

[In Confidence]

Office of the Minister of Energy and Resources

The Chair, Cabinet Environment, Energy and Climate Committee

## **Proposal to revise minimum energy performance standards for energy-using products**

### **Proposal**

- 1 I propose to introduce revised minimum energy performance standards (MEPS) for commercial refrigeration and household refrigerators and freezers, and to make minor revisions and changes to the format of the relevant regulations. I also propose to rescind a previous decision on distribution transformers and be given delegated authority to release non-contentious consultation papers on industrial products.

### **Executive Summary**

- 2 Minimum energy performance standards (MEPS) and energy labelling requirements apply to a range of products under the *Energy Efficiency (Energy Using Products) Regulations 2002* (the Regulations).
- 3 The changes I am proposing will save New Zealand an estimated 4,507 gigawatt hours of electricity and 0.5 million tonnes of associated emissions over the effective lifetime of the proposed regulation, worth a combined \$136.9 million in net benefit (at net present value), at a total cost of \$73.44 million. The benefits far outweigh the compliance costs to businesses (\$2.21 million) and costs to government (\$0.58 million).
- 4 The proposals include introducing revised MEPS for commercial refrigeration and household refrigerators and freezers, and making minor revisions to requirements for electric motors, dishwashers, clothes washing machines, clothes dryers and external power supplies.
- 5 These measures have been developed under the Trans-Tasman Equipment Energy Efficiency (E3) Programme. Adopting these measures will keep our regulation aligned with Australia, which facilitates trade, reduces business costs, and achieves administrative efficiencies for both governments. Better alignment of New Zealand's product regulation with that of Australia also supports Closer Economic Relations (CER) and the Trans-Tasman Mutual Recognition Arrangement (TTMRA).
- 6 Each proposal has been through extensive public consultation and cost-benefit analysis for both New Zealand and Australia and has been approved for adoption in Australia by the Council of Australian Governments (COAG) Energy Council.

7 Keeping our regulation aligned with Australia will also necessitate changing the way the requirements are set out in the Regulations, and reversing a previous Cabinet decision to revise MEPS for distribution transformers<sup>1</sup>.

## Background

8 Since 2002, MEPS and labelling have saved New Zealanders \$848 million in avoided energy costs, 34.7 petajoules<sup>2</sup> in energy, and 1.4 million tonnes in energy-related greenhouse gas emissions.

9 The Energy Efficiency and Conservation Authority (EECA) estimates that further savings of 109 petajoules<sup>3</sup> in energy and 5.17 million tonnes of greenhouse gas emissions could be made through raising energy efficiency in New Zealand.<sup>4</sup> This helps fulfil the objective of “Innovative and efficient use of electricity” under the New Zealand Energy Efficiency and Conservation Strategy (2017-2022) (NZECS)<sup>5</sup>. Improving the efficiency of products can help realise this potential.

10 Cabinet endorsed the investigation of measures for certain products, including those covered by this paper, through noting the E3 Forward Work Plan in 2013. As part of this, Cabinet authorised the Minister of Energy and Resources to release non-contentious consultation papers related to products on the E3 Work Plan 2013/14 up to and beyond 30 June 2014 [EGI Min (13) 27/12 refers].

11 In November 2017, the COAG Energy Council voted to implement measures developed under the E3 Programme for commercial refrigeration, and household refrigerators and freezers in Australia.

12 I am now seeking approval from Cabinet to these measures in New Zealand along with other minor proposals.

## Comment

13 To be included on the E3 Programme, products must meet feasibility and cost-effectiveness criteria, including how significant their energy consumption is likely to be, the potential to save energy and whether this can be achieved without regulation, and what administrative complexities may be involved.

14 A summary of the regulatory development process and proposed measures for each product is outlined below, followed by a combined summary of the cost benefit analysis.

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<sup>1</sup> A device used in distribution networks that lowers the voltage of electricity so that it can be used for electrical equipment.

<sup>2</sup> 34.7 petajoules equates to 9,639 gigawatt hours, which is enough electricity to power 1,023,663 homes for a year.

<sup>3</sup> 109 petajoules equates to 30,278 gigawatt hours, which is enough electricity to power 3,215,527 homes for a year.

<sup>4</sup> These are potential cumulative savings to 2035, and include adopting best available technology and adapting how products are used.

<sup>5</sup> A statutory document prepared under the Energy Efficiency and Conservation Act 2000, which guides EECA's work programme.

## *Commercial refrigeration*

- 15 Revisions to MEPS for commercial refrigeration products are proposed, to reflect the more energy efficient products in the market, make compliance easier, and align with international best practice.
- 16 Refrigerated commercial cabinets are used to display and to store food in retail and commercial premises. They run continuously, resulting in significant energy use, running costs, and greenhouse gas emissions. New Zealand businesses own around 157,000 refrigerated commercial cabinets. Sales are expected to increase by over 40 per cent by 2035.
- 17 A review of the existing MEPS requirements (introduced in 2004) identified the following problems:
  - 17.1 Current MEPS levels are set too low for the market and are no longer driving improved efficiency;
  - 17.2 The scope<sup>6</sup> is not clearly defined and no longer reflects available technologies. Further, storage cabinets (which account for around 20 per cent of the stock) are largely exempt despite being similar to display cabinets;
  - 17.3 The current test method is overly complex and specific to New Zealand and Australia, making testing more costly (especially for globally traded products already tested to overseas standards);
  - 17.4 The complex and ambiguous nature of the requirements means that compliance rates are not as high as they should be.
- 18 I propose to adopt the following measures in New Zealand to address these problems:
  - 18.1 Extend the scope to cover commercial storage cabinets;
  - 18.2 Set MEPS at the levels the European Commission applied to refrigerated display cabinets in 2017 and to refrigerated storage cabinets in 2018;
  - 18.3 Adopt the international test method set out in ISO 23953-2:2015<sup>7</sup> for refrigerated display cabinets, and the European test methods set out in EN 16901<sup>8</sup> for ice cream freezers, EN 16838<sup>9</sup> for gelato cabinets, and EN 16825<sup>10</sup> for storage cabinets;

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<sup>6</sup> Defining which products are covered.

<sup>7</sup> ISO 23953-2:2015 Refrigerated display cabinets — Part 2: Classification, requirements and test conditions (excluding requirements for beverage vending machines).

<sup>8</sup> EN 16901:2016 Ice-Cream Freezers - Classification, Requirements And Test Conditions

<sup>9</sup> EN 16838:2016 Refrigerated display scooping cabinets for gelato - Classification, requirements and test conditions.

<sup>10</sup> EN 16825: 2016 Refrigerated storage cabinets and counters for professional use - Classification, requirements and test conditions (excluding parts relating to blast cabinets, condensing units and process chillers).

- 18.4 Apply an introduction date of no earlier than 1 December 2019, to allow industry some lead-in time to prepare for the changes.
- 19 COAG Energy Ministers agreed in November 2017 to adopt these measures in Australia. If adopted in New Zealand, these measures are forecast to deliver a net benefit to the economy of \$87.44 million from 256 kilo tonnes of avoided greenhouse gas emissions and 1,986 gigawatt hours of avoided electricity for products sold between 2017 and 2035.<sup>11</sup>
- 20 Industry was consulted on proposed options for updating the regulations between July and August 2016 via a consultation paper (for which 21 submissions were received) and public meetings in Sydney, Melbourne, Brisbane and Auckland attended by 57 industry representatives from 44 companies. The proposal was also informed by a working group that included industry representatives. Following consultation, the proposal was revised to streamline compliance requirements for small businesses, withdraw labelling measures, clarify product definitions, and streamline registration.

#### *Household Refrigerators and Freezers – proposed revisions to MEPS*

- 21 On average, household refrigerators and freezers account for about ten percent of household electricity demand. New Zealanders own about 2.3 million refrigerators and 1.1 million freezers and about 212,800 units are sold each year.
- 22 Revisions to MEPS for household refrigerators and freezers (which were last updated in 2005) are proposed, to reflect the more energy efficient products in the market. Adoption of an international test method is also proposed, to reduce compliance costs and align with international best practice.
- 23 COAG Energy Ministers agreed in November 2017 to adopt the following measures in Australia:
- 23.1 Adopt MEPS levels equivalent to those that apply in the United States (as of 15 September 2014)<sup>12</sup>; and
- 23.2 Adopt the method of test specified in Parts 1-3 of the international standard IEC 62552:2015<sup>13</sup> to replace the existing test method specified in the Australia/New Zealand Standard AS/NZS 4474.1:2007.
- 24 I propose that these measures come into effect from no earlier than 1 January 2021, to allow industry adequate time to prepare for the changes.

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<sup>11</sup> This includes the preceding years before the new MEPS come into force (in 2019) to account for the costs and benefits as suppliers prepare to be compliant with the new requirements, and as efficient products start to enter the market in higher volumes. The benefits extend to 2050, to account for the years that products sold to 2035 will remain in use.

<sup>12</sup> The new levels will replace the current ones, as specified in *AS/NZS 4474.2 Performance of household electrical appliances – Refrigerating appliances – Energy labelling and minimum energy performance standard requirements*.

<sup>13</sup> In full: *IEC 62552-1:2015 Household refrigerating appliances - Characteristics and test methods - Part 1: General requirements; Part 2: Performance requirements; and Part 3: Energy consumption and volume*.

- 25 If adopted in New Zealand, these measures are forecast to deliver a net benefit to the economy of \$49.46 million from 244 kilo tonnes of avoided greenhouse gas emissions and 2,521 gigawatt hours of avoided electricity for products sold between 2015 and 2030.<sup>14</sup>
- 26 Consultation with the industry in New Zealand and Australia began in 2011, when industry was first notified of the proposal to align with United States MEPS levels. Between 2011 and 2017, industry's input was sought on the proposed standards and the implementation timeframes. Consultation occurred on a full proposal in May 2017, and again in August 2017, concluding in agreement to delay implementation by a year.

#### *Rescinding Cabinet's previous decisions on distribution transformers*

- 27 In 2012, Cabinet agreed to implement updated MEPS for distribution transformers<sup>15</sup> [EGI Min (12) 29/10 refers]. Australia was expected to adopt these same changes but decided not to proceed with them following a programme review.
- 28 The updated MEPS agreed by Cabinet will be out-of-date by the time distribution transformers are next reviewed under the E3 Programme. I therefore propose that the decision is rescinded.

#### *Re-formatting and incorporating minor updates into regulation*

- 29 I also propose some changes to the way the Regulations set out requirements for products. Currently, the Regulations feature tables at the back which list standards incorporated by reference against each regulated product class. This format offers no scope for setting out requirements directly in the Regulations or modifying material incorporated by reference.
- 30 The proposed changes will offer more flexibility to incorporate requirements (such as MEPS levels) directly. They will also make it easier to modify material incorporated by reference (for example, in order to specify which sections are relevant, make minor adaptations to international standards for the local market, or make necessary clarifications).
- 31 These changes are necessary to ensure that the Regulations can effectively incorporate the measures proposed in this paper and can remain aligned with Australian regulation.
- 32 The changes will also allow us to incorporate a number of minor clarifications<sup>16</sup> that Australia has already incorporated in its regulatory instruments (which are

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<sup>14</sup> This includes the preceding years before the new MEPS come into force (in 2021) to account for the costs and benefits as suppliers prepare to be compliant with the new requirements, and as efficient products start to enter the market in higher volumes. The benefits extend to 2050, to account for the years that products sold to 2030 will remain in use.

<sup>15</sup> A device used in distribution networks that lowers the voltage of electricity so that it can be used for electrical equipment.

<sup>16</sup> For example, when a brand of spinach specified as a soiling agent in dishwasher testing ceased to be available, an alternative brand needed to be specified.

'determinations' issued under the Australian Commonwealth Greenhouse and Energy Minimum Standards (GEMS) Act 2012) in order to resolve existing misalignment between New Zealand and Australian regulation.

### *Proposed minor updates*

33 I propose the following minor updates:

33.1 Updates to labelling requirements for dishwashers, clothes washing machines, and clothes dryers (adopted by Australia in 2015) will allow products to display an energy rating label with an expanded rating scale of ten stars (instead of the current six-star version) to show performance exceeding a six-star level.

33.2 Updates to MEPS for external power supplies<sup>17</sup> (adopted by Australia in 2014) will allow them to display a high efficiency compliance mark to indicate performance well above the minimum (MEPS-compliant) level.

33.3 Updates to MEPS for three-phase cage induction motors (electric motors)<sup>18</sup> will replace outdated test requirements for determining energy consumption in Australia/New Standard AS/NZS 1359.5:2004<sup>19</sup> with those of the international standard IEC 60034-2-1:2014. The proposal also adjusts MEPS for electric motors to make them compatible with IEC 60034-2-1:2014, and updates the scope of electric motors to align with the scope that will apply under the GEMS (Three Phase Cage Induction Motors) Determination 2012 when it is next updated.

34 I propose other minor updates (adopted by Australia in 2012<sup>20</sup>) to address technical and interpretive issues for air conditioners, chillers, clothes washing machines, close control air conditioners, dishwashers, external power supplies, household refrigerating appliances, refrigerated display cabinets, rotary clothes dryers, set-top boxes, television sets, three-phase cage induction motors, and tubular fluorescent lamps.

### *Delegated authority to release consultation papers on industrial products*

35 The E3 work plan<sup>21</sup> was updated in 2016/17 and 2017/18 and now features additional products – industrial products (such as pumps and boilers) – that were not in the version cited by Cabinet in 2013 [EGI Min (13) 27/12 refers]. My officials plan to consult on regulatory proposals for these products later this year. I therefore seek Cabinet's agreement to extend my existing delegated authority to release non-contentious consultation papers relating to these products.

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<sup>17</sup> A device used to convert mains voltage to a level suitable for appliances (such as laptops).

<sup>18</sup> These are used to power industrial and other equipment (such as industrial fans and air conditioning systems).

<sup>19</sup> AS/NZS 1359.5:2004: Rotating electrical machines – General requirements – Part 5: Three-phase cage induction motors – High efficiency and minimum energy performance standard requirements.

<sup>20</sup> To incorporate "regulatory rulings" issued under the E3 Programme between 2004 and 2012.

<sup>21</sup> Now referred to as the E3 Prioritisation Plan.

*Benefits and costs of introducing the proposed measures*

Table 1: Benefit and cost summary

Product	Benefits			Costs				Summary	
	Energy saving (\$M)	GHG saving (\$M)	Total benefits (\$M)	Capital costs (\$M)	Govt costs (\$M)	Cost to comply (\$M)	Total costs (\$M)	Net benefit (\$M)	Benefit to cost ratio
Refrigerators and freezers (2015-2030 <sup>22</sup> )	\$96.46	\$2.79	\$99.25	\$49.59	\$0.10	\$0.10	\$49.79	\$49.46	1.99
Commercial refrigeration (2017-2035)	\$108.13	\$2.97	\$111.10	\$21.07	\$0.48	\$2.11	\$23.65	\$87.44	4.70
<b>Total</b>	<b>\$204.59</b>	<b>\$5.76</b>	<b>\$210.35</b>	<b>\$70.66</b>	<b>\$0.58</b>	<b>\$2.21</b>	<b>\$73.44</b>	<b>\$136.90</b>	<b>2.86</b>

- 36 The costs and benefits to New Zealand from implementing the proposed measures are summarised in Table 1 (at net present value). In total, these proposals will save 4,507 gigawatt hours in electricity and 0.5 million tonnes in greenhouse gas emissions over the effective lifetime of the proposed regulation, worth a combined \$136.9 million in net benefit, at a total cost of \$73.44 million. The assessment period for each proposal relates to when market transformation is expected to occur as a result of the proposed measures.
- 37 Benefits consist of reductions in energy costs due to products operating more efficiently and in the cost of offsetting greenhouse gas emissions related to their energy use. Costs are made up of increased capital investment to supply products that can meet higher standards of efficiency, additional compliance costs imposed on businesses, and the cost to the government to implement and enforce the proposed measures.
- 38 The benefit shown is the national benefit calculated using the long-run marginal cost of new electricity generation. Accordingly, resource costs are used to calculate the capital cost of improving product efficiency, so that the costs and benefits remain proportionate to each other<sup>23</sup>.

<sup>22</sup> Costs and benefits are assessed for products sold between 2015 and 2030, with the expectation that more efficient models start to enter the market before the proposed measures come into force (in 2021) as suppliers gear up to meet the new requirements. Benefits extend to 2050, to account for the years that products sold to 2030 will remain in use.

<sup>23</sup> Alternatively, consumer costs and benefits could be assessed using inputs that reflect the full retail value of energy and appliances.

### *Impacts on business*

- 39 Businesses will incur compliance costs to educate staff, carry out additional testing and registration, update records, and provide additional sales data (for newly regulated products).
- 40 Adopting international standards reduces costs for businesses already required to meet these standards overseas. Moreover, testing and registration costs are mostly already incurred for the Australian market, as only products unique to the New Zealand market need to be registered locally. Therefore, the compliance costs identified for New Zealand are low.
- 41 The proposed measures are not expected to have adverse impacts on competition. 'Deemed to comply' provisions have been developed for local commercial refrigeration businesses that supply in low volumes and would otherwise face disproportionate compliance costs.
- 42 Transitional provisions will apply to products manufactured in, or imported into, New Zealand prior to the new requirements coming into force, meaning these products will not need to comply with the new requirements.

### *Impacts on consumers*

- 43 Consumers will benefit from lower energy costs over the lifetime of the appliances purchased, due to better energy performance. Although consumers will benefit overall, they may initially pay higher purchase prices for products, while businesses seek to recover the increased capital costs of production. However, the price increase per unit is very small compared to the overall cost of the product, and the payback period tends to be short.
- 44 For household refrigerators and freezers, for example, the forecast price increase ranges from \$3.10 to \$80.30 per unit, depending on the type purchased. At the top end, those spending an extra \$80.30 on their appliance would recover this cost within 1.4 years via energy savings worth \$52.10 per year, and would go on to gain about \$550.00<sup>24</sup> in net benefits over twelve years of service.

### **Consultation**

- 45 The following departments have been consulted on this paper: Department of the Prime Minister and Cabinet, Treasury, Energy Efficiency and Conservation Authority, Ministry for the Environment, Ministry of Foreign Affairs and Trade, WorkSafe New Zealand, and Parliamentary Counsel Office.
- 46 Consultation that meets the requirements of section 36(2) of the Energy Efficiency and Conservation Act 2000 has been undertaken for each proposal, as summarised in the comment section above. The requirements are that the proposals are publicly notified, and that interested persons are given reasonable time to make submissions, including persons that the Minister considers appropriate.

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<sup>24</sup> [Decision Regulation Impact Statement – Household Refrigerators and Freezers](#) (figures not discounted).

- 47 There will be further consultation when the notification requirements in Section 51 of the Legislation Act 2012 are met (this requires me to make copies of material proposed for incorporation by reference available for inspection free of charge, allow a reasonable opportunity for comment, and consider any comments made).

### **International obligations**

- 48 World Trade Organisation (WTO) Agreement on Technical Barriers to Trade (TBT) obligations have been met for these proposals. The WTO TBT notification period has elapsed and no comments have been received<sup>25</sup>.

### **Financial Implications**

- 49 There are no financial implications arising from these proposals. Monitoring and compliance of the Regulations will be met within existing EECA funding.

### **Human Rights**

- 50 There are no human rights implications arising from these proposals.

### **Legislative Implications**

- 51 The *Energy Efficiency (Energy Using Products) Regulations 2002*, made under the Energy Efficiency and Conservation Act 2000, will need to be amended to give effect to the proposals.

### **Quality of the Impact Analysis**

- 52 The Regulatory Impact Analysis Review Panel has reviewed the attached Regulatory Impact Summaries prepared by the Ministry of Business, Innovation and Employment. They consider that the information and analysis summarised in them meets the criteria necessary for Ministers to fairly compare the available policy options and take informed decisions on the proposals in this paper. The other regulatory changes proposed in this paper do not require regulatory impact analysis as they are only minor.

### **Publicity**

- 53 Stakeholders will be updated by email once decisions are made on proposals, and EECA's website will be updated. This paper and associated regulatory impact summaries will be published on the Ministry of Business, Innovation and Employment's website, subject to any redactions consistent with the *Official Information Act 1982*.

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<sup>25</sup> Refrigerators and freezers and commercial refrigeration were notified in December 2017, and comments closed in March 2018.

## Recommendations

It is recommended that the Committee:

- 1 **Note** that the proposals in this paper have been developed under the Trans-Tasman Equipment Energy Efficiency (E3) Programme;
- 2 **Note** that adopting the proposals will better align New Zealand's product regulation with that of Australia, meeting our commitments under Closer Economic Relations (CER) and the Trans-Tasman Mutual Recognition Arrangement (TTMRA);
- 3 **Note** that minimum energy performance standards and energy rating labels provide net energy and environmental benefits valued at \$136.9 million from avoided electricity and greenhouse gas emissions;
- 4 **Agree** to amend the Energy Efficiency (Energy Using Products) Regulations 2002 to give effect to the following:
  - 4.1 Extend the scope of minimum energy performance standards for commercial refrigeration to include refrigerated storage cabinets;
  - 4.2 Set minimum energy performance standards at the levels the European Commission applied to refrigerated display cabinets in 2017 and to refrigerated storage cabinets in 2018, from no earlier than 1 December 2019;
  - 4.3 Adopt the International Standards Organisation (ISO) test method for refrigerated display cabinets set out in ISO 23953-2:2015, and European test methods set out in EN 16901 for ice cream freezers, EN 16838 for refrigerated display scooping cabinets for gelato, and in EN 16825 for refrigerated storage cabinets, from no earlier than 1 December 2019;
  - 4.4 Adopt deemed to comply provisions for refrigerated cabinets supplied in low volumes;
  - 4.5 Revise minimum energy performance standards for household refrigerators and freezers to adopt the levels that apply in the United States (as of 15 September 2014) from no earlier than 1 January 2021;
  - 4.6 Adopt the method of test for household refrigerators and freezers to that set out in the International Electrotechnical Committee (IEC) Standard (IEC 62552: 2015 Parts 1-3) from no earlier than 1 January 2021;
  - 4.7 Update the regulatory requirements for dishwashers, clothes washing machines and rotary clothes dryers, in line with those adopted in Australia in 2015 under the Australian Commonwealth Greenhouse and Energy Minimum Standards (GEMS) (Dishwashers) Determination 2015, the GEMS (Clothes Washing Machines) Determination 2015, and the GEMS (Rotary Clothes Dryers) Determination 2015;
  - 4.8 Update the regulatory requirements for external power supplies, in line with the changes adopted in Australia in 2014 under in the GEMS (External Power Supplies) Determination 2014;

- 4.9 Adopt the international test method IEC 60034-2-1:2014 used for determining the energy consumption of three-phase cage induction motors (electric motors) in place of the currently specified test method A or test method B in Australia/New Standard AS/NZS 1359.5:2004;
  - 4.10 Adjust the minimum energy performance standards for electric motors to make them compatible with IEC 60034-2-1:2014;
  - 4.11 Update the scope of electric motors in the Regulations to align with the scope that will apply under the GEMS (Three Phase Cage Induction Motors) Determination 2012 when it is next updated;
  - 4.12 Incorporate minor technical and interpretative updates for air conditioners, chillers, clothes washing machines, close control air conditioners, dishwashers, external power supplies, household refrigerating appliances, refrigerated display cabinets, rotary clothes dryers, set-top boxes, television sets, three-phase cage induction motors, and tubular fluorescent lamps;
  - 4.13 Update the format of the Regulations as required to allow for greater flexibility in the method of incorporating technical information;
- 5 **Agree** to rescind the 2012 Cabinet decision to implement updated minimum energy performance standards for distribution transformers [EGI Min (12) 29/10 refers] as Australia did not implement the changes and they are now out-of-date;
  - 6 **Authorise** the Minister of Energy and Resources to release non-contentious consultation papers on E3 Programme proposals on industrial products;
  - 7 **Invite** the Minister of Energy and Resources to issue drafting instructions to the Parliamentary Counsel Office to give effect to the above decisions.
  - 8 **Authorise** the Minister of Energy and Resources to make decisions on minor additional changes, consistent with the policy intent, on any issues that arise during the drafting process.
  - 9 **Agree** that this paper be published on the website of the Ministry of Business, Innovation and Employment, subject to any redactions consistent with the *Official Information Act 1982*.

Authorised for lodgement

Hon Dr Megan Woods

Minister of Energy and Resources