:**

## 1. PROJECT SUMMARY – 169MW LED WINTER PEAK DEMAND REDUCTION

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On 25 November 2022 the Electricity Authority published a Consultation Paper titled *“Driving efficient solutions to promote consumer interests through winter 2023”*.

The Electricity Authority’s paper sets out an initial set of possible options to better manage supply risk for winter 2023.

It also states that *“Stakeholder feedback is sought not only on the options outlined in this paper, but any other approaches that may be available to the Authority for the long-term interests of consumers”* and *“While the focus in this consultation is winter 2023, the Authority also invites stakeholder views on medium term issues and options.”*

Ecobulb notes that supply side risk can also be managed by reducing the winter peak demand through a large residential LED project. This could be rolled out nationally before and during winter 2023 and deliver a large peak **winter** network load reduction. This would also further promote consumer interests by delivering large electricity savings for residential consumers and large carbon dioxide emission reductions.

It would be logical extension of the nine EECA LED pilot projects in the last four years. This includes four region size projects delivered by Ecobulb in partnership with EECA, lines companies and Energy Trusts.

Ecobulb therefore proposes a **13.06 million Ecobulb LED** New Zealand residential project<sup>1</sup> in 2023.

It would involve **70% of New Zealand homes** picking up **ten free** Ecobulb LEDs each from 350 venues on specific weekends (region-by-region) throughout New Zealand **during 2023**, and through community group distribution of Ecobulbs to homes that can’t come into a venue to pick them up.

Based on an independent evaluation by Concept Consulting, this would *“conservatively”* (ie. by excluding the benefits delivered from the *“business-as-usual”* progressive uptake of LED light bulbs) deliver<sup>2</sup> a:

1. **169MW electricity network peak winter load reduction.**
2. **\$880 Million cumulative electricity savings** for New Zealand homes by 2030. This would deliver a boost to New Zealanders struggling with the increased cost of living and energy hardship.
3. **736,000 Tonnes cumulative carbon dioxide emission reduction** by 2040.
4. **\$725 Million Net Present Value to New Zealand Inc.** (excluding consumer electricity savings).
5. **16 : 1 Benefit : Cost** ratio from this project.
6. **\$52.310 Million (plus GST) Government funding**, potentially awarded and administered by EECA. The consumer electricity savings alone from this project would pay back this funding within three months.

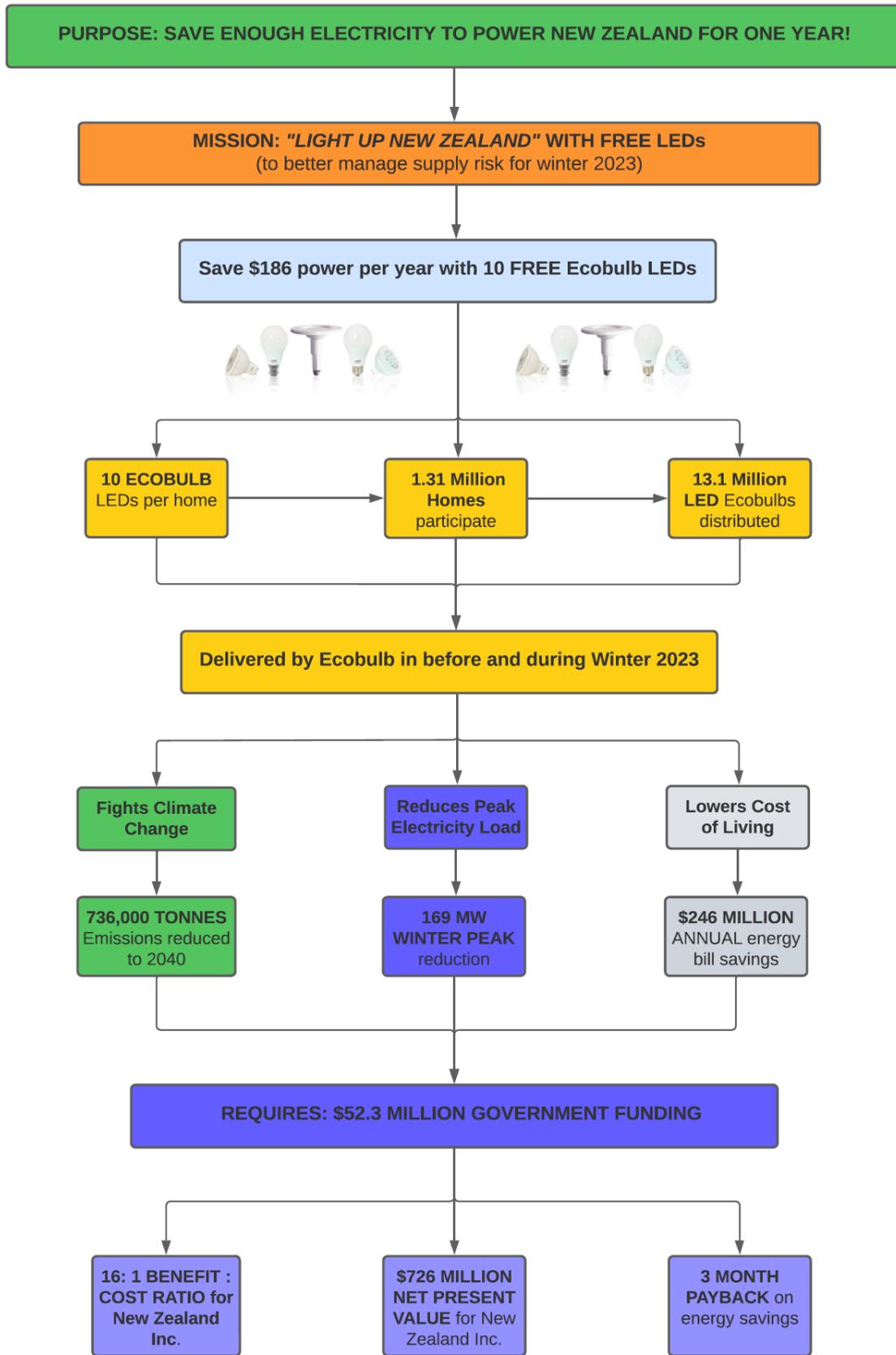
**Ecobulb’s submission proposes a large 2023 New Zealand residential LED project as an efficient solution to promote consumer interests through winter 2023 and beyond. Much of it could be delivered before and during winter 2023 if a decision to proceed was made by 27 January 2023.**

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<sup>1</sup> Two other different sized Ecobulb LED project scenarios are summarised in Section 6 of this proposal.

<sup>2</sup> The peak load, cumulative electricity savings and emission reductions, the Net Present Value and Benefit to Cost ratio numbers are from *“Evaluation of the economic and environmental benefits of a programme of significant LED uptake proposed by Ecobulb”*, Concept Consulting, 15 October 2021.

**One Page Summary of a Residential 13.06 Million Ecobulb LED Project in 2023**



## 2. BACKGROUND ABOUT THIS RESIDENTIAL LED OPPORTUNITY

The system operator (Transpower's) "Market insights report – winter review November 2022". sets out the system operator concerns that tight peak supply conditions may be more prevalent in winter 2023 than indicated in its June 2022 Security of Supply Assessment.

On 25 November 2022 the Electricity Authority published a Consultation Paper titled "Driving efficient solutions to promote consumer interests through winter 2023".

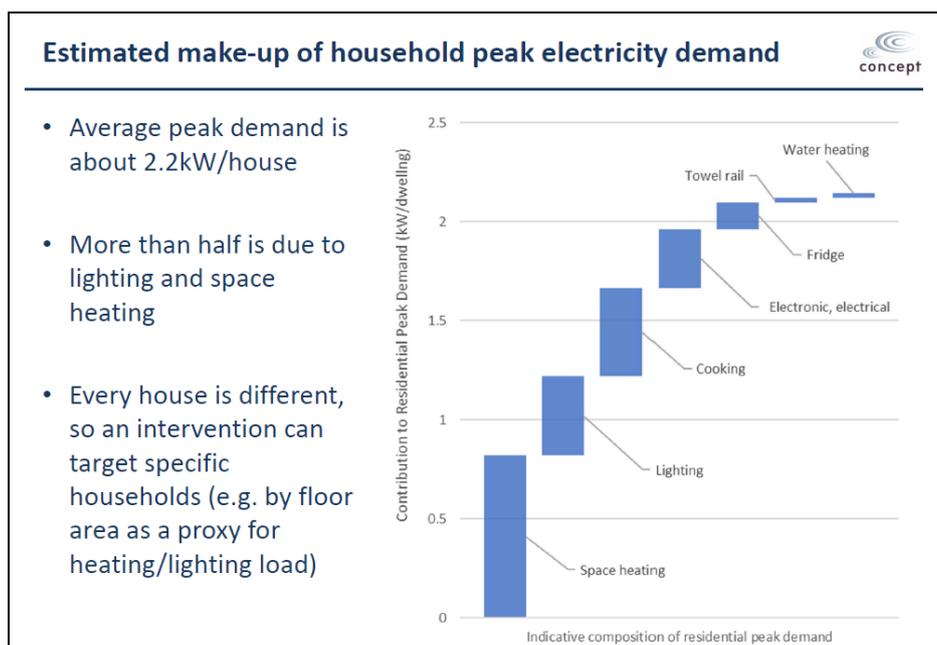
The Electricity Authority's paper sets out an initial set of possible options to better manage supply risk for winter 2023.

The Authority states in their paper that:

1. "Stakeholder feedback is sought not only on the options outlined in this paper, but any other approaches that may be available to the Authority for the long-term interests of consumers".
2. "While the focus in this consultation is winter 2023, the Authority also invites stakeholder views on medium term issues and options."
3. "We are particularly interested in more detailed feedback on options proposed for introduction before mid-2023 as a first step, as they will need to be progressed quickly to be available by that time".

A 2019 study undertaken for EECA by Concept Consulting<sup>3</sup> found that residential lighting and space heating are largely responsible for the winter peak in electricity demand and much fossil fuel generation. They estimated that capturing the full technical potential of peak-related electricity efficiency could reduce electricity emissions by about 34% per year (1.7 million tonnes of carbon dioxide per year).

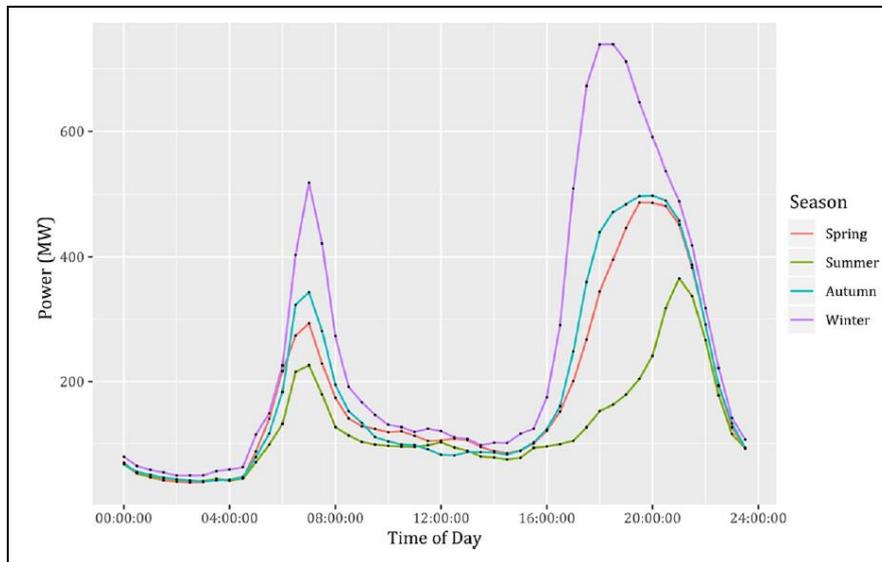
### Concept Consulting: Estimated make-up of household peak electricity demand



<sup>3</sup> "What is the case for electricity efficiency initiatives?", Concept Consulting, March 2018 report for EECA.

A 2020 Otago University Department of Physics study<sup>4</sup> estimated that 12% of New Zealand’s winter evening peak period electricity demand in 2015 – equating to up to 780MW as shown in the following figure – was due to residential lighting, even though it only made up 4% of national annual electricity consumption. They stated this was because residential lighting use is concentrated in winter due to less daylight hours and occurs at times corresponding to peak demand periods.

**2015 Mean half-hourly New Zealand residential lighting MW demand by season, Otago University**



While the Authority’s consultation paper focuses on options to manage supply side risk for winter 2023, Ecobulb notes that supply side risk can also be managed by reducing the winter peak demand through another “efficient solution”, namely a large residential “energy efficiency” LED project where:

1. There is an opportunity to replace a large portion of the 29.99 million inefficient light bulbs<sup>5</sup> in New Zealand homes with LEDs.
2. This could be rolled out nationally **before and during winter 2023**.
3. It would deliver a large peak **winter** network load reduction.
4. It would further promote consumer interests by delivering large electricity savings for residential consumers and large carbon dioxide emission reductions.

It would be logical extension of the nine EECA LED pilot projects in the last four years. This includes four region size projects delivered by Ecobulb in partnership with EECA, lines companies and Energy Trusts.

This residential energy efficient lighting “low hanging fruit” has been well recognized and acted on in other countries. Installing residential energy efficient lighting has been the cornerstone activity of the Australian State Government Energy Efficiency and White Certificate programs<sup>6</sup> in Victoria, New South Wales, South Australia and the Australian Capital Territory.

**Ecobulb’s submission therefore proposes a large 2023 New Zealand residential LED project as an efficient solution to promote consumer interests through winter 2023 and beyond.**

<sup>4</sup> “Lightening the load: quantifying the potential for energy-efficient lighting to reduce peaks in electricity demand”, Physics Department, Otago University, May 2020.

<sup>5</sup> Calculated from “Forecast of BAU NZ residential lighting stock”, Beletich, 2019 (work done by them for EECA).

<sup>6</sup> 16 million of the light bulbs installed in these Australian programs are Energy Mad / Ecobulb Limited “Ecobulbs”.

### 3. LED OFFER TO ALL NEW ZEALAND HOMES

A nationwide LED project would “scale up” the seven regional Ecobulb LED projects<sup>7</sup> Ecobulb Limited has delivered in the last four years with EECA, electricity distribution companies and Energy Trusts, and 97 local community groups, where 73% to 87% of homes in these regions received 345,855 Ecobulbs.

Ecobulb Limited has the proven capability to supply the Ecobulb LEDs for, and project manage, the delivery of this project through the continuation of its partnership approach with EECA, Energy Trusts, electricity distribution companies and hundreds of community groups and selected nationwide social service agencies.

This LED project would involve all New Zealand homes receiving a personalised letter and voucher from the Government<sup>8</sup> offering them any combination of **ten free high-quality, high-power factor Ecobulb LEDs** to replace inefficient light bulbs, halogens and recessed ceiling incandescent downlights that would save them up to \$1,650 electricity over the next 10 years.

#### July 2020: Trust Tairāwhiti / EECA Personalised Offer sent to 15,164 Gisborne Consumers



The letter would be supported by full page ads in the relevant local newspapers, radio advertising, newspaper advertising, extensive social media, and information at the Ecobulb pick-up venues.

A targeted **70% of New Zealand homes** would then each pick up their ten free Ecobulb LEDs by presenting their **voucher** at one of 350 venues (staffed by 5,400 volunteers) on specific weekends during a 48-week region by region rollout across New Zealand during 2023.

Ecobulb LEDs would also be distributed **through community groups**<sup>9</sup> to low income and disadvantaged homes that couldn't come into a venue to pick-up their Ecobulbs. This community group distribution of Ecobulb LEDs has proven extremely effective at reaching low income and Māori homes, as explained (see the following link) in a 7min 17sec video that tells the Light up Tairāwhiti story from the July 2020 Gisborne Ecobulb Project: <https://youtu.be/Yx1DhNwxctM>.

<sup>7</sup> South Canterbury (45,000 LEDs, April 2018), King Country (34,650 LEDs, January 2019), Waimate (10,600 LEDs, October 2019), Eastland (65,645 LEDs, July 2020), North Otago (35,000 LEDs, July 2020), Eastern Bay (70,000 LEDs, October 2020) and Waipa (85,760 LEDs, November 2022). The South Canterbury, Waimate, Eastland and Eastern Bay projects were co-funded by EECA.

<sup>8</sup> With the mailing lists provided by the electricity retailers.

<sup>9</sup> Including Councils, Iwi, primary and secondary schools, health organisation, tenancy agencies, foodbanks, Salvation Army, churches, fire brigades, police, housing trusts, women's organisations, Lions and Rotary. These organisations have assisted the previous Ecobulb projects by distributing Ecobulb LEDs to low income and disadvantaged homes.

**July 2020: Network Waitaki Personalised Letter sent to 8,709 North Otago Consumers**

20 July 2020

<FirstName> <FirstName>  
<Address1> <Address2>  
<Locality>, <Territory Authority> <Postcode>



**Save up to \$850\* on your power bills**

Hello <Salutation>.

Here's a smart way to save money on your power bills with your lights on!

Instead of using outdated inefficient light bulbs, switch to the newest generation Ecobulb LEDs. They last up to 30 years and use up to 90% less electricity than the inefficient light bulbs they replace.

By swapping just 5 of your most frequently used inefficient light bulbs to Ecobulb LEDs you could save up to \$850\* over the next 10 years.

You can also save lots more by reducing your heating and cooling costs with the innovative screw-in retrofit Ecobulb LED downlight, that does not require an electrician to install.

**Get 5 Ecobulb LEDs for FREE\*\* with this exclusive voucher.**

The Waitaki Power Trust, proud owners of Network Waitaki, are supporting Ecobulb LEDs so you can get them for FREE!

All you need to do is take the enclosed voucher to the Scottish Hall (10 Tyne Street, Oamaru) between 9am to 5pm Friday or Saturday (24 and 25 July), or to one of the Hampden or Kurow locations (Saturday 25 July only) listed on your voucher.

There you can get any mix of 5 Ecobulb LED bulbs and screw-in retrofit downlights for FREE, that could save you up to \$850\* over the next 10 years.

Then take your Ecobulbs home, install them, and you'll start saving straight away. It really is as easy as that.

**John Clements**  
Chair, Waitaki Power Trust



Waitaki Power Trust Trustees from left to right: Doreen Cleave, John Clements (Chair), Dr Helen Brookes, Herb Tonkin and Jack Webster



**4 MORE REASONS TO SWITCH TO ECOBULB LEDs**

- 1. REPLACES THE COMMON LIGHT BULBS**  
Ecobulb LED bulbs replace the common inefficient incandescent and halogen light bulbs found in New Zealand homes.
- 2. REDUCES HEATING AND COOLING COSTS**  
Screwing retrofit Ecobulb LED downlights into recessed ceiling downlights also reduces heating and cooling costs by reducing draughts through the ceiling.
- 3. LAST FOR UP TO 30 YEARS**  
Ecobulb LEDs last for approximately 35,000 hours, which is about 30 years for normal home usage. Ecobulb LEDs come with a 10-year warranty.
- 4. ULTRA ENERGY EFFICIENT**  
Ecobulb LEDs use up to 90% less electricity than the inefficient light bulbs they replace. They also reach full brightness as soon as you turn on the light switch, unlike earlier energy saving bulbs.

\* Based on replacing 5 inefficient 75W light bulbs used 3 hours per day with 5 efficient 7W Ecobulb LEDs, with an electricity price of \$0.23 / kWh, over the next 10 years.  
\*\* \$198 recommended retail price for 5 Ecobulb LED downlights.

**November 2020: Trust Horizon / EECA Voucher sent to 17,461 Eastern Bay Consumers**

<p>This voucher entitles you to get</p> <p><b>5 Ecobulb LEDs for FREE**</b></p>	<p>Save up to <b>\$940</b> on your power bills!*</p>	<p>Valid between 9am and 5pm this Saturday 31 October, while stocks last.</p> <p>Please enter the information about how many different types of inefficient light bulbs you have in your home on the back of this voucher.</p> <p><small>*Based on replacing 5 inefficient 75W light bulbs used 3 hours per day with 5 efficient 9W Ecobulb LEDs, with an electricity price of \$0.30 / kWh, over the next 10 years. **\$198 recommended retail price for 5 Ecobulb LED downlights</small></p>
<p>You can redeem this voucher at the following locations between 9am and 5pm this Saturday 31 October:</p> <ul style="list-style-type: none"> <li>📍 <b>Whakatāne RSA</b> 21 Richardson Street, Whakatāne</li> <li>📍 <b>Ōpōtiki RSA</b> 103 Saint John Street, Ōpōtiki</li> <li>📍 <b>Concert Chambers</b> Ranfurly Court, Kawerau</li> </ul>		<p><b>TRUST HORIZON</b></p> <p><b>EECA</b> TE TARI TIAKI PŪNGAO ENERGY EFFICIENCY &amp; CONSERVATION AUTHORITY</p>

A key focus of Ecobulb's LED projects is to maximise the peak winter network load reduction by ensuring the Ecobulb LEDs are rapidly installed after distribution in the rooms of the homes where the lights are on the most during the winter evening hours.

EECA undertook follow-up research of the 45,000 LED April 2018 South Canterbury Ecobulb Project<sup>10</sup> that found:

1. While 78% of the Ecobulb LEDs had been installed within two months after the project, 22% of the LEDs had not been installed, mostly because people were waiting for existing bulbs to blow or hadn't got round to it.
2. Of the LEDs installed however, they were predominantly installed in the areas where the lights were on the most during the winter hours of 6pm and 9pm.

Ecobulb has developed significant expertise in its subsequent Ecobulb projects to ensure consumers install their Ecobulb LEDs straight away after receiving them into the light fittings they use the most during the winter evening hours.

Ecobulb has developed a plan for this project to be rolled out over a 48-week period across New Zealand through 16 regional events<sup>11</sup>.

The first regional event could **commence 11 weeks** after the signing of a project agreement for this proposal, based on the current manufacturing and shipping lead times of Ecobulb LEDs.

Ecobulb has confirmed with their manufacturers that they have the required Ecobulb LED manufacturing capacity available for Ecobulb to deliver to this plan.

<sup>10</sup> "EECA-Led LineTrust Evaluation", July 2018.

<sup>11</sup> This plan allows the maximum consumer participation rates to be achieved in each region, while minimising the risk of running out of Ecobulb LEDs during a regional event or having excess LEDs at the conclusion of the project period.

## 4. BENEFITS DELIVERED - CONCEPT CONSULTATION EVALUATION

This proposal involves distributing 13.06 million Ecobulb LEDs into 70% of New Zealand homes in 2023.

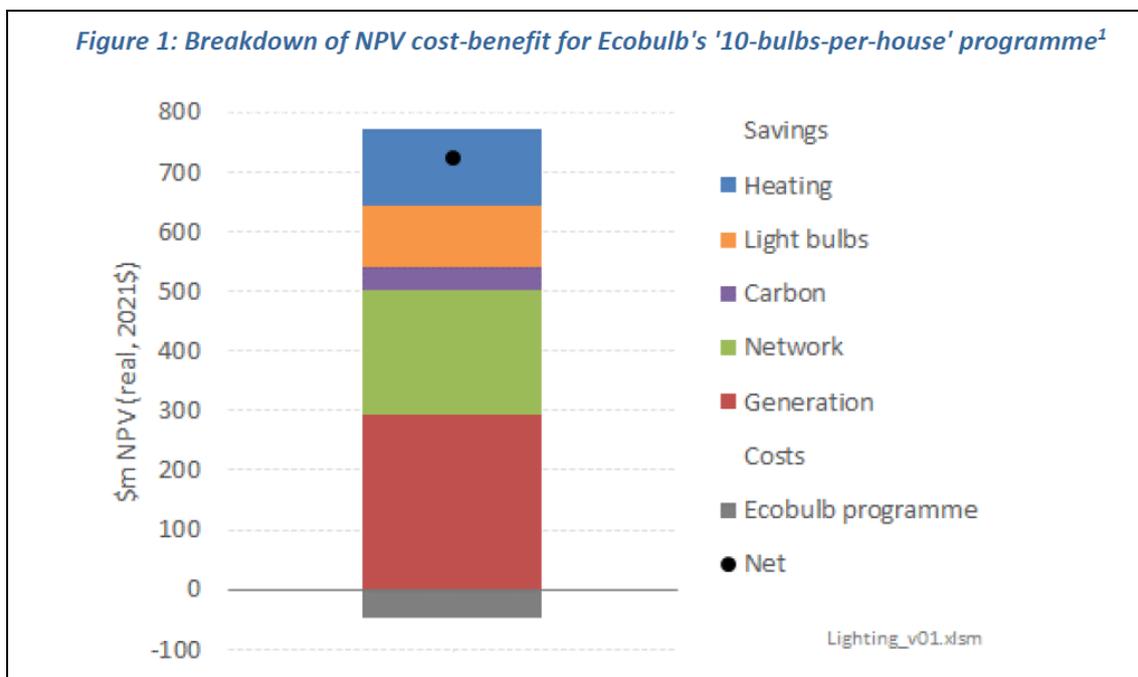
Ecobulb commissioned Concept Consulting to “undertake an independent review and evaluate the proposal from Ecobulb for the Government to fund the provision of highly efficient lightbulbs to New Zealand homes during 2022. Ecobulb’s central proposal is for a programme resulting in approximately 70% of households receiving 10 lightbulbs each. Ecobulb has indicated the cost of the programme would be approximately \$50 million”.

Concept Consulting is an advisor to a number of Crown entities including Treasury.

The Concept Consulting evaluation<sup>12</sup> calculated that this project would deliver the following benefits from the **13.06 Million Ecobulbs distributed**:

1. **169MW electricity network peak winter load reduction.**
2. **\$880 Million cumulative electricity savings**<sup>13</sup> for New Zealand homes by 2030. This would deliver a boost to New Zealanders struggling with the increased cost of living and energy hardship.
3. **736,000 Tonnes cumulative carbon dioxide emission reductions** by 2040.
4. **\$725 Million Net Present Value to New Zealand Inc.** (excluding consumer electricity savings).
5. A **16 : 1** Benefit : Cost ratio.

**Concept Concept Evaluation Figure 1 : \$725 Million Net Present Value to New Zealand Inc.**



<sup>12</sup> “Evaluation of the economic and environmental benefits of a programme of significant LED uptake proposed by Ecobulb”, Concept Consulting, 15 October 2021.

<sup>13</sup> Calculated on an undiscounted basis, being the arithmetic sum of the savings through to 2030.

The Concept Consulting numbers are conservative because they:

1. **Exclude** the benefits delivered from the **“business-as-usual”** progressive uptake of LED light bulbs, on the basis that these benefits would otherwise be delivered in the absence of this project.
2. Used the most aggressive business as usual LED purchase scenario for New Zealand homes.
3. Assumed annual residential lighting GWh consumption that is just 53% of that derived from the comprehensive BRANZ 2006 Household Energy End-use Project that monitored 400 households from 1997 to 2005.
4. Assumed 99% of electricity generation being renewal by 2030.

It should be noted that the **total potential** cumulative electricity savings, emission reductions, Net Present Value and Benefit to Cost ratio to New Zealand Inc. from a switch to residential LEDs is **significantly greater than those calculated in the Concept evaluation** – because the **total potential** equals the Concept numbers **plus** the numbers from the business-as-usual progressive uptake of LED light bulbs.

**Waipa Networks Ecobulb Project: Te Awamutu Courier, 3 November 2023**

**Te Awamutu COURIER**  
PART OF NEW ZEALAND'S HERALD  
Reporting Local, Supporting Local

Thursday, November 3, 2022

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Te Wharekura o Ngā Pūtoru o Te Aroha student Alex Tuhi-hohenga and teacher Ngawai Aperahama receiving the bulbs from Waipā Networks CEO Sean Horgan and board chair Jonathan Kay.  
Photo / Supplied

# Waipā lightbulb moment

Waipā Networks providing 85,000 free energy-saving bulbs to help light the region more efficiently

**W**aipā Networks has begun distributing 85,000 light bulbs throughout the Waipā region this week as an initiative to light the region more efficiently. The project is set to light up the Waipā community with household savings.

About 10,000 households have already been contacted through various local charities and schools, and have been offered five free generation Ecobulb LED energy-saving light bulbs, valued at up to \$200. The first 5000 of these bulbs have been distributed with the support from Te Wharekura o Ngā Pūtoru

We're owned by our customers so this is another way we can directly support our community  
Sean Horgan, CEO of Waipā Networks

Te Aroha and Te Awamutu College. Te Wharekura o Ngā Pūtoru o Te Aroha student Alex Tuhi-hohenga and teacher Ngawai Aperahama received the bulbs on behalf of their school, with each family within the school will receiving five bulbs each.

continued on A1

## 5. FUNDING REQUIRED

The required LED Project **funding of \$52.310 Million plus GST** is summarised in the following table<sup>14</sup>.

Ecobulb Limited proposes that this LED Project funding could be provided from the Government to EECA, with EECA to award and administer this funding.

Description	Funding Required (ex. GST)
Ecobulb LED purchase	\$42.713 Million
LED freight / distribution	\$4.278 Million
Personalised letter to all NZ homes	\$2.800 Million
Project promotion	\$0.560 Million
Ecobulb LED distribution to homes	\$1.958 Million
<b>TOTAL PROJECT FUNDING</b>	<b>\$52.310 Million + GST</b>

The key points to note about this Ecobulb LED Project funding are that it delivers (over and above the business as usual progressive uptake of LED light bulbs):

1. \$725 Million Net Present Value to New Zealand Inc. (excluding consumer electricity savings).
2. A 16 : 1 Benefit : Cost ratio.
3. Consumer electricity savings from this project that alone pay back this funding within 3 months.
4. Lifetime \$ / MMh electricity savings that are approximately **two orders of magnitude more cost effective** than running a Rankine unit on coal<sup>15</sup>.

**Photo of consumers picking up their Ecobulb LEDs, Timaru Events Centre, 27 April 2018**



<sup>14</sup> Two other different sized Ecobulb LED project scenarios are summarised in Section 6 of this proposal.

<sup>15</sup> Based on Figure 3 in the Electricity Authority's consultation paper that estimated the short run marginal costs of running a Rankine unit on coal at over \$250 / MWh through to 2025.

## 6. POTENTIAL WORLD FIRST 100% LED

New Zealand has the potential to further lead the world by expanding this project to **replace all 30 million** residential inefficient light bulbs with LEDs – becoming the **first country to be 100% LED**.

This would deliver a **\$1,681 Million Net Present Value to New Zealand Inc.** (excluding consumer electricity savings) and **1,806,000 Tonnes cumulative carbon dioxide emission reductions** by 2040.

The following table summarises the benefits and funding requirement from three different sized Ecobulb LED project scenarios<sup>16</sup> that involve replacing:

1. The **five** most used inefficient light bulbs per home with Ecobulb LEDs in 70% of the homes in New Zealand.
2. The **ten** most used inefficient light bulbs per home with Ecobulb LEDs in 70% of the homes in New Zealand, as per this submission.
3. **All 29.99 million inefficient** light bulbs in New Zealand homes (an average of 16.1 per home) with Ecobulb LEDs.

Description	5 LEDs per home / 70% of homes	10 LEDs per home / 70% of homes	100% LED Zealand homes
Number of Ecobulb LEDs	6.53 Million	13.06 Million	29.99 Million
Cumulative Consumer Electricity Savings to 2030	\$430 Million	\$880 Million	\$1,887 Million
Peak Load Reduction	83MW	169MW	342MW
Cumulative Carbon Abatement to 2040	350,000 Tonnes	736,000 Tonnes	1,806,000 Tonnes
Net Present Value to New Zealand Inc.	\$354 Million	\$725 Million	\$1,681 Million
Funding Required (+GST)	\$24.803 Million	\$52.310 Million	\$143.488 Million

<sup>16</sup> Note that the benefits and funding do not scale linearly with the number of light bulbs, because of the proportionally greater number of more expensive halogen and downlight replacement Ecobulb LEDs found in the “ten per home” and “all inefficient light bulb” scenarios.

## 7. ABOUT ECOBULB LIMITED

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Ecobulb Limited (formerly Energy Mad) is a 100% owned Christchurch company. It has a goal to “Save enough electricity to power New Zealand for one year”.

Ecobulb are experts in designing, developing and delivering New Zealand regional and nationwide residential energy assessment and lighting projects.

They have a highly successful history and proven track record from delivering 98 large Ecobulb and energy efficiency projects with Governments, Energy Trusts, Lines Companies and Electricity Retailers, in New Zealand, Australia, the United States and Germany since 2004.

With approximately **25 Million “Ecobulb”** energy saving light bulbs installed in an estimated 3.4 million New Zealand, Australian and United States homes, and having completed energy assessments in 37,300 New Zealand homes, Ecobulb is 64% of the way to achieving our goal.

These Ecobulbs are saving an estimated \$6.0 billion electricity and 19 million tonnes of carbon dioxide emission reductions over their lifetimes.

## ECOBULB EFFICIENT LIGHTING PROJECTS DELIVERED

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1. From September 2005 to October 2006 Ecobulb delivered a 13-month nationwide rollout of “Ecobulb” efficient lighting projects involving 22 regional size Ecobulb projects where:
  - a. The three biggest sold 1.2 million Ecobulbs in 2005 and 2006 in Wellington, Christchurch and Auckland. They were delivered in partnership with the Electricity Commission, Genesis Energy, Vector, Meridian Energy, Orion, Mercury Energy and Foodstuffs;
  - b. 46% of Auckland homes brought Ecobulbs in the 2006 Mercury Ecobulb Project.
2. Ecobulb delivered the largest and most complex individual energy efficient lighting project ever undertaken in New Zealand with the “Shell” 2007 Ecobulb project that involved:
  - a. The Electricity Commission, Housing New Zealand, Trustpower and 240 Shell stores;
  - b. 1.25 million New Zealand homes mailed a personalised offer for Ecobulbs on Saturday 23 June 2007;
  - c. 1.5 million Ecobulbs distributed to 240 Shell stores across New Zealand, along with prominently located displays and extensive point of sales materials to each of these stores that were set up in all 240 Shell stores on Friday 29 June 2007.
3. Achieved **57% of New Zealand homes** (915,000 homes) purchasing five or more Energy Mad Ecobulbs each by February 2009.
4. Developed, secured EECA and electricity sector partnerships and funding for, and delivered, seven complex regional size free Ecobulb LED projects in the last four years that included:
  - a. Manufacturing, shipping and distributing 345,855 Ecobulbs to 20 event venues;
  - b. The marketing to mail personalised letters to 71,814 homes sourced from 20 electricity retailers, with extensive newspaper, radio and social media advertising and editorial;
  - c. Mobilising 500 people and 97 community groups to distribute the free Ecobulbs.
5. We provide world leading high quality Ecobulb LEDs that maximise the energy savings, the New Zealand electricity network peak load reduction and carbon dioxide emission reductions.

## ENERGY ASSESSMENTS DELIVERED

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1. Ecobulb delivered free home energy efficiency assessments in 33,000 New Zealand homes through funding provided by Energy Trusts from 2006 to 2016. 11,000 of these homes purchased an insulation, efficient heating package and / or an efficient downlight package.
2. Ecobulb delivered six regional Home Energy Saver Programmes since April 2021 that involved:
  - a. Ecobulb's world first innovative "Power\$aver" software platform for delivering in-home and on-line energy assessments'
  - b. Co-funding for five of these from the Ministry of Business, Innovation and Employment's Support for Energy Education in Communities Programme;
  - c. 34 locally employed energy assessors undertaking free, personalised "energy assessments" to make these homes more energy efficient, help them find the lowest cost electricity retail plan, and supply them Ecobulb LEDs and energy efficient showerheads;
  - d. 4,465 free home energy assessments completed.



## AWARDS WON

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Ecobulb Limited (which listed as Energy Mad on the Main Board of the New Zealand Stock Exchange in October 2011 and delisted in December 2018) has won the following main awards:

1. 2012 New Zealand International Business Awards for "Most innovative business model in international business".
2. 2010 Air NZ Cargo Canterbury Export Awards "Emerging Exporter".
3. 2008 Bayer Innovations Award for "Design & Engineering".
4. 2007 Deloitte Unlimited Fast 50 "Fastest Growing Company in New Zealand" (12th Fastest Growing Company in Asia/Pacific).
5. 2007 Price Waterhouse Coopers "New Zealand Hi-Tech Emerging Company".
6. 2007 Price Waterhouse Coopers "New Zealand Hi-Tech High Growth".
7. 2007 Sustainable Business Network "Making a Difference" Award.
8. 2006 Energy Efficiency and Conservation Authority "Special Award for Energy Efficiency".
9. 2006 New Zealand Engineering Excellence Awards "Sustainability and Clean Technology".

## 8. DETAILED SUPPORTING INFORMATION AVAILABLE

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The following detailed information is available to support this proposal:

1. *"Evaluation of the economic and environmental benefits of a programme of significant LED uptake proposed by Ecobulb"*, Concept Consulting, 15 October 2021.
2. *"New Zealand Ecobulb Project Rollout High Level Plan"*, Ecobulb Limited, 4 November 2021.
3. *"Forecast of BAU NZ residential lighting stock"*, Beletich, 2019.
4. Provision of the independent laboratory test reports for the Ecobulb LEDs including: Lumens output, efficiency, lifetime, Colour Rendering Index, CCT, Power Factor, EMC, Electrical Safety and 12V halogen lamp transformer compatibility.
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