

Clean Energy Transition in Pacific Island Countries

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An Overview of the World Bank Group



WORLD BANK GROUP

THE WORLD BANK IFC International Finance Corporation MIGA Multilateral Investment Guarantee Agency

World Bank (IBRD and IDA)

- IBRD (1944-) lends to governments of middle-income and creditworthy low-income countries
- IDA (1960-) provides financing on highly concessional terms to governments of the poorest countries

IFC

- IFC (1956-) provides loans, guarantees, equity, and advisory and project development services and mobilizes additional capital from other sources to stimulate private sector investment in developing countries

MIGA

- MIGA (1988-) provides political risk insurance and credit enhancement to investors and lenders to facilitate foreign direct investment in emerging economies

ICSID

- ICSID (1966-) Provides international facilities for conciliation and arbitration of investment disputes

IBRD and IDA Snapshot

Members

IBRD: 189 countries

IDA: 174 countries

Net
loan/credit
outstanding

IBRD: US\$227 billion (FY22)

IDA: US\$174 billion (FY22)

Annual
commitment
for energy
and
extractives

IBRD: US\$3.1 billion (FY22)

IDA: US\$3.7 billion (FY22)

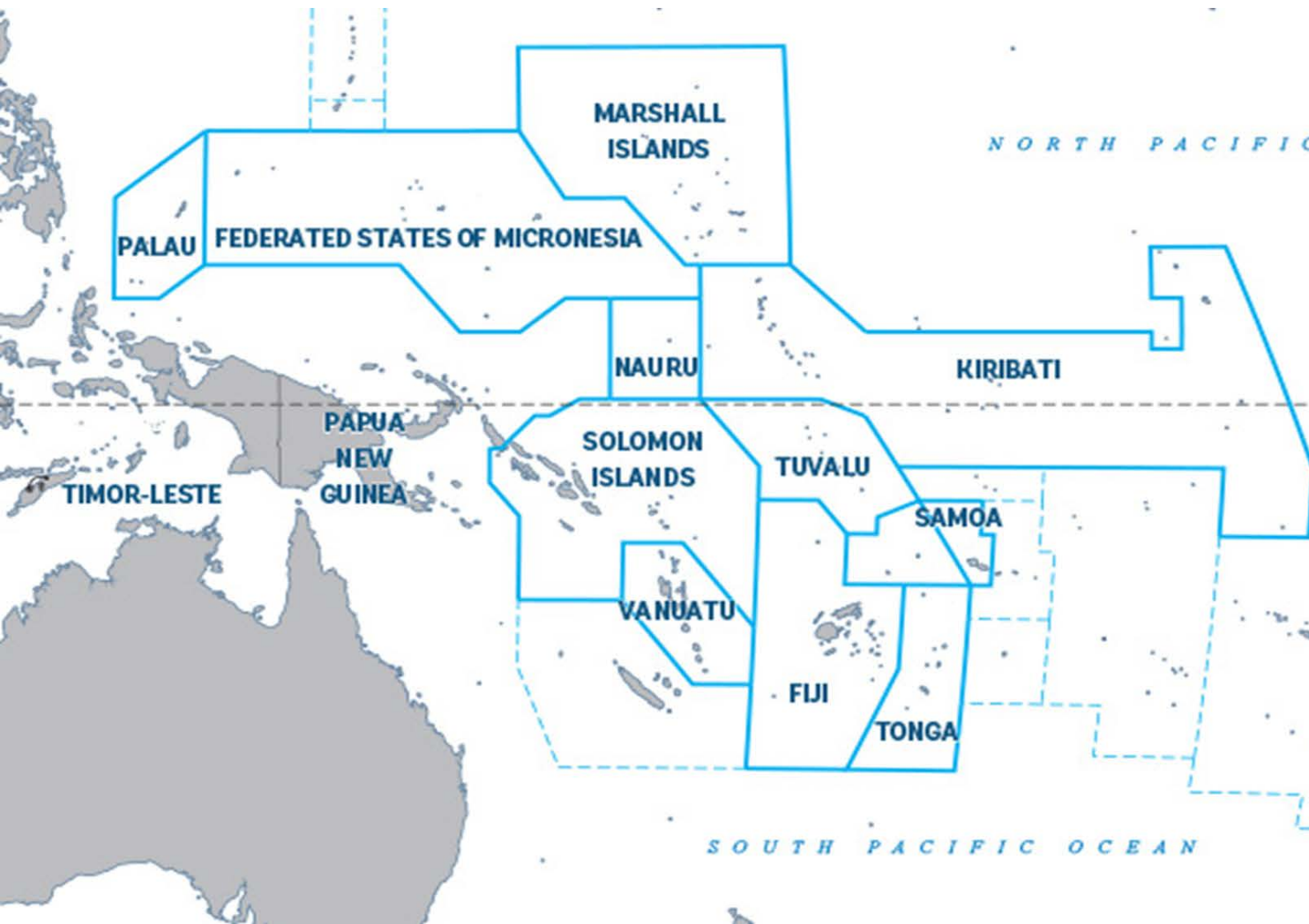
Staff

12,778 (FY22) from 170+ countries

130+ locations



Pacific Island Countries: A Snapshot



WB Member Countries in the Pacific

Countries: **12**

Land areas: **517,010 km²**
(452,860 km² in PNG)

+EEZs: **17,344,399 km²**

Population: **11.5 million**
(8.9 million in PNG)

GDP: **US\$34 billion**
(US\$25 billion in PNG)

GDP per capita: **US\$1,515 ~ 14,244**

Energy Challenges in Pacific Island Countries

GHG Emission Profile*

GHG Emission in 2018
(including LUCF)

48 MtCO₂eq; or

0.1% of Global Emission

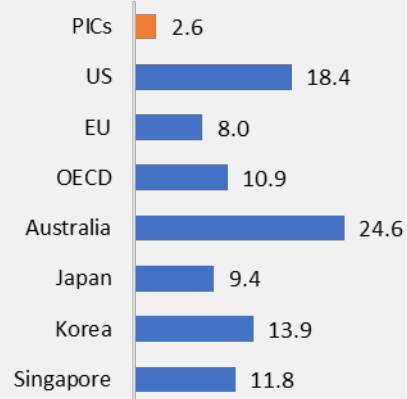
Energy Sector Emission
(including Transport Sector)

7% of Total Emission

Emissions Intensity (w/o LUCF)
(tCO₂eq per GDP \$mil.)



Emissions Per Capita (w/o LUCF)
(tCO₂eq per person)



* Aggregate 7 countries including Fiji, FSM, RMI, Solomon Islands, Tonga, Tuvalu and Vanuatu

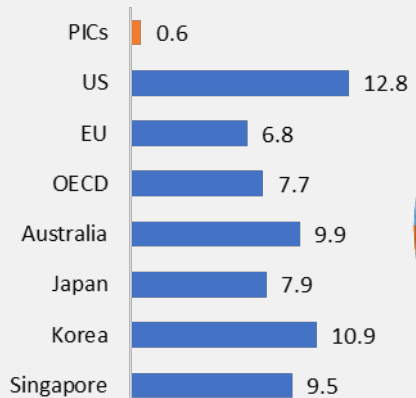
NDC Targets on Mitigation and Energy

- Most of PICs have updated their NDCs between 2020-2021, including the following countries

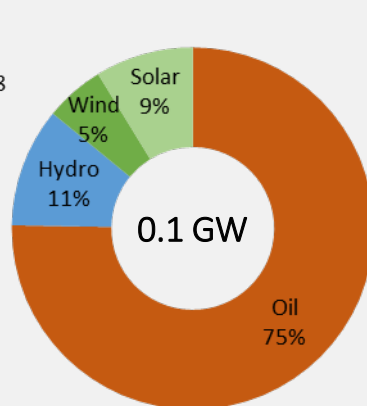
Country	Updated NDC Targets
Fiji	Unconditionally 10% below BAU by 2030, conditionally 30% below BAU by 2030 Net zero emission by 2050
RMI	32% below 2010 level by 2025, 45% below 2010 level by 2030
Samoa	26% below 2007 level by 2030
Solomon Islands	Unconditionally 30% below BAU by 2030, conditionally 45% below BAU by 2030
Vanuatu	Close to 100% RE in the power sector by 2030

Power Sector*

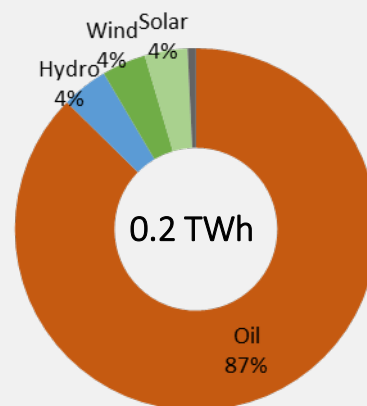
Electricity Consumption Per Capita (MWh per person)



Generation Capacity in 2019



Electricity Generation in 2019

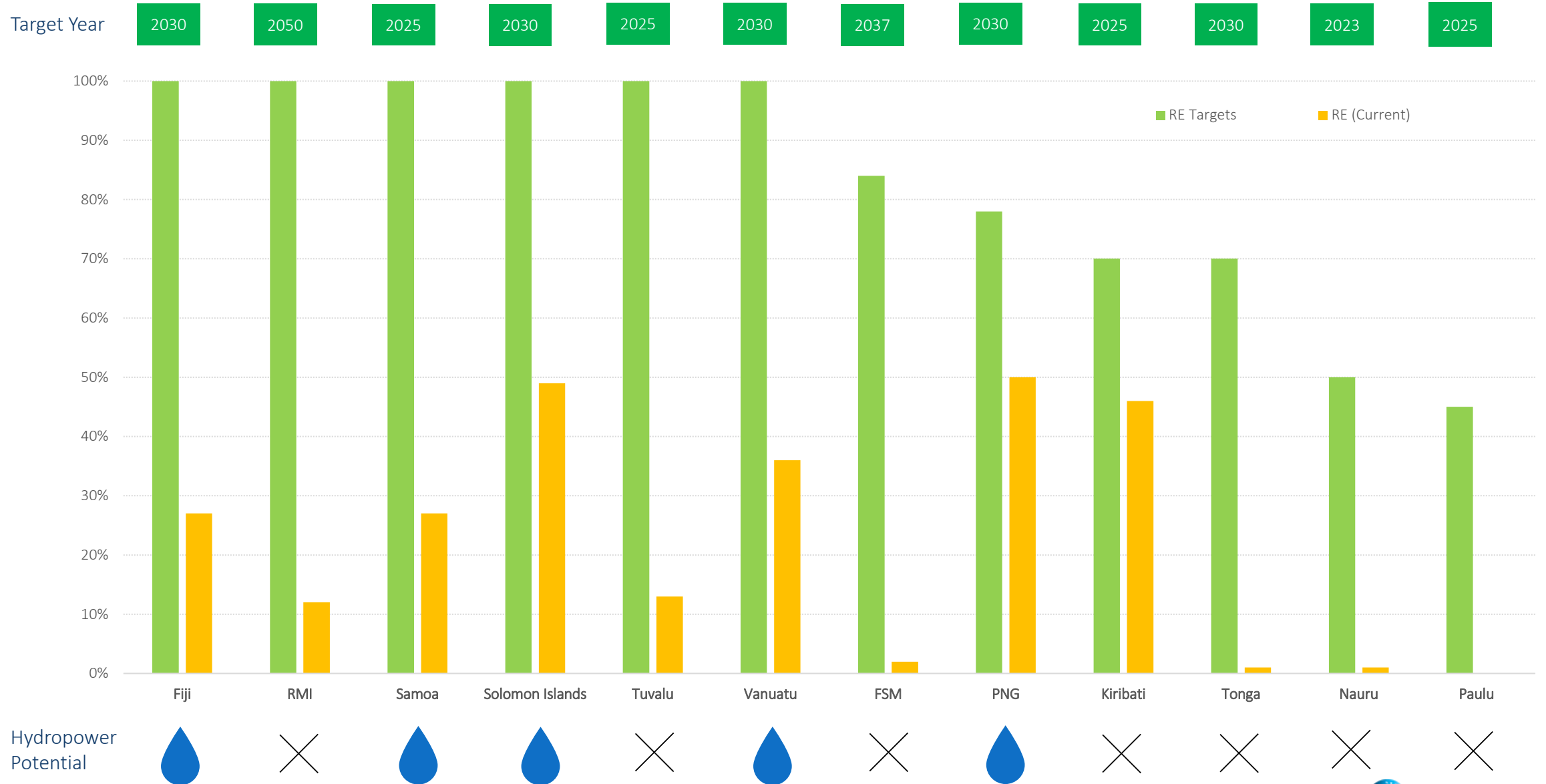


* Aggregate 4 countries including FSM, RMI, Tuvalu and Vanuatu

Highlights

- Some countries have significant energy access gaps, such as Solomon Islands, Vanuatu, and FSM. Clean cooking access is lagging in many countries.
- GHG emissions from PICs in aggregate are very marginal to global emissions, and more than 90% of the aggregate GHG emissions comes from LUCF in Solomon Islands.
- PICs rely heavily on liquid oil such as diesel and HFO for electricity generation. Electricity consumption per capita is very small. Liquid fuel-based expensive generation poses an opportunity for transition to renewable energy and energy storage options with competitive cost.
- Adaptation and resilience is a high priority of PICs given the climate-related hazards that pose significant risks to the countries. Resilient energy and transport infrastructure is of high importance in many of PICs.
- The Bank's engagement spans from support to energy access, renewable energy, and to improving infrastructure resilience in these countries.

Pacific Island Countries Have Ambitious Plans to Scale-up Renewable Energy



1. The challenge

GHG

reductions are urgently needed



8x

more natural disasters affected the poorest countries in the last decade than in the 1980s

"Tackling the climate crisis while meeting urgent development needs is the fundamental challenge of our time"

World Bank Group CCAP



Trillions of US dollars required in developing countries every year through 2030 to build infrastructure



800 million people worldwide still lack electricity



Climate change and the degradation of ecosystems together will push the planet closer to irrevocable **tipping points**



Adaptation & resilience are *critical* for the **POOREST & most vulnerable** countries.



2. The plan

ALIGN CLIMATE & DEVELOPMENT

NEW DIAGNOSTICS

Country Climate & Development Reports supporting clients' NDCs, LTSS and development plans

Align with Paris Agreement Goals

July 1, 2023 July 1, 2025

World Bank: 100% WBG-wide: 100%
IFC/MIGA: 85%

WBG Climate finance = 35% of overall flows, half for adaptation (WB)

PRIORITIZE KEY SYSTEMS TRANSITIONS

5 KEY SYSTEMS

that generate 90% of GHG emissions and face significant adaptation challenges

- Energy
- Agriculture, food water, land
- Cities
- Transport
- Manufacturing

FINANCING TO SUPPORT THE TRANSITION



Help **CLIENT COUNTRIES** boost **public domestic RESOURCES**

INCREASE MOBILIZATION

of domestic and private capital

Support global efforts to raise and deploy concessional finance



World Bank's Approaches to Energy Transition

Policy dialogue: Support sound policy – focus on promoting alternatives, and (where possible) accelerating coal retirement.

Convene: Extensive engagement - international/local stakeholders, development partners and regional institutions - increase concessional financing

Finance: Leverage, catalyze early market development, de-risk and mobilize private capital flow

Advisory Services and Analytics (ASA)

Lending

Policies and regulations to reduce coal production and consumption

- **Power system planning:** balancing least cost and carbon constraints, fully aligned with NDC
- **Pricing and subsidy reform:** internalizing environmental and social costs of coal use
- **System dispatch:** in favor of clean power alternatives (e.g., priority dispatch and mandate market share of renewable energy)
- **Pricing and compensation mechanism:** accelerating retirement of existing coal plants; incentivizing re-purposing of coal power assets
- **Institutional governance and capacities:** building capacity for implementing transition programs

Scale up clean energy alternatives and energy efficiency

- **Renewables:** Investment in hydro, solar, wind and geothermal through competitive auctions and public-private partnership
- **Grid:** Upgrade of grid networks, digitalization, battery and pumped hydropower storage to facilitate integration of variable RE
- **Gas:** Investment in gas as a transitional fuel to replace coal for power and space heating
- **Regional interconnection:** Improving power system flexibility and facilitating clean energy trade
- **Energy efficiency:** Supply and demand sides of the power system

Support decarbonization in the industrial and transport sector

- **Industrial energy use:** Improving energy and material efficiency, and accelerating electrification of industrial processes
- **Transport energy use:** Decarbonization through scaling up electric mobility solutions and other alternative fuel
- **Alternative fuel:** Exploring green hydrogen, ammonia and other alternative fuel to replace combustion of fossil fuel in the industrial and transport sector

Just Transitions: coal mine and coal power plant closure

- **Lead the early stages of planning and preparation** for regional transition strategies, in coordination with broader parts of the WBG
- **Macro-economic impacts:** Modelling direct and indirect impacts on taxes, royalties, export revenues, GDP due to coal mine closure and regional transition
- **Social impacts:** Retraining to support re-employment of coal miners; ensure continuation of social services in coal regions
- **Environmental impacts:** Environmental standards and international practices for coal mine closure for repurposing

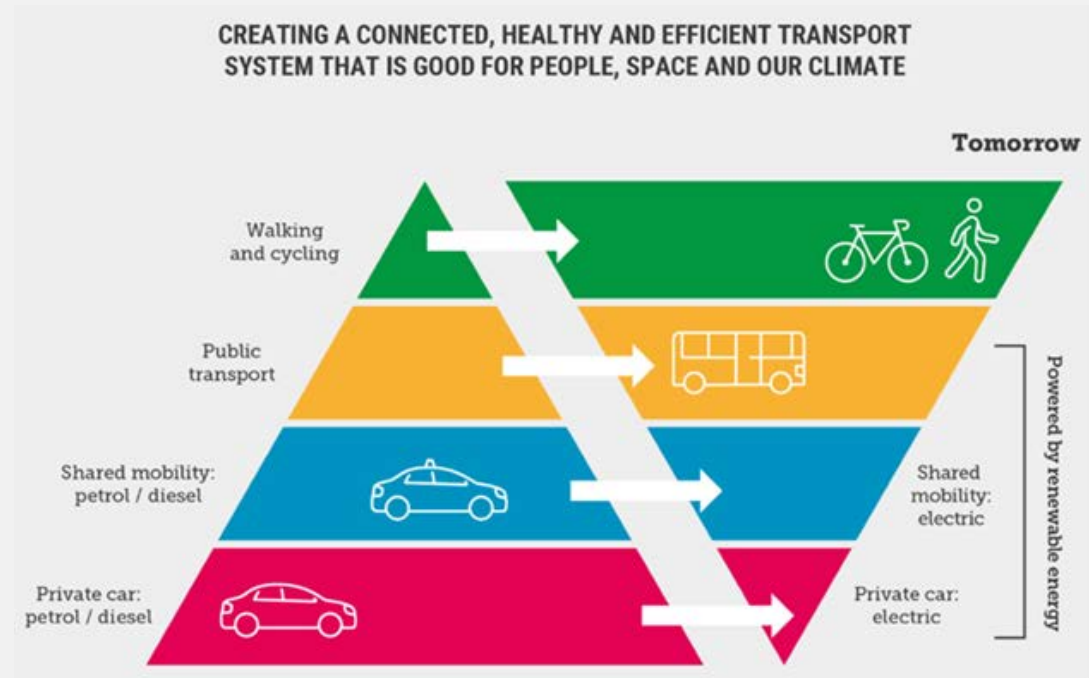
- **Energy sector reform** support in Solomon Islands
- **Geo-spatial national electrification plans** in PNG, Solomon Islands, and Vanuatu
- **Least-Cost Power Development Plan** for two main power systems in PNG
- **Cost-of-service and tariff study** in Solomon Islands
- **Energy subsidies review** with the Pacific Region Infrastructure Facility
- **Utility performance improvement** in PNG with **smart meters** and **management information systems**
- **Management service contract** for the utilities in FSM
- **Regional data management** with the **Pacific Community (SPC)**
- **Regional disaster assistance program** with the **Pacific Power Association (PPA)**
- **Climate vulnerability assessments** and investment plans for FSM, RMI, Tuvalu, and Samoa (and beyond).

- **Solar and wind energy resource measurement** and mapping
- **Geothermal energy** pre-feasibility assessment in Fiji
- **Offshore wind potential assessment** in Fiji and PNG
- **Hydropower development** in Solomon Islands (**15 MW Tina River HPP**) and PNG (**80 MW Naoro Brown HPP**)
- **Grid-connected solar** in Solomon Islands
- **Floating solar** in RMI
- **Solar/battery/diesel mini-grids** in FSM, RMI, Tuvalu, Solomon Islands, and PNG
- **Gas sector and CCUS** assessments in PNG
- **Network rehabilitation and enhancements** in PNG
- **Technical and commercial losses reduction program** in PNG, FSM, Solomon Islands
- **Development of regional Battery Energy Storage System (BESS) Policy and Program, PPP Options for the PICs**

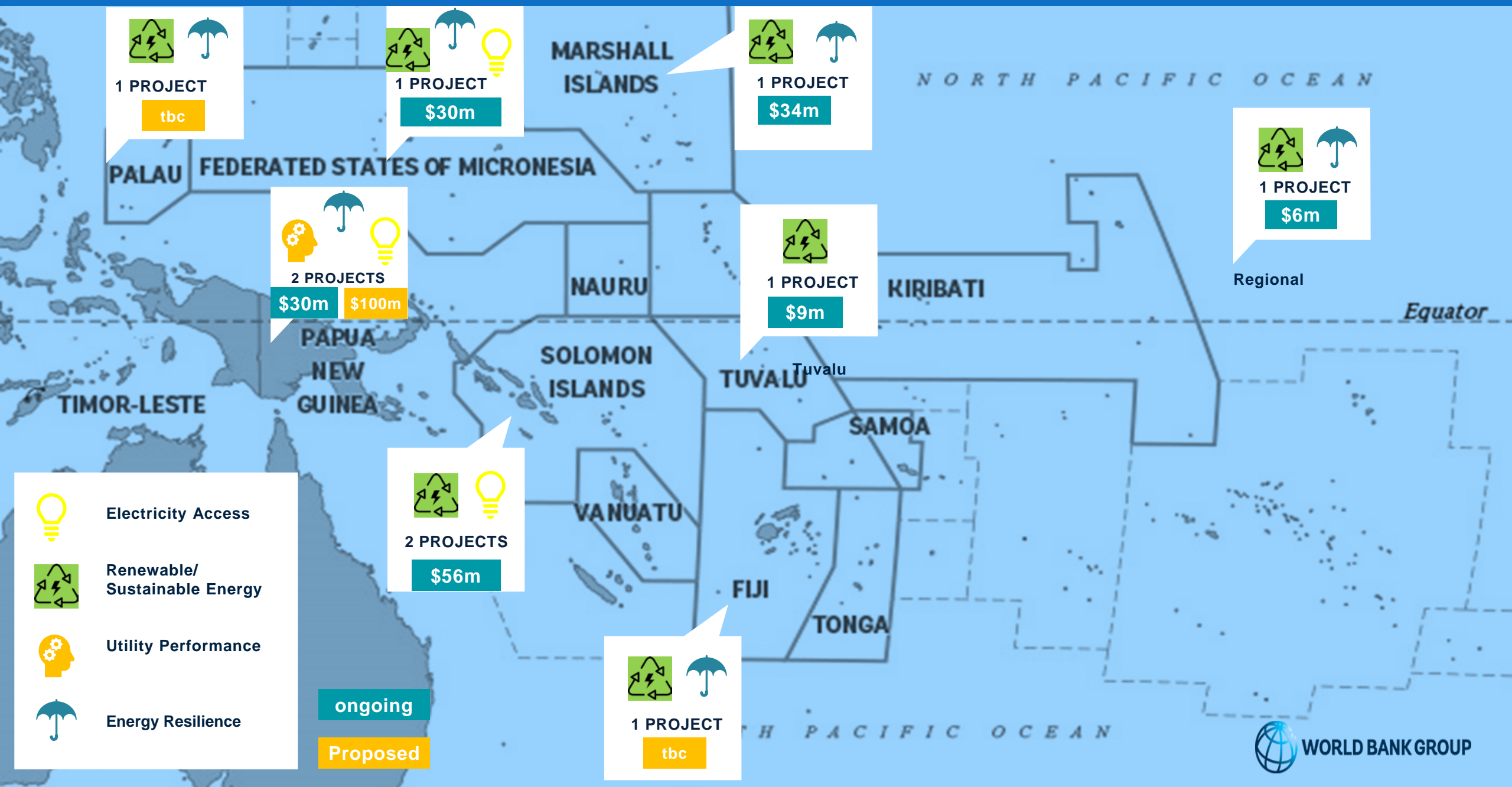
Support Decarbonization in the Industrial and Transport Sectors

Decarbonization in Transport

- **E-mobility pilot** schemes in RMI and Tuvalu
- **E-mobility potential assessments** targeting Fiji, Palau, Solomon Islands
- **Design regional e-mobility policy framework and technical guidelines** in the Pacific
- **Blue transformation for maritime transport study** for the Pacific
- **Direct use of geothermal energy** in Fiji under discussion



World Bank Energy Program in PNG and Pacific Island Countries



-  Electricity Access
-  Renewable/Sustainable Energy
-  Utility Performance
-  Energy Resilience

ongoing

Proposed

- Clean energy transition cannot wait, especially under the current external environment.
- It will not only build resilience but also support job creation, economic empowerment of women, and local economic and social development.
- Energy investment needs are significant – both private investments and services are essential for energy access, energy transition, and resilience.
- World Bank plans to ramp up its Pacific energy program and looks forward to continued collaboration with all partners.

Thank you!

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