

Application in support of Electricity Generation Licence

1. General

1.1 The Applicants

Pacific Hydro Limited (ACN 057 279 508) (**PHL**) is the holder of 2 generation licences. One licence is held in its own right (ESC File Ref: 11020/02), and the other is held jointly with Pacific Hydro Chalicum Hills Wind Farm Pty Ltd (ACN 101 989 744) (**PHCH**) (ESC File Ref: 11020/07).

Energy Pacific (Vic) Pty Ltd (ACN 063 543 984) (**EPV**) and PHL are applying to the Essential Services Commission (**ESC**) for the issue of a licence to be held jointly by both parties. The licence is intended to cover the Yambuk Wind Farm located at Yambuk (**Yambuk WF**) near Portland in Victoria's southwest.

The Yambuk WF was originally contemplated in the licence previously issued to PHL (ESC file Ref: 11020/02), however, in a letter to the ESC dated 20 July 2004, PHL requested that the reference to Yambuk be deleted from that Licence.

1.2 Applicant's Contact Details

EPV and PHL share the same Registered Office details. Those details are:

Level 10, 474 Flinders Street
Melbourne VIC 3000
Australia
Phone: +61 3 9620 4400
Facsimile: +61 3 9620 4433

1.3 Applicant's Officers

EPV's officeholders are:

Jeffrey Harding – Director
John McInnes – Director
Philip van der Riet – Director
Kevin Holmes – Secretary

PHL's officeholders are:

Bernard Wheelahan - Chairman
Jeffrey Harding – Director
Holly Koeppel – Director
Philip van der Riet – Director
John McInnes – Director
Kate Spargo – Director
Geoff Coffey – Director
Kevin Holmes – Secretary

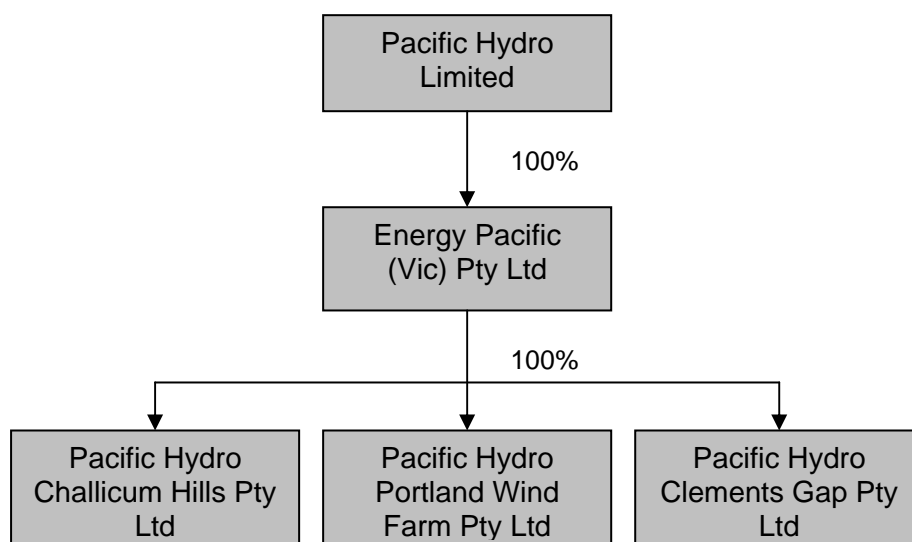
David Hastings (General Manager, Wind Energy – PHL) and various members of his Wind Team will be on secondment from PHL to EPV to

oversee the development, construction and operation of the Yambuk WF.

1.4 Company Structure

PHL is listed on the Australian Stock Exchange (**ASX**) and has a current market capitalisation of approximately \$450 million. EPV is 100% owned by PHL and owns:

- the 18.2MW Codrington Wind Farm;
- the subsidiary which fully owns the 52.5MW Challicum Hills Wind Farm;
- the subsidiary which will develop and fully own the Clements Gap Wind Farm; and
- the subsidiary which will develop and fully own the Portland Wind Energy Project (**PWEP**) consisting of 3 separate wind farms at Cape Sir William Grant, Cape Bridgewater and Cape Nelson (**the 3 Capes**).



1.5 PHL Background Information

Since listing on the ASX on 1 April 1993, PHL has built up a strong record in the development, acquisition and operation of renewable energy generating assets in Australia and internationally.

In relation to hydro, this record includes:

- the development, construction and operation of the 30MW Ord River Hydro Project in the northwest of Western Australia;
- the development, construction and operation of the 70MW run-of-river Bakun Hydro Project in the Philippines;
- pre-construction feasibility and design for the 68MW Tagoloan II run-of-river hydro project in the Philippines;
- the development, construction and operation of three hydro facilities in Victoria totalling 10MW;

- the development, construction and operation of The Drop Hydro Project, a 2MW hydro facility in NSW;
- the acquisition and operation of the 39.3MW Coya and 37MW Pangal hydro power plants in Chile (acquired from the Chilean state owned copper company CODELCO);
- the development, construction and operation of the 6.5MW Wainikasou Hydro Project in Fiji. This development forms part of a project which will result in the installation of up to 100MW of hydro and wind power generation capacity in Fiji over the next 5 years;
- the pre-construction feasibility and design for the Kayapa Diversion Project in the Philippines (this will increase the generation capacity of the Bakun Hydro Project by around 25%); and
- activities concentrated on developing a total of 300MW in generation capacity, comprising the 155MW La Higuera Hydro Power Project and 145MW La Confluencia Hydro Power Project on the Tinguiririca River in Chile.

In relation to wind, PHL's record includes:

- the development, construction and operation of the 18.2MW Codrington Wind Farm in Victoria;
- the development, construction and operation of the 52.5MW Challicum Hills Wind Farm in Victoria; and
- up to 1,500MW of potential developments in Australia including the 165MW PWEF and 30MW Yambuk WF in southwest Victoria, and the 57.8MW Clements Gap Wind Farm in South Australia, each of which are in the advanced stages of development.

The table below lists PHL's current operating projects.

Project	Size	Type
Ord River Hydro Project (WA)	30MW	Hydro
Lake William Hovell (Vic)	1.6MW	Hydro
Lake Glenmaggie (Vic)	3.8MW	Hydro
Eildon Pondage (Vic)	4.5MW	Hydro
Bakun Hydro Project (Philippines)	70MW	Hydro
Codrington Wind Farm (Vic)	18.2MW	Wind
The Drop Hydro Project (NSW)	2MW	Hydro
Challicum Hills Wind Farm (Vic)	52.5MW	Wind
Coya (Chile)	39.3MW	Hydro
Pangal (Chile)	37MW	Hydro
Wainikasou Hydro Project (Fiji)	6.5MW	Hydro

1.6 Projects

(a) Ord River Hydro Project

The Ord is located in the Kimberley region of northern Western Australia and is the largest privately funded renewable energy infrastructure project in Australia. Winner of a 1996 Institution of Engineers Engineering Excellence Award, the Ord supplies power to the towns of Kununurra and Wyndham, and the Argyle Diamond Mines, the world's largest diamond mine.

The Ord produces around 220GWh of electricity each year and is wholly owned by PHL.

(b) Lake William Hovell, Lake Glenmaggie, Eildon Pondage Hydro

These 3 hydroelectric projects were developed by PHL in Victoria.

Each project was developed on water authority land as a result of long-term agreements covering the use of water, use of site and power sales. These agreements were offered under a Victorian Government initiative for the development of small power generation projects based on renewable energy or co-generation principles.

Total average annual generation based on 40 years of records is 34GWh for the three stations and importantly, there is no negative environmental impact resulting from the operation of these projects, as generation only occurs when water would otherwise be passing over the spillway or released for irrigation purposes.

(c) Bakun Hydro Project

The 70MW run-of-river power station in the North Luzon region of the Philippines started commercial operation in 2001. PHL and Aboitiz Equity Ventures of the Philippines jointly own the US\$150M project, which is expected to generate 225GWh per annum.

Energy generated by the project is sold to the National Power Corporation under a long-term BOOT Power Purchase Agreement (**PPA**), and all revenue payments are in US dollars and supported by a Philippine Government guarantee.

The power station incorporates high quality Swiss manufactured Sulzer turbines and Alstom generators.

(d) Codrington Wind Farm

The 18.2MW Codrington Wind Farm achieved practical completion in 2001. At the time of completion, it was Victoria's first and Australia's largest wind farm and is also Australia's first privately owned wind farm.

PHL achieved 40% local content for the project and injected more than \$8 million into the regional economy during the

development and construction stages. More than 20 jobs were created during construction with several local companies contracted to assist in various aspects of the construction works.

The electricity generated at Codrington:

- produces no pollutants, waste or greenhouse gases;
- eliminates the need for coal-generated electricity that would have emitted more than 71,000 tonnes of greenhouse gases each year (which is the equivalent of removing more than 17,000 cars from the road); and
- is enough to supply electricity to the equivalent of up to 14,000 homes.

(e) The Drop Hydro Project

The Drop commenced generation in November 2002 and is located on the Mulwala Canal, Australia's largest irrigation channel. The 2MW project exploits the previously unutilized energy potential in the water flow which is released for irrigation purposes.

The project is expected to generate approximately 11,000MWh of pollution free energy per annum.

PHL has a long-term agreement to sell all the Renewable Energy Certificates (**REC's**) and electricity generated by the plant to major NSW energy retailer Country Energy.

The project makes a significant contribution to the environment by avoiding around 11,000 tonnes of greenhouse gas emissions every year, which is equivalent to removing 2,500 cars from the road.

(f) Challicum Hills Wind Farm

The 52.5MW Challicum Hills Wind Farm was Australia's largest wind farm when it was completed in August 2003.

Located on private farming land just east of Ararat, the wind farm generates enough clean electricity to supply 26,000 Victorian homes every year.

The A\$76 million project makes a significant contribution to the environment by avoiding around 190,000 tonnes of greenhouse gas emissions every year.

(g) Coya and Pangal Hydros

PHL acquired two Chilean run of river hydro plants in April 2004 from CODELCO. The US\$75.6 million acquisition included associated transmission infrastructure and water rights.

The 39.3 MW Coya and 37.0 MW Pangal power plants are located in the sixth region of Chile, in the basin of the Pangal and Cachapoal Rivers, and produce enough clean electricity to avoid around 330,000 tonnes of greenhouse gas emissions every year, and supply around 250,000 houses.

The Coya and Pangal Hydros sell all of their output to CODELCO under a long term PPA and CODELCO uses the output from the plants to power its El Teniente copper mine with surplus power being sold directly into the deregulated national electricity market.

(h) Wainikasou Hydro Project

The 6.5MW Wainikasu Hydro Project was developed by Sustainable Energy Limited (**SEL**), the joint venture formed between PHL and the Fiji Electrical Authority.

SEL was formed to utilize the renewable energy potential of Fiji, with the aim of developing up to 100MW of renewable energy capacity in the next 5 years. This will assist in reducing Fiji's dependence on imported diesel fuels.

Another project identified for initial development by SEL was the 3MW Vaturu Hydro Project. Both the Wainikasou and Vaturu projects are located on Viti Levu, Fiji's main island.

2. Yambuk Wind Farm

The 30MW Yambuk WF will consist of 20 wind generators. These wind generators will connect in to the Yambuk WF Sub-Station, which will be built on private property leased by EPV. The Yambuk WF Sub-Station will connect in to the national grid.

Construction works required will include the erection of wind generators, the construction of the Yambuk WF Sub-Station, the creation of site access tracks, and the laying of 22kV underground cables and 66kV overhead lines.

This construction work (with the exception of the erection of the 66kV lines) is within the engineering, procurement and construction (**EPC**) contract scope of NEG Micon Australia, the contractor. Erection of the 66kV lines will be undertaken by Powercor Australia. The technical reviews, code compliance and connection agreement issues will be managed by PHL, both directly and through specialist advisers as necessary.

Electricity generated at each of the 20 wind generators will be transmitted via 22kV underground cables to the Yambuk WF Sub-Station where the electricity will be stepped-up from 22kV to 66kV. Approximately 20km's of overhead 66kV feeder will be constructed to connect in to the main Powercor 66kV loop between Portland and Koroit.

The Yambuk WF is to be financed by a combination of internally generated cash-on-hand and available corporate funding facility, and EPV will own all of the Yambuk WF assets, consisting of the wind farm, cables and the Yambuk WF Sub-Station.

As part of a deal involving the PWEF and Yambuk WF, Danish wind generator manufacturer Vestas will build a blade factory in Portland. Construction of this factory will most likely coincide with the commencement of construction of the Yambuk WF and it is anticipated that factory will be completed in time so as to supply the 100 sets of blades required for the construction of the PWEF wind generators. Initially, the factory is expected to provide direct jobs for up to 50 people, with the possibility of more employment as demand for blades increases over time. The factory will also

improve equipment delivery times, reduce capital costs and eliminate exposure to foreign currency exchange.

The PWEP together with the Yambuk WF, is expected to:

- generate enough pollution free electricity for 100,000 homes (which is enough to supply a city the size of Geelong);
- abate up to 700,000 tonnes of greenhouse gases each year;
- create a new manufacturing industry in southwest Victoria, providing new jobs and a potential export market worth up to \$100 million per year;
- enrich habitats and re-establish indigenous vegetation through a managed revegetation program; and
- develop a major tourist attraction around Portland (more than 50,000 people a year enter the Codrington Wind Farm viewing area).

Given the 30MW capacity of the Yambuk WF, the EI Act requires that a generation licence be held by the wind farm operator. This application is aimed at facilitating the issue of a generation licence for the Yambuk WF.

3. The ESC's Objectives

The goals of EPV and PHL in developing the Yambuk WF are closely aligned with the objectives of the ESC. A commitment to environmentally sound business practices through the development and operation of clean renewable power generation will make the Yambuk WF a contributor to the reduction of Australia's greenhouse gas emissions, as well as contributing to meet the continually growing demand for new generation in the region.

The development of the Yambuk WF will advance Victoria's commitment to meeting the Mandatory Renewable Energy Target (**MRET**) which was introduced by the federal government in April 2001.

As the Yambuk WF will operate in a rural area far from major sources of generation, EPV and PHL will provide valuable service by providing embedded generation, effectively displacing some generation and transmission losses from distant sources. This will increase the efficiency of the generation and transmission of electricity in accordance with the ESC's objectives.

By focusing on the generation of new renewable electricity, EPV and PHL will create another source of renewable energy to meet the growing consumer demand for Green Power programmes and will also provide REC's to enable electricity retailers to comply with their MRET obligations, once more in accordance with the ESC's Objectives.

In providing this renewable electricity at competitive prices, EPV and PHL will assist in maintaining the competitiveness and viability of the Victorian electricity market.

4. Technical Capacity

The staff associated with the development (and eventual operation) of the Yambuk WF have successfully delivered and managed various renewable energy projects since the early 1990's, the most recent being the Challicum Hills Wind Farm in 2003. Please see section "5. Staff Skills and Experience" below, for further information on the backgrounds and abilities of key staff members.

The structure of the Yambuk WF includes:

- long-term lease agreements with landholders;
- a balanced contract portfolio combining both highly contracted and flexible components;
- a long term connection agreement (which is currently under negotiation);
- gaining all relevant regulatory, development and environmental approvals;
- an EPC contract with NEG Micon Australia (a wholly owned subsidiary of Vestas) for construction of the wind farms;
- a contract with Powercor Australia for the erection of the 66kV lines; and
- various agreements with specialist advisers to act as PHL's technical representatives in an advisory and supervisory role.

The Yambuk WF is being designed with the National Electricity Code (**Code**) in mind and the relevant utilities were consulted at an early stage of the process (and will continue to be). This not only allows EPV and PHL to accurately determine connection costs and capacities, but also assists in determining any further technical parameters that are to be considered as part of the overall system design.

The detailed technical specifications of the Yambuk WF are the responsibility of the contractors who supply the full scope of works, including the wind generators and associated electrical equipment.

The technical content is compliant with the requirements of the Code and also any particular requirements of the transmission and distribution network service providers (**T&DNSP's**). The connection agreement will specify the technical performance requirements of the Yambuk WF (as stated by the T&DNSP's) so as to ensure compliance with the Code.

On completion of the Yambuk WF, for a period of 2 years, the EPC contractor will operate, service and maintain the wind farm, including each of the 20 wind generators and the Yambuk WF Sub-Station. This will ensure that warranty performance obligations are met and ensure that skilled resources (including qualified high voltage electrical operators) are retained to carry out the necessary functions.

Following the expiration of the 2-year warranty period, responsibility for the operation and maintenance of the Yambuk WF will revert to EPV, where extensive technical experience will be available due to the resources of PHL, which has significant experience in the industry, having been a generator since the early 1990's.

EPV and PHL are familiar with the Code, will be registered with NEMMCO prior to commissioning and will continue to ensure compliance throughout the period of operation.

The operation and maintenance of wind farms is a relatively simple and low cost task. At the expiration of the 2-year warranty period a team of around 5 technicians will be capable of servicing the 30MW project, and much of the cost will be associated with the provision of spare parts and consumables such as gear and hydraulic oil, brake pads, filters, etc.. In terms of the technology and reliability, wind generators are well proven. Statistics show that even in the very early stages of operation, while wind generators are bedding-in, they can produce availability figures well above 95%.

5. Staff Skills and Experience

5.1 Jeff Harding – Managing Director

Managing Director since 1995, Jeff has seen PHL's market capitalisation grow from less than \$5 million in 1995 to approximately \$450 million today.

Jeff qualifications include a Bachelor of Engineering (Civil), a Bachelor of Economics and a Master of Business Administration.

During Jeff's tenure as Managing Director, the Company has successfully delivered the Ord Hydro in WA, the Bakun Hydro in the Philippines, the Codrington and Challicum Hills Wind Farms in Victoria, and acquired the Coya and Pangal Hydros in Chile. Jeff has taken PHL from a minor domestic IPP to Australia's leading renewable energy company, with a portfolio of domestic and international assets.

Previously Jeff was General Manager of the Industrial Services and Equipment Divisions of Brambles Australia Ltd.

Jeff is currently Vice President of the Business Council for Sustainable Energy and is a fellow of the Australian Institute of Company Directors.

5.2 Rob Grant – General Manager, Business Development and Operations

Rob joined PHL in 1996 after several years working in South Africa as a Civil Engineer. Rob's qualifications include a Bachelor of Engineering (Civil) from Melbourne University, a Master of Business Administration also from Melbourne University and a Master of Applied Finance from Macquarie University.

In his Project development role, Rob has been instrumental in the successful development and financing of the 70MW Bakun hydro station in the Philippines, the 18.2MW Codrington and 52.5MW Challicum Hills Wind Farms in Victoria, and the US\$75.6 million acquisition of the Coya and Pangal Hydros in Chile.

Rob has seen PHL's market capitalisation grow from \$10 million in 1996 to around \$450 million today.

Rob will have ongoing management input into the construction and operation of the PWEF via his directorship of PHPWF.

5.3 David Hastings – General Manager, Wind Energy

David joined PHL in 2001 having spent several years in the development of wind farm projects overseas.

A civil engineer, David was involved in the construction of large-scale infrastructure projects in the UK such as the Dee Crossing in North Wales and the A74/M6 upgrade in southwest Scotland before becoming involved in wind farm development and construction with specialist UK company Renewable Energy Systems Ltd.

David has been involved in delivering over 450MW of wind farm projects in Ireland, West Texas in the United States, and Australia.

As General Manager, Wind Energy David is responsible for all stages of wind farm development – from conception through to operation and

maintenance. With PHL, David has delivered the 18.2MW Codrington Wind Farm and the 52.5MW Chalicum Hills Wind Farm.

David is also in charge of up to 1,500MW of potential developments in Australia, including the 165MW PWEF and 30MW Yambuk Wind Farm in southwest Victoria, and the 57.8MW Clements Gap Wind Farm in South Australia, each of which are in the advanced stages of development.

5.4 Nigel Baker –Wind Farm Engineer

Nigel had four years experience as an engineer in the consulting and manufacturing fields prior to moving into the wind industry.

In 2001 he joined B9 Energy, a prominent developer and operator of wind farms in Ireland and the UK. In this role Nigel gained valuable experience in the operation and maintenance of wind farms whilst based in Northern Ireland and Scotland. This experience included managing the operations of two wind farms – at the time one of which used the largest wind generators installed in the UK, while the other was the largest capacity wind farm in Britain.

In 2003 Nigel returned to Australia and joined PHL, bringing the experience gained in the more mature UK wind industry back to Australia. Nigel currently manages the operation and maintenance of PHL's two operational wind farms (Codrington and Chalicum Hills), as well as providing technical input into the planning and construction stages of new projects (PWEF, Yambuk and Clements Gap).

Nigel holds a Bachelor of Engineering (Honours) from the University of Melbourne, has completed a Graduate Diploma in Project Management and has undertaken numerous short courses including High Voltage Operations, OH&S, Power & Protection, Maintenance Systems and Risk Management.

6. Financial Viability

In the interests of achieving a level of commercial flexibility in a changing and competitive environment, and without some of the restrictions imposed by non-recourse project financing, EPV and PHL have decided to take a more strategic approach to revenue contracting for the Yambuk WF. Instead of looking solely to long-term PPA's, EPV and PHL will look to pursue a more balanced contract portfolio combining both highly contracted and flexible components. In relation to the Yambuk WF, the contract portfolio may include long to medium-term PPA's and/or commodity specific contracts (such as REC or Emissions Permits only deals) and spot market revenue.

PHL has conducted analysis on expected generation from Yambuk WF and spot energy prices in the National Energy Market (**NEM**). This analysis reveals a reasonably high correlation between expected generation and "peak" spot market prices in the NEM. Therefore, by leaving some energy uncontracted, PHL will be in a good position to maximise revenues through higher spot market prices during the summer months and by taking advantage of favourable conditions in the REC market.

Obviously, details of these contractual structures are competitively sensitive and highly confidential. We are however, finalising the remaining contractual negotiations across a range of areas related to the Yambuk WF.

As stated in section “2. Yambuk Wind Farm”, the Yambuk WF will be funded by a combination of internally generated cash-on-hand and available corporate facility.

6.1 Half-year PHL Highlights

Some highlights of PHL in the half-year to 31 December 2003 are listed below.

- EBITDA of \$25 million exceeded the half-year results to 31 December 2002 by 3%.
- NPAT of \$20.3 million exceeded the half-year results to 31 December 2002 by 3%.
- Basic earnings per share increased from the same period in 2002 by 2% to 15.6 cents per share.
- An interim dividend of 2.5 cents per share unfranked was announced for the half-year ended 31 December 2003.

Please refer to Appendix 1 for a description of PHL's gearing and Appendix 2 for PHL's Half year report to 31 December 2003.