

Request for Proposals

Efficient Lighting Programme

A request for proposals for programmes to enhance the electricity efficiency of lighting in New Zealand

Closing Date: 10 November 2008

Contents

1	PURPOSE OF THIS REQUEST FOR PROPOSALS	3
2	RFP PROCESS.....	16
3	TERMS AND CONDITIONS	20
4	ESSENTIAL REQUIREMENTS, EVALUATION AND ACCEPTANCE	26
5	INFORMATION REQUIRED FROM PROPOSERS	30
	APPENDIX 1 - PROPOSER PROFILE.....	36
	APPENDIX 2 - DRAFT CONTRACT TERMS AND CONDITIONS	37

1 PURPOSE OF THIS REQUEST FOR PROPOSALS

1.1 Purpose

The purpose of this Request for Proposals (RFP) is to select one or more parties whom the Electricity Commission (Commission) may engage to promote the uptake of efficient lighting technologies in one or more of the following key areas:

- Eliminating inefficient **incandescent** lighting;
- Eliminating inefficient **halogen** lighting;
- Eliminating inefficient **mercury vapour** lighting;
- Eliminating inefficient **fluorescent** lighting; and
- Increasing the use of efficient **lighting design and controls**

1.2 Role of the Commission

The Electricity Commission is a Crown entity established under the Electricity Act 1992 (Act) to oversee New Zealand's electricity industry and markets. It began operating in September 2003.

The Commission regulates the operation of the electricity industry and markets (wholesale and retail) in accordance with the Act and the Government Policy Statement (GPS).

The Commission's principal objective, as set out in the Act, is to ensure that electricity is produced and delivered to all classes of consumers in an efficient, fair, reliable and environmentally sustainable manner. The Commission is also required to promote and facilitate the efficient use of electricity.

The Commission promotes and facilitates electricity efficiency and conservation, reflecting the Government Policy Statement on Electricity Governance and the Electricity Act 1992. Its brief includes funding of programmes to provide incentives for cost-effective electricity efficiency and conservation. It is funded by a levy on the electricity industry.

The Commission seeks to facilitate cost-effective electricity efficiency programmes across all sectors of the New Zealand economy, to complement transmission and generation investment.

For more information on electricity efficiency activities at the Commission, please refer to the following web link:

<http://www.electricitycommission.govt.nz/opdev/elec-efficiency/>

1.3 Background

Following a pilot project on Compact Fluorescent Lamps (CFLs) in Christchurch in late 2005, the Commission initiated a national programme focusing on residential uptake of CFLs in 2006/07. In addition to providing subsidies for CFLs, the Commission supported two information-based programmes:

- Educating consumers – a consumer lighting guide was developed on efficient lighting with a focus on CFLs; and
- Trade education – information about efficient lighting was developed for builders, architects, designers and specifiers.

Further programmes were rolled out in 2008, resulting from the Commission's 2007 Efficient Lighting RFP, which expanded the technologies supported beyond CFLs to include:

- new generation halogen replacements for GLS lamps – lamps that use halogen technology to achieve 30% energy savings and last twice as long as a standard incandescent lamp;
- energy saver replacements for dichroic lamps – 35 W replacing 50W lamps (30% energy saving) that last 5000 hours as opposed to standard 2,000–4,000 hours;
- compact fluorescent replacements for dichroic lamps – 15 W CFL downlights replacing 50 W halogen lamps for use in general room lighting rather than task-lighting or spot-lighting; and
- more efficient fluorescent tubes – new T8 tubes that are 10% more efficient than standard T8 tubes.

To date the Commission's funding has contributed to the installation of over five million lamps. This represents:

- energy savings of 400 GWh per year;
- a peak demand reduction of 191 MW; and
- a reduction of 80,000 tonnes of CO₂ per annum.

For more information on the CFL programmes and other electricity efficiency activities at the Commission, please refer to the following web link:

<http://www.electricitycommission.govt.nz/opdev/elec-efficiency>

1.4 The Commission's Efficient Lighting Programme

The purpose of the Commission's Efficient Lighting Programme is to encourage and accelerate the nationwide uptake of efficient lighting technologies and behaviours that reduce the electricity consumption from lighting – especially during times of peak demand.

The objective of the Commission's Efficient Lighting Programme is to contribute towards achieving the Commission's target (across all of its electricity efficiency programmes) of annual electricity savings of 837 GWh by 2012, as set out in the New Zealand Energy Efficiency and Conservation Strategy (NZEECS).

This RFP process is intended to support the achievement of the programme's key objective by implementing one or more efficient lighting programmes targeted at achieving the recently developed strategic objectives for efficient lighting in New Zealand (refer section 1.6).

The Commission's Efficient Lighting Programme has been developed using the analysis from the KEMA Potentials Study as well as feedback from representatives of the lighting industry through the Efficient Lighting Stakeholder Group (ELG) and other lighting industry representatives.

1.5 Efficient lighting – the KEMA report

In order to better focus its electricity efficiency programmes, the Commission contracted KEMA to report on the technically feasible and cost-effective electricity efficiency potential in New Zealand. The final report was submitted to the Commission in October 2007.

The full KEMA Potentials Study may be downloaded from the Commission's website using the following link:

<http://www.electricitycommission.govt.nz/opdev/elec-efficiency/potentialstudy>

Some of the applicable sections of the KEMA report pertaining to lighting are:

- Baseline data for residential lighting – pp 15-19;
- Baseline data for commercial lighting – pp 22-29, p 39;
- Achievable potential for residential lighting – pp 61-65; and
- Achievable potential for commercial lighting – pp 68-71.

1.6 Efficient Lighting Strategy

The Commission, in partnership with the Energy Efficiency and Conservation Authority (EECA) and the Lighting Council of New Zealand (LCNZ), established the ELG. The ELG comprises representatives from the Commission, EECA, Department of Building and Housing (DBH), the LCNZ and other lighting industry representatives.

The ELG was formed under a Terms of Reference that included the development of an “integrated lighting strategy”. The Terms of Reference can be found on:

<http://www.electricitycommission.govt.nz/advisorygroups/pjtteam/lesg>

The resulting Efficient Lighting Strategy can be found on:

<http://www.electricitycommission.govt.nz/pdfs/advisorygroups/pjtteam/LESG/ELS.pdf>

The key objective set out in the Efficient Lighting Strategy developed by the ELG is to “strengthen naturally-occurring, market delivered efficiency through interventions that remove barriers to technologically and economically viable efficient lighting options”. In order to help achieve the key objective, the Efficient Lighting Strategy sets out six strategic goals as follows:

- Eliminating inefficient incandescent lighting;
- Eliminating inefficient halogen lighting;
- Eliminating inefficient fluorescent lighting;
- Eliminating inefficient mercury vapour lighting;
- Increasing the use of efficient lighting design and controls; and

- Eliminating inefficient street lighting.

These goals were developed by the ELG taking into account the outputs from the KEMA Potentials Study and broad stakeholder knowledge experience of ELG members.

These six goals provide the focus for the Commission's interventions in the lighting market to improve the efficiency of lighting in New Zealand.

1.7 Minimum Energy Performance Standards (MEPS)

EECA is responsible for developing and introducing MEPS and/or labelling requirements for a range of lighting products in New Zealand.

The introduction of the proposed MEPS will remove the worst performing lamps from the market in several stages and will only initially cover a limited range of lamps. The MEPS will never include speciality lamps for appliance lighting or medical lighting.

The first lamps to be subject to MEPS, from November 2009, will be incandescent light bulbs less than 150 W. Alternatives will be available to fit existing light fittings. MEPS will cover CFLs, to ensure good quality alternatives are available.

From October 2010, it has been proposed the MEPS will extend to cover >40 W candle, fancy round and decorative lamps, mains voltage halogen non-reflectors and extra low voltage halogen reflectors.

From October 2012 it is proposed the MEPS are extended to cover proposed mains voltage halogen non-reflector lamps including halogen, >25 W candle, fancy round and decorative lamps.

Further information about the proposed MEPS can be found on EECA's website at:

<http://www.eeca.govt.nz/labelling-and-standards/lighting/upcoming-plans-lighting.html>

Because the shortly to be implemented MEPS for incandescent lighting effectively raises the efficiency "floor" above which new bulbs

sold in the market must comply with, the Commission does not see a compelling economic case to invest in further subsidy programmes to eliminate inefficient light bulbs that would have otherwise been dealt with under these MEPS. For the avoidance of doubt, this means programmes where the Commission will provide a direct financial subsidy to reduce the price of a more efficient incandescent lighting alternative to overcome a price/cost barrier.

However, in light of recent misrepresentations and misconceptions in the market as to the benefits or otherwise of efficient incandescent lamps (specifically CFLs), the Commission sees a need for the provision of accurate, clear and concise information being delivered to the market. This will help assist consumers to have the correct information to make an informed decision which can lead to the uptake of more efficient incandescent lighting (i.e. above the new efficiency floor) and reduce the potential for stocking up of less efficient incandescent light bulbs prior to the implementation of the MEPS in late 2009.

1.8 Information barriers to the uptake of energy efficient lighting

In August 2008 research was undertaken by the Commission to understand the information barriers that are constraining the uptake of energy efficient lighting in New Zealand and to identify options to address these barriers.

The report was based on feedback received from organisations directly involved in the lighting industry and associated organisations. The findings highlighted the significant differences in the decision processes, information sources and key barriers between key market segments and also outlined a number of opportunities to address the issues.

A number of information initiatives were identified as requiring independent, centralised management or coordination for expediency and to maximise effectiveness. These include providing centralised PR leadership on energy efficient lighting issues and the development of core information required to educate the market and overcome the barriers identified where independence is likely to increase the credibility and acceptance of the information in the market. These items are therefore excluded from this RFP process.

Market information requirements that are identified in the “Information Barriers to Growth” report of 7 October 2008 as requiring “industry management” are included in this RFP round. It is recommended that these information requirements are specifically considered as a component of any proposal submitted or alternatively as a proposal in their own right.

The full report can be viewed at
<http://www.electricitycommission.govt.nz/opdev/elec-efficiency/programmes/lighting/further-info/index.html>

1.9 Proposals sought

1.9.1 Scope of the Efficient Lighting Programme RFP

This RFP is for proposals that (when implemented) will address identified market failures and deliver cost-effective electricity savings in lighting in New Zealand.

Proposals are requested for the design and implementation of efficient lighting programmes that:

- (i) Focus on achieving one or more of the following Efficient Lighting Strategy goals, as detailed further in Section 1.9 below:
 - Eliminating inefficient incandescent lighting;
 - Eliminating inefficient halogen lighting;
 - Eliminating inefficient mercury vapour lighting;
 - Eliminating inefficient fluorescent lighting; and
 - Increasing the use of efficient lighting design and controls;
- (ii) Address one or more of the identified barriers in order to achieve the above goals, as referred to in sections 1.9.2 to 1.9.6 below;
- (iii) Demonstrate enduring energy savings (and reductions in peak demand, if applicable) within the proposed programme target area(s);
- (iv) Achieve energy savings and reduction in peak demand in a cost-effective manner;
- (v) Apply throughout New Zealand or to a significant industry or region (in terms of electricity consumption or peak demand) within New Zealand;

- (vi) Can be replicated and/or expanded in other regions/nationally and/or across other industry sectors;
- (vii) Demonstrate a strong technical, marketing and implementation focus and capability; and
- (viii) Demonstrate a desire to work in financial partnership with the Commission to jointly deliver electricity savings outcomes.

These are essential requirements which must be met by all proposals.

Proposals may be from "aggregators" that manage a programme involving multiple contractors, which may widen the coverage of the programme and achieve greater energy savings.

This RFP calls for five programmes of measures that have been extracted from the KEMA report and subsequent Efficient Lighting Strategy as target areas for intervention, based on the potential electricity savings (in GWh). These five programmes are:

- Programme 1 – Eliminating inefficient **incandescent** lighting;
- Programme 2 - Eliminating inefficient **halogen** lighting;
- Programme 3 - Eliminating inefficient **mercury vapour** lighting;
- Programme 4 – Eliminating inefficient **fluorescent** lighting; and
- Programme 5 - Increasing the use of efficient **lighting design and controls**.

Proposers may submit multiple proposals or submit proposals for programmes which address inefficiencies in one or more of the five programmes. Where multiple technologies are considered, proposals must clearly itemise each measure.

Further detail about each programme area is provided below. While some market barriers are identified, this list is not exhaustive and some of the barriers may not apply in all instances. Proposers should specify the applicable barriers in each proposal and the applicable intervention to address the barriers.

1.9.2 Programme 1 – Eliminating inefficient incandescent lighting

Proposals are sought for information campaigns aimed at the barriers to the replacement of inefficient incandescent lighting. ***The Commission is not looking to price-subsidise any efficient replacements for incandescents that will be covered by the proposed MEPS being introduced in late-2009 (refer commentary in 1.7).***

Key information barriers to the replacement of inefficient incandescent lighting include:

- Lack of awareness of benefits – consumers are not always aware of the benefits or alternative technologies. With regard to CFLs, consumers are not always aware of their long life, different light colour outputs (warm and cool white) and range of bulb types such as compact spiral and R80 replacements.
- Perceived public misconceptions around efficient replacements for incandescents and implementation of MEPS – the media spotlight on MEPS has resulted in CFLs and other efficient replacements being portrayed in a negative light, as of late. Common public misconceptions around the MEPS include lack of choice and safety fears about efficient replacements.

1.9.3 Programme 2 – Eliminating inefficient halogen lighting

Halogen lamps are being used more and more in new home builds and renovations, retail shops and reception and foyer areas of commercial buildings. Their small size, crisp light, directional light focus and ability to recess into the ceiling make them a popular choice in lighting.

There are two main types of halogen light sources: mains voltage (230 V) and low voltage (12 V).

Halogen lamps are increasingly being used in residential housing for general room lighting rather than task lighting. While individual lamps use 50 Watts compared with 100 Watts for a standard incandescent lamp, significantly more halogen lamps are used where one or two incandescent lamps (or one fluorescent tube in the case of commercial premises) were used before. It is not uncommon to see six to eight halogen lamps in a lounge ceiling (300–400 Watts) where one to two incandescent lamps were used (100–200 Watts) or more efficient CFLs could be used (20–40 Watts).

Key barriers to the replacement of inefficient halogen lighting are:

- Up-front capital costs – efficient halogen and fluorescent replacement lamps are typically two to three times more expensive than standard halogen lamps.
- Information – most people do not know that there are different types of halogen lamps (such as infrared) available or that other more efficient lighting technologies can be used in their place (refer also to the key findings and recommendations outlined in

the "Information Barriers to Growth" report as summarised in section 1.8 above).

- Limited distribution – efficient halogen lamps are only available through specialist lighting suppliers. They are not available in supermarkets where standard halogens are sold.
- Size – most fluorescent replacements are larger in size and therefore not always aesthetically pleasing to consumers.

1.9.4 Programme 3 – Eliminating inefficient mercury vapour lighting

Lighting in industrial buildings has the potential for 16 GWh of savings.

A range of efficient replacement options is available such as high pressure sodium, metal halide, linear fluorescent and high wattage CFL lamps.

Particular lighting technologies may be appropriate for certain applications.

Key barriers to the removal of inefficient mercury vapour lighting include:

- Cost – higher upfront cost dissuades people from purchasing the more efficient technology.
- Split incentives – between the purchaser of the lighting technology and the energy payer. The majority of occupants of industrial buildings are tenants.
- Information – many businesses do not know that more cost effective lighting options exist (refer also to the key findings and recommendations outlined in the "Information Barriers to Growth" report as summarised in section 1.8 above).

1.9.5 Programme 4 – Eliminating inefficient fluorescent lighting

Fluorescent lamps are a very efficient light source. However, inefficiencies do exist in the use of fluorescent lamps in terms of:

- Inefficient design – not taking account of the use of daylight and the inefficient use of lighting controls and switch banking.
- Overlighting – many work areas, hallways and offices are over-lit, and in many cases energy savings can easily be realised by a delamping exercise.

Key barriers to the replacement of inefficient fluorescent lighting include:

- Split incentives – between the purchaser of the lighting technology and the energy payer (the majority of occupants of commercial buildings are tenants).
- Uneconomical – most cost-effective when done during a building refurbishment.
- Low involvement – lighting is an insignificant cost for the majority of businesses compared with other operating costs.
- "Crashing" Specification – a common complaint from the lighting industry is that when a lighting design is specified for a building there is an incentive for the developer to choose a lighting contractor with the cheapest lighting option as the developer then receives greater profit from the lighting installation.
- Information – refer to the key findings and recommendations outlined in the "Information Barriers to Growth" report as summarised in section 1.8 above.

1.9.6 Programme 5 – Increasing the use of efficient lighting design and controls

Inefficient lighting design and the lack of lighting controls and sensible switching has resulted in inefficient lighting being "locked in" to commercial and residential buildings.

Lighting design and controls are an important element of the lighting installation because they are expensive to retrofit after they have been installed.

Of particular concern is the large number of new homes built without regard to efficiency for lighting. The "paint by numbers" approach of applying recessed down-lights in ceilings (both incandescent R80 and 50 W halogen lamps) based on a roof area formula, results in a large number of lamps being installed which locks in the inefficiencies until the home is renovated some time in the future. The Commission is interested in proposals that will address this issue.

Key barriers to the uptake of more efficient lighting design include:

- Information – a lack of client knowledge about the "value add" of specialist lighting design expertise, about how to access specialist lighting design knowledge and about lack of client knowledge of how to formulate design brief (refer to the key

findings and recommendations outlined in the "Information Barriers to Growth" report as summarised in section 1.8 above).

- Architects controlling the project budget having a reluctance to engage sub-consultants (i.e. lighting consultants).
- Architects acting as "lighting designers" without sufficient or current specialist lighting expertise.
- Electrical contractors acting as "lighting designers" without sufficient specialist knowledge.
- The unwillingness of some clients to pay for advice that they would otherwise receive for "free".

1.9.7 Expected term of contracts for efficient lighting programmes

The Commission will seek to contract with supplier(s) to implement selected programmes and to commence a phased rollout of these programmes in early 2009.

The term of the contract will take account of the nature of the programme proposed.

1.9.8 Possible programme structures

Outlined below are some of the possible programme and payment structures that may be considered. However, the Commission is also open to considering other options that may be proposed, providing the desired purpose and aims of the RFP are achieved.

Information programmes

Information programmes may include the design, production and distribution of information to meet the needs of a specific market or markets. For example, this may include development of suitable point of sale material, sales reference guides, industry training/education programmes, or the delivery of the relevant information to one or more target markets via a relevant communications medium.

Investment subsidies

Investment subsidies may entail direct financial assistance from the Commission to address price barriers to consumers who wish to invest in more efficient alternatives. The Commission's subsidy of the purchase of energy efficient light bulbs is a current example of an investment subsidy.

These examples are not provided with any preference to one over the other, or over any alternative payment structure.

1.9.9 Financial scale

For the year ending 30 June 2009, the Commission has an appropriation of \$12 million for electricity efficiency initiatives in the commercial and industrial sectors and for efficient lighting programmes.

The Commission currently estimates that up to \$3.5 million will be available in 2008/09 for programmes arising out of this RFP and an RFP that was recently released for Industrial Motors Programmes.

Proposals submitted in response to this RFP will be assessed in conjunction with responses to the Industrial Motors RFP and the available funding will be applied to the proposals considered to best utilise the available funds.

For programmes that are anticipated to run beyond the current financial year, the Commission's anticipated appropriation for electricity efficiency programmes for 2009/10 is \$15 million across the three areas of commercial, industrial and lighting.

The funding estimate is provided only as an indication of the *potential* scale of the Efficient Lighting Programme and should not be interpreted as a project budget or a contract budget.

1.10 Commission objective of this RFP

The Commission's objective from this RFP is to identify suitable parties with whom the Commission will seek to contract to implement selected programmes, and to commence a phased rollout of these programmes from early 2009.