TE TARI TIAKI PŪNGAO
ENERGY EFFICIENCY & CONSERVATION AUTHORITY

[redacted]

9 May 2022

Kia ora [redacted]

**Re: Official Information Act request – Details of EECA's Technology Demonstration Fund**

Thank you for your email on 30 March 2022, in which you requested details of the Technology Demonstration Fund, administered by the Energy Efficiency and Conservation Authority (EECA). Please see below EECA's response to your request.

***Details of the fund and eligibility criteria. Including if funding needs to be paid back, any interest rates incurred and payback timeframes.***

> The Technology Demonstration Fund was established in 2013, to support the early adoption of proven technology or an innovative process improvement opportunity that has yet to be widely deployed in New Zealand.
>
> Co-funding of up to 40% of the costs of an eligible project (generally limited to $100,000) is available to businesses to reduce the risk to the early adopter. Projects that displace fossil fuelled process heat can receive up to $250,000. Occasionally, EECA may offer dedicated funding rounds for specified technologies of interest with revised funding amounts. This funding does not have to be paid back.
>
> For more information on the Technology Demonstration Programme's eligibility criteria, refer to the 'Who should apply' section: https://www.eeca.govt.nz/co-funding/technology-demonstration/

***A list of organisations and businesses that have received money from this fund in the past 3 years, including the value of each contribution and the reason the money was given. (Please indicate whether figures are GST inclusive or exclusive).***

> See Appendix 1 for a list of all organisations and businesses that have received funding approval for their Technology Demonstration project between 22 March 2019 and 22 March 2022 (dates inclusive). All figures in the table are GST exclusive.

***Any and all advice or consultation on the effect any of this funding (over the past 3 years) would have on New Zealand's net emissions in relation to individual projects or the fund as a whole.***

Emissions reduction is not the sole focus of the Fund. Rather, projects receive funding support based on their ability to demonstrate technologies that will either increase energy efficiency and/or reduce carbon emissions. This reflects the core purpose of the Technology Demonstration Fund: to support the early adoption of proven technology, or an innovative process improvement opportunity, that has yet to be widely deployed in New Zealand.

Projects are individually assessed for funding with quantitative and qualitative criteria. Quantitative inputs include the cost of the energy savings and cost of carbon abatement (Appendix 1 provides details of each project's estimated direct carbon reductions). The qualitative evaluation is conducted by the EECA Assessment Panel, assessing a project's demonstration value and replication potential (also included in Appendix 1).

Project outcomes are promulgated through news articles and case studies on EECA's website to promote replication and increase New Zealand's energy productivity and/or reduce carbon emissions.

***All significant/material documents (including emails) relating to EECA funding or grants given to Wellington Electric Boat Building Company Limited and/or East by West Ferries. This particularly includes funding applications, internal decision memos, and funding agreements, and any other documents relating to key milestones or decision-points around this funding.***

EECA has a Funding Agreement with East By West Company Limited for Technology Demonstration funding support for the construction and deployment of an electric commuter ferry in Wellington.

EECA has no funding agreements with, and has not provided any funding to, Wellington Electric Boat Building Company Limited who area technology supplier, as funding is only available to technology end users.

Tabulated below are a list of documents essential to understand the project and funding obligations, which we have collated and attached.

| | |
|---|---|
| **1** | East By West Ferry Application Final |
| **2** | East West Electric Ferry assessment April 2019 |
| **3** | East By West Approval Memo SIGNED |
| **4** | East by West Tech Demo Project Funding Agreement SIGNED |
| **5** | East By West EECA Tech Demo – REPORT 1 FINAL |
| **6** | East by West PFA Milestone Extension |
| **7** | Staged plan for ferry charging v2 |
| **8** | East By West Funding Agreement 2 Final SIGNED |
| **9** | Re_Wellington Electric Boat Building Company L_1rc7d88p (email on financial due diligence) |

| | |
|---|---|
| **10** | EECA_Claimformsigned12July21 |
| **11** | File Note – Wellington Electric Boat Buildings C_1rc7tim3 |
| **12** | East By West Funding Agreement VOC2 SIGNED |
| **13** | Certificate of Survey Ika Rere |
| **14** | East By West Claim_1rcqbroj |

Note that the final part of your request (regarding Wellington Electric Boat Building Company Limited and East by West Ferries) was refined in scope with your agreement to enable a timely response.

You have the right, by way of complaint to the Ombudsman, to seek an investigation and review of the Energy Efficiency and Conservation Authority's response to your information request. You can do this by email to info@ombudsman.parliament.nz or by writing to the Office of the Ombudsman, PO Box 10152, Wellington 6143.

Yours sincerely

[redacted]

Andrew Caseley
**EECA Chief Executive**

**Appendix 1: All projects supported through the Technology Demonstration Fund over the past three years**

| Organisation and project description | Time of funding approval | Total co-funding amount | Reason |
|---|---|---|---|
| **Christchurch International Airport Limited (CIAL)**<br>*Heat pump technology* | 03/04/2019 | $200,000 | • Technology innovation: Replacing CIAL's International Terminal Building's diesel/LPG boilers and existing chillers and associated cooling towers with a Ground Sourced Heat Pump (GSHP). HP hot water technology is well proven overseas but not yet widely applied/demonstrated in New Zealand.<br>• Annual direct CO2 reductions: 994 tonnes $CO_2e$<br>• Replication potential: Potential for replication in NZ for process heat where medium temperature hot water needs to be in the region of 70 degrees. Demonstrate the broader benefits of optimising heating and cooling through the single system. Potential to replace existing high carbon potential refrigerants win existing systems with R1234ze. |

| Organisation and project description | Time of funding approval | Total co-funding amount | Reason |
|---|---|---|---|
| **Ovation New Zealand Limited** *High temperature heat pump technology* | 15/05/2019 | $225,600 | • Technology innovation: Heat Pump hot water technology is well proven, but with very limited uptake in this sector. In this project the technology is modified to achieve cost efficiencies. Although the solution is modified by Ovation the same principles will apply at other sites with similar demand for heating and cooling.<br>• Annual direct CO2 reductions: 256 tonnes $CO_2e$<br>• Replication: Potential for replication in NZ industry for process heat where hot water is generated in close proximity to refrigeration installations. Most meat processing plants as well as food & dairy plants. |
| **Airport Farm Trustee Limited** *Poultry shed ventilation system (DACS)* | 23/05/2019 | $70,000 | • Technology innovation: Patented improvements to existing systems. Well proven overseas, but no existing installations/demonstration in New Zealand settings.<br>• Annual direct $CO_2$ reductions: 134 tonnes $CO_2e$<br>• Replication: More than 50 new and existing sheds per annum. Expect minimum of 20% to be DACS once savings are proven. |
| **East By West Ferries** *Electric ferry* | 30/05/2019 | $300,000 | • Technology innovation: Technology is well proven internationally, but this would be the first scheduled electric passenger ferry in New Zealand. High replication/scale potential if upfront capital cost barriers are overcome.<br>• Annual direct $CO_2$ reductions: 486 tonnes $CO_2e$<br>• Replication: Minimum 35 ferries within next 10 years. |

| Organisation and project description | Time of funding approval | Total co-funding amount | Reason |
|---|---|---|---|
| **Canterbury Linen Services Limited**<br>*Toploader biofuel supply system* | 01/07/2019 | $100,000 | • Technology innovation: The technology is new to New Zealand but well proven internationally. Simple concept in principle – instead of a moving floor a sweeping arm moves across the top of the wood chip pile pushing the chips onto the supply auger. Demonstration would encourage uptake among other wood energy users.<br>• Annual direct $CO_2$ reductions: 3,117 tonnes $CO_2e$<br>• Replication: Potential for replication in NZ for the larger wood energy conversions. The technology is actually cheaper than conventional wood supply systems. |
| **McCain Foods (NZ) Limited**<br>*Pulse Electric Field technology project* | 22/07/2019 | $250,000 | • Technology innovation: Pulsed Electric Field technology can potentially eliminate fossil fuelled process heat in a number of industries. The technology is new to NZ but is being increasingly used overseas.<br>• Annual direct $CO_2$ reductions: 1,407 tonnes $CO_2e$<br>• Replication: Potential for replication in NZ industry for process heat where hot water is used for pre-treating food. Most food processing plants as well as meat & dairy plants. |

| Organisation and project description | Time of funding approval | Total co-funding amount | Reason |
|---|---|---|---|
| **Christchurch City Council**<br>*Wastewater heat recovery project* | 29/07/2019 | $100,000 | • Technology innovation: Logical technology not currently being utilised in NZ. Utilises energy from a relatively abundant waste steam. Better heat availability than ground source and consistent across the year.<br>• Annual direct $CO_2$ reductions: 84 tonnes $CO_2e$. Note: base case is GSHP. Benefits higher if replacing fossil fuel boiler.<br>• Replication: Some replication potential in larger metropolitan areas with access to larger sewer systems. Estimated 5 projects over the next 10 years. Facility/project dependent. |
| **Food Partners Limited**<br>*Vacuum cooling* | 29/08/2019 | $50,000 | • Technology innovation: Vacuum cooling is a proven technology, with an improved and much lower capital cost version of a previously underutilised technology. Increasingly used in Europe. Demonstration in New Zealand settings would encourage wider uptake in the food processing sector.<br>• Annual direct $CO_2$ reductions: 33 tonnes $CO_2e$. The project will save electricity – it is not focussed on emission reduction.<br>• Replication: Large potential market – in the vegetable, prepared food and meat processing industries. |

| Organisation and project description | Time of funding approval | Total co-funding amount | Reason |
|---|---|---|---|
| **AFFCO New Zealand Limited**<br>*Hydraulic filter plate press technology project* | 13/09/2019 | $80,000 | • Technology innovation: Hydraulic filter plate press technology which will remove process heat by removing steam requirement for dewatering process. This treatment is currently done by using direct steam in a decanter. This technology is new to NZ and has potential process heat removal benefits across a number of processing industries.<br>• Annual direct $CO_2$ reductions: 91.5 tonnes $CO_2e$ (potential reduction of 704 $CO_2e$/annum in future)<br>• Replication: Potential for replication in NZ meat industry for process heat where direct steam is used for dewatering process in a decanter. Most meat processing plants as well as fairy plants. |
| **Nelson Pine Industries Limited**<br>*Re-generative Drive system project* | 4/10/2019 | $18,000 | • Technology innovation: Use of regenerative drives instead of breaking resistors to convert wasted kinetic energy and useful electrical energy. New to New Zealand but well proven overseas. Demonstration would reduce barriers to uptake in industrial sectors.<br>• Annual direct $CO_2$ reductions: 31 tonnes $CO_2e$. This is not an emission reduction project (electricity savings).<br>• Replication: Potential for replication in NZ industry where they use conveyor belts that require frequent start/stop or forward and backword (up and down) movements. |

| Organisation and project description | Time of funding approval | Total co-funding amount | Reason |
|---|---|---|---|
| **Waste Management NZ Limited**<br>*Electrification project* | 5/12/2019 | $19,616 | • Technology innovation: Replacement of traditional diesel fuelled hot water high pressure cleaners with electrically heated units. No known instances in New Zealand but proven internationally. Demonstration would encourage further uptake in the waste sector.<br>• Annual direct $CO_2$ reductions: 107 tonnes $CO_2$/annum.<br>• Replication potential: Considerable replication potential with 20 Waste Management sites plus other truck washes. |
| **Open County Dairy**<br>*Electrode Boiler* | 11/02/2020 | $200,000 | • Technology innovation: At 13MW, this will be the largest electrode boiler in NZ, operating as a peaking boiler over a limited seasonal period. This project will prove that electrode boilers can meet the high technical/operational demands of a wide range of process heat users and ensure it is considered as an alternative to fossil fuelled heat.<br>• Annual direct $CO_2$ reductions: 6,798 tonnes $CO_2e$<br>• Replication: Reasonable replication potential with large number of coal boilers in New Zealand. Operating mode will determine economics. |

| Organisation and project description | Time of funding approval | Total co-funding amount | Reason |
|---|---|---|---|
| **Fonterra Limited**<br>*Coal to wood pellet boiler conversion* | 24/02/2020 | $200,000 | • Technology innovation: Conversion of a large coal boiler to wood pellets is innovative. New to New Zealand and few instances in the world. Demonstrating its applicability and benefits will encourage other process heat users to consider this as an alternative to coal.<br>• Annual direct $CO_2$ reductions: 82,630 tonnes $CO_2e$<br>• Replication potential: Considerable replication potential with large number of coal boilers in New Zealand |
| **Ngai Tahu Tourism Limited**<br>*Shotover Electric Jet Boat* | 4/06/2020 | $200,000 | • Technology innovation: Meets the 100% battery electric vessel requirement. High speed planning operation and shore-based charging system. Demonstration in this demanding setting would encourage further uptake in the jet boat fleet.<br>• Annual direct $CO_2$ reductions: 133 tonnes $CO_2e$<br>• Replication potential: Applicable to most jet boats in New Zealand. Total fleet numbers around 50. Great example of electrification that will be highly visible to large numbers of NTT customers. |

| Organisation and project description | Time of funding approval | Total co-funding amount | Reason |
|---|---|---|---|
| **Asaleo Care New Zealand Limited**<br>*Vacuum system upgrade* | 18/06/2020 | $100,000 | • Technology innovation: Proven technology in Europe and Asia. This would be the first installation in New Zealand and second in Australasia. Its demonstration would reduce barriers to replication across similar applications.<br>• Annual direct $CO_2$ reductions: 560 tonnes $CO_2e$<br>• Replication potential: This would be the first installation in New Zealand. Could be replicated at other pulp and paper sites: Norske Skog, Oji Fibre, SIG, NZ Sugar, and Dominion Salt. |
| **Electric Boat Co NZ Limited**<br>*Electric boats*<br><br>*NOTE: This is a different company to Wellington Electric Boat Building Company Limited.* | 30/09/2020 | $40,000 | • Technology innovation: Electric hire boats are already very prevalent in Europe. The technology is much underutilised in NZ and this project will make it accessible to the general public.<br>• Annual direct $CO_2$ reductions: 41 tonnes of $CO_2e$<br>• Replication: Significant potential market - there are over one million small boats in NZ. Converting just 10% to electric will reduce emissions by 240,000 tonnes per year. Substantial reductions in NOx emissions as well. |

| Organisation and project description | Time of funding approval | Total co-funding amount | Reason |
|---|---|---|---|
| **Forest Lodge Orchard Limited**<br>*Electric frost fans and energy battery system* | 19/10/2020 | $50,000 | • Technology innovation: New high efficiency electric fans recently developed. Improved from previous smaller fans. Combined with battery storage to manage grid capacity and network charges.<br>• Annual direct $CO_2$ reductions: 37 tonnes $CO_2e$<br>• Replication potential: Significant potential market – there is estimated 4-5000 existing frost fans and up to 200 new ones required annually. Potentially 50 new fans per year and 350,000 litres of diesel saved. |
| **Forest Lodge Orchard Limited**<br>*Electric tractor and battery system* | 28/06/2021 | $46,000 | • Technology innovation: New development which won the "Tractor of the Year" in USA in 2020. Has won numerous other awards e.g. "Top 10 New Product". No known instances in New Zealand, and a significant potential market.<br>• Annual direct $CO_2$ reductions: 50 tonnes $CO_2e$<br>• Replication: Significant potential market – there are thousands of tractors in use on NZ farms. |

| Organisation and project description | Time of funding approval | Total co-funding amount | Reason |
|---|---|---|---|
| **Central Otago District Council**<br>*Water source heat pump* | 2/08/2021 | $100,000 | • Technology innovation: The use of heat pump using a municipal water supply is done only at the Pioneer Pools in Christchurch, however this is using a heat pump with a much higher global warming potential (GWP). Demonstrating the technology at this higher capacity would show its replication potential in other regions.<br>• Annual direct $CO_2$ reductions: 265 tonnes $CO_2e$<br>• Replication: Considerable replication potential given the large number of community pools, though is most suited to climates with low ambient air temperatures. |
| **New Zealand Luxury Limited**<br>*Green bottle project* | 14/07/2021 | $200,000 | • Technology innovation: Establishment of a business for glass bottle washing technology to enable reuse instead of recycling, of which there are no known large-scale plants in NZ. There are a few local examples (ABC Swap a Crate, Oaklands Milk in Nelson, and The Bond Store (spirits)).<br>• Annual direct CO2 reductions: At 9.2 million bottles per year (230 working days at 8 hours per day), the annual emissions savings are 1,616 tonnes $CO_2e$.<br>• Replication: Considerable replication opportunity at this site alone. There is ample supply of bottles for reuse in NZ. Opportunity for replication in cities and major towns. |

| Organisation and project description | Time of funding approval | Total co-funding amount | Reason |
|---|---|---|---|
| **LeaderBrand Produce Limited**<br>*Hydro Vacuum Cooling* | 30/08/2021 | $58,625 | • Technology innovation: This technology is an advance on old vacuum cooling technology which fell out of favour. Current technology increasingly used in Europe. Used in the fresh vegetable industry in Australia.<br>• Annual direct $CO_2$ reductions: 64 tonnes $CO_2e$. This project will mainly save on electricity – it is not focused on emissions reductions.<br>• Replication potential: Significant potential market – in the vegetable, prepared food and meat processing industries. Definite interest in NZ by the fresh vegetable suppliers. EECA has funded this technology before for meat cooling process. |
| **Urgent Couriers Limited**<br>*Cargo e-bikes* | 10/09/2021 | $20,000 | • Technology innovation: Some examples of cycle cargo couriers being successful overseas, but very little uptake in NZ to date.<br>• Annual direct $CO_2$ reductions: 44.1 tonnes $CO_2e$<br>• Replication: High replication potential – there are many instances where electric cargo bikes could displace fossil vehicles for city couriers/delivery/freight applications. |

| Organisation and project description | Time of funding approval | Total co-funding amount | Reason |
|---|---|---|---|
| **Black Swamp Limited**<br>*Heat transfer system* | 16/12/2021 | $9,500 | • Technology innovation: Well deployed in NZ but new to the breweries sector. Demonstration would encourage its uptake in the sector.<br>• Annual direct $CO_2$ reductions: 32.6 tonnes $CO_2e$<br>• Replication: High replication potential in the sector – there are 200 plus small breweries in NZ. Easier/cheaper in new builds but retrofit is possible. |
| **Phytotecnia Limited**<br>*Hothouse ventilation system* | 16/12/2021 | $95,000 | • Technology innovation: Use of a combination of commercial systems to enable lower energy glasshouse operation is novel to NZ. Demonstration would encourage uptake in glasshouses across New Zealand which currently use fossil fuels.<br>• Annual direct $CO_2$ reductions: 87 tonnes $CO_2e$<br>• Replication: There are thousands of glasshouses in NZ and most are heated using fossil fuels. This will demonstrate electrification of indoor cropping in the strictest of controlled environments. (i.e. to meet pharmaceutical grade MC requirements). |
| **Epsom Girls Grammar School**<br>*CO2 heat pump heating system* | 14/12/2021 | $100,000 | • Technology innovation: Novel compressor system used within heat pumps. $CO_2$ refrigerant. Heat pump technology to displace gas. Demonstration would encourage uptake among other schools using gas boilers.<br>• Annual direct $CO_2$ reductions: 67 tonnes $CO_2e$<br>• Replication: Estimated to be 800 schools using gas boilers. Assume average of 200 MWh per school, this represents 26,000 tonnes pa that could be saved |

| Organisation and project description | Time of funding approval | Total co-funding amount | Reason |
|---|---|---|---|
| **Bremworth Carpet and Rugs Limited**<br>*Radio frequency dryer* | 16/03/2022 | $176,000 | • Technology innovation: Radio Frequency technology is used overseas for drying textiles and wool, it is not known to be commercially used for this application in NZ. Some commercial use of RF technology for defrosting food products in NZ.<br>• Annual direct $CO_2$ reductions: 208.8 tonnes $CO_2e$<br>• Replication: Estimated that approximately 10 other wool/textile sites in NZ including competitors could potentially save 2,000 T $CO_2e$/year. Four gas dryers at Napier site upon successful implementation. |

# Technology Demonstration Project

# Application Form

business@eeca.govt.nz

*The programme is open to businesses who want to:*

- *install energy efficient and/or renewable energy technologies that are provided by EECA registered technology suppliers. OR*
- *implement an innovative energy efficiency or renewable energy process improvement opportunity themselves.*

*If accepted, we will fund pay up to 40% of the project costs:*

- *Up to $100,000 for non-process heat projects*
- *Up to $250,000 for projects process heat projects.*

*To qualify for funding, your project must:*

- *Reduce energy intensity or greenhouse gas emissions*
- *Be applicable to multiple businesses in a sector*
- *Be financially viable, with a reasonable payback period.*

*In addition, you must meet the following requirements:*

- *For technology related projects the technology must be commercially available and the technology supplier must first be registered with EECA*
- *For innovative processes projects, any process change must be proven*
- *You will commit to having your project independently monitored and to promoting the project and outcomes.*

*Projects must meet minimum cost-effectiveness requirements for energy benefits and carbon reductions. We will not consider projects that have already started or would happen anyway. We will not fund projects involving the following:*

- *Heat pumps < 10 kW*
- *residential products*
- *standard commercial lighting, including LED's and office products*
- *solar hot water and photovoltaic panels*
- *electric light passenger vehicles (specialist electric vehicles may be considered)*
- *wind, hydro and marine electricity generation*
- *products under research and development.*

| **PROJECT DETAILS**<br><br>*All applicants must be legal entities registered in New Zealand* | |
|---|---|
| **Name of organisation or company** | East By West Company Limited, trading as East By West Ferries |
| **Description of the project - technology or process**<br><br>*Short description of the project and its potential demonstration value* | Demonstrate a 100% battery electric passenger ferry on the Wellington CBD to Eastbourne public transport route. The ferry will be ultra-fast charged at around 1 MW to meet commuter schedules, and is capable of transporting around 130 passengers per trip.<br><br>This first electric ferry demonstration in New Zealand will provide confidence to other New Zealand based ferry and marine vessel operators to consider electrification, based on East By West's experience and lessons learned.<br><br>While the project was public announced in December 2018, this was prior to East By West identifying additional costs and risks associated with deploying the electric ferry.<br><br>If co-funding from EECA is not available, then the new vessel will be fitted with 2 x John Deere 6090SFM75 marine diesel engines, one in each hull of the catamaran.<br><br>  <br> |
| **Status of technology**<br><br>*Details showing the project would use proven, commercial available technology / process improvement that is underutilised in NZ* | The newly launched Wellington Electric Boat Building Company (WEBB Co) will provide the electric ferry. The company draws extensively on existing New Zealand experience in manufacturing high energy efficiency carbon-fibre catamaran hulls (Malcolm Tennant design) to which it will add electric drive train technology now in use in the marine sector in Norway and other northern hemisphere countries.<br><br>It is the ultra-light weight carbon fibre construction and high efficiency of the hull design that makes battery electric operation feasible.<br><br>**Ferry specifications:**<br>• Passengers: 130<br>• Length: 18.5 metres<br>• Service speed: 20 knots<br>• Construction: carbon fibre foam cored<br>• Hull type: Tennant canoe-stern low drag catamaran<br>• Battery storage: 497 kWh at a capacity of 800 Ah<br>• Battery cooling: Ethylene Glycol Liquid cooling system<br>• Electric motors: Visedo/Danfoss Electric Power Drum Motors, Permanent Magnet Synchronous Machine, water cooled dual stators 278kW at 1800 RPM continuous rating<br><br>Ultra-fast charging of electric drive trains is established in the marine sector overseas, and has recently been demonstrated in |

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| | New Zealand for charging double-decker buses operated by Tranzit in Wellington.<br><br>The project will also examine the costs of electricity network connection and network usage for ultra-fast charging when transport peak demand coincides with electricity peak demand. These costs will be compared with the alternative of continuous slow charging of a shore based stationary battery with the ultra-fast charge being drawn from the battery storage. Should on-shore battery storage be selected, this will provide additional demonstration benefits transferrable to fast-charging road transport in areas where network capacity is limited. |
| **EECA registered supplier**<br><br>*If applicable* | Not applicable |
| **Total project cost**<br><br>*Have costs been approved by the business? What is the timeline for this?* | Total project costs were estimated at [redacted] (exclusive of GST) when East By West publicly announced in December 2018 its aspirations to add an electric ferry to its fleet. These costs were to be financed through a combination of private equity and commercial finance.<br><br>However, since the announcement, East By West has identified additional costs and project risks associated with deploying the ferry in Wellington for public transport. These include:<br><br>• The high electricity network connection and use costs for ultra-fast charging the ferry at around 1 MW to meet commuter schedules, when transport peak demand coincides with electricity peak demand<br><br>• That the jurisdiction for electrical safety will be split between two agencies – Maritime NZ for the electric vessel and WorkSafe for the wharf-based charging infrastructure<br><br>• That the wharf-based charging infrastructure needs to have a visual aesthetic compatible with the Wellington Waterfront Framework's design principles for the area.<br><br>An EECA Technology Demonstration Grant of $250,000 will help offset the additional deployment costs and risks and leverage around [redacted] private investment into the 100% electric ferry. |
| **Incremental project cost**<br><br>*Cost over the cost of standard technology* | A conventional aluminium alloy, diesel fuelled ferry of an equivalent size has a capital cost of around [redacted].<br><br>The cost of the carbon-fibre hulled electric ferry is at least [redacted] information withh greater than a conventional ferry. |
| **EECA funding** | $250,000 exclusive of GST |
| **Timeline from start to completion** | Initial project investigations, preliminary designs and determination of feasibility commenced in September 2018.<br><br>If funding is received, ferry construction can commence in May 2019, with completion and certification estimated to be completed in December 2019.<br><br>East By West would seek to begin demonstration of the ferry on its scheduled public transport route from early 2020. |

<table>
<tr><th colspan="2">PROJECT ASSESSMENT INFORMATION</th></tr>
<tr><td>Annual energy savings</td><td>At least 200,000 litres of diesel per year in comparison with a conventional aluminium alloy diesel fuelled ferry of a similar size and capacity.</td></tr>
<tr><td>Annual CO2 reductions</td><td>Assuming an average of 90% renewable electricity generation over the 20-year life of the ferry, annual CO2 emission reductions are estimated to be at least 490 tonnes per year in comparison with a conventional aluminium alloy diesel fuelled ferry.</td></tr>
<tr><td>Replication potential<br><br>Describe any known previous deployment history of the project, the technology and/or process in New Zealand. Provide any information you have on how many other businesses/sites in New Zealand could utilise this technology or already are; include estimated energy savings or carbon reductions if possible.</td><td>This will be the first electric passenger ferry operating in New Zealand.<br><br>New Zealand has similar sized diesel fuelled passenger vessels operating:<br><br>• As passenger transport ferries in Auckland, Northland, Marlborough Sounds, Lyttleton, Dunedin, Fiordland, Stewart Island; Auckland Transport is seeking to expand its ferry public transport services; and East By West also has plans for new routes in Wellington<br><br>• With tourism operators such as whale and dolphin watch; charter pleasure cruises; and water taxis.<br><br>There are estimated to be around 1,200 commercial passenger vessels registered with Maritime New Zealand.<br><br>A recent survey of commercial passenger ferry operators in New Zealand by the NZ Maritime Transport Association asked ferry operators about when they are likely to consider deploying potentially viable electric ferries in their current and future operations. The results are presented in the table below. These exclude commercial passenger vessel operators in the tourism sector.<br><br>
<table>
<tr><th>Year</th><th>Predicted Number of Electric Ferries</th><th>Location</th></tr>
<tr><td>1 year (2020)</td><td>1</td><td>Wellington</td></tr>
<tr><td>2 years (2021)</td><td>3 to 4</td><td>Wellington (1) Auckland (2-3)</td></tr>
<tr><td>5 years (2024)</td><td>23 to 25</td><td>Wellington (5) Auckland (15) South Island (3-5)</td></tr>
<tr><td>10 years (2029)</td><td>35</td><td>Wellington (5)<br>Auckland (25)<br>South Island (5)</td></tr>
</table>
<br>This first electric ferry demonstration will provide confidence to other New Zealand based ferry operators to consider electrification, based on East By West's experience and lessons learned.<br><br>While the domestic marine transport sector is not large, each individual vessel influenced saves a significant amount of diesel fuel (in the order of 100,000 –300,000 litres per year per vessel). It will be easy to reach the small number of ferry operators in New Zealand to deliver demonstration information and influence (in comparison with the much larger task of reaching road transport operators for example)</td></tr>
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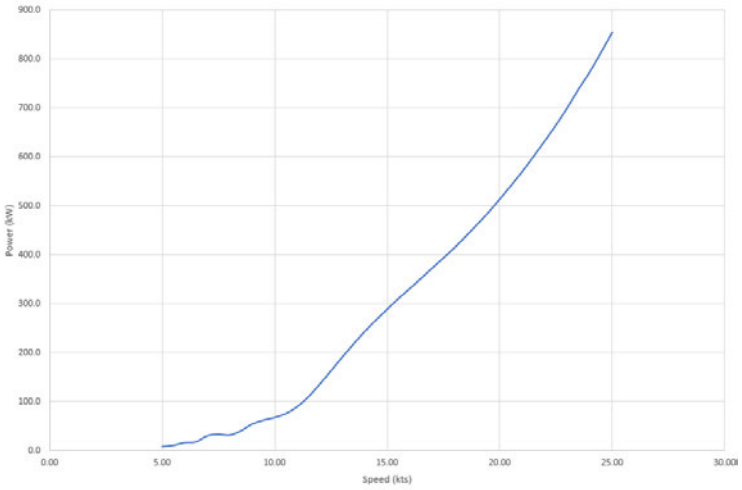
| **Other benefits**<br><br>*e.g. maintenance cost savings* | The relatively low maintenance electric drive train will provide estimated maintenance cost savings of [redacted] in comparison with a diesel fuelled drive train.<br><br>Electrification will reduce noise and odours associated with marine diesel engines, making the voyage more comfortable for passengers and crew.<br><br>Having no diesel fuel on board will eliminate the risks of diesel spill in the Wellington harbour and costs of spill clean up.<br><br>Having no diesel fuel eliminates the risk of diesel bug (microbes than can thrive in a water-diesel interface) in the fuel system preventing operation of the ferry and damaging the fuel system and engine. Diesel bug is a particular issue for marine diesel systems.<br><br>Electrifying the ferry will reduce air quality emissions associated with marine diesel engines, helping mitigate negative health effects and health costs of diesel particulate and other emissions species for workers and residents in the Wellington CBD, residents in the suburb of Eastbourne, and for passengers and crew who are subject to exposure.<br><br>WEBB Co is looking at the whole Asia Pacific region as a market for a successfully demonstrated passenger ferry, with interest being shown by the City of Sydney, for example. Construction will be at WEBB Co's premises in Seaview, Lower Hutt and will create an estimated 8-15 full-time equivalent jobs depending on future orders in New Zealand and elsewhere. |
| **Payback period** | [redacted] |

| | |
|---|---|
| | [redacted]<br><br>EECA's co-investment of $250,000 will help share the first-mover risk associated with demonstrating the first 100% electric ferry and charging system in New Zealand. This will provide increased confidence to East By West's investors to select the electrified ferry option. |
| **Technical ability to undertake the demonstration project** | [redacted]<br><br>WEBB Co's managing director, Fraser Foote, has extensive experience in building composite catamaran hulls, including ferries. As owner of his previous company, Northland Contract Boat Builders Ltd, for 20 years he was responsible for the manufacturing and delivery of 25 catamarans and several super yachts, using composite construction technology. He has also worked on the America's Cup racing yacht design team, conducted innovative composite construction, repairs, refits and insurance work.<br><br>The detailed ferry design is by naval architects SSC Marine, who specialise in high energy efficiency vessels based on Malcolm Tennant design concepts https://sscmarine.com/<br><br>Electric drive train design and fit out is subcontracted to New Zealand marine electrical company McKay http://www.mckay.co.nz/what-we-do/marine/ McKay's clients include the Royal New Zealand Navy, the Royal Australian Navy and luxury superyachts. |
| **Project monitoring**<br><br>*Describe how the success of the project can be monitored and reported. Include what information needs to be collected to make a good case study and any expectations you have of EECA.*<br><br>*Describe how you plan to promote, inform, and make the benefits of the project/technology known.* | Monitoring of the project will include collecting information on:<br><br>• Electricity consumed, electricity costs and electricity network use costs – this will be straightforward as there will be no other source of electricity use at the metered connection for the ferry<br><br>• Electric drive maintenance costs<br><br>• Battery performance and drive train efficiency and how this varies with environmental conditions, eg temperature, wind, wave and tidal conditions<br><br>• Attitudes and opinions on the ferry from customers and crew<br><br>Detailed examination of diesel fuel use by the existing ferry is being undertaken as part of the ferry design to optimise the battery size needed for its duty cycle and so will be available for comparison.<br><br>The East by West Ferries are an iconic feature of Wellington so it will be relatively easy for the project to attract media attention. East By West will seek to maximise publicity about the project through launch events and reporting on performance through media releases, articles for marine industry publications and through formal and informal NZ ferry operator networks including the NZ Marine Transport Association and NZ Marine Inc.<br><br>The performance of the ferry will be a key marketing tool for the ferry manufacturer, WEBB Co, who will look to provide this |

| | |
|---|---|
| | information to potential ferry and marine service operators throughout New Zealand and the Asia Pacific as part of its business development. |
| **Risk management**<br><br>*List potential risks identified, their probability of eventuating, and how you propose to mitigate or minimise them. Declare any possible conflicts of interest. Provide details of any feasibility studies undertaken in relation to the project.* | **Risk:** Public resistance to electric ferries<br>**Probability:** Currently low, may increase closer to launch<br>**Mitigation:** Public opinion has been initially tested through the project announcement and has been overwhelmingly positive. Proactively provide FAQs and media information about ferry electric propulsion to dispel myths closer to launch.<br><br>**Risk:** High costs of electricity network connection and use<br>**Probability:** Medium to high<br>**Mitigation:** Investigate on-shore battery storage as an alternative to high power draw at electricity demand peak periods for ultra-fast charging.<br><br>**Risk:** Uncertainty around electrical safety requirements for ultra-fast charging in the marine environment<br>**Probability:** Medium to high<br>**Mitigation:** Engage early with WorkSafe ahead of selection of charging infrastructure provider. Meet with Tranzit to learn from their experience of engagement with WorkSafe for land based ultra-fast charging in NZ.<br><br>**Risk:** Installation of charging infrastructure in high-use, high-profile public space<br>**Probability:** Low to medium<br>**Mitigation:** Engage early with Wellington City Council's Waterfront design team.<br><br>**Risk:** Charging is unavailable temporarily at Queen's Wharf due to power outage or technical issues<br>**Probability:** Low to medium<br>**Mitigation:** A lower power back up charging option at Days Bay will be constructed, and conduit to allow for this has already been included for the rebuild of the Days Bay wharf scheduled during 2019. The option of on-shore battery storage at Queen's Wharf significantly reduces the risk of charging not being available temporarily due to power outage. Should charging be unavailable temporarily, the ferry can drop its speed and keep operating on remaining power in the on-board batteries. The power required for the ferry varies non-linearly with vessel speed, as shown in the graph below.<br><br>  <br><br><br>**Risk:** Breakdown of ferry battery electric drive train strands ferry in the harbour<br>**Probability:** Low<br>**Mitigation:** The ferry has two completely independent battery packs and electric drive trains – one in each hull of the |

| | |
|---|---|
| | catamaran. The chances of both failing at the same time are very low.<br><br>**Risk:** Time delays in sourcing electric drive train components including batteries and charging infrastructure from overseas<br>**Probability:** Low to medium<br>**Mitigation:** Early engagement with suppliers and identification of more than one supplier option.<br><br>A scoping study has been undertaken by SSC Marine for the electric ferry and its all-of-life costings. The data in the graph in the section on payback period is taken from this study. |

| APPLICANT DETAILS<br>*Applicants must be legal entities registered in New Zealand* | |
|---|---|
| **NZ Business number (NZBN)** | 9429039439062 |
| **NZ Physical address** | Meridian Building,<br>Waterside,<br>North Queens Wharf,<br>Wellington |
| **Postal address** | PO Box 5077<br>Wellington |
| **Energy use of organisation by fuel type**<br>*$ and kWh* | Diesel fuel: [redacted]<br>Electricity: [redacted] |
| **Primary contact name and position** | Jeremy Ward<br>Managing Director |
| **Phone** | 04 499 1282; [redacted] |
| **Email** | jeremy@eastbywest.co.nz |
| **Technology supplier contact name and position (if applicable)** | Fraser Foote<br>Managing Director<br>Wellington Electric Boat Building Company Limited |
| **Phone** | [redacted] |
| **Email** | fraser@electricboatbuilders.co.nz |

| CONFIRMATION<br>*By signing below you are confirming that, to the best of your knowledge, all the information provided in this application is accurate* | |
|---|---|
| **Name Jeremy Ward** | [redacted] |
| **Signature** | |
| **Date 13th March 2019** | |

| Fuel | Diesel | Unit Check |
|---|---|---|
| Input Energy Units | L | |
| Input Quantity | 200,000 | |
| Output Energy Units | kWh | |
| Output Quantity | 2,133,333 | |
| $CO_2$ Tonnes | 544 | |

# Inputs

| | |
|---|---|
| **Account manager** | D Chand |
| **Company name** | East By West Ltd |
| **Schedule number and VOC number** | |
| **Date Completed** | 22/02/2019 |

## Project X

**Project Information**

| Project Timing | |
|---|---|
| Expenditure Year | 2019 |
| Benefit Delay Years | 1 |
| Benefit Duration Years | [redacted] |

| | Fuel 1 | Fuel 2 | Fuel 3 | Fuel 4 | Fuel 5 |
|---|---|---|---|---|---|
| **Energy Type** | Diese | Electricity | <Energy type> | <Energy type> | <Energy type> |
| Energy cost | [redacted] | [redacted] | | | |
| Energy cost unit | $/L | c/kWh | | | |
| c/kWh cost coefficient | [redacted] | [redacted] | 0.0000 | 0.0000 | 0.0000 |
| Energy Cost (c/kWh) | [redacted] | [redacted] | 0.00 | 0.00 | 0.00 |
| Proposed EECA Contribution | $ 100,000 | | | | |
| Total project cost | $ [redacted] | | | | |
| **Energy Savings** | | | | | |
| Energy Savings (unit) | L | kWh | <Unit> | <Unit> | <Unit> |
| **Energy Increase** | | [redacted] | | | |
| Energy Increase (unit) | <Unit> | kWh | <Unit> | <Unit> | <Unit> |
| Other Benefits (Type) | Maintenance | <benefits> | <benefits> | <benefits> | <benefits> |
| Other Benefits ($) | $ [redacted] | | | | |
| Other Costs (Type) | <costs> | <costs> | <costs> | <costs> | <costs> |
| Other Costs ($) | | | | | |

## Project X: Alternative Scope

**Leave these fields blank if there is no alternative case**

| Key Outputs | Project | Alternative Case |
|---|---|---|
| Economic NPV at 6.0% in 2019 | [redacted] | $0 |
| Consumer Payback (years) | | 0 00 |
| EECA Capex as % of Total | | 0% |
| EECA Cost c/kWh | | 0 00 |
| Max Annual CO2 Savings tonnes | 486 | 0 |
| Cumulative CO2 Savings tonnes | 9,236 | 0 |

---

## Project X

**Information for Memos**

a) 1 683 GWh of net energy savings each year
b) [redacted]
c) Annual net carbon dioxide emission reductions of 486.1 tonnes
d) [redacted] *note: changed to undiscounted basis*
e) Cost of CO2 Abatement: Net National Benefit Basis -$34 /tonne CO2; EECA Costs Only: $20 /tonne CO2

| Test | Value | Criteria | |
|---|---|---|---|
| (1) Cost of savings (c/kWh) | [redacted] | < 6.48 c/kWh | |
| (2) Cost of EECA funding (20 years, 6% discount rate) | [redacted] | < 2.59 c/kWh | |
| (3) EECA Funding (share of project incremental cost) | [redacted] | 40% | *Maximum* |
| (4) Maximum $ of EECA Funding Available | $100,000 | $100,000 | *Maximum* |

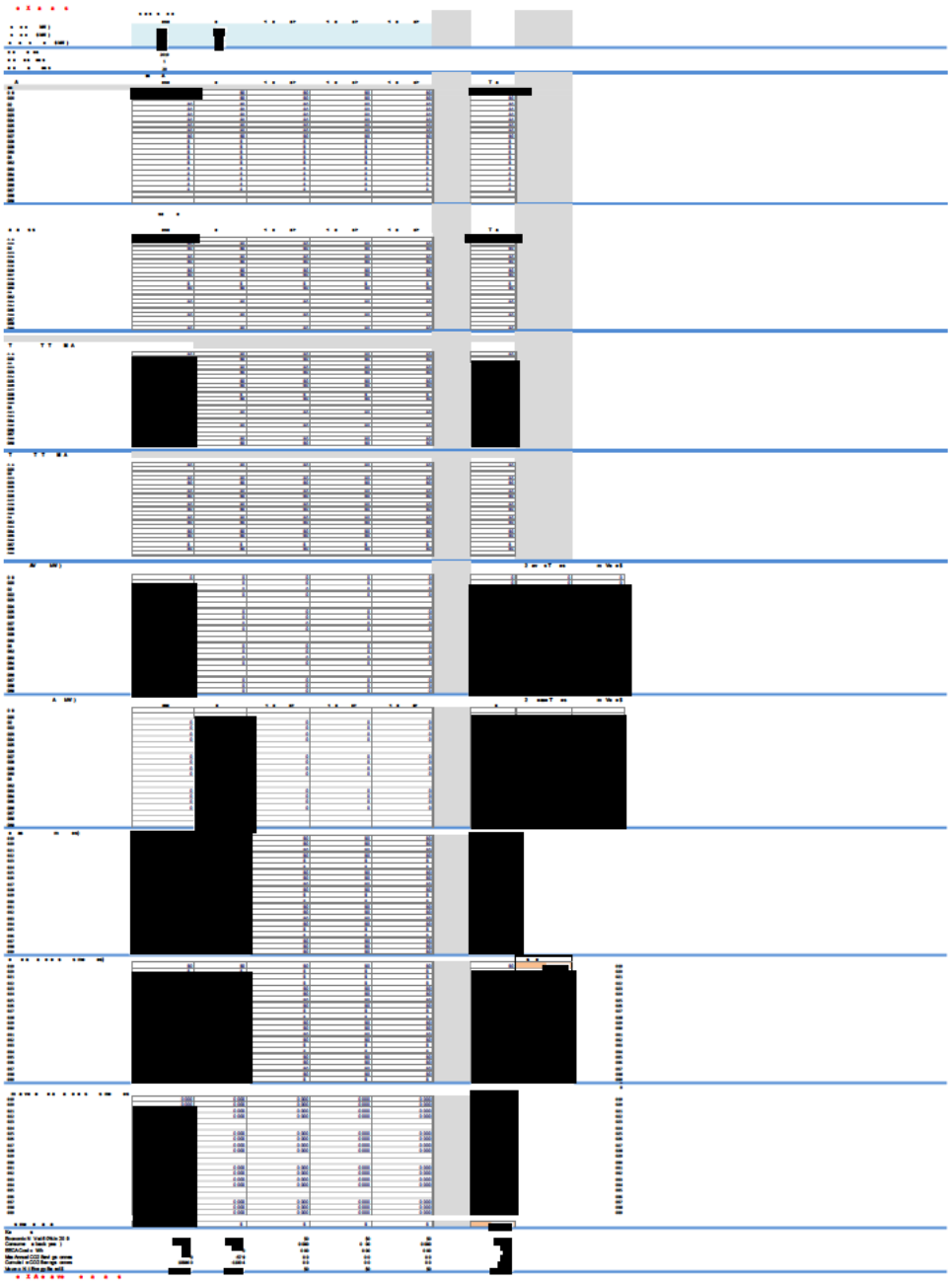
CO2 reductions are equivalent to taking 177 cars off the road
Energy savings are equivalent to the energy use of 174 households
Electricity savings are equivalent to the electricity use of 0 households

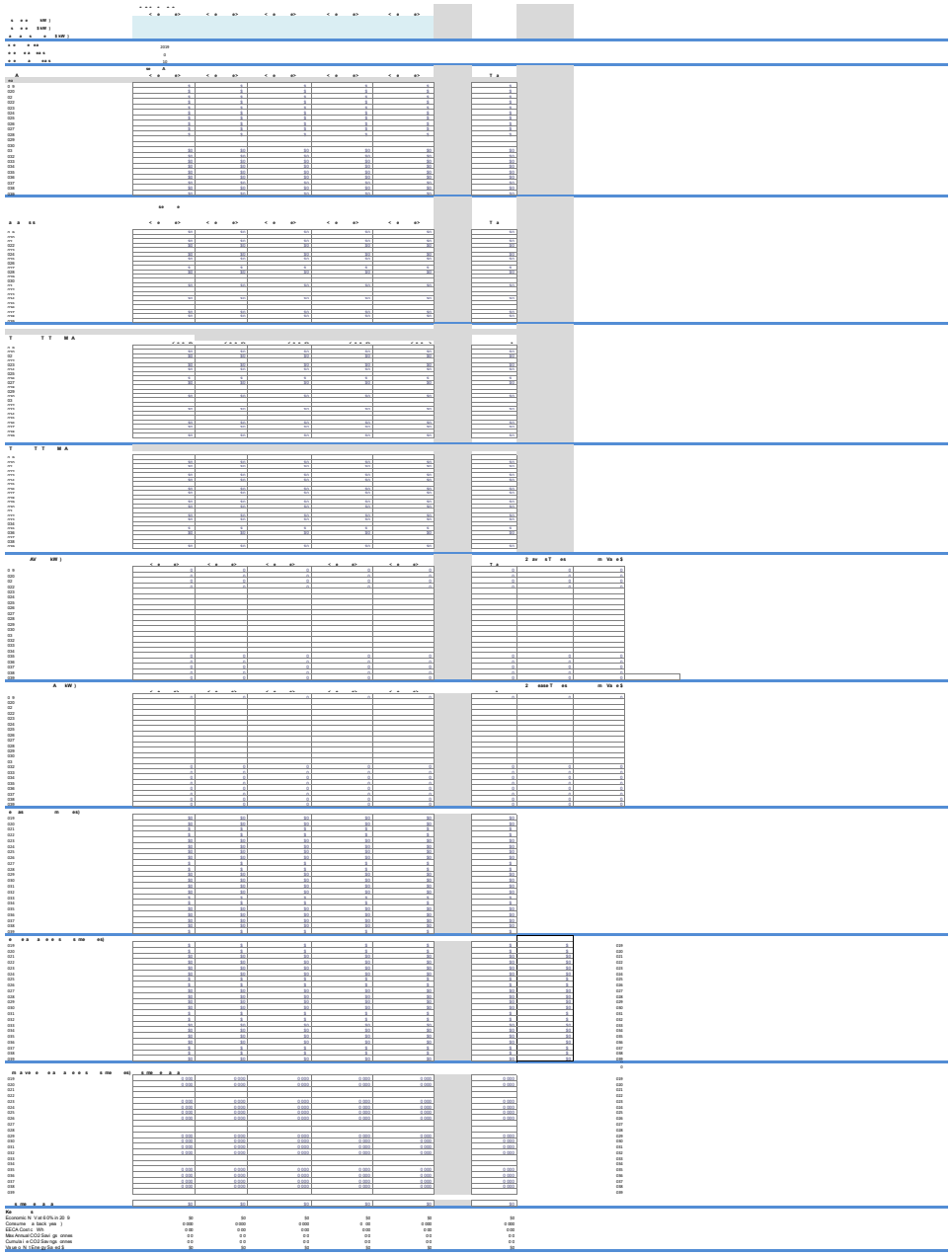
**Additional Information**

| | Value | Criteria | |
|---|---|---|---|
| (5) Customer IRR, after EECA Funding | [redacted] | 100% | *Maximum* |

**Annual Energy Savings (if collaboration agreement or GWEM then annual savings achieved at the end of the contract)**

| | GWh | | |
|---|---|---|---|
| Total | [redacted] | | [redacted] |
| Electricity | [redacted] | [redacted] | [redacted] |
| Natural Gas | [redacted] | [redacted] | [redacted] |
| Coal | | | |
| Diesel | | [redacted] | [redacted] |
| Light Fuel Oil | | | |
| LPG | | | |
| Wood | [redacted] | [redacted] | [redacted] |





| <Energy type> | <Marginal Cost ($/kWh)> | <Emissions Factors | CV MJ/Unit | Unit |
|---|---|---|---|---|
| Coal - Bituminous | 0.0270 | 0.3230 | 29.87 | kg |
| Coal - Lignite | 0.0180 | 0.3371 | 15.27 | kg |
| Coal - Sub-Bituminous | 0.0270 | 0.3335 | 21.59 | kg |
| Diesel | 0.0697 | 0.2550 | 38.40 | Litre |
| Electricity | 0.0879 | 0.1287 | 3.60 | kWh |
| Light Fuel Oil | 0.0395 | 0.2626 | 40.44 | Litre |
| LPG | 0.0612 | 0.2174 | 50.00 | kg |
| Natural Gas | 0.0247 | 0.2168 | 1000.00 | GJ |
| Petrol | 0.0796 | 0.2499 | 35.01 | Litre |
| Wood Chips - 15% MC | 0.0285 | 0.0056 | 17.52 | kg |
| Wood Chips - 30% MC | 0.0285 | 0.0056 | 13.93 | kg |
| Wood Chips - 50% MC | 0.0285 | 0.0056 | 9.96 | kg |
| Wood Pellets | 0.0285 | 0.0056 | 20.48 | kg |

| | | |
|---|---|---|
| *Updated :* | *20-Feb-17* | *10-May-17* |
| *Source:* | *John Duncan* | *John Duncan* |

**Input Data**

| Energy Type | Marginal Cost $/kWh | kgCO2e/kWh | CV MJ/Unit | Unit |
|---|---|---|---|---|
| Coal - Bituminous | 0.0270 | 0.3230 | 29.9 | kg |
| Coal - Lignite | 0.0180 | 0.3371 | 15.3 | kg |
| Coal - Sub-Bituminous | 0.0270 | 0.3335 | 21.6 | kg |
| Diesel | 0.0697 | 0.2550 | 38.4 | Litre |
| Electricity | 0.0879 | 0.1287 | 3.6 | kWh |
| Light Fuel Oil | 0.0395 | 0.2626 | 40.4 | Litre |
| LPG | 0.0612 | 0.2174 | 50.0 | kg |
| Natural Gas | 0.0247 | 0.2168 | 1000.0 | GJ |
| Petrol | 0.0796 | 0.2499 | 35.0 | Litre |
| Wood Chips - 15% MC | 0.0285 | 0.0056 | 17.5 | kg |
| Wood Chips - 30% MC | 0.0285 | 0.0056 | 13.9 | kg |
| Wood Chips - 50% MC | 0.0285 | 0.0056 | 10.0 | kg |
| Wood Pellets | 0.0285 | 0.0056 | 20.5 | kg |
| CO2 Price $/tonne | 25.0 | | | |

**Energy use per household**

| | PJ | GWh | Dwellings per GWh | | |
|---|---|---|---|---|---|
| Residential Electricity use | 44.0 | 12228 | 147 | 6780 | 2016 Data from Energy In New Zealand 2017, MBIE |
| Residential Total energy use | 62.9 | 17469 | 103 | | |
| | | | | | |
| Dwellings estimate as at 31 December 2016 | 1,803,400 | | | | Statistics NZ http //www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/DwellingHouseholdEstimates_HOTPDec16qtr.aspx |

**Tonnes of CO2 per car**

| | |
|---|---|
| Petrol kg CO2/litre | 2.34 |
| Average Distance Travelled | 11952 |
| Average Fuel Consumption l/100 km | 9.83 |
| Litres Consumed per Vehicle | 1175 |
| CO2 tonnes per Vehicle | 2.7 |

| Date | Changes to inputs | Version | User |
|---|---|---|---|
| 14/04/2015 | Initial assessment to confirm draft workplan meets internal criteria | v1 | DF |
| 16/04/2015 | Adjusted EECA contribution and total project value following discussion with client re draft workplan | v2 | DF |
| 10/02/2016 | Fixed savings duration | | KA |
| Apr-16 | Fixed Levy calculations | | KA |
| 2-Jun-16 | Created Master and protected calc sheets | | KA |
| 20/02/2017 | Revised Calculations/Updated | RV3 | JD |
| 20/03/2017 | Additional Features | RV4 | JD |
| 21/03/2017 | CO2 Values added | RV5 | JD |
| 18/07/2017 | Updated EF abd CVs. Corrected lookup for bituminous coal EF and vale. | | JD |
| 9/08/2017 | Suggestion for the following additions to the PAS | | GW |
| | - Add a cost converter eg $/GJ -> c/kWh | | |
| | - Add a table with internally accepted values for the expected benefit duration (eg Ccx 2-5 years, ESO 10 years, staff engagement 1-2 years, etc we d need some internal discussion for what these values actually are) | | |

EECA BUSINESS
PUTTING ENERGY TO WORK

# Funding Evaluation Memo

| | |
|---|---|
| **Title** | **Evaluation of technology demonstration funding application for East By West Ferries for an electric ferry** |
| **Date** | 8 May 2019 |
| **To** | Eddie Christian, GM Market Engagement<br>Paul Bull, Account Director |
| **From** | Dinesh Chand |
| **Actions sought** | Approve $100,000 of technology demonstration project funding for an electric ferry project with East By West Limited |

## Proposed project

1. EECA has received a technology demonstration funding application for the following project.

| | |
|---|---|
| **Applicant** | East By West Company Limited (East By West) |
| **Site** | Wellington Harbour routes |
| **Technology or process** | East By West plans to operate a 100% battery electric ferry on the Wellington to Eastbourne route. The ferry will be ultra-fast charged at 1 MW and carry up to 130 passengers. A carbon fibre 18.5m catamaran will be outfitted for the new ferry. If it is not electrified the alternative is for the twin hulls to be each fitted with a John Deere marine diesel engine. |
| **Technology supplier** | Newly launched Wellington Electric Boat Building Company (Webb Co) will provide the electric ferry. Webb Co will draw on extensive existing experience in manufacturing carbon fibre catamarans and will add electric drive train technology from Europe. The electric ferry has been designed and fully scoped already.<br>NOTE: EECA funding will only be payable once an electric ferry has been launched and has received full marine certification for operation in New Zealand. If this milestone is not achieved than regardless of prior work undertaken for the project no EECA funding will be payable. |
| **Existing technology** | East By West currently operates a composite body diesel fuelled ferry. However the majority of existing passenger ferries in New Zealand are aluminium alloy diesels. The base case for construction cost comparison is a diesel aluminium ferry. Savings have been calculated against the fuel burn of the current ferry. |
| **Total project cost** | [redacted] |
| **Incremental project cost** | [redacted] |
| **EECA funding sought** | $250,000 |
| **Recommended funding** | $100,000 (maximum available under current funding rules).<br>A board paper to be submitted to the May EECA Board meeting will seek approval for dedicated budget for a technology demonstration |

| | |
|---|---|
| | funding round focussed on electric maritime projects. If approved it is likely the maximum funding available for a technology demonstration electric ferry project will increase to $250,000, but on a contestable basis. East By West has decided to proceed with their application under the current $100,000 limit. |

# Strategic drivers and risk management

2. The strategic drivers for supporting the project are as follows:

<table>
<tr><td>Strategic importance to ECA</td><td>➢ The technology will eliminate use of fossil fuels for transport.<br>➢ Although the project will increase electricity use, various charging options such as on-shore battery trickle charge, will be investigated to reduce peak demand.<br>➢ The project will reduce carbon emissions by 486 tonnes/annum.<br>➢ The cost of the carbon emissions reduction to EECA is $20/tonne – at the $100k funding level.</td></tr>
<tr><td>Replication potential</td><td>This will be the first electric passenger ferry operating in New Zealand. There are 1,200 commercial passenger vessels registered with Maritime New Zealand. A recent survey by NZ Maritime Transport Association suggests the following replication potential (excluding tourism sector):
<table>
<tr><th>Year</th><th>Predicted # of electric ferries</th><th>Location</th></tr>
<tr><td>1 Year</td><td>1</td><td>Wellington</td></tr>
<tr><td>2 Years</td><td>3-4</td><td>Wellington (1) Auckland (2-3)</td></tr>
<tr><td>5 Years</td><td>23-25</td><td>Wellington (5) Auckland (15)<br>South Island (3-5)</td></tr>
<tr><td>10 Years</td><td>35</td><td>Wellington (5) Auckland (25)<br>South Island (5)</td></tr>
</table>
Each electric ferry has the potential to save 100,000-300,000 litres of diesel per year.<br>Further replication potential is likely available in the tourism sector.</td></tr>
<tr><td>Potential risks / mitigation</td><td>➢ Electric ferries are operating successfully overseas, especially in Europe. With twin battery systems and twin electric motors (one in each hull) failure risk during harbour crossing is minimised.<br>➢ Emission reduction is based on measured current operations.<br>➢ The application identifies a number of risks associated with the project. These are mitigated from EECA perspective by contracting to provide funding only if a successful electric ferry is commissioned.<br>➢ There is a risk the ferry will prove unsuitable for operation on Wellington harbour. The use of experienced designers, builders and drive technology from Europe reduces this risk but being the first such ferry in New Zealand means this risk remains.</td></tr>
</table>

EECA BUSINESS
PUTTING ENERGY TO WORK

# Funding Evaluation Memo

## Assessment of proposed outcomes

3. An EECA assessment panel, comprising Paul Bull, Tania Hood, Glenn Wellington, Michael Henry, Graham Dray, Harry Gates and Dinesh Chand has assessed the application, with the following results:

| | Result | Assessment Criteria | Average score | Weight | Weighted Score |
|---|---|---|---|---|---|
| **Potential public benefits** | | | **/ 10** | **%** | |
| Innovation of technology | Proven in overseas operating conditions.<br>Will be first scheduled electric passenger ferry in NZ. | New – few instances in the world<br>New to NZ – proven overseas<br>Well proven - but not under these circumstances | 7.0 | 20 | 14.0 |
| Annual $CO_2$ reductions | 486 tonnes $CO_2$/annum.<br>EECA cost of reduction $20/tonne.<br>($39,tonne for $200k funding) | EECA cost of CO2 reduction compared to projected market prices of CO2 emissions over project life. | 6.7 | 20 | 13.4 |
| Replication potential (savings per project multiplied by number of probable replications) | Minimum 35 ferries within next 10 years. | # of site with potential replication as a % of total sector / Energy savings as a % of energy use in a sector or business | 5.1 | 20 | 10.3 |
| **Potential private benefits** | | | **/ 10** | **%** | |
| Other benefits (e.g. maintenance cost savings) | $50k/year reduced maintenance costs.<br>Greatly enhanced passenger environment.<br>Risk of diesel spill in harbour eliminated. | Value of benefits.<br>H&S and environmental impacts | 6.9 | 10 | 6.9 |
| **Value for money** | | | **/ 10** | **%** | |
| Payback period | [redacted]vith EECA funding.<br>[redacted]@ $200k)<br>[redacted]ithout EECA funding | < 5 years | 3.6 | 5 | 1.8 |
| Cost of savings/fuel switching | [redacted] | < 6.48 c/kWh | 5.7 | 5 | 2.9 |
| Cost of EECA savings | 0.56 c/kWh<br>(1.13 @ $200,000) | < 2.59 c/kWh | 7.3 | 5 | 3.6 |
| EECA funding leverage - based | [redacted] | $1.50 : $1.00 | 8.1 | 5 | 4.1 |

| | | | | | |
|---|---|---|---|---|---|
| incremental project cost | [redacted] $200K) | | | | |
| **Capability and commitment** | | | **/ 10** | **%** | |
| Technical ability to undertake the demonstration project. | Although a new boat building company the people involved have extensive experience.<br>Naval architects SSC Marine is designer.<br>NZ marine electrical company McKay will install electric drive train. | | 6.9 | 10 | 6.9 |
| **Total Weighted Score** | | | | **100 %** | **64** |

4. With the final weighted score of 64 the technology demonstration assessment panel recommends funding the project at a maximum of $100,000.
5. There is funding available in the 2018/19 technology demonstration budget for the project.

## Actions sought

6. Approve funding of $100,000 for the East By West electric ferry project.

[redacted]

Dinesh Chand

Supported by:

[redacted]

Paul Bull

Account Director

13/5/2019

Date

Approved by:

[redacted]

Eddie Christian

Group Manager Market Engagement

13 MAY 2019

Date

# PROJECT FUNDING AGREEMENT

EECA
**ENERGY EFFICIENCY AND CONSERVATION AUTHORITY**

Recipient
**EAST BY WEST COMPANY LIMITED**

New Zealand Government

EECA Energy Efficiency and Conservation Authority Te Tari Tiaki Pūngao

## PARTIES

(1) **ENERGY EFFICIENCY AND CONSERVATION AUTHORITY** (NZBN 9429041901953), a Crown entity constituted under the Energy Efficiency and Conservation Act 2000 (**"EECA"**); and

(2) **EAST BY WEST COMPANY LIMITED** (NZBN 9429039439062), a New Zealand Limited Company located at Meridian Building, Queens Wharf, Wellington 6011 (**"Recipient"**).

## BACKGROUND

A. The Recipient has agreed to implement a technology demonstration project, subject to funding support from EECA.

B. EECA has agreed to provide such funding support to the Recipient on the terms of this Agreement.

## AGREEMENT

### 1. DEFINITIONS AND INTERPRETATION

1.1 In this Agreement:

"**Agreement**" means this project funding agreement, including the Schedule;

"**Business Day**" means a day on which registered banks are open for general banking business, other than a Saturday or Sunday, in New Zealand;

"**Claim**" means a claim for EECA Funding made by the Recipient to EECA in the manner specified by EECA;

"**Completion Date**" means, in relation to each milestone set out in item 2 of the Schedule, the date by which the Recipient must complete that milestone;

"**Confidential Information**" means information disclosed by a party under this Agreement that is marked as confidential or which might reasonably be expected to be confidential in nature;

"**EECA Funding**" means the maximum amount of funding payable by EECA to the Recipient to support the Project, as specified in item 1 of the Schedule;

"**Equipment**" means the equipment being installed, upgraded or replaced under the Project as set out in item 5 of the Schedule;

"**Energy Savings Target**" means the targeted energy savings for the Project as described in item 9 of the Schedule;

**"Force Majeure Event"** means an extraordinary event or circumstance beyond the reasonable control of a party such as an Act of God (but excluding lack of funds);

"**GST**" means goods and services tax within the meaning of the Goods and Services Tax Act 1985;

"**Project**" means the technology demonstration project to be undertaken by the Recipient, as described in item 4 of the Schedule;

"**Project Reports**" means the reports that the Recipient is required to provide to EECA under this Agreement, as described in item 6 of the Schedule;

"**Proposal**" means the proposal for the Project that the Recipient supplied to EECA;

"**Records**" means all information and data for the management of this Agreement and the delivery of the Project. Records include, but are not limited to, reports, invoices, letters, emails, notes of meetings, photographs and other media recordings. Records can be hard copies or soft copies stored electronically;

"**Schedule**" means the schedule of contract details attached to this Agreement;

"**Serious Incident**" means any notifiable event as defined by the Health and Safety at Work Act 2015;

"**Site**" means the site where the Project is to be undertaken, as specified in item 3 of the Schedule.

"**Worker**" means any person who carries out work for the Recipient in any capacity, including work as an employee, contractor or subcontractor, an employee of a contractor or subcontractor, or a volunteer worker. It also includes anyone else directed or influenced by the Recipient in the exercise of their work;

"**WHS Laws**" means all applicable legislation and regulations in force including, but not limited to, the Health and Safety at Work Act 2015 and any amendments or replacement legislation, the Hazardous Substances and New Organisms Act 1996, the Resource Management Act 1991, the Building Act 2004, and the Human Rights Act 1993 and all relevant Regulations, Approved Codes of Practice, New Zealand Standards and guidance material, and/or other international standards and guidance material regarding best practice requirements for undertaking the Project that the Recipient could reasonably be expected to be aware of.

1.2 **Interpretation**:

(a) References to clauses and schedules are to clauses and schedules of this Agreement unless the context requires otherwise.

(b) The headings in this Agreement are for convenience only and have no legal effect.

(c) The singular includes the plural and vice versa.

(d) A reference to a statute includes a legislative instrument or other subordinate legislation made under it and amendments to or replacement of any of them from time to time.

## 2. TERM

2.1 This Agreement will commence on the date it is signed by both parties and continue until 28 February 2021 unless the Agreement is terminated earlier in accordance with clause 9.

## 3. RECIPIENT'S OBLIGATIONS

3.1 The Recipient will:

(a) undertake the Project at the Site in accordance with this Agreement;

(b) take full responsibility for the Equipment installed as part of the Project and manage the operation of that Equipment in accordance with good manufacturing, operational and health and safety practices relevant to the business on the Site; and

(c) implement and manage the Project with all due care and skill and to a professional standard commensurate with the nature of the Project.

## 4. EECA FUNDING

4.1 EECA will pay the Recipient the EECA Funding in three instalments based on achievement of the milestones by the relevant Completion Dates. The milestones are set out in item 2 of the Schedule.

4.2 To receive EECA Funding, the Recipient must provide EECA with a Claim that contains at least the following details:

i. the Recipient's name, address and GST number;

ii. the milestone against which the Claim is being made;

iii. evidence of completion of the relevant milestone (unless otherwise agreed by EECA); and

iv. the amount and GST due.

4.3 Following the receipt and approval of a Claim, EECA will provide the Recipient with a buyer created invoice at the time of making payment.

4.4 Subject to clause 4.5, if EECA receives a valid Claim by the 10th of the month following the month which the Claim relates to, EECA will pay the sum set out in the Claim on the 20th day of that month. Any valid Claims received after the 10th of the month will be paid on the 20th of the following month.

4.5 If EECA disputes the sum in any Claim:

i. EECA will notify the Recipient of the dispute following receipt of the Claim;

ii. EECA will pay the undisputed portion of the Claim in accordance with clause 4.4; and

iii. the disputed portion will be dealt with under clause 11 (Disputes).

4.6 EECA is not under any obligation to make any payment under this Agreement until EECA has received:

i. a valid Claim for the EECA Funding from the Recipient; and

ii. reasonably satisfactory evidence ( if applicable) from the Recipient that the relevant milestone has been completed in accordance with this Agreement.

4.7 If EECA is required to withhold any taxes from any payment required to be made by it under this Agreement, payment of the valid Claims shall be deemed to have been made in full if EECA makes payment of the invoiced sum, less the taxes so required to be withheld.

4.8 The Recipient agrees and warrants that it will use EECA Funding only for the purposes set out in this Agreement. If any of the EECA Funding is not used for the purpose of the Project, the Recipient must immediately repay the EECA Funding.

## 5. REPAYMENT

5.1 Without limiting any other remedy EECA may have, the Recipient must repay EECA Funding to EECA in the circumstances set out in this clause 5. All repayments must be made within 10 Business Days of a demand in writing by EECA.

5.2 If the actual total costs of the Project are less than the total costs set out in the Proposal, the Recipient (if the Recipient has claimed from EECA the full amount of EECA Funding available under this Agreement) will repay to EECA an amount of EECA Funding proportional to the reduction in total costs (i.e. the same percentage of total costs as set out in the Proposal, but applied against actual costs).

5.3 The Recipient will, on demand by EECA, repay all or part (at EECA's discretion) of the EECA Funding paid by EECA if:

(a) the Recipient fails to comply with any of its obligations required under this Agreement (including, without limitation, Project reporting requirements set out in item 2 of the Schedule); or

(b) the Project fails to meet a minimum of 80% of the Energy Savings Target.

## 6. INFORMATION MANAGEMENT

6.1 The Recipient must:

(a) provide EECA with the Project Reports described in item 6 of the Schedule at the specified intervals; and

(b) keep and maintain full, true and up-to-date Records of the performance of its obligations under this Agreement during the term of this Agreement and for a minimum of three years following termination or expiry of the Agreement;

(c) allow EECA or its nominee to audit the Records, or audit the performance (including reviewing the Records) from time-to-time as reasonably required by EECA;

(d) co-operate with EECA and provide all information and assistance reasonably requested by EECA to allow EECA to promote, if successful, the Project through the publication of case studies, guides, workshops and seminars (including the participation of the Recipient at one or more workshops and seminars arranged by EECA);

(e) give information to EECA relating to the performance of the Recipient's obligations pursuant to this Agreement which EECA reasonably requests. All information provided by the

Recipient must be in a format that is usable by EECA, and delivered within a reasonable time of the request;

(f) co-operate with EECA to provide information immediately if the information is required by EECA to comply with an enquiry or its statutory, parliamentary, or other reporting obligations; and

(g) make sure that any Records provided to EECA or created for EECA, are securely managed and securely destroyed on their disposal.

6.2 The parties shall otherwise co-operate promptly and share information with each other as necessary to meet the operational objectives of EECA and enable the Recipient to perform its obligations under this Agreement.

## 7. INTELLECTUAL PROPERTY

7.1 Any intellectual property already in existence at the commencement of this Agreement shall remain the property of the current owner.

7.2 All intellectual property created, or developed, by, or for, the Recipient in performing this Agreement, including all intellectual property rights in the Project will be owned by the Recipient.

7.3 The Recipient grants to EECA a perpetual, irrevocable, royalty-free and non-exclusive licence to use its existing intellectual property to the extent necessary in carrying out its obligations under this Agreement.

## 8. HEALTH AND SAFETY

8.1 If there is an inconsistency or ambiguity between this clause and the WHS Laws, the WHS Laws will prevail.

8.2 The Recipient must at all times when undertaking the Project in accordance with this Agreement comply with all WHS Laws.

8.3 The Recipient must (and must ensure that its Workers):

(a) at all times identify and exercise all necessary precautions for the protection of the health and safety of all persons including Workers, EECA, and members of the public who may be affected by the Project or by the performance or purported performance of the Project;

(b) undertake the Project in a safe manner; and

(c) do all things requested by EECA or any of its personnel to allow EECA to discharge and comply with EECA's obligations under the WHS Laws.

8.4 The Recipient will:

(a) comply with any directions on safety issued by any relevant authority;

(b) notify EECA and the relevant authorities promptly after any Serious Incident regarding the Project;

(c) conduct an investigation into the circumstances of a near miss or an incident (including a Serious Incident) affecting or potentially affecting the health and safety of any person promptly after that event occurs and promptly notify EECA of the outcome of any such investigation in relation to the Project; and

(d) if requested by EECA, promptly provide to EECA any documents relating to or created in respect of any investigation (by the Recipient or any regulator) into a near miss or incident (including a Serious Incident) in relation to the Project.

8.5 EECA and the Recipient will schedule a kick-off meeting on commencement of the Project. There is an expectation that health and safety systems and performance will be reviewed in this meeting. Topics for discussion will include but are not limited to:

(a) the Recipient's health and safety system which includes hazard identification, risk assessment, training, supervision and monitoring. If required, the Recipient working with EECA to complete a hazard and risk identification and management process for the Project to identify potential hazards/risks and developing a system to control those hazards/risks prior to commencing work, where relevant;

(b) supervision and training of Workers performing work for or participating in the Project if applicable;

(c) the provision of protective safety equipment to Workers participating in the Project if applicable;

(d) the provision of first aid equipment at the Site if applicable.

8.6 The Recipient must ensure, and provide (on request) evidence to the satisfaction of EECA, that any subcontractor it engages in accordance with this Agreement has the necessary safety systems, expertise and financial standing to carry out the work to be subcontracted.

8.7 The parties and any subcontractor will consult, co-operate, and co-ordinate activities with each other in order to ensure that each of the parties and the subcontractor meet their obligations under this Agreement and the WHS Laws.

## 9. TERMINATION

9.1 Either party may terminate this Agreement if the other party commits a material or persistent breach of this Agreement and, if such breach is capable of remedy, fails to remedy that breach within 10 Business Days after receipt of a notice from the other party requiring the breach to be remedied.

9.2 EECA may terminate this Agreement on notice with immediate effect if:

(a) EECA considers in its sole discretion the Recipient has not fulfilled its obligations under clause 3.1; or

(b) the Recipient becomes insolvent; or

(c) the Recipient is the subject of enforcement action pursuant to the WHS Laws.

9.3 Upon termination of the Agreement under clause 9.2 EECA will not be obliged to pay the EECA Funding and any EECA Funding paid to the Recipient will be repayable on demand by EECA.

9.4 The termination of this Agreement shall be without prejudice to either party's rights and remedies in respect of any breach by the other party to this Agreement, where the breach occurred before the termination of this Agreement.

## 10. CONFIDENTIALITY AND PUBLICITY

10.1 Except as permitted by clause 10.2, each party shall keep the other party's Confidential Information confidential and will not disclose any Confidential Information to any person or use the Confidential Information for any purpose other than to perform this Agreement.

10.2 Notwithstanding clause 10.1, a recipient of Confidential Information may disclose any Confidential Information if, and to the extent that, disclosure is required by law (including under the Official Information Act 1982 and the Health and Safety at Work Act 2015) or any governmental authority, regulator, or parliamentary convention, provided that the disclosing party gives the other party notice of the requirement as soon as practicable before such disclosure is made, and gives the other party copies of any such information to be disclosed.

10.3 Each party will ensure that its personnel:

(a) are aware of the confidentiality obligations in this Agreement; and

(b) do not use or disclose any of the other party's Confidential Information except as allowed by this Agreement.

10.4 Subject to clause 10.5 and except as required by law, a party shall make no announcement or disclosure relating to the contents of this Agreement except as agreed by the parties in advance (such approval not to be unreasonably withheld or delayed).

10.5 Either party may publish the results and findings arising from the Project in such manner and media as it thinks fit, provided that the party obtains the other party's prior written approval to any such publication (such approval not to be unreasonably withheld).

10.6 The Recipient acknowledges that EECA is subject to the Official Information Act 1982 and may be required to disclose information pursuant to that Act. The Recipient should mark any commercially sensitive information as "Commercial: In Confidence" if the Recipient wishes to protect specific commercial information. However, EECA does not guarantee that such marked information will be protected from disclosure. The Recipient will immediately forward to EECA any request for information made under the Official Information Act 1982 received by the Recipient.

10.7 The Recipient will notify EECA of any actual or anticipated issues, including but not limited to health and safety events or investigations by the regulator, that could receive media attention or significantly impact on a Project agreed under this Agreement.

10.8 This clause survives termination of this Agreement.

## 11. DISPUTES

11.1 If any dispute or difference arises between the parties in relation to, or arising out of, this Agreement, both parties will endeavour in good faith to settle the dispute by agreement.

11.2 If the dispute or difference is not settled by agreement within 20 Business Days of the dispute arising then, unless agreed otherwise, either party may refer the dispute to mediation.

11.3 If a dispute is referred to mediation, the mediation will be conducted:

(a) by a single mediator agreed by the parties or if they cannot agree, appointed by the Chair of the Resolution Institute;

(b) on the terms of the Resolution Institute standard mediation agreement; and

(c) at a fee to be agreed by the parties or if they cannot agree, at a fee determined by the Chair of the Resolution Institute.

11.4 Each party will pay its own costs of mediation under this clause 11.

11.5 Neither party may issue legal proceedings (other than for urgent interlocutory relief) in respect of such dispute or difference, unless that party has first taken all reasonable steps to comply with clauses 11.1 to 11.3.

## 12. INSURANCE

12.1 It is the Recipient's responsibility to ensure the risks of doing business are adequately covered by insurance. The Recipient must within 10 Business Days of a request from EECA provide proof confirming the specific nature and quantity of the insurance cover held and show that this cover is current.

## 13. INDEMNITY

13.1 The Recipient shall, to the full extent permitted by law, defend, indemnify and hold harmless EECA, from and against any and all damage, loss (including loss of profits), cost, liability, and expense whatsoever (including legal fees, third party claims, all and any actual court costs, witness fees and expenses and all disbursements) directly incurred by reason of:

(a) any failure by the Recipient to perform any covenant or observe any obligation of the Recipient under this Agreement; or

(b) any breach by the Recipient of any representation, warranty, or covenant on the part of the Recipient contained in this Agreement; or

(c) the negligence or wrongful act or omission of the Recipient.

13.2 Notwithstanding clause 13.1, neither party shall be liable for any breach of this Agreement to the extent such breach is due to a Force Majeure Event, provided that it keeps the other party fully informed of the situation, uses reasonable endeavours to mitigate the effect of the Force Majeure Event and resumes full performance as soon as reasonably practicable.

## 14. GENERAL

14.1 **Assignment**: The obligations of the Recipient under this Agreement are personal to the Recipient and may only be assigned or transferred with the prior approval in writing of EECA, such approval not to be unreasonably withheld.

14.2 **Change of Control**: Any change in the majority shareholding of the Recipient or the effective management control of the Recipient shall be deemed to be an Assignment under this Agreement requiring the consent of EECA pursuant to clause 14.1.

14.3 **Counterparts**: This Agreement may be signed in any number of counterparts (including electronic copies) and provided that each party has signed a counterpart, the counterparts, when taken together, will constitute a binding and enforceable agreement between the parties.

14.4 **Entire agreement**: The parties acknowledge that this Agreement sets out the entire agreement and understanding of EECA and the Recipient and supersedes all prior oral or written agreements, understandings or arrangements relating to its subject matter.

14.5 **Further assurances**: Each party shall, at its own expense, promptly sign and deliver any documents, and do all things, which are reasonably required to give full effect to the provisions of this Agreement.

14.6 **New Zealand Law**: This Agreement will be governed by and construed in accordance with the laws of New Zealand and the parties submit to the non-exclusive jurisdiction of the New Zealand courts.

14.7 **No partnership**: Nothing contained in this Agreement shall be deemed to constitute either party as being the partner of the other or to constitute either party as being the agent or legal representative of the other. Neither party shall have any authority to act or to assume any obligation or liability on behalf of the other.

14.8 **Notices**: Each notice under this Agreement shall be in writing and delivered by courier or sent by email to the address set out in item 7 or 8 (as applicable) of the Schedule. A notice is deemed to be received:

(a) if delivered by courier, when delivered; or

(b) if sent by email, when actually received,

provided that any notice received after 5 pm on a Business Day or on a non-Business Day shall be deemed to have been received on the next Business Day.

14.9 **Variations**: This Agreement cannot be varied in any manner except by way of agreement in writing signed by the parties.

**EXECUTION**

**SIGNED** for and on behalf of
**ENERGY EFFICIENCY AND CONSERVATION AUTHORITY** by

EDWARD CHRISTIAN
Print Name

[redacted]
Signature

GM - MARKET ENGAGEMENT
Position

30 MAY 2019
Date

**SIGNED** for and on behalf of
**EAST BY WEST COMPANY LIMITED** by

JEREMY WARD
Print Name

[redacted]
Signature

DIRECTOR
Position

28/5/19
Date



New Zealand Government

EECA Energy Efficiency and Conservation Authority Te Tari Tiaki Pūngao

## SCHEDULE 1 : CONTRACT DETAILS

1. **EECA Funding**

The lesser of $100,000 and 40% of the total cost of the consruction and deployment of the Equipment, all excluding GST.

EECA Funding will only apply once the Equipement has been successfully deployed on the water and and has received all regulatory operating and safety certification.

2. **Milestones, Deliverables, Completion Dates and Payments**

| *Milestone* | *Deliverable* | *Completion Date* | *Payment Amount* |
|---|---|---|---|
| S1M1P11 | Project Report 1 | 31 July 2019 | Nil |
| S1M2P11 | Project Report 2 | 31 January 2020 | 75% of EECA Funding to maximum of $75,000 |
| S1M3P11 | Project Report 3 | 31 July 2020 | 12.5 % of EECA Funding to maximum of $12,500 |
| S1M4P11 | Project Report 4 | 31 January 2021 | 12.5 % of EECA Funding to maximum of $12,500 |

3. **Site**

Queens Wharf, Wellington

4. **Project**

Design, construction, commissioning, certification and launch of electric passenger ferry for the Queens Wharf to Eastborne Wellington Harbour service.

5. **Equipment**

130 passenger carbon fibre catamaran constructed by Wellington Boat Building Company to Malcolm Tennant design. Electric motive power by Visedo/Danfoss Electric Power Drum Motors sufficient battery storage for the route. High speed battery charging capability to be located on Queens Wharf.

6. **Project Reports**

**Project Report 1**: A report detailing the initiation of the Project including:

- Confirmation of procurement order for the Equipment, including associated charging infrastructure;
- Confirmation of finalised project plan including health and safety management plan and risk assessment and mitigation measures for the safe and timely delivery of the Project;
- A measurement and verification (M&V) plan, to IPMVP principles, sufficient to confirm Project outcomes and the performance of the Equipment; and
- Details of actions undertaken or planned to resolve outstanding items identified as a result of the Project kick-

off meeting undertaken in accordance with clause 8.5 of the Agreement.

**Project Report 2**: A report detailing the construction and commissioning of the Equipment. Report to include photographs of the Equipment and commentary on any issues encountered during the commissioning phase. Attach copies of invoices for costs associated with the construction and deployment of the Equipment.

**Project Report 3**: A report outlining the first six months of operation of the Equipment, including results of the monitoring in accordance with the M&V plans outlined in Project Report 1.

**Project Report 4**: A report outlining the first twelve months of operation of the Equipment, including results of the monitoring in accordance with the M&V plans outlined in Project Report 1.

| | | |
|---|---|---|
| 7. | **Recipient's address for notices** | Meridian Building, Queens Wharf<br>Wellington 6011<br><br>For: Jeremy Ward<br><br>Email: jeremy@eastbywest.co.nz |
| 8. | **EECA's address for notices** | Level 8, 44 The Terrace<br>Wellington 6011<br><br>For: Dinesh Chand<br><br>Email: dinesh.chand@eeca.govt.nz |
| 9. | **Energy Savings Targets** | i. 200,000 litres of diesel (in comparison with a similar sized aluminium catamaran); and<br><br>ii. 486 tonnes/annum of carbon emission reductions (after accounting for increase in electricity use). |

# Project Report 1 for EECA

## 1. Background and purpose of report

EECA has agreed to provide co-funding to East By West ferries to demonstrate a 100% battery electric passenger ferry on the Wellington CBD to Eastbourne public transport route. The ferry will be ultra-fast charged at around 1 MW. This report has been prepared to meet the requirements of milestone S1M1P11 under the funding agreement between EECA and East By West.

## 2. Introduction and project plan

East By West has commissioned Wellington Electric Boat Building Company (WEBB) to build and commission the ferry. WEBB is using SSC Marine as the marine architects and designers of the vessel structure, working in partnership with McKay Ltd for the design, delivery, installation and commissioning of the electric drive train and charging infrastructure. Retyna Ltd is assisting East By West with project coordination and permissions required for the shore based charging infrastructure. An overview of the project plan is presented as a Gantt chart in Appendix 1.

## 3. Confirmation of procurement orders – vessel and progress with construction

A Boat Building Agreement for the vessel was signed with WEBB in December 2018. The option remains for East by West to revert to diesel power should there be difficulties with the actual costs of the electric drive train, charging infrastructure or costs to supply electricity. The Boat Building Agreement is based on a budget cost only and acknowledges that the final costs may be different from this. This is common practice for boat building agreements for custom built vessels. The procurement Agreement is attached as Appendix 2.

The vessel is now under construction. The deck is being built on a jig at WEBB's premises at 122 Gracefield Road, Seaview. The hull will be assembled at Seaview Marina, with the deck then transported by road to complete the vessel.

**Photo: Progress with the construction of the carbon fibre deck at WEBB**

## 4. Progress towards confirmation electricity supply and charging infrastructure

Coordinating a significant additional supply of electricity to charge the ferry to a location in a high pedestrian public space has proved to be the most challenging aspect of the project so far. The parties that East by West needs to secure permissions from and coordinate with are:

- Wellington Electricity, the local network company
- McKay as the designers of the charging infrastructure
- Meridian Energy as ferry sponsor, electricity retailer and provider of space for some infrastructure
- Norman Disney Young – consultants to Meridian Energy
- WorkSafe, for shore based electrical safety
- Maritime NZ, for vessel safety including vessel based electrical safety
- Wellington Waterfront (part of Wellington City Council) for an easement for infrastructure in the waterfront public space
- Technical Advisory Group on the Wellington Waterfront, a panel of urban design experts that approve the aesthetic design and placement of infrastructure in the Waterfront public space
- Wellington City Council for resource consent of infrastructure on the shore (eg transformer)
- Wellington Regional Council for resource consent for infrastructure below the high tide mark (eg ferry charger on wharf/pontoon)
- Landlords of buildings which could house any infrastructure.

Meetings have been held over the last few months on a fortnightly to weekly basis to coordinate this work and gain agreement on the optimal location and configuration of infrastructure needed to charge the ferry.

Four options have been developed by Wellington Electricity to supply a network connection (two high voltage and two low voltage). These options are attached as Appendix 3. Meridian Energy has come on board as a sponsor of the ferry and we are now also working with them regarding certain parts of the infrastructure being housed within their building. We anticipate that this will ease the way to progressing charging infrastructure decisions. Consequently Option 3 from Wellington Electricity is the one most likely to be pursued, and will require relatively minor alterations to the WE transformer room in Meridian Energy's building.

## 5. Health and Safety Plans

East by West has documented health and safety policy, attached as Appendix 4. This refers to:

- Marine Transport Operator Plans (MTOP) approved by Maritime New Zealand
- Vessel Operating Procedure Manuals for each vessel
- Induction/training checklists
- Health and Safety issue register.

All of this documentation is available for inspection at East By West's offices on Queen's Wharf. The health and safety requirements of the new vessel and charging will be created by the suppliers and through the approvals process for these.

A new Vessel Operating Procedure Manual will be available for the electric ferry, and applications made as appropriate to Maritime New Zealand to update the MTOP.

East By West and McKay has engaged early with WorkSafe New Zealand regarding the electrical safety of the charging infrastructure in particular. This engagement will continue as some aspects of the project are not covered by existing standards and guidelines due to the innovative nature of the project.

Maritime New Zealand are responsible for regulating vessel safety, including the on-board electrical safety. International ship classification experts, DNV GL, will approve the vessel safety, including electric drive train, and provide documentation for Maritime NZ. Early engagement with Maritime NZ has also occurred and will continue.

## 6. Risk assessment and mitigation

The electrical system designers and installers, McKay, have undertaken a comprehensive analysis of the electrical safety risks and how these are mitigated or managed. This is attached for the vessel as Appendix 5 and for the charging system as Appendix 6.

In addition, the following risks have been identified, are being monitored, and mitigations put in place to manage these.

| Risk | Current Probability | Mitigations |
|---|---|---|
| Public resistance to electric ferries | Low, may increase closer to launch | Proactively provide FAQs and media information about ferry electric propulsion to dispel myths closer to launch. |
| High costs of electricity network connection and use | Medium | Charging will be occurring during peak times. Analysis of a comparison of direct charging and charging via on-shore battery storage is being undertaken [redacted] |
| Delays related to installation of charging infrastructure on waterfront public space | High | Weekly to fortnightly meetings with all relevant stakeholders have been held over the last two months to identify solution options. [redacted] |
| Charging is unavailable temporarily at Queen's Wharf due to power outage or technical issues | Low | Should charging be unavailable temporarily, the ferry can drop its speed and keep operating on remaining power in the on-board batteries, as power for ferry varies non-linearly with vessel speed. A second diesel ferry is available to continue the service. Consideration is being given to future shore-based battery storage. |
| Breakdown of ferry battery electric drive train strands ferry in the harbour | Low | The ferry has two completely independent battery packs and electric drive trains – one in each hull of the catamaran. The chances of both failing at the same time are very low. Intelligent battery management system keeps skipper informed of state of charge and recommends vessel speed accordingly. |

It is now unlikely that the ultra-fast charging infrastructure will be in place ahead of the completion of the electric ferry. However, the vessel needs to undergo extensive sea trials and maritime approvals before it is put into public service. These Wellington Harbour sea trials can take place without the ultra-fast charger in place, as the ferry can be slow charged at the Seaview marina.

Completion date for the infrastructure is now estimated at March 2020 by which time the sea trials are likely to have been completed and the vessel can be put into service.

## 7. Measurement and verification plan

EECA has set performance targets for the energy and $CO_2$ savings expected to be achieved. These are:

- 200,000 litres per year of diesel fuel savings (in comparison with a similar sized aluminium catamaran)
- 486 tonnes per year of $CO_2$ emissions reductions (after accounting for increase in electricity use).

The table below outlines the data sets required in order to report against these performance targets, and how the data measurement has been or will be undertaken.

| Data required | Data measurement methodology |
|---|---|
| 1. Baseline ferry distance and speed over one year (all seasons and conditions) | Existing GPS data gathered on every sailing of existing (smaller) diesel ferry on the same route |
| 2. Baseline diesel fuel consumption, litres per km at different speeds | Existing modelled fuel burn rates for 130 pax aluminium diesel ferry from SSC Marine (marine architects) |
| 3. Baseline annual diesel fuel consumption | Calculations based on 1 and 2 |
| 4. Baseline annual $CO_2$ emissions from equivalent diesel ferry | Based on 3 and determined using EECA's $CO_2$ emissions calculator |
| 5. Electric ferry distance and speed over one year | GPS data to be gathered on every sailing of new electric ferry (a standard procedure in the ferries) |
| 6. Electric ferry electricity consumption over one year | Electricity consumption data from separately metered ferry charger |
| 7. **Target:** Annual diesel fuel savings | Based on 3, with adjustment for any differences in actual annual distance and speeds between baseline ferry and electric ferry ascertained from 1 and 5 |
| 8. Annual $CO_2$ emissions reductions from diesel fuel savings | Based on 7 and determined using EECA's $CO_2$ emissions calculator |
| 9. Annual electricity generation $CO_2$ emissions for ferry electricity use | Based on 6 and determined using EECA's $CO_2$ emissions calculator |
| 10. **Target:** Annual $CO_2$ emissions reductions | Calculation from 8 and 9 |

## 8. Actions from project kick-off meeting

A project kick-off meeting was held on Monday 15 July, initially at East By West's offices at Queen's Wharf in Wellington, then at WEBB's premises in Gracefield Road, Seaview and Seaview Marina. Present were Dinesh Chand from EECA, Jeremy Ward from East By West, Fraser Foote from WEBB and Liz Yeaman from Retyna.

The following two actions were identified at the meeting and have since been implemented.

| Action required | Evidence of implementation |
|---|---|
| 1. Provide information regarding risk management of ferry electric propulsion system and charger | Risk management attached in Appendix 5 and 6. |
| 2. Install safety warning signage on the outer doors of both WEBB premises | Photos attached in Appendix 7 and 8. |

## 9. List of Appendices

Appendix 1 Project plan Gantt chart
Appendix 2 Boat building agreement between WEBB and East By West
Appendix 3 Wellington Electricity network supply options
Appendix 4 East By West health and safety policy
Appendix 5 McKay risk analysis for vessel
Appendix 6 McKay risk analysis for charging system
Appendix 7 Photo of safety hazard/risk signage on outer doors at WEBB, 122 Gracefield Road
Appendix 8 Photo of safety hazard/risk signage on outer doors at WEBB, Seaview Marina

TE TARI TIAKI PŪNGAO
ENERGY EFFICIENCY & CONSERVATION AUTHORITY
EECA

East By West Company Limited
Attn: Jeremy Ward
By email

8 May 2020

Dear Jeremy

**Re: AGREEMENT TO AMEND PROJECT FUNDING AGREEMENT 65433**

Further to the phone conversation on 7 May 2020 with your EECA Account Manager Dinesh Chand, the purpose of this letter is to confirm, subject to the final paragraph below, that the parties agree that this letter forms a variation to the Agreement and shall be effective on and from 15 May 2020 ("Effective Date").

Both parties agree to the following changes to the Agreement:

1. Extension of the 'Completion date' for the following Milestones:
    (i) For Schedule 1 Milestone 2 (S1M2P11: Project Report 2) delete the date 31 January 2020 and replace it with the date 30 November 2020;
    (ii) For Schedule 1 Milestone 3 (S1M3P11: Project Report 3) delete the date 31 July 2020 and replace it with the date 15 June 2021;
    (iii) For Schedule 1 Milestone 4 (S1M4P11: Project Report 4) delete the date 31 January 2021 and replace it with the date 15 December 2021; and
2. Extension of the term of the Agreement by deleting the date 28 February 2021 in clause 2.1 and replacing it with the date 30 December 2021.

If you have any questions please feel free to contact myself or Dinesh directly, otherwise unless we hear from you by 14 May 2020 EECA will consider these changes as being accepted by mutual consent from the Effective Date, and amend its contract register accordingly.

Yours sincerely

Paul Bull

**Account Director**

# Staged plan for ferry charging

**Context and purpose**

This document lays out a new five-stage plan for deploying charging infrastructure for the East by West electric ferry operation from Queen's Wharf. The staged approach allows for proof-of-concept at each stage, minimising capex investment before moving to the next stage. It takes into account:

- The electric ferry should be ready for sea-trials in the second half of 2020
- Difficulty in identifying suitable waterfront land for transformers and power electronics associated with ferry chargers
- New, compact ultra-fast charging technology that has recently come on to the market which has integrated power electronics and cooling units, avoiding the need for finding separate locations for these https://www.hypercharger.it/products/#hyc225-300
- Options, timeframes and costs associated with securing a suitable electricity supply from Wellington Electricity
- NZTA will now fund 51% of charging infrastructure for public transport if the other 49% is in council ownership and a viable business plan is made. Having transformers owned by East By West rather than Wellington Electricity is an advantage to East by West if they can sell these to GWRC.
- Disruptions to commuter and tourism patronage and operations resulting from COVID-19.

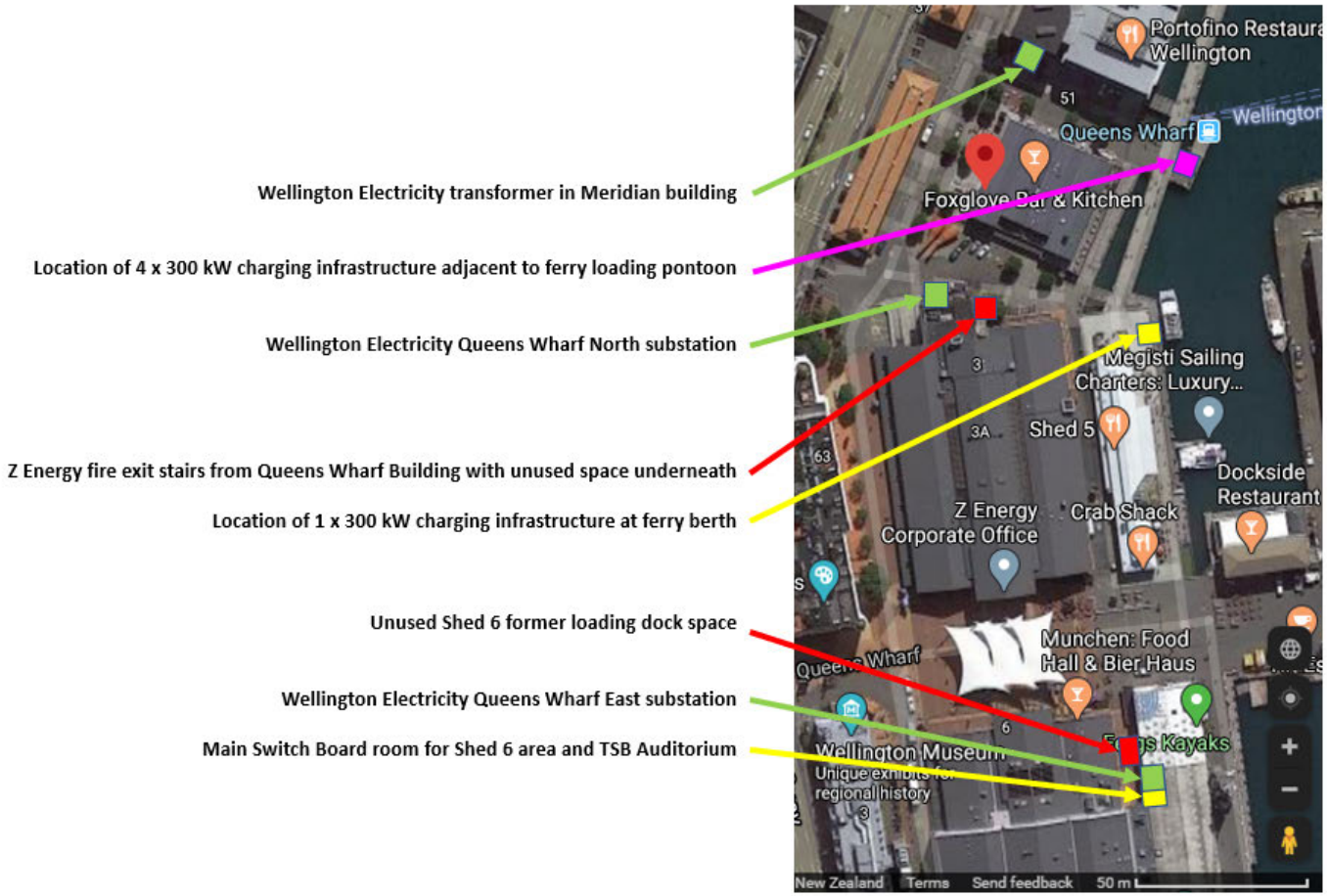
**Summary of staged charging plan**

| Stage and timeframe | Electric ferry route activity | Infrastructure proposed | Estimated capex for infrastructure |
|---|---|---|---|
| **Stage 1** May 2020 | Testing charging concept on dummy/modelled ferry electrical architecture using ChargeNet's 300 kW Hypercharger to be installed at Bombay Hills, Auckland in May 2020 for road vehicle charging. | 1 x mobile dummy test rig in Auckland | Negligible |
| **Stage 2** Q3/Q4 2020 | Sea trials to gain all approvals needed to commence commercial operation of electric ferry. | 1 x 300 kW Hypercharger with two charging cables, each delivering 150 kW to each hull | [redacted] |
| **Stage 3** Q4 2020/ Q1 2021 | Electric ferry operates for 3 return sailings a day, charging at berth between sailings. Potential for 5 return sailings a day once experience gained. Existing diesel ferry operates remaining sailings. | No new charging infrastructure | Nil |
| **Stage 4** 2021 | Electric ferry operates on all timetabled sailings with charging occurring adjacent to loading pontoon during passenger loading and unloading. Existing diesel ferry is available to cover during scheduled and unscheduled maintenance. | 1 x transformer and supply connection from Wellington Electricity<br>4 x 300 kW Hypercharger each with one charging cable delivering 300 kW. | [redacted]<br>[redacted] |
| **Stage 5** 2022 | Additional electric ferries operating on proposed new route from Queens Wharf to Wellington Airport and Shelly Bay. | No new charging infrastructure required – higher utilisation of existing infrastructure | Nil |

**Map of proposed infrastructure location options**

The map below indicates the various locations referred to in this document.

Wellington waterfront around Queens Wharf is a pedestrian area, as well as being part of a working port. Open space on which new infrastructure can be placed is very limited. Any new infrastructure to be installed on the waterfront first needs to gain approval from Wellington Waterfront's Technical Advisory Group (TAG) which considers its visual and amenity values within the context of the waterfront development. TAG's recommendations are considered through the consent process.



**Further summary information on the staged plan**

- Currently most electric ferries around the world use custom-designed charging infrastructure which is expensive and requires extensive testing to demonstrate it is electrically safe.
- In the last one to two years, ultra-fast automotive chargers have come on to the market which are suitable, when used in parallel, to charge large batteries such as in the East by West electric ferry.
- Ultra-fast automotive chargers are "off-the-shelf" items which come with warranties and electrical safety documentation, and are lower cost in comparison with custom-designed and built chargers.
- The 300 kW Hypercharger product, made in Italy, has been identified as the most suitable off-the-shelf option for charging the ferry. It has been selected because it is the only ultra-fast charger which does not have additional power electronics and cooling units which need to be located near the charger. It is very difficult to identify additional space on the waterfront for this separate infrastructure.
- Hypercharger is represented in New Zealand by ChargeNet, a private company that has invested in the majority of the country's public 50 kW vehicle charging network with co-funding support from the Energy Efficiency and Conservation Authority.
- ChargeNet have confirmed that the cost of the Hypercharger would be under [redacted] with a more precise estimate depending on exchange rate fluctuations, which are particularly volatile currently.
- ChargeNet are installing a number of Hyperchargers in NZ, starting April 2020 at Bombay Hills, Auckland, for automotive charging.
- Sufficient power supply has been identified from an 800A cabinet in Wellington City Council's Main Switch Board for Shed 6, TSB Auditorium and surrounding area, for Stage 2 of the charging infrastructure plan. No additional transformers would be required. Wellington City Council have given verbal permission for us to use this power supply. Wellington Electricity does not need to be involved at until preparations for Stage 4, minimising delay and cost risks.
- For stage 2, cabling from the Shed 6 supply to the ferry berth requires no trenching as it can be slung under the wharf. The cost of aluminium cabling and connection to the Shed 6 supply has already has been costed at around [redacted]
- **Unknowns:** the following information still needs to be confirmed with Hypercharger
    - Whether the chargers can operate in parallel or be adapted to operate in parallel
    - Acceptable modifications to charger installation requirements given no solid ground available
- Three options have been identified for electricity supply for Stage 4, following an extensive search for suitable space, which need to be costed:
    1. Wellington Electricity upgrades their transformer in the Meridian Building, which requires some structural work to the building
    2. East By West installing a new transformer in underutilised space under the Z Energy emergency exit from the Queen's Wharf Building with electricity supply from the adjacent Queens Wharf North Substation (pending permission from landowner)
    3. East By West installing a new transformer in underutilised WCC controlled space adjacent to Queens Wharf East Substation.

# PROJECT FUNDING AGREEMENT

EECA
**ENERGY EFFICIENCY AND CONSERVATION AUTHORITY**

Recipient
**EAST BY WEST COMPANY LIMITED**

PARTIES

(1) **ENERGY EFFICIENCY AND CONSERVATION AUTHORITY** (NZBN 9429041901953), a Crown entity constituted under the Energy Efficiency and Conservation Act 2000 ("EECA"); and

(2) **EAST BY WEST COMPANY LIMITED** (NZBN 9429039439062), a New Zealand Limited Company located at Meridian Building, Queens Wharf, Wellington 6011 ("Recipient").

BACKGROUND

A. The Recipient has agreed to implement a technology demonstration project, subject to funding support from EECA.

B. EECA has previously agreed to provide funding support to the Recipient on the terms of a "Project Funding Agreement" dated 30 May 2019 (the "Initial Funding Agreement").

C. The Recipient has requested further funding from EECA.

D. EECA has agreed to provide further funding to the Recipient in the form of a grant of up to NZD200,000 on the terms of this Agreement.

AGREEMENT

1. DEFINITIONS AND INTERPRETATION

1.1 In this Agreement:

**"Agreement"** means this project funding agreement;

**"Business Day"** means a day on which registered banks are open for general banking business, other than a Saturday or Sunday, in New Zealand;

**"Claim"** means a claim for EECA Funding made by the Recipient to EECA in the manner specified by EECA;

**"Completion Date"** means the date on which the Recipient provides to EECA, in a form acceptable to EECA (in its sole discretion), evidence that (i) the Equipment has been commissioned into service (ii) all liabilities that the Recipient owes to WEBBCL in respect of the Equipment have been paid in full; and (iii) the Equipment is owned by the Recipient. For the avoidance of doubt, the Completion Date will only occur once items (i); (ii) and (iii) are satisfied;

**"Confidential Information"** means information disclosed by a party under this Agreement that is marked as confidential or which might reasonably be expected to be confidential in nature;

**"EECA Funding"** means up to NZD200,000 (plus GST) payable by EECA to the Recipient to support the Project;

**"Equipment"** means the 130 passenger carbon fibre catamaran constructed by WEBBCL to Malcolm Tennant design, electric motive power by Visedo/Danfoss Electric Power Drum Motors sufficient battery storage for the route; high speed battery charging capability to be located on Queens Wharf, Wellington;

**"Force Majeure Event"** means an extraordinary event or circumstance beyond the reasonable control of a party such as an Act of God (but excluding lack of funds);

**"GST"** means goods and services tax within the meaning of the Goods and Services Tax Act 1985;

**"Initial Funding Agreement"** has the meaning given to it in the section "Background" of this Agreement;

[redacted] has the meaning given to that term in clause 2.2(c);

**"Permitted Purpose"** means the use of the EECA Funding to finance the construction, commissioning, certification and launch of the Equipment;

**"Project"** means the technology demonstration project to be undertaken by the Recipient, being the design, construction, commissioning, certification and launch of electric passenger ferry for the Queens Wharf to Eastbourne Wellington Harbour service;

**"Project Reports"** means any reports that the Recipient is required to provide to EECA under this Agreement;

**"Proposal"** means the proposal for the Project that the Recipient supplied to EECA;

**"Records"** means all information and data for the management of this Agreement and the delivery of the Project. Records include, but are not limited to, reports, invoices, letters, emails, notes of meetings, photographs and other media recordings. Records can be hard copies or soft copies stored electronically;

**"Serious Incident"** means any notifiable event as defined by the Health and Safety at Work Act 2015;

**"Site"** means the site where the Project is to be undertaken, being Queens Wharf, Wellington.

**"WEBBCL"** means Wellington Electric Boat Building Company Limited (NZBN 9429047142893);

**"Worker"** means any person who carries out work for the Recipient in any capacity, including work as an employee, contractor or subcontractor, an employee of a contractor or subcontractor, or a volunteer worker. It also includes anyone else directed or influenced by the Recipient in the exercise of their work; and

**"WHS Laws"** means all applicable legislation and regulations in force including, but not limited to, the Health and Safety at Work Act 2015 and any amendments or replacement legislation, the Hazardous Substances and New Organisms Act 1996, the Resource Management Act 1991, the Building Act 2004, and the Human Rights Act 1993 and all relevant Regulations, Approved Codes of Practice, New Zealand Standards and guidance material, and/or other international standards and guidance material regarding best practice requirements for undertaking the Project that the Recipient could reasonably be expected to be aware of.

1.2 **Interpretation:**

(a) References to clauses are to clauses of this Agreement unless the context requires otherwise.

(b) The headings in this Agreement are for convenience only and have no legal effect.

(c) The singular includes the plural and vice versa.

(d) A reference to a statute includes a legislative instrument or other subordinate legislation made under it and amendments to or replacement of any of them from time to time.

(e) References to "disposal" includes any sale, assignment, exchange, transfer, loan, lease, surrender of lease, licence or parting with possession of, or the granting of any option, right or interest, the payment of money (including a distribution by way of dividend) or any agreement for any of the foregoing but excludes any such transaction which is a security).

## 2. TERM AND CONDITIONS TO EECA FUNDING

2.1 This Agreement will commence on the date it is signed by both parties and continue until 31 December 2023 unless the Agreement is terminated earlier in accordance with clause 9.

2.2 No EECA Funding is payable under this Agreement until the Recipient has provided to EECA, in a form acceptable to EECA (in EECA's sole discretion):

(a) evidence that (i) WEBBCL can pay its debts as and when they fall due; and (ii) WEBBCL can, in respect of the Project, meet it liabilities and complete the build and commissioning of the Equipment; and (iii) WEBBCL has agreed to forego any margin in respect of their services for the Project and the Recipient and WEBBCL have thereby agreed that the costs for the Project have been reduced by [redacted]

(b) evidence that the Recipient's shareholders have contributed, to a bank account in the name of the Recipient, an additiona[redacted] be used for completion of the construction of Equipment (leading to an aggregate contribution to the Project by the Recipient's shareholders of at lea[redacted]

(c) evidence that (i) the Recipien[redacted]nd WEBBCL have entered into a deed that provides for the sharing of intellectual property in relation to the Project; (ii) confirmation that the cost for the services that [redacted]as provided and is to provide in respect of the Project is capped at [redacted]and (iii) confirmation that the only amounts payable to [redacted]n respect of the Project are no more than [redacted]and that the [redacted]mount Outstanding is repayable by way of a loan (on terms acceptable to EECA); and

(d) a schedule of invoices for the claimed costs to be paid by the EECA Funding.

## 3. RECIPIENT'S OBLIGATIONS

3.1 The Recipient will:

(a) undertake the Project at the Site in accordance with this Agreement;

(b) take full responsibility for the Equipment and manage the operation of that Equipment in accordance with good manufacturing, operational and health and safety practices relevant to the business on the Site;

(c) implement and manage the Project with all due care and skill and to a professional standard commensurate with the nature of the Project; and

(d) complete the Project by 31 December 2021.

## 4. EECA FUNDING

4.1 Subject to clause 4.5, EECA will pay the Recipient the EECA Funding in one lump-sum instalment on satisfaction of the conditions set out in clause 2.2 and compliance with this clause 4.

4.2 To receive EECA Funding, the Recipient must provide EECA with the Claim that contains at least the following details:

(a) the Recipient's name, address and GST number;

(b) evidence of completion of each condition in 2.2 (unless otherwise agreed by EECA); and

(c) the amount and GST due.

4.3 Following the receipt and approval of the Claim, EECA will provide the Recipient with a buyer created invoice at the time of making payment.

4.4 Subject to clause 4.5, if EECA receives the valid Claim by the 10th of the month, EECA will pay the sum set out in the Claim on the 20th day of that month. If the valid Claim is received after the 10th of the month, it will be paid on the 20th of the following month.

4.5 If EECA disputes the sum in the Claim:

(a) EECA will notify the Recipient of the dispute following receipt of the Claim;

(b) EECA will pay the undisputed portion of the Claim in accordance with clause 4.4; and

(c) the disputed portion of the Claim will be dealt with under clause 11 (Disputes).

4.6 EECA is not under any obligation to make any payment under this Agreement until EECA has received:

(a) a valid Claim for the EECA Funding from the Recipient; and

(b) satisfactory evidence from the Recipient that the conditions in clause 2.2 have been satisfied in accordance with this Agreement.

4.7 If EECA is required to withhold any taxes from any payment required to be made by it under this Agreement, payment of the valid Claim shall be deemed to have been made in full if EECA makes payment of the invoiced sum, less the taxes so required to be withheld.

4.8 The Recipient agrees and warrants that it will use EECA Funding only for the Permitted Purposes. If any of the EECA Funding is not used for the Permitted Purpose, the Recipient must immediately repay the EECA Funding.

## 5. REPAYMENT

5.1 Without limiting any other remedy EECA may have, the Recipient must repay EECA Funding to EECA in the circumstances set out in this clause 5. All repayments must be made within 10 Business Days of a demand in writing by EECA.

5.2 If the actual total costs of the Project are less than the total costs set out in the Proposal, the Recipient (if the Recipient has claimed from EECA the full amount of EECA Funding available under this Agreement) will repay to EECA an amount of EECA Funding proportional to the reduction in total costs (i.e. the same percentage of total costs as set out in the Proposal, but applied against actual costs).

5.3 The Recipient will, on demand by EECA, repay all or part (at EECA's discretion) of the EECA Funding paid by EECA if:

(a) the Recipient fails to comply with any of its obligations required under this Agreement;

(b) there are any material amendments to the documentation that has been provided to EECA under clause 2.2 of this Agreement or the arrangements contemplated by clause 2.2 of this Agreement;

(c) the Recipient fails to achieve the Completion Date by 31 December 2021; or

(d) the Recipient sells the Equipment within 2 years following the Completion Date.

## 6. INFORMATION MANAGEMENT

6.1 The Recipient must:

(a) keep and maintain full, true and up-to-date Records of the performance of its obligations under this Agreement during the term of this Agreement and for a minimum of three years following termination or expiry of the Agreement;

(b) allow EECA or its nominee to audit the Records, or audit the performance (including reviewing the Records) from time-to-time as reasonably required by EECA;

(c) co-operate with EECA and provide all information and assistance reasonably requested by EECA to allow EECA to promote, if successful, the Project through the publication of case studies, guides, workshops and seminars (including the participation of the Recipient at one or more workshops and seminars arranged by EECA);

(d) give information to EECA relating to the performance of the Recipient's obligations pursuant to this Agreement which EECA reasonably requests. All information provided by the Recipient must be in a format that is usable by EECA, and delivered within a reasonable time of the request;

(e) co-operate with EECA to provide information immediately if the information is required by EECA to comply with an enquiry or its statutory, parliamentary, or other reporting obligations; and

(f) make sure that any Records provided to EECA or created for EECA, are securely managed and securely destroyed on their disposal.

6.2 The parties shall otherwise co-operate promptly and share information with each other as necessary to meet the operational objectives of EECA and enable the Recipient to perform its obligations under this Agreement.

## 7. INTELLECTUAL PROPERTY

7.1 Any intellectual property already in existence at the commencement of this Agreement shall remain the property of the current owner.

7.2 All intellectual property created, or developed, by, or for, the Recipient in performing this Agreement, including all intellectual property rights in the Project will be owned by the Recipient.

7.3 The Recipient grants to EECA a perpetual, irrevocable, royalty-free and non-exclusive licence to use its existing intellectual property to the extent necessary in carrying out its obligations under this Agreement.

## 8. HEALTH AND SAFETY

8.1 If there is an inconsistency or ambiguity between this clause and the WHS Laws, the WHS Laws will prevail.

8.2 The Recipient must at all times when undertaking the Project in accordance with this Agreement comply with all WHS Laws.

8.3 The Recipient must (and must ensure that its Workers):

(a) at all times identify and exercise all necessary precautions for the protection of the health and safety of all persons including Workers, EECA, and members of the public who may be affected by the Project or by the performance or purported performance of the Project;

(b) undertake the Project in a safe manner; and

(c) do all things requested by EECA or any of its personnel to allow EECA to discharge and comply with EECA's obligations under the WHS Laws.

8.4 The Recipient will:

(a) comply with any directions on safety issued by any relevant authority;

(b) notify EECA and the relevant authorities promptly after any Serious Incident regarding the Project;

(c) conduct an investigation into the circumstances of a near miss or an incident (including a Serious Incident) affecting or potentially affecting the health and safety of any person promptly after that event occurs and promptly notify EECA of the outcome of any such investigation in relation to the Project; and

(d) if requested by EECA, promptly provide to EECA any documents relating to or created in respect of any investigation (by the Recipient or any regulator) into a near miss or incident (including a Serious Incident) in relation to the Project.

8.5 The Recipient must ensure, and provide (on request) evidence to the satisfaction of EECA, that any subcontractor it engages in accordance with this Agreement has the necessary safety systems, expertise and financial standing to carry out the work to be subcontracted.

8.6 The parties and any subcontractor will consult, co-operate, and co-ordinate activities with each other in order to ensure that each of the parties and the subcontractor meet their obligations under this Agreement and the WHS Laws.

## 9. TERMINATION

9.1 EECA may terminate this Agreement if the Recipient commits a material or persistent breach of this Agreement and, if such breach is capable of remedy, fails to remedy that breach within 10 Business Days after receipt of a notice from the other party requiring the breach to be remedied.

9.2 In addition, EECA may terminate this Agreement on notice with immediate effect if:

(a) EECA considers in its sole discretion the Recipient has not fulfilled its obligations under clause 3.1; or

(b) the Recipient becomes insolvent; or

(c) the Recipient is the subject of enforcement action pursuant to the WHS Laws.

9.3 Upon termination of the Agreement under clause 9.2 EECA will not be obliged to pay the EECA Funding and any EECA Funding paid to the Recipient will be repayable on demand by EECA.

9.4 The termination of this Agreement shall be without prejudice to EECA's rights and remedies in respect of any breach by the Recipient, where the breach occurred before the termination of this Agreement.

## 10. CONFIDENTIALITY AND PUBLICITY

10.1 Except as permitted by clause 10.2, each party shall keep the other party's Confidential Information confidential and will not disclose any Confidential Information to any person or use the Confidential Information for any purpose other than to perform this Agreement.

10.2 Notwithstanding clause 10.1, a recipient of Confidential Information may disclose any Confidential Information if, and to the extent that, disclosure is required by law (including under the Official Information Act 1982 and the Health and Safety at Work Act 2015) or any governmental authority, regulator, or parliamentary convention, provided that the disclosing party gives the other party notice of the requirement as soon as practicable before such disclosure is made, and gives the other party copies of any such information to be disclosed.

10.3 Each party will ensure that its personnel:

(a) are aware of the confidentiality obligations in this Agreement; and

(b) do not use or disclose any of the other party's Confidential Information except as allowed by this Agreement.

10.4 Subject to clause 10.5 and except as required by law, a party shall make no announcement or disclosure relating to the contents of this Agreement except as agreed by the parties in advance (such approval not to be unreasonably withheld or delayed).

10.5 Either party may publish the results and findings arising from the Project in such manner and media as it thinks fit, provided that the party obtains the other party's prior written approval to any such publication (such approval not to be unreasonably withheld).

10.6 The Recipient acknowledges that EECA is subject to the Official Information Act 1982 and may be required to disclose information pursuant to that Act. The Recipient should mark any commercially sensitive information as "Commercial: In Confidence" if the Recipient wishes to protect specific commercial information. However, EECA does not guarantee that such marked information will be protected from disclosure. The Recipient will immediately forward to EECA any request for information made under the Official Information Act 1982 received by the Recipient.

10.7 The Recipient will notify EECA of any actual or anticipated issues, including but not limited to health and safety events or investigations by the regulator, which could receive media attention or significantly impact on a Project agreed under this Agreement.

10.8 This clause survives termination of this Agreement.

## 11. DISPUTES

11.1 If any dispute or difference arises between the parties in relation to, or arising out of, this Agreement, both parties will endeavour in good faith to settle the dispute by agreement.

11.2 If the dispute or difference is not settled by agreement within 20 Business Days of the dispute arising then, unless agreed otherwise, either party may refer the dispute to mediation.

11.3 If a dispute is referred to mediation, the mediation will be conducted:

(a) by a single mediator agreed by the parties or if they cannot agree, appointed by the Chair of the Resolution Institute;

(b) on the terms of the Resolution Institute standard mediation agreement; and

(c) at a fee to be agreed by the parties or if they cannot agree, at a fee determined by the Chair of the Resolution Institute.

11.4 Each party will pay its own costs of mediation under this clause 11.

11.5 Neither party may issue legal proceedings (other than for urgent interlocutory relief) in respect of such dispute or difference, unless that party has first taken all reasonable steps to comply with clauses 11.1 to 11.3.

## 12. INSURANCE

12.1 It is the Recipient's responsibility to ensure the risks of doing business are adequately covered by insurance. The Recipient must within 10 Business Days of a request from EECA provide proof confirming the specific nature and quantity of the insurance cover held and show that this cover is current.

## 13. INDEMNITY

13.1 The Recipient shall, to the full extent permitted by law, defend, indemnify and hold harmless EECA, from and against any and all damage, loss (including loss of profits), cost, liability, and expense whatsoever (including legal fees, third party claims, all and any actual court costs, witness fees and expenses and all disbursements) directly incurred by reason of:

(a) any failure by the Recipient to perform any covenant or observe any obligation of the Recipient under this Agreement; or

(b) any breach by the Recipient of any representation, warranty, or covenant on the part of the Recipient contained in this Agreement; or

(c) the negligence or wrongful act or omission of the Recipient.

13.2 Notwithstanding clause 13.1, neither party shall be liable for any breach of this Agreement to the extent such breach is due to a Force Majeure Event, provided that it keeps the other party fully informed of the situation, uses reasonable endeavours to mitigate the effect of the Force Majeure Event and resumes full performance as soon as reasonably practicable.

## 14. GENERAL

14.1 **Assignment**: The obligations of the Recipient under this Agreement are personal to the Recipient and may only be assigned or transferred with the prior approval in writing of EECA, such approval not to be unreasonably withheld.

14.2 **Change of Control**: Any change in the majority shareholding of the Recipient or the effective management control of the Recipient shall be deemed to be an Assignment under this Agreement requiring the consent of EECA pursuant to clause 14.1.

14.3 **Counterparts**: This Agreement may be signed in any number of counterparts (including electronic copies) and provided that each party has signed a counterpart, the counterparts, when taken together, will constitute a binding and enforceable agreement between the parties.

14.4 **Entire agreement**: The parties acknowledge that this Agreement sets out the entire agreement and understanding of EECA and the Recipient and supersedes all prior oral or written agreements, understandings or arrangements relating to its subject matter.

14.5 **Further assurances**: Each party shall, at its own expense, promptly sign and deliver any documents, and do all things, which are reasonably required to give full effect to the provisions of this Agreement.

14.6 **New Zealand Law**: This Agreement will be governed by and construed in accordance with the laws of New Zealand and the parties submit to the non-exclusive jurisdiction of the New Zealand courts.

14.7 **No partnership**: Nothing contained in this Agreement shall be deemed to constitute either party as being the partner of the other or to constitute either party as being the agent or legal representative of the other. Neither party shall have any authority to act or to assume any obligation or liability on behalf of the other.

14.8 **Notices**: Each notice under this Agreement shall be in writing and delivered by courier or sent by email to the address set out in item 7 or 8 (as applicable) of the Schedule. A notice is deemed to be received:

(a) if delivered by courier, when delivered; or

(b) if sent by email, when actually received,

provided that any notice received after 5 pm on a Business Day or on a non-Business Day shall be deemed to have been received on the next Business Day.

14.9 **Variations**: This Agreement cannot be varied in any manner except by way of agreement in writing signed by the parties.

Execution

**SIGNED** for and on behalf of the
**ENERGY EFFICIENCY AND CONSERVATION AUTHORITY** by

[redacted]
Signature

A M Caseley
Print Name

CE
Position

30 June 2021
Date

**SIGNED** for and on behalf of
**EAST BY WEST COMPANY LIMITED** by

DIRECTOR

[redacted]

[illegible] WARD
Print Name

Position

24/6/21
Date

## Alexandra Doyle-Franklin

**From:** Andrew Caseley
**Sent:** Wednesday, 7 July 2021 7:08 am
**To:** Jeremy Ward
**Cc:** Dinesh Chand; Russell Holmes
**Subject:** RE: Wellington Electric Boat Buildings Company Ltd (WEBB) [FIA-FINDEX.FID36799942]

Thanks Jeremy.

I'll review today and await Russell's response so we can finalise for you as quickly as we can.

Regards,

Andrew

**Andrew Caseley**
Chief Executive

EECA TE TARI TIAKI PUNGAO

Level 8 · 44 The Terrace · Wellington 6011 · PO Box 388 · Wellington 6140
P +64 4 470 2200 · DDI +64 4 470 2201 Mobile: +64 21 905 449

www.eeca.govt.nz



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**From:** Jeremy Ward <jeremy@eastbywest.co.nz>
**Sent:** Tuesday, 6 July 2021 4:02 pm
**To:** Andrew Caseley <Andrew.Caseley@eeca.govt.nz>
**Cc:** Dinesh Chand <Dinesh.Chand@eeca.govt.nz>; Russell Holmes <Russell.Holmes@findex.co.nz>
**Subject:** Fw: Wellington Electric Boat Buildings Company Ltd (WEBB) [FIA-FINDEX.FID36799942]

Hi Andrew

In response to your email queries:

- Re bullet point 1, I have attached an updated project finish cost.
- With the timing and all facets now pretty much defined, these costs are now unlikely to change dramatically
- Re bullet point 2, the spreadsheet also contains a cost spreadsheet for the shore based charging infrastructure. *((For your information we are also talking to* [redacted] *a large company.* [redacted] *Also it would be good*

*for WEBB as we can now offer turnkey solutions to potential new WEBB clients.))*

Financially I believe we are there, with the latest support of EECA, and ongoing EBW additional support as required.

- Re bullet point 3, In respect of the [redacted] I have now enclosed the dated version (21 June 21). And to confirm the amount of [redacted] gst was paid to [redacted] on 26th June [redacted] You can view this on the attached EBW bank account transactions.

  The [redacted] details the amount owed as capped at [redacted] less the amount paid as above on 26 June [redacted] so total amount now owing is confirmed at [redacted] as per your email below.

- Re bullet point 4, the amount o [redacted] not [redacted] as referred to in you email??) in the 2nd schedule to [redacted] for shore based infrastructure was for their initial investigation a year back when [redacted] (not proceeded with). There are no further charges expected from [redacted] re the shore based infrastructure unaccounted for.
- 
- Re bullet point 6, re the [redacted] loans to WEBB, these are convertible loans provided by interested parties to assist in the development and build of the electric ferry, and ongoing to become a shareholder in WEBB going forward. The convertible loans bear interest at 5% and is convertible to shares in [redacted]. The loan is initially for 1 year, extendable to 2 years at the option of WEBB at 5% interest. The date for conversion was originally 31 April 2021 but the company will be looking to extend that to 31st Dec 2021.

- Re bullet point 7, I have attached EBW Kiwibank statement of account for period 26th June to 6th July 2021.

The other accounting queries you have raised will be responded to by Russell Holmes by separate email.

I trust that information and Russell's response covers all your queries and we look forward to receiving the $200k grant as soon as feasible.

Many thanks

Jeremy

**Jeremy Ward | Managing Director | East By West Ferries** www.electricboatbuilders.co.nz
Meridian Building, Queens Wharf, PO Box 5077, Wellington 6140 | P (04) 499 1282 | F (04) 499 1288 | | [redacted]
jeremy@eastbywest.co.nz | www.eastbywest.co.nz

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**From:** Andrew Caseley <Andrew.Caseley@eeca.govt.nz>
**Sent:** Thursday, 1 July 2021 2:50 PM
**To:** Russell Holmes <Russell.Holmes@findex.co.nz>
**Cc:** Jeremy Ward <jeremy@eastbywest.co.nz>; Dinesh Chand <Dinesh.Chand@eeca.govt.nz>
**Subject:** RE: Wellington Electric Boat Buildings Company Ltd (WEBB) [FIA-FINDEX.FID36799942]

Hello Russell,

Further to our conversation I have outlined below what I'd like to cover with you or Jeremy:

- I notice in Book 1 the costs to complete have changed from what Jeremy provided in the first attachment – could someone update the financing position ( attachment 1 ) as it indicates to me you are about [redacted] short as a number of costs ( particularly stainless steel work & labour have increased quite a lot)
- I would also like to see an updated estimate for the completion of the shore based infrastructure as I can't see this
- In respect to the [redacted] deal I see [redacted] had to be paid – has this been paid? And the loan amount is then [redacted] and could you advise the date of the Agreement as I see it is undated
- Is the [redacted] cost to complete of the shoreside infrastructure of [redacted] capped?
- Could you advise where the [redacted] loan sits ie whose balance sheet?
- In respect to the solvency of WEEBBC ( I have referred the balance sheet as at 31arch 2021)
    - What are the terms of the [redacted] loans and how did they arise ( were they in lieu of payment for services or as cash loans?) as I see they are a source of funding for the Project?
    - Can you advise why there is such a high negative balance as Accounts Receivable
    - When does the New Ferry Deposit liability get reversed out and what is the credit entry for this transaction?
- Could you please send the EBWC bank account transactions since the shareholder advance was received on 22 June
- Can you explain why the asset value of the ferry in the balance sheet of EBWC ([redacted] at 31 March ) is so much less than the total payment made to 30 May of [redacted]

I have signed the Agreement and once we have worked through these items to our satisfaction Clause 2.2 of the Agreement will then be satisfied and we can make payment.

Regards,

Andrew Caseley

**Andrew Caseley**
Chief Executive

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---

**From:** Russell Holmes <Russell.Holmes@findex.co.nz>
**Sent:** Wednesday, 16 June 2021 2:26 pm
**To:** Andrew Caseley <Andrew.Caseley@eeca.govt.nz>
**Cc:** Jeremy Ward <jeremy@eastbywest.co.nz>
**Subject:** Wellington Electric Boat Buildings Company Ltd (WEBB) [FIA-FINDEX.FID36799942]

Hi Andrew

Jeremy Ward asked me to pass some comments through to you to support the proposed grant for WEBB and in particular East by West Company Ltd's (EBW) commitment in supporting the project and ongoing success of WEBB.

We advise that we have acted for EBW for around 20 years now and note that the company has a long solid trading history and current strong equity position with all liabilities current.

EBW directly owns 51% of WEBB and is heavily committed to the success of the WEBB business. The current project is essentially funded by EBW through the purchase of the boat but with some R&D type expenditure remaining as a cost with WEBB. EBW has also supported the funding of this and will continue to do so until WEBB is in a position to support itself once further projects are underway, which are expected in the near future.

All parties involved are highly motivated to ensure the success of WEBB, in particular EBW who will be in a position to showcase the new first of its kind electric ferry on the Wellington harbour and reap the benefits of the new technology.

Let me know if there is anything further we can provide or comment on to support this grant.

Kind regards,

**Russell Holmes**
**Principal - Accounting & Business Advisory**

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FINDEX


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# East By West Company Limited

## EECA technology demonstration project funding

# Claim Details

| | |
|---|---|
| **Claim Number** | 01 |
| **Contract Date** | 30 June 2021 |
| **Contract Title** | Project Funding Agreement |
| **Your EECA Account Manager** | Dinesh Chand |
| **Milestone Number** | S1M1 |
| **Milestone Description** | Technology Demo Project on site |
| **Claim Amount (GST Exclusive)** | $200,000.00 |
| **Please attach and note any supporting documentation** | Project budget to completion and company financial records provided. |

# Claimant Details

| | |
|---|---|
| **Company Name** | East By West Company Limited |
| **Person Claiming** | Jeremy Ward |
| **Bank Account Number** | [redacted] |
| **GST Number** | 050-626-407 |

Signe[redacted] for with co. CSO

Date: 12th July 2021

## Alexandra Doyle-Franklin

**From:** Andrew Caseley
**Sent:** Tuesday, 13 July 2021 11:44 am
**To:** Andrew Caseley
**Cc:** Dinesh Chand
**Subject:** File Note - Wellington Electric Boat Buildings Company Ltd (WEBB)
**Attachments:** Fw: Wellington Electric Boat Buildings Company Ltd (WEBB) [FIA-FINDEX.FID36799942]

# FILE NOTE

Further to my queries below I have since spoken (on 13 July 2021) to both Russell Holmes, who is the Accounting and Business Advisor to the "group", and Jeremy Ward , who is the managing Director of both East by West Ferries (EBW) and Wellington Electric Boat Building Company (WEBB).

The conversations were as follows:

**Russell –** it was explained that the finances of EBW & WEBB are very entwined with EBW providing on going funding support to WEBB while the Boat build is completed. Russell felt the better thing to do was to look at the liabilities still to be met as part of the cost to complete that Jeremy had provided. This shows there are sufficient funds being introduced ( primarily from EECA ) to meet the outstanding liabilities as part of the cost to complete assessment. Russell was confident the "Group" was and would remain solvent.

**Jeremy –** I made clear to Jeremy EECA was seeking assurance that the boat could be commissioned and put into service while retaining group solvency and no claims or other actions would occur in respect to parties involved in the boat build. Jeremy assured me this was and would be the case with the boat planned to be in service by early September. He felt confident (95%) around the cost to complete estimates for both the boat and on shore facilities.

The specific response to my queries were:

- I notice in Book 1 the costs to complete have changed from what Jeremy provided in the first attachment – could someone update the financing position ( attachment 1 ) as it indicates to me you are about [redacted] as a number of costs ( particularly stainless steel work & labour have increased quite a lot) Updated cost to complete provided as well as outstanding labilities still to be met - see attachment
- I would also like to see an updated estimate for the completion of the shore based infrastructure as I can't see this Included above – see attachment
- In respect to the [redacted] deal I see [redacted] had to be paid – has this been paid? And the loan amount is then [redacted] and could you advise the date of the Agreement as I see it is undated - [redacted] and agreement dated 21 June 2021
- Is the [redacted] to complete of the shoreside infrastructure of [redacted] capped? Cost to complete level of confidence is 95% given point of time in the projects
- Could you advise where the [redacted] loan sits ie whose balance sheet? This will be a liability in WEBB
- In respect to the solvency of WEEBBC ( I have referred the balance sheet as at 31arch 2021)
    - What are the terms of the [redacted] loans and how did they arise ( were they in lieu of payment for services or as cash loans?) as I see they are a source of funding for the Project? Jeremy Ward has clarified adequately in the attached E mail
    - Can you advise why there is such a high negative balance as Accounts Receivable see explanation below from Russell – satisfied with this response
    - When does the New Ferry Deposit liability get reversed out and what is the credit entry for this transaction? see explanation below from Russell – satisfied with this response
- Could you please send the EBWC bank account transactions since the shareholder advance was received on 22 June received and reviewed as per email attached

- Can you explain why the asset value of the ferry in the balance sheet of EBWC ([redacted] at 31 March ) is so much [redacted] than the total payment made to 30 May of [redacted] - see explanation below from Russell – satisfied with this response

On the basis of these enquiries and discussions I am now satisfied about the solvency of the "group" and completion of the boat build and therefore will be authorising payment of the $200,000 on 20 July 2021.

Andrew Caseley – 13 July 2021

**Andrew Caseley**
Chief Executive

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---

**From:** Russell Holmes <Russell.Holmes@findex.co.nz>
**Sent:** Tuesday, 13 July 2021 8:56 am
**To:** Andrew Caseley <Andrew.Caseley@eeca.govt.nz>
**Subject:** RE: Wellington Electric Boat Buildings Company Ltd (WEBB)

Ok.

Kind regards,

**Russell Holmes**
**Principal - Accounting & Business Advisory**

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Direct: +64 4 466 4829

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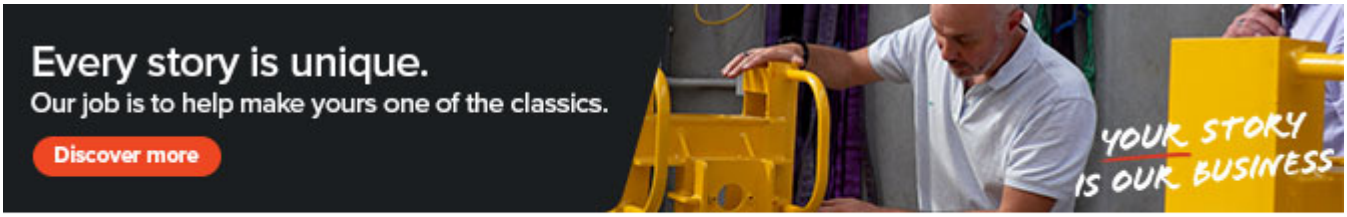
PO Box 11976, Manners Street, Wellington 6142, New Zealand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**From:** Andrew Caseley <Andrew.Caseley@eeca.govt.nz>
**Sent:** Tuesday, 13 July 2021 8:53 AM
**To:** Russell Holmes <Russell.Holmes@findex.co.nz>
**Subject:** RE: Wellington Electric Boat Buildings Company Ltd (WEBB)



I'll call you at 10 Russell.

Andrew

**Andrew Caseley**
Chief Executive

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**From:** Russell Holmes <Russell.Holmes@findex.co.nz>
**Sent:** Tuesday, 13 July 2021 8:43 am
**To:** Andrew Caseley <Andrew.Caseley@eeca.govt.nz>
**Subject:** RE: Wellington Electric Boat Buildings Company Ltd (WEBB)

Hi Andrew

Can you give me a call when you get a chance to discuss. I'm free most of the day.

Kind regards,

**Russell Holmes**
**Principal - Accounting & Business Advisory**

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Direct: +64 4 466 4829

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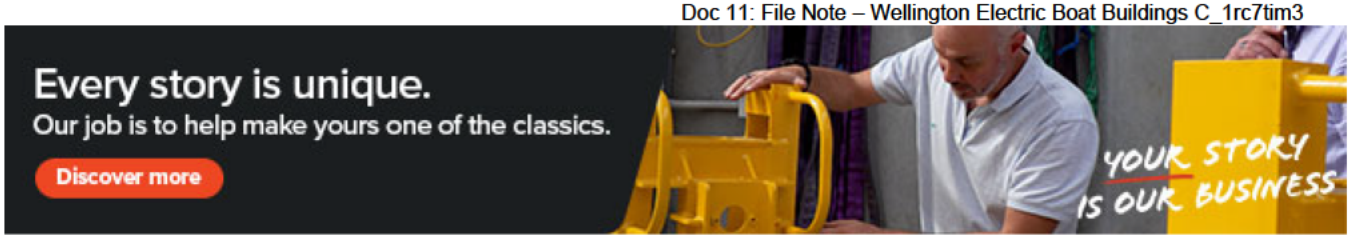
PO Box 11976, Manners Street, Wellington 6142, New Zealand

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**From:** Andrew Caseley <Andrew.Caseley@eeca.govt.nz>
**Sent:** Monday, 12 July 2021 5:49 PM
**To:** Russell Holmes <Russell.Holmes@findex.co.nz>
**Cc:** Jeremy Ward <jeremy@eastbywest.co.nz>
**Subject:** RE: Wellington Electric Boat Buildings Company Ltd (WEBB) [FIA-FINDEX.FID36799942]



Hi Jeremy & Russell,

Thank - you for the additional info you have provided and I think I have got my head around it.

What I am finally trying to do is to complete a total project cost funding summary and this is what I have come up with:

**Total Project Cost** ( per latest spreadsheet from Jeremy but excluding the loan from Mckay's) [redacted]

**Sources of Funding:**

- Funding provided to 31 May to WEBB ( previous funding summary) - [redacted]
- Additional Shareholder Loan - [redacted]
- EECA - **$.3m**
- Ferry Infrastructure Paid to 31 May (previous funding summary) - [redacted]
- Other Receipts ( Covid payment and bank account ) [redacted]
- **Total** [redacted]

**Cash Shortfall** [redacted]

Could you now check this calculation as clearly I have missed something given your scenario Jeremy that after June and everything is paid up you see there is in fact [redacted] excess funding so somewhere we are [redacted] different.

If you would like to contact me I am available in the morning until 9 am and then between 11.30 and 1 pm.

I look forward to the clarity.

Regards,

Andrew

**Andrew Caseley**
Chief Executive

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**From:** Russell Holmes <Russell.Holmes@findex.co.nz>
**Sent:** Wednesday, 7 July 2021 8:23 am
**To:** Andrew Caseley <Andrew.Caseley@eeca.govt.nz>
**Cc:** Jeremy Ward <jeremy@eastbywest.co.nz>
**Subject:** Wellington Electric Boat Buildings Company Ltd (WEBB) [FIA-FINDEX.FID36799942]

Hi Andrew

Jeremy has answered those I've noted as such. Answers to the rest I've provided below in red. Some may need discussion so fell free to call me.

Kind regards,

**Russell Holmes**
**Principal - Accounting & Business Advisory**

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Direct: +64 4 466 4829

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PO Box 11976, Manners Street, Wellington 6142, New Zealand




---

**From:** Andrew Caseley <Andrew.Caseley@eeca.govt.nz>

**Sent:** Thursday, 1 July 2021 2:50 PM
**To:** Russell Holmes <Russell.Holmes@findex.co.nz>
**Cc:** Jeremy Ward <jeremy@eastbywest.co.nz>; Dinesh Chand <Dinesh.Chand@eeca.govt.nz>
**Subject:** RE: Wellington Electric Boat Buildings Company Ltd (WEBB) [FIA-FINDEX.FID36799942]



Hello Russell,

Further to our conversation I have outlined below what I'd like to cover with you or Jeremy:

- I notice in Book 1 the costs to complete have changed from what Jeremy provided in the first attachment – could someone update the financing position ( attachment 1 ) as it indicates to me you are about [redacted] a number of costs ( particularly stainless steel work & labour have increased quite a lot) Jeremy.
- I would also like to see an updated estimate for the completion of the shore based infrastructure as I can't see this Jeremy.
- In respect to the [redacted] deal I see [redacted] had to be paid – has this been paid? And the loan amount is then [redacted] and could you advise the date of the Agreement as I see it is undated Jeremy.
- Is the [redacted] cost to complete of the shoreside infrastructure of [redacted] capped? Jeremy.
- Could you advise where the [redacted] loan sits ie whose balance sheet? This hasn't been recorded yet but will be a specific loan liability in the books of WEBB.
- In respect to the solvency of WEEBBC ( I have referred the balance sheet as at 31arch 2021)
    - What are the terms of the [redacted] loans and how did they arise ( were they in lieu of payment for services or as cash loans?) as I see they are a source of funding for the Project? Jeremy.
    - Can you advise why there is such a high negative balance as Accounts Receivable There was credit raised from WEBB back to EBW around March 2020 in respect of build costs of around [redacted]. At the moment this is showing as a credit in Accounts Receivable. This will be reduced by future invoicing from WEBB but an element of this will ultimately be converted to a loan from EBW to WEBB. Its possible this could also be converted to shares but this hasn't been fully considered and the final loan position needs to be crystalised yet. This is commented on further below.
    - When does the New Ferry Deposit liability get reversed out and what is the credit entry for this transaction? The agreement was that this will be held and offset against the final build costs. It will probably ultimately end up being wrapped up in the final loan amount from EBW to WEBB noted above.
- Could you please send the EBWC bank account transactions since the shareholder advance was received on 22 June Jeremy.
- Can you explain why the asset value of the ferry in the balance sheet of EBWC ( [redacted] at 31 March ) is so much [redacted] the total payment made to 30 May of [redacted] What's been charged for the boat build to date is only direct costs such as materials, labour and subcontractors plus 5% - note that the 5% was to cover an element of overheads but has been well short of these. Up to 31 May 2021 total overheads including R&D incurred by WEBB total around [redacted] Originally a large part of the overheads were on-charged but it was later decided that this wasn't very commercial especially given there was a significant component of R&D that was considered really should remain with WEBB. A credit was raised in respect of the overcharge which is noted above. EBW has essentially been funding the overheads through a loan to WEBB rather than it being on-charged in the boat costs. I now understand that the 5% margin is also to be removed which means the boat cost to EBW will reduce and the loan increase. It was originally thought the loan from EBW would end up around [redacted] but as funding has ultimately been needed from elsewhere, as the boat cost has escalated, the loan is now looking likely to only be around [redacted] Attached is a simple summary of where we expect the final position for WEBB to end up after crediting back the 5% margin.

I have signed the Agreement and once we have worked through these items to our satisfaction Clause 2.2 of the Agreement will then be satisfied and we can make payment.

Regards,

Andrew Caseley

**Andrew Caseley**
Chief Executive

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---

**From:** Russell Holmes <Russell.Holmes@findex.co.nz>
**Sent:** Wednesday, 16 June 2021 2:26 pm
**To:** Andrew Caseley <Andrew.Caseley@eeca.govt.nz>
**Cc:** Jeremy Ward <jeremy@eastbywest.co.nz>
**Subject:** Wellington Electric Boat Buildings Company Ltd (WEBB) [FIA-FINDEX.FID36799942]

Hi Andrew

Jeremy Ward asked me to pass some comments through to you to support the proposed grant for WEBB and in particular East by West Company Ltd's (EBW) commitment in supporting the project and ongoing success of WEBB.

We advise that we have acted for EBW for around 20 years now and note that the company has a long solid trading history and current strong equity position with all liabilities current.

EBW directly owns 51% of WEBB and is heavily committed to the success of the WEBB business. The current project is essentially funded by EBW through the purchase of the boat but with some R&D type expenditure remaining as a cost with WEBB. EBW has also supported the funding of this and will continue to do so until WEBB is in a position to support itself once further projects are underway, which are expected in the near future.

All parties involved are highly motivated to ensure the success of WEBB, in particular EBW who will be in a position to showcase the new first of its kind electric ferry on the Wellington harbour and reap the benefits of the new technology.

Let me know if there is anything further we can provide or comment on to support this grant.

Kind regards,

**Russell Holmes**
**Principal - Accounting & Business Advisory**

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# Variation Agreement

Contract Number: 65433

Variation Number: 2

## Parties

1. **East By West Company Limited** (NZBN 9429039439062) a duly incorporated company having its registered office at Meridian Building, Waterside, North Queens Wharf, Wellington, New Zealand("**Recipient**")
2. **Energy Efficiency and Conservation Authority**, (NZBN 9429041901953) a Crown entity established under section 20 of the Energy Efficiency and Conservation Act 2000 ("**EECA**")

(Each a "**party**" and together the "**parties**")

## Background

1. The parties entered into a Project Funding Agreement that commenced on 30 May 2019 (the "**Agreement**").
2. Notwithstanding that the term of the current Agreement expired on 30 December 2021, the parties have continued to prosecute their respective obligations under the Agreement.
3. The parties have now agreed to revise the dates for delivery of Project Reports 2 – 4 and extend the term of the Agreement.
4. The parties now wish to effect these changes on the terms and conditions set out in this variation agreement ("**Variation**").

## Terms of this Variation

1. The parties agree that this Variation shall be effective on and from the date of last signing by the parties ("**Effective Date**").
2. On and from the Effective Date, the terms set out in the Agreement are varied by:

    (i) For Schedule 1 Milestone 2 (S1M2P11: Project Report 2) delete the date 30 November 2020 and replace it with the date 31 March 2022;

    (ii) For Schedule 1 Milestone 3 (S1M3P11: Project Report 3) delete the date 15 June 2021 and replace it with the date 30 September 2022;

    (iii) For Schedule 1 Milestone 4 (S1M4P11: Project Report 4) delete the date 15 December 2021 and replace it with the date 31 March 2023; and

3. The term of the Agreement is extended by deleting the date 30 December 2021 in clause 2.1 and replacing it with the date 31 May 2023.
4. All other terms and conditions contained in the Agreement will continue in full force and effect.

This Variation may be executed in two or more counterparts (including facsimile or electronic pdf copies) each of which shall be deemed to be an original, but all of which together shall constitute one instrument. No counterpart shall be effective until each party has executed at least one counterpart

**Signed** for and on behalf of **Energy Efficiency and Conservation Authority** by

[redacted]
Signature

Glenn Wellington
Print Name

Manager Products & Partnerships
Position

23/02/2022
Date

**Signed** for and on behalf of **East by West Compa[redacted]**

[redacted]
Signature

JEREMY WARD
Print Name

DIRECTOR
Position

20/02/22
Date

MARINECRAFT & FIBREGLASS
Contact: Cory Ward 0273043787 Email: coryward@xtra.co.nz

# New Zealand Certificate of Survey

Issued under the provisions of Maritime Rule MR44.41 and MR44.42

## Ship details

| | | | |
|---|---|---|---|
| Name of ship | Ika Rere | MNZ number | 141039 |
| Primary port | Wellington | Port of registry | Wellington |
| Total engine power (kW) | 652 | No of drives | 2 x Shaft Drive |
| Length overall (m) | 19.00 | Length (m) MR 47, 48 | 18.44 |
| Beam | 6.74 (Register) | Gross tonnage | 150 |
| Ship registration number | 876566 | | |

## Scope of certification

| | |
|---|---|
| Categories | Passenger |
| Activities | Passenger Ferry |

## Operational limits

This ship must not proceed beyond the following operating limits:

| Operating Limit | Category | Operating area / Description | Max Pass | Min Crew | Max Persons |
|---|---|---|---|---|---|
| Enclosed Waters | Passenger | Wellington - Inside a straight line from Pencarrow Head lighthouse to Palmer Head. | 1 to 99 | 2 | 105 |
| Enclosed Waters | Passenger | Wellington - Inside a straight line from Pencarrow Head lighthouse to Palmer Head. | 100 to 132 | *3 | 138 |
| *A minimum safe crewing document is to be held detailing the minimum crewing requirements if carrying 100 to 132 Passengers | | | | | |

THIS IS TO CERTIFY that the vessel meets the requirements of MR44.41 in respect for the issuance of a Certificate of Survey and meets applicable Maritime and Marine Protection Rules. The Ship and its equipment remain sound and serviceable and fit for their intended use but subject to any conditions or restrictions listed on the reverse of this certificate.
This certificate has 5 (Five) conditions.
This certificate is only valid if the conditions of MR19.64 are met.

| | | | |
|---|---|---|---|
| **Survey Certificate Number** | CW1474 | **Date of issue** | 21/02/2022 |
| **Date of survey** | OOW 12/03/2019 to 14/07/2021<br>In Water 21/09/2021, 22/11/2021 & 23/11/2021 | **Date of expiry** | 14/07/2026 |

Signature of surveyor [redacted]

Name of surveyor Cory Ward Marine Surveyor number SRV040

**Please see conditions and limitations on page 2**

MARINECRAFT & FIBREGLASS
Contact: Cory Ward 0273043787 Email: coryward@xtra.co.nz

# New Zealand Certificate of Survey
# Conditions and Limitations

## Expiry dates of other certificates required for this Certificate of Survey

Radio survey 12/11/2025 Compass Recheck 10/01/2026

Exemption 113-EX-19 14/10/2029 Exemption 115-EX-20 10/08/2030

Issued Subject to Maritime Rule MR44.41 / MR44.42

| | | | |
|---|---|---|---|
| Name of ship | Ika Rere | MNZ number | 141039 |
| Survey certificate number | CW1474 | Date of survey | OOW 12/03/2019 to 14/07/2021<br>In Water 21/09/2021, 22/11/2021 & 23/11/2021 |

This certificate of survey is issued subject to the following conditions and limitations.

1). Maximum Loading and operating conditions are to be followed as per Stability Booklet Ref 18007 approved 22/12/2021.

2). No structural alterations, major modifications or electrical changes are to be carried out on vessel without first consulting with Design Approvers and Surveyor for approval.

3). Maximum operating displacement is not to exceed 39.5 tonnes.

4). A Current Minimum Safe Crewing Document is required as per Maritime Rule Part 31 when vessel is carrying more than 99 Passengers.

5). The following wave height / speed limitations are proposed; however, the vessel is to be operated in a prudent manner at all times in regard to the environmental conditions and passenger comfort and safety.

| | | | | | |
|---|---|---|---|---|---|
| Max Speed (Knots) | 22 | 19 | 12 | 8.5 | 6 |
| Max wave height (metres) | 0.5 | 0.6 | 1 | 1.4 | 2.15 |

[redacted]

**From:** Dinesh Chand
**To:** Glenn Wellington
**Subject:** East By West Claim
**Date:** Tuesday, 22 February 2022 9:24:44 am

---

East By West has obtained the Marine Operating Certificate to confirm the construction and commissioning phase is over and milestone completed. I have agreed with them to receive and actual construction and commissioning report from them later, once I have given them a template for it. In the meantime rthey have provided EECA with a copy of the certificate and it is sufficient to pay them milestone 2.

Could you please approve this payment and forward to Claims. I have asked Amalia to investigate if we can do a special payment run prior to 20 March. However I have informed East By West that in all likelihood payment will be on 20 March.

| | | | |
|---|---|---|---|
| Client Name (name on contract): | East By West Company Limited | | |
| Payment Amount (excluding GST): | $75,000.00 | Date: 22 February 2022 | |
| Total value of the Milestone (excluding GST): | $75,000.00 | Is the Milestone being claimed in full?<br>☒**YES** | |
| Milestone reference and description:<br>e.g. S3M2P10 Work Plan Submitted with Energy Baseline | **S1M2P11: Project Report 2** | If the Milestone is not being claimed in full, what is happening with the balance? **N/A** | |
| Is there a Savings Report? No<br>If there is a Savings Report include contracts@eeca.govt.nz in your email and include the Savings Report in the body of the email) | | Link to the Milestone in GEM: | GEM (eeca.govt.nz) |
| Evidence to Support Claim:<br>Certificate of Survey Ika Rere (1).pdf | | Report received: | Fery has been launched and has undergone sea trials. Certification now complete. |
| Account Manager Approval (Approved) | Approved | Comments: | |

Thanks

Dinesh