# **Renewable Energy**

Pacific Region Sustainable Investment





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### Pacific American Renewable Energy Strategy

Through investment in leading renewable technologies, Pacific American Holdings seeks to be a leader in small scale off-grid hybrid renewable energy projects.

#### **Leading Renewable Technologies**

- PAK has joined with Global Hydro GmbH in the formation of GP Hydro Pte Ltd, a specialist Joint Venture company delivering micro hydro solutions to the Australia and South Pacific Islands
- PAK is seeking new investment opportunities in solar, wind and battery storage so as to provide a 24/7 power solution for off-grid communities

#### **Small Scale Off-grid**

- Having reviewed the renewable energy market, there is an abundant of opportunities to install small scale off-grid renewable projects throughout Australia and the South Pacific Islands
- Positioning alongside major Utility's, PAK is identifying high value opportunities that complement existing infrastructure while offering local communities direct access to 24/7 renewable energy

#### **Market Model**

• PAK brings to market a business model that has the flexibility to participate in Private Public Partnerships through collaboratively funding the development of hybrid renewable projects through to offering direct access to leading renewable technology products as part of new project development.

### **Renewable Energy Sector**

Public markets invested \$9.3 billion in clean energy in 2019.

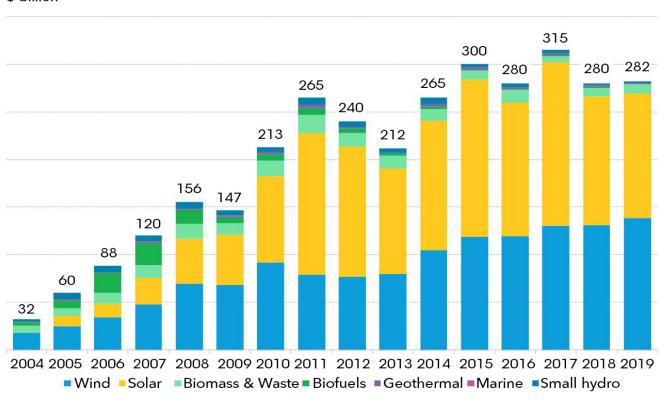
Corporate and government research and development in wider-definition clean energy totaled \$45.7 billion.

The Asian Development Bank (ADB) is scheduled to invest over \$1 billion worth of energy projects in the Pacific from 2019 to 2021.

83% of \$13.3 trillion new investment goes to zero carbon

#### Global renewable energy capacity investment, 2004 to 2019

\$ billion



Source: BloombergNEF. Note: The figures represent utility-scale asset finance of new wind, solar, biomass and waste-to-energy, geothermal, small hydro and marine power projects, plus small-scale solar systems. Prior years' totals have been revised in this round, to reflect new information. Totals are rounded to nearest billion dollars

# Sustainable Clean Renewable Energy – Delivery for the long term



Access to clean renewable energy transitions communities out of poverty through the creation of:

- Businesses
- Medicine
- Greater land management
- Infrastructure
- Communications
- Secondary and tertiary production

**United Nations Sustainable** 

Development Goal #7:

Affordable and Clean Energy

Renewable Energy Capacity Investment

• (2010 – 2019) US\$2.6trillion

Solar Energy attracted 52% of funding

Small Scale Hydro - \$43 billion of commitments

Wind received \$1 Trillion

UN Environment Programme, "Global

Trends in Renewable Energy

### **Benefits of Small Scale Hybrid Renewable Projects**

Small Scale Hybrid Projects have direct and indirect benefit to society ranging from enhancing education, employment and the environment.

- Reduced diesel-based energy dependence.
- Reduced environmental impact of electricity production.
- Increased level of services to the local community.
- Increased employment creation
- Reduced cost of electricity deferred capital investment.
- Reduced transmission/distribution losses.
- Reduced capital risk and risk of stranded capital.
- Elimination of fuel poverty where areas that are rich in renewable resource

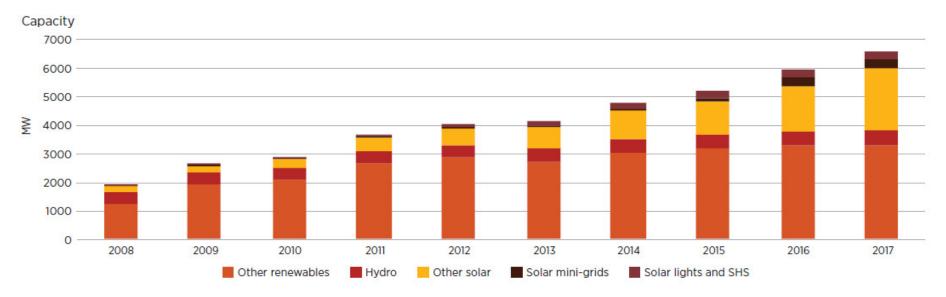


# **Small Scale Hybrid Renewable Projects**

- It is estimated that by 2030, renewable energy sources will power over 60% of new electricity access,
- 47 million people connected to **19,000 mini grids,** mostly hydro and diesel-powered, at an investment cost of **\$28 billion**.
- Goal for 2030 globally 490 million people served at least cost by 210,000 mini grids, mostly solar-hybrids, requiring an investment of \$220 billion

# **Private Sector Opportunity**

- \$3.3 billion Annual profit potential for developers for mini grids deployed between 2019–2030
- \$4.7 billion Net profit potential across all mini grid component and service suppliers in 2030 alone



# **Regional Opportunities**

The Pacific Island Region has set renewable energy targets creating opportunities to increase access to renewable energy and the renewable energy generation capacity.

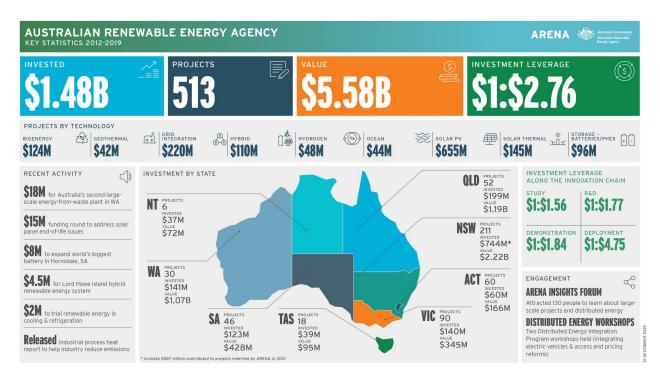
Pacific Island Countries	Geography	Population	Electricity Access	Generation GWh pa	RE Target	RE Target by Year
PNG	Over 600 islands	8,558,800	12%	217.3	100%	2030
Solomon Islands	~1000 islands, 350 inhabited	682,500	23%	78	79%	2030
Vanuatu	>80 islands, 65 inhabited	304,500	33%	66.3	100%	2030
FSM	607 islands	105,300	65%	72	> 30%	2020
Kiribati	32 widely scattered atolls	120,100	>65%	23	23 - 40%	2025
Fiji	320 islands, 106 inhabited	888,400	87%	900	100%	2030
Marshall Islands	34 islands, mostly atolls	55,500	87%	101	20%	2020
Tonga	176 islands, 36 inhabited	100,300	89%	55.4	50%	2020
Palau	596 islands, 12 inhabited	17,900	98%	89.3	45%	2025
Tuvalu	9 atolls	10,200	98%	5.2	100%	2020
Cook Islands	14 islands	15,200	99%	31.8	100%	2020
Niue	single island	1,520	99%	3.3	80%	2025
Nauru	single island	11,000	100%	31.7	50%	2020
Samoa	10 islands	196,700	100%	140	100%	2025
Tokelau	3 atolls	1,400	100%	1.2	100%	long-term

Source: Pacific Region Infrastructure Facility (PRIF) - Renewable Energy Costs in the Pacific (March 2019)

### **Australia Overview**

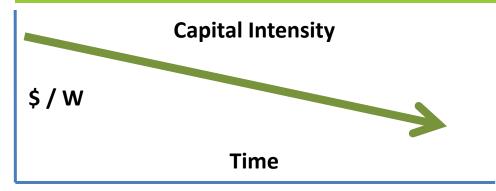
### Australia is making a huge investment into renewables energy.

- \$24 billion has been invested in renewable energy in the last 18 months alone
- Investors are increasingly demanding change while the federal government is investing heavily into the space.
- Australia was the world's fifth-biggest investor in renewable energy projects in 2018, spending almost \$10 billion, and had the second-highest use of solar-generated electricity per person

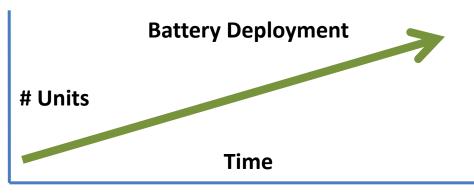


https://arena.gov.au/assets/2019/07/arena-at-a-glance.pdf

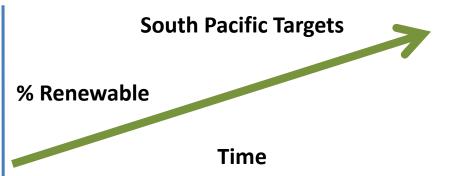
# **Renewable Energy Trends**



Over 47 Renewable Projects in the Pacific consistently show the cost of renewable projects have decreased over the past decade, with many solar projects below the cost of new diesel projects.



Opportunity for small hydro projects will increase with increasing life cycle cost of battery related projects due to concerns relating to end of life battery disposal.



The South Pacific region is strategically moving towards a higher portion of renewable energy within their energy mix offsetting diesel generated power.

Source: Pacific Region Infrastructure Facility (PRIF) - Renewable Energy Costs in the Pacific (March 2019)

### Goals

#### Step 1

Focus solely on the small scale and off grid renewables sectors

#### Step 3

Develop a pipeline of renewables projects and businesses in the south pacific region

### Step 2

Create partnerships with world leading technology companies in the renewables sector

#### Step 4

Create a world leading business in the pacific and Australian markets.

# **Ambitions**

### **Implement**

- Business and marketing plan
- Establish business unit

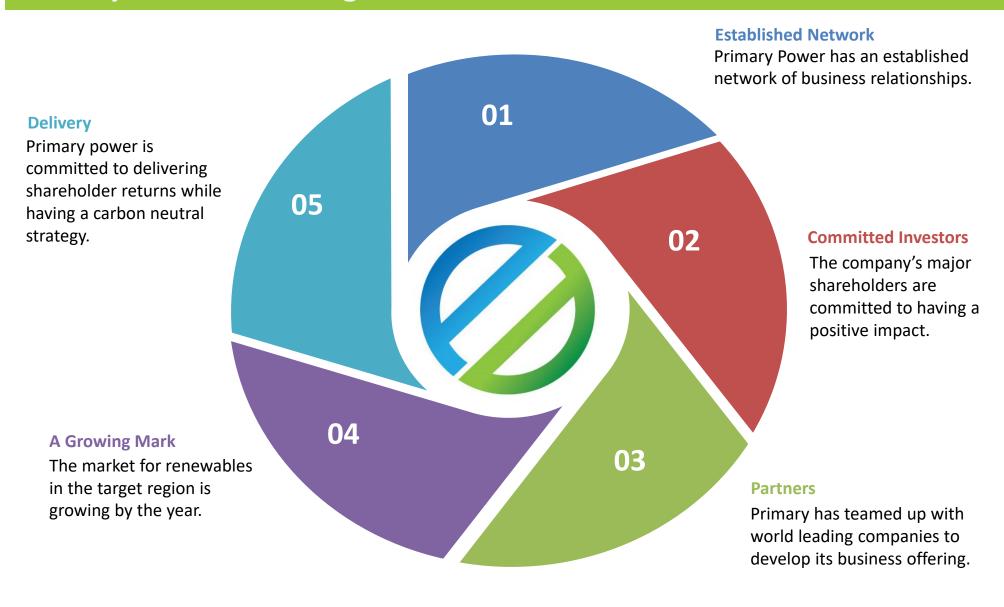
### **Establish**

- Portfolio of businesses
- Australia and Pacific Region

### **Develop**

- Partnerships with world leaders in renewables space
- Portfolio of small-scale projects

# **Primary Power Advantage**



### **Recent Events**



Engaged partners potential partners across the globe

#### Set up

Set up GP Hydro and started recruitment process for CEO











#### Initiated

Reviewed renewables industry and developed the business plan for the sector

#### **Selection**

Selected micro Hydro and funded JV Company

#### Started

Started GP Hydro business

# **Ongoing Activities**

Review

Other renewables products and opportunities

Engage

Partners across the globe with cutting edge technology

Develop

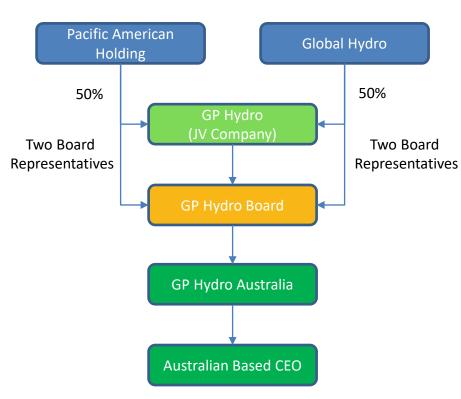
Partnerships with world leaders

# **GP Hydro Joint Venture**

### **Highlights**

- Each JV Partner has committed an investment of USD500K for a total of USD1M to the joint Venture spread over four agreed milestones
- GP Hydro holds the exclusive rights for the pacific region and Australia for Global Hydro's smarT micro hydro products.
- The Joint Venture company has employed an Australian renewables expert with expertise starting and developing start up businesses in the sector
- The SmarT products have:
  - Low operating costs
  - Sustainable technology, no environmental impact
  - Best way for rural electrification and remote areas
  - Also usable for factory grids and mines

#### **Structure**



# **Summary**

- Sector supported by Govt Funding
- Long term growth projections
- Proven portfolio of products
- High Social Impact Business
- World Class JV Partner
- Consistent Delivery
- Project Pipeline
- Local team







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