29TH ANNUAL PPA CONFERENCE 21-24
NOVEMBER 2022, BRISBANE, AUSTRALIA

Utility Board Directors Workshop
21st -22nd November 2022

Chairs
Jay Prasad jay.prasad@unsw.edu.au
Iain MacGill i.macgill@unsw.edu.au
Edoardo Santagata edoardo.snatagta@student.unsw.edu.au

Theme: "Supporting Utilities towards Environmental Stewardship, Operational Performance and Financial Stability".

Introductions

Question to Utility Board Members:

- What keeps you **busy** at work?
- What **challenges** keep you up at night?
- What **question** do you have for your 'Board' colleagues?
- What **advice** do you have for your 'Board' colleagues?

Utility Board Directors Workshop: Agenda Day 1

Start Time	Finish Time	Day 1 Monday 21/11/2022		
		Chair	Presenter	Topic
8:30	9:00	Dr. Iain MacGill	Jay Prasad	Welcome/Agenda/Introductions
9:00	10:00			Discussion on Key Concerns and Common Issues
10:00	10:30	Morning Tea		
10:30	10:50	Edoardo Santagata	Dr. Maria Balabat	Sustainable Governance in the Utilities Sector
10:50	11:10		Dr. Maria Balabat	Trends in Sustainable Business Reporting Sector
11:10	11:30		Jay Prasad	Facilitation of High Penetration of Variable Renewable Energy in Pacific Island Country Utility Grids
11:30	12:00		Dr. Maria Balabat, Jay Prasad, Board Members	Panel Discussion/Q&A
12:00	13:00	Lunch		
13:00	13:20	Jay Prasad	Ms. Reema Alpana	Engaging persons with disabilities in the Pacific energy sector: An inclusive approach towards achieving SDGs
13:20	13:40		Edoardo Santagata	Decarbonising the Pacific: a national policy and sectoral target review
13:40	14:00		Dr. Atul Raturi	SDGs, NDCs and the role of electricity sector in achieving them
14:00	14:20		Dr. Anna Bruce	Tariff and Distributed Energy Resources
14:20	15:00		Ms. Reema Alpana, Edoardo Santagata, Dr. Atul Raturi, Dr. Anna Bruce	Panel Discussion/Q&A
15:00	15:30	Afternoon Tea		
15:30	15:50	Dr. Iain MacGill	Dr. Iain MacGill	Complexity of what the electricity sector is being asked to do, and measured on this, across the region.
15:50	16:10		Edoardo Santagata	Scenario-based modelling for e-mobility in the Pacific
16:10	16:30			Discussion and Wrap-up Day 1

Utility Board Directors Workshop: Agenda Day 2

Start Time	Finish Time	Day 2 Tuesday 22/11/2022		
		Chair	**Presenter**	**Topic**
8:30	15:00	Main Event: Opening Ceremony and Presentations		
15:00	15:30	Afternoon Tea		
15:30	15:50	Jay Prasad	Abraham Simpson	Regulatory Reform in PICTS, Update on work of OPERA
15:50	16:10		Dr. Iain MacGill	Discussion and Recap, Wrap Up Workshop
16:10	16:30			Workshop Survey Questionnaire

Pacific Island Countries and Territories Electricity Utility Boards Challenges and Opportunities

Professor Iain MacGill
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Utility Board members workshop
29th Pacific Power Association Conference
21-24 November 2022
Brisbane, Australia

Dr. Iain McGill
Professor, UNSW

Dr Iain MacGill is a Professor in the School of Electrical Engineering and Telecommunications at UNSW Australia, and Joint Director (Engineering) for the University's Collaboration on Energy and Environmental Markets (CEEM).

Iain's teaching and research interests at UNSW include electricity industry restructuring and the Australian National Electricity Market, sustainable energy generation technologies, distributed energy resources in the built environment, energy efficiency options, energy access in developing and emerging economies, energy and climate policy and environmental regulation. He has
run industry short courses and workshops and consulted to industry and government clients in these areas in Australia and internationally.

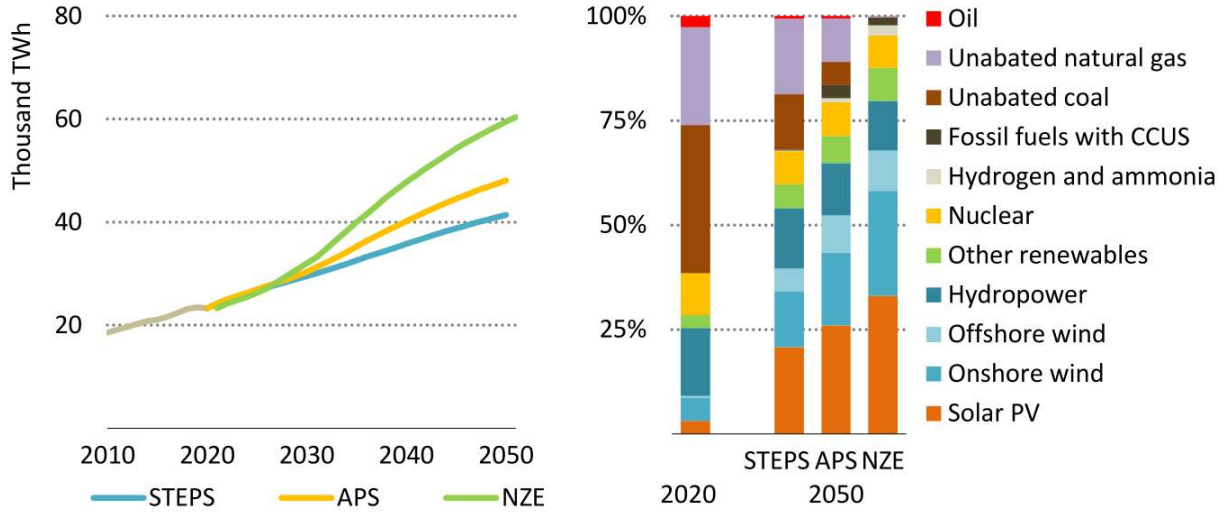
Presentation Topic:

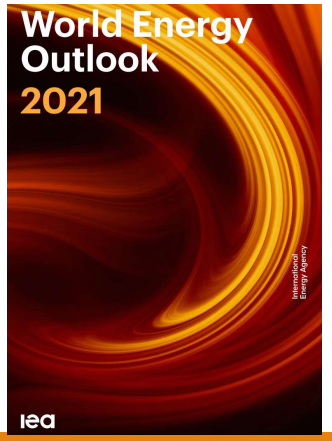
Complexity of what the electricity sector is being asked to do, and measured on this, across the region.

Globally, a shared electricity industry destination

- a future global sustainable electricity sector will be larger, more diverse, increasingly variable RE dominated, the key to decarbonisation, energy security
- with all countries having to contribute as appropriate and possible to transition
- and major regional variations in generation mix, industry size

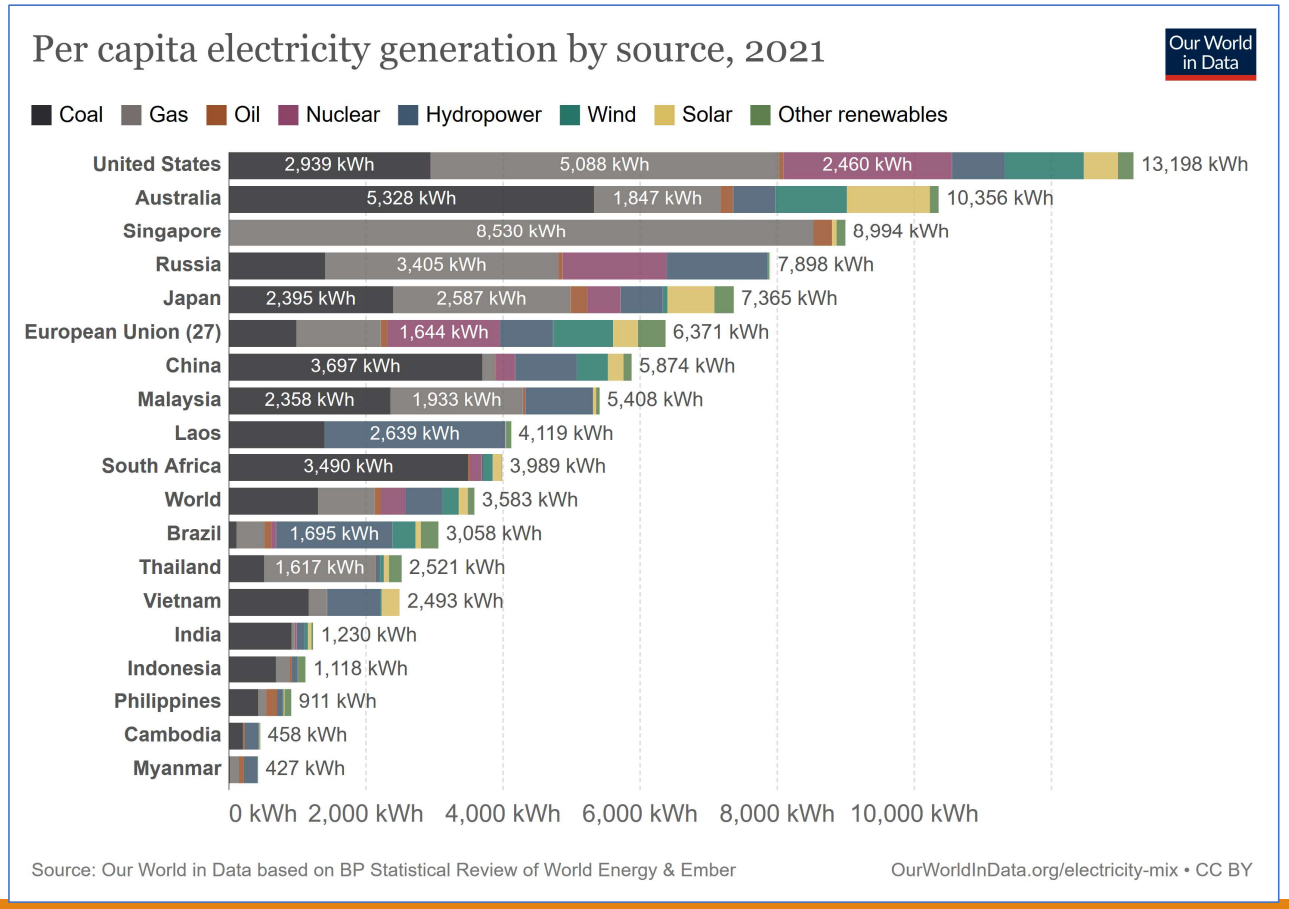
Figure 4.20 ▷ Global electricity demand and generation mix by scenario





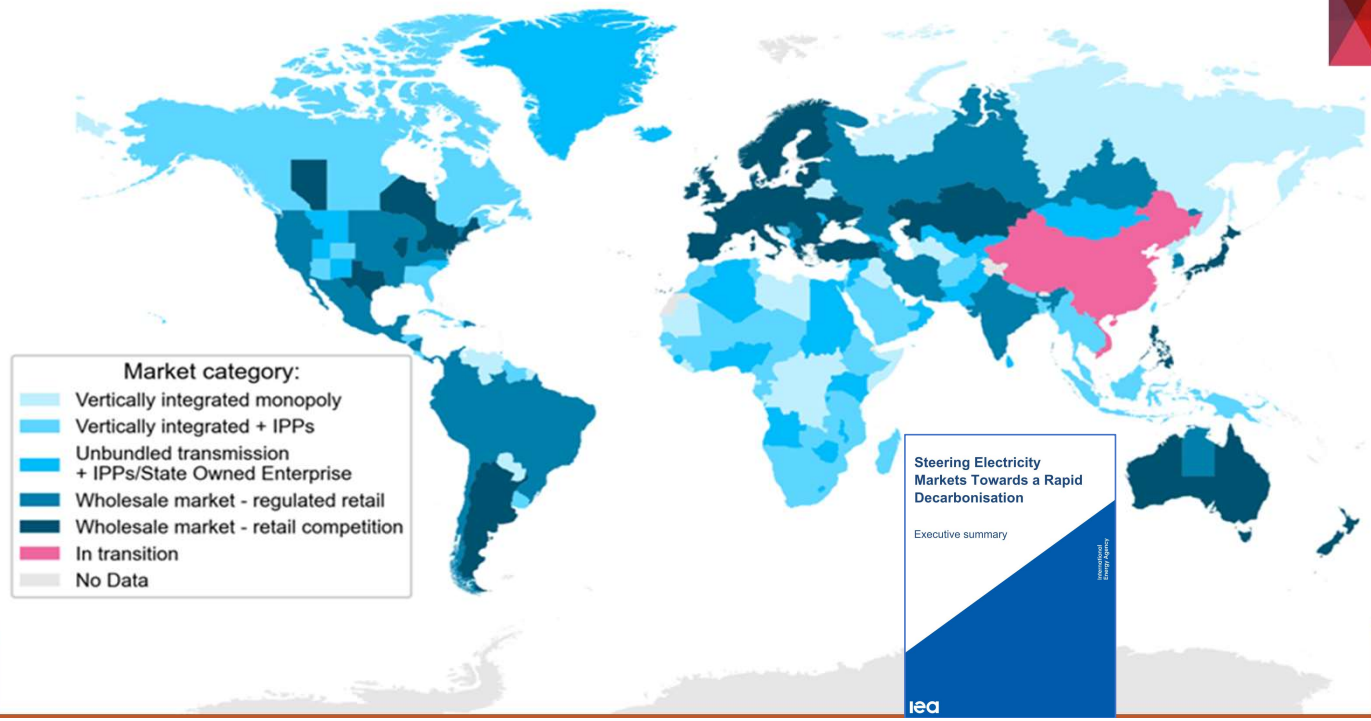
From very different starting points

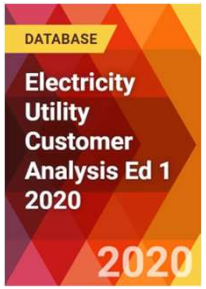
- Including industry size, generation mix



Global electricity utilities

- Near universal electricity industry arrangement for >100 years
  - Provision of essential services/infrastructure, contribution to social and economic welfare, natural 'wires' monopoly, economies of scale in engineering, finance
  - More market based arrangements over past 30 years in some jurisdictions
- Estimated 900 electricity tx utilities, 7200 dx utilities globally
  - 38 dx utilities > 10m customers, 41 5-10m, 237 1-5m, 6,865 < 1m
  - 2.2b customers (estimated 92% of total across 200 countries)





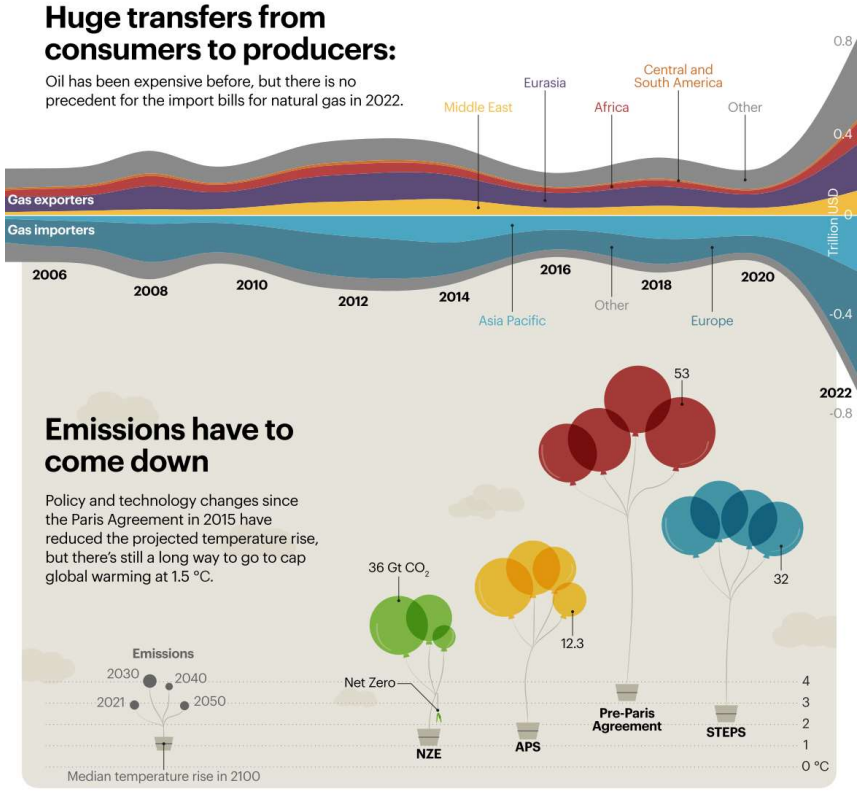
Pacific Island Countries and Territories electricity utilities

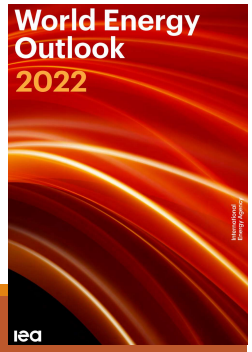
Pacific Utility	Country/ Territory
ASPA	Amercian Samoa
CPUC	Fed. Staes of Micronesia (FSM)
CUC	Commonwealth of Northern Marianas
EDT	French Polynesia
EEC	New Caladonia
EEWF	Wallis & Futuna
ENERCAL	New Caladonia
EPC	Samoa
EFL	Fiji
GPA	Guam
KAJUR	Marshall Islands (RMI)
KUA	Fed. States of Micronesia (FSM)
MEC	Marshall Islands (RMI)
NPC	Niue
NUC	Nauru
PPL	Papua New Guinea (PNG)
PPUC	Palau
PUB	Kiribati
PUC	Fed. States of Micronesia (FSM)
SCE	Santa Catalina Island
SP	Solomon Islands
TAU	Cook Islands
TEC	Tuvalu
TPL	Tonga
UNELCO	Vanuatu
YEPSC	Fed. States of Micronesia (FSM)

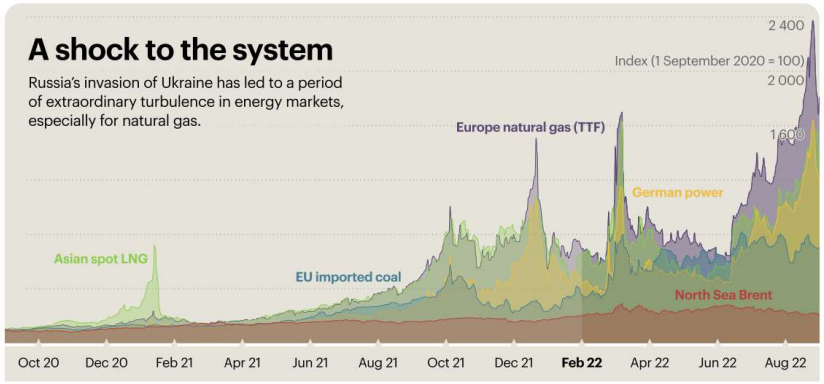
Utilities	Peak Demand (for largest Grid)	Size Category	Smaller Grids Serviced	Total Annual Energy Produced (MWH)	Renewable Energy Contribution (%)
ASPA	25.00	medium	Yes	173,582	2.3%
CPUC	2.97	small	Yes	16,894	5.1%
EEC	86.49	large	Yes	490,011	12.0%
EPC	29.99	medium	Yes	192,410	44.4%
EFL	180.22	Large	Yes	977,150	64.2%
GPA	247.00	large	Yes	1,686,618	3.0%
KUA	1.29	small	No	6,927	3.2%
MEC	9.40	medium	Yes	65,141	0.8%
NUC	5.75	medium	No	39,151	7.7%
PPL	131.40	large	Yes	1,500,704	44.7%
PPUC	11.50	medium	Yes	86,239	2.0%
PUB	5.60	medium	No	32,993	6.8%
PUC	6.15	medium	No	37,482	4.1%
SCE	5.60	medium	Yes	27,418	0.0%
SP	15.91	medium	Yes	98,950	1.7%
TAU	5.53	medium	No	31,207	13.7%
TEC	1.42	small	Yes	9,649	15.7%
TPL	11.49	medium	Yes	76,016	11.8%
UNELCO	13.20	medium	Yes	59,736	14.7%
YEPSC	1.90	small	Yes	10,646	19.5%
Total				5,618,924	17.10%

… and a global energy crisis to navigate

- Unprecedented gas + coal prices, high + volatile oil prices
- Growing climate change impacts, inadequate efforts to date avoid dangerous warming
- Enormous wealth transfers, adverse impacts on societal progress in developing + emerging economies, recession risks in industrialised nations







Electricity utility objectives – *legislated Board requirements*

Meet the Board

- Role of the Board
- Directors' Duties
- Statutory Duties of the Board
- Here is the Current Board of Directors

Role of the Board

As required by Section 6 (4) of the State Owned Enterprises Act 2007, the Board is responsible for charting the Company's strategic direction, for the setting of objectives, policy guidelines, goals management, and for monitoring the achievement of these matters.

The Board is also responsible for reviewing the Business Plan, Corporate Plan and Statement of Corporate Intent, and approves Operating and Capital Budgets each year. The Board also reviews matters of a major or unusual nature, which are not in the ordinary course of business.

Directors' Duties

The role and duties of the Directors are defined in regulations 17 to 27 of the SOE Regulations, 2010. A key responsibility of the Directors is to achieve the principal objective of the Authority, as stated in Section 5 of the SOE Act: The principal objective of every State Owned Enterprise shall be to operate as a successful business and to this end, to be

a) As profitable and efficient as comparable businesses that are not owned by the Crown or established as statutory bodies by an Act of Parliament,
b) A good employer, and
c) An organization that exhibits a sense of social responsibility by having regard to the interests of the community in which it operates.

Statutory Duties of the Board

In addition to the above duties, the Board of Directors of SIEA collectively and individually have agreed on the fulfillment of the following duties toward the company:

- When exercising powers or performing duties, Directors must act in good faith and in what the Director believes to the best interests of the State Owned Enterprise.
- A Director of a State Owned Enterprise, when exercising a power as Director, must exercise that power for a proper purpose.
- A Director of a SOE must not:
  a) Agree to the business of the SOE being carried out on or in a manner likely to create a substantial risk of serious loss to the SOE creditors or,
  b) Cause or allow the business of a SOE to be carried out on or in a manner likely to create substantial risk of loss to the SOE creditors.
- A Director must not agree to the SOE incurring an obligation unless the Director believes at the time, on reasonable grounds, that the SOE will be able to perform the obligation when it is required to do so.
- A Director of a SOE, when exercising powers or performing duties, must exercise the care, diligence, and skills that a reasonable Director would exercise in the same circumstances.
- Another controlling measure imposed on Directors is the requirement to enter any conflict of interest in an interests register.

Electricity utility objectives – *government priorities*

2022 PACIFIC ENERGY OFFICIALS MEETING

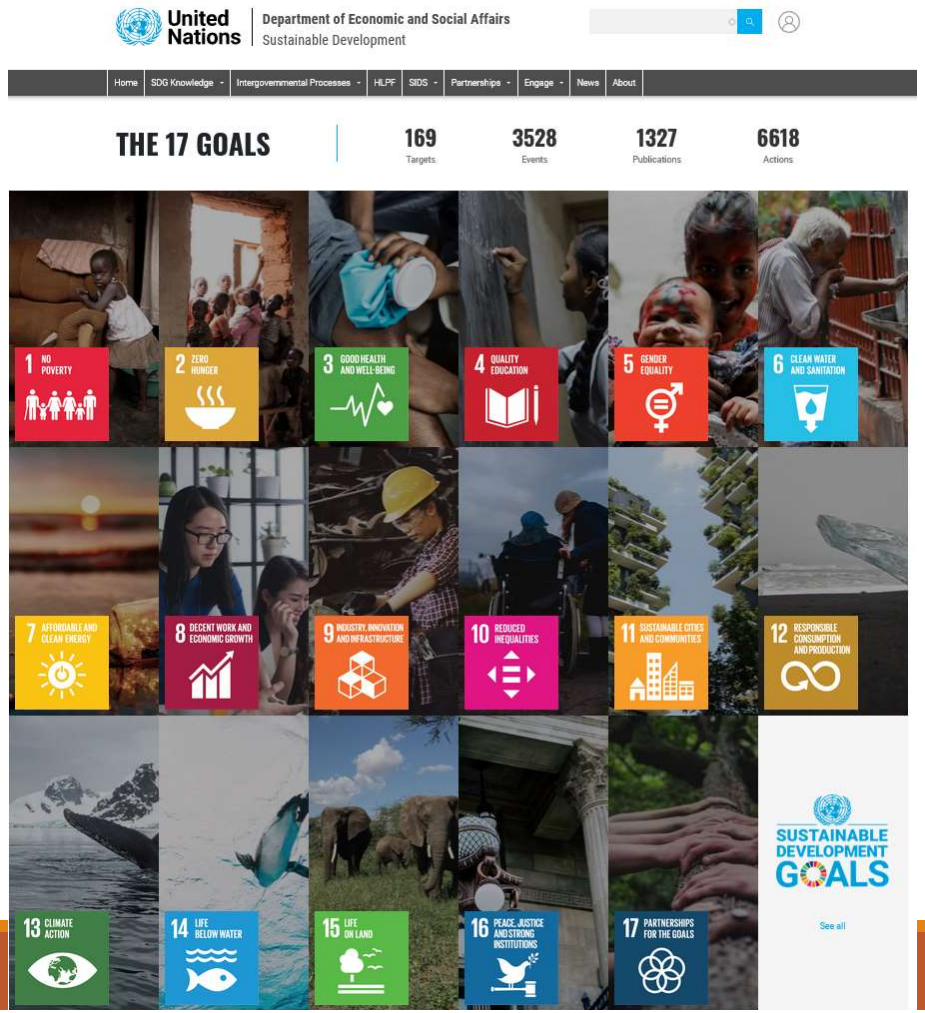
5-7 July 2022
Virtual Meeting

Meeting Outcomes

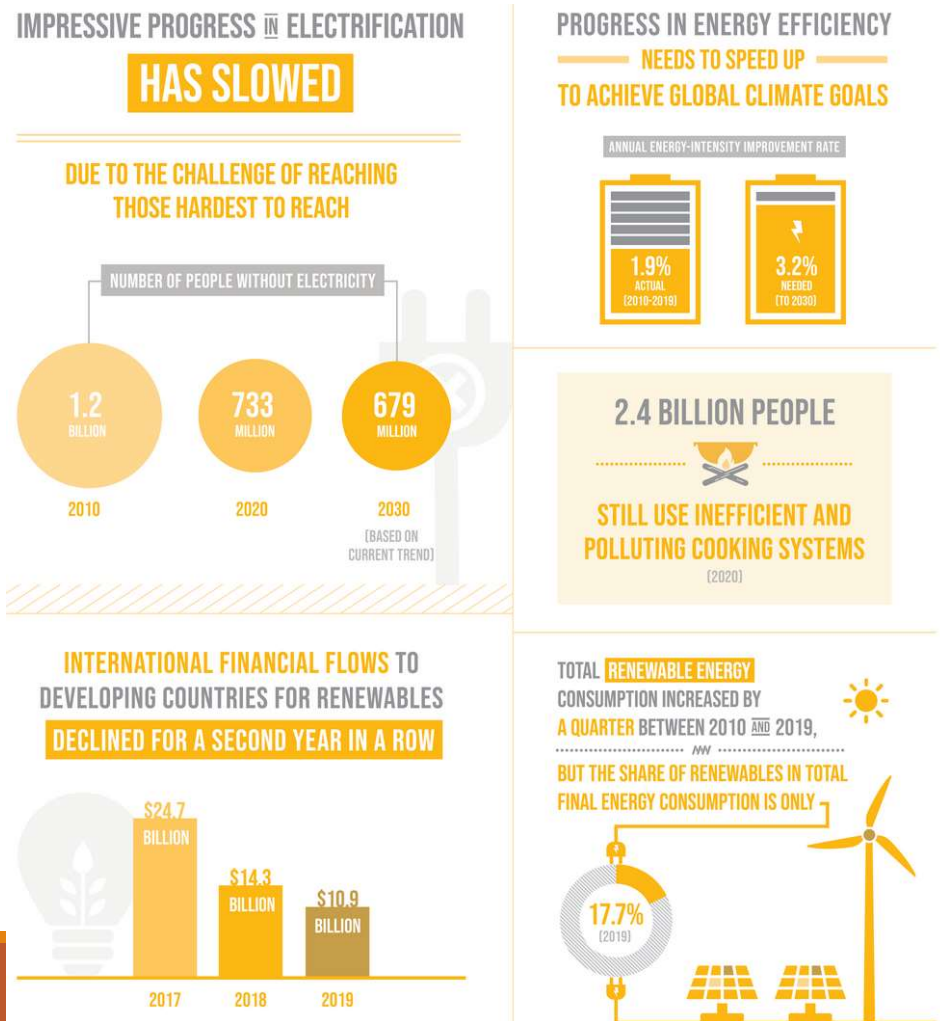
The 2022 Pacific Energy Officials Meeting was held virtually on 5-7 July 2022 and hosted by the Government of Vanuatu. The opening address was delivered by Mr Abraham Nasak, Acting Director General of the Ministry of Climate Change in Vanuatu.

1. Noted the severe impacts of the COVID-19 pandemic on the planning and delivery of national energy initiatives and the eventual achievement of national energy targets.
2. Recognised the slow progress of implementation of NDC initiatives in the PICTs. Donors and development partners are urged to support the implementation of NDC commitments.
3. Noted with concern the current high prices of fossil fuel and its impacts on the power tariff and the flow-on effects to the fragile island economies.
4. Concerned about the current high prices of fossil fuel and re-emphasised the need for regional back-up assistance for petroleum services. Reaffirming the Ministers' decision in 2019 in recognising the need to strengthen the regional petroleum advisory service at SPC. In response to the high fuel price, some countries are requesting for power tariff review.
5. Acknowledged the progress made by PICTs in developing, finalising and implementing their climate change mitigation and energy-related roadmaps, strategies, policies and legislations. The meeting recognised the development partners who assisted the countries in this regard.
6. Noted the request by PICTs for development partners to support relevant capacity development initiatives for national energy offices, regulators, power utilities and the private sector.
7. Noted the progress made by the countries, in collaboration with partners, in installing additional renewable energy capacities and the increasing role of IPPs in accelerating this development.
8. Noted the current emphasis to decarbonise the power sector and the priorities highlighted by the countries to urgently decarbonise the transport sector, in particular land and maritime transport.
9. Acknowledged the need for innovative financing mechanisms and to strengthen and incentivise Private-Public-Partnerships to accelerate the energy transition in the region.
10. Emphasised the need to implement gender mainstreaming initiatives in the energy sector, including clean cooking.
11. Recognised the financial and technical issues relating to the sustainability of rural electrification (e.g. solar home systems, solar freezers and mini grids) and called for the necessary steps to rectify these issues.
12. Recognised green hydrogen as a potential energy option for the future in the Pacific and the need for PICTs to learn from development partners that are leading the research and development on green hydrogen.
13. Recalled the 2019 Ministers outcome statement urging PICTs and development partners to develop other renewable energy sources such as floating solar and ocean energy.
14. Proposed the use of robust design and internationally recognised renewable energy and energy efficiency standards (hardware and software) in the region, subject to verification by relevant national agencies.
15. Noted the potential for solar rooftop in increasing renewable power generation in the PICTs, particularly for atoll nations. Power utilities and development partners are urged to look into this matter.
16. Supported the need to embrace and accelerate the uptake of clean cooking technologies such as solar cook stove and domestic biogas system, in rural communities.
17. Noted the severity of natural disasters affecting the energy systems that cause significant economic damages and losses and called for concerted actions to strengthen disaster risk management and climate change adaptation of the energy systems of the member countries.

Electricity utility objectives – *Sustainable development goals (SDGs)*



Causes for concern



Possible measures of governance

Utilities	Power Quality Standards	Self-Regulated or Externally regulated	Public or Private Ownership
ASPA	Self	Self	Public
CPUC	US	Self	Public
CUC	US	External	Public
EDT	concession contract	External	Private
EEC	EN50160	External	Private
EPC	AUS/NZ	External	Public
EFL	AUS/NZ	External	Public
KAJUR	self	Self	Public
KUA	KUA	Self	Public
MEC	MEC	Self	Public
NUC	AUS/NZ	Self	Public
PPL	AUS/NZ	External	Public
PPUC	JIS, NEC	Self	Public
PUB	Self	Self	Public
PUC	Self	Self	Public
SCE	US	External	Private
SP	Self	Self	Public
TAU	AUS/NZ	External	Public
TEC	AUS/NZ	Self	Public
TPL	Self	External	Public
UNELCO	Concession contract	External	Private
YEPSC	NEC	Self	Public

Governance Indicator	Good Governance	Poor Governance	Score
Are Ministers appointed to the Board?	No	Yes	12%
Are Ministers/ public servants representing line/ sector Ministry appointed to the Board?	No	Yes	12%
Is a Code of Conduct in place and implemented?	Yes	No	8%
Is a commenrcial mandate in place and implemented?	Yes	No	19%
Is the CEO on a performance contract with annual reviews?	Yes	No	8%
Has a Strategic Plan (at least 3 years forecasts) been adopted and implemented?	Yes	No	15%
Is the Annual Report (audited) completed within four months of the end of the reporting year?	Yes	No	19%
Does the Annual Report disclose performance against Plan?	Yes	No	8%
Total Score			100%

Workforce Gender Make-up	
Total Employees	5,126
% Male employees	80.3%
% Female employees	19.7%
Total Technical Employees	2,630
% Technical Male employees	95.0%
% technical Female employees	5.0%
Total Management Staff	141
% Management Staff - Male	73.8%
% Management Staff - Female	26.2%

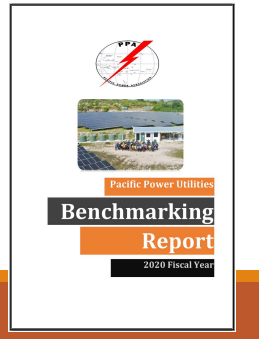
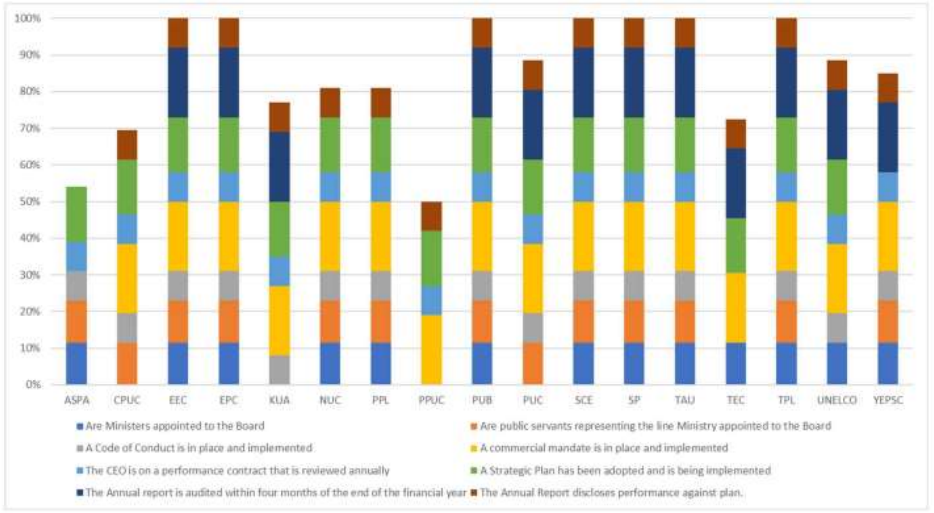
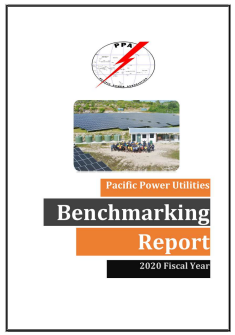


Figure 2.1: Composite Governance Score for 2020 FY



Possible measures of utility performance

Conference Theme: *"Supporting Utilities towards Environmental Stewardship, Operational Performance and Financial Stability".*



Pacific Island Countries and Territories Electricity Utility Boards Challenges and Opportunities

Final Remarks

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I. Rationales for state ownership

The state exercises the ownership of SOEs in the interest of the general public. It should carefully evaluate and disclose the objectives that justify state ownership and subject these to a recurrent review.

A. The ultimate purpose of state ownership of enterprises should be to maximise value for society, through an efficient allocation of resources.

B. The government should develop an ownership policy. The policy should *inter alia* define the overall rationales for state ownership, the state's role in the governance of SOEs, how the state will implement its ownership policy, and the respective roles and responsibilities of those government offices involved in its implementation.

C. The ownership policy should be subject to appropriate procedures of political accountability and disclosed to the general public. The government should review at regular intervals its ownership policy.

D. The state should define the rationales for owning individual SOEs and subject these to recurrent review. Any public policy objectives that individual SOEs, or groups of SOEs, are required to achieve should be clearly mandated by the relevant authorities and disclosed.

II. The state's role as an owner

The state should act as an informed and active owner, ensuring that the governance of SOEs is carried out in a transparent and accountable manner, with a high degree of professionalism and effectiveness.

A. Governments should simplify and standardise the legal forms under which SOEs operate. Their operational practices should follow commonly accepted corporate norms.

B. The government should allow SOEs full operational autonomy to achieve their defined objectives and refrain from intervening in SOE management. The government as a shareholder should avoid redefining SOE objectives in a non-transparent manner.

C. The state should let SOE boards exercise their responsibilities and should respect their independence.

D. The exercise of ownership rights should be clearly identified within the state administration. The exercise of ownership rights should be centralised in a single ownership entity, or, if this is not possible, carried out by a co-ordinating body. This "ownership entity" should have the capacity and competencies to effectively carry out its duties.

E. The ownership entity should be held accountable to the relevant representative bodies and have clearly defined relationships with relevant public bodies, including the state supreme audit institutions.

F. The state should act as an informed and active owner and should exercise its ownership rights according to the legal structure of each enterprise. Its

III. State-owned enterprises in the marketplace

Consistent with the rationale for state ownership, the legal and regulatory framework for SOEs should ensure a level playing field and fair competition in the marketplace when SOEs undertake economic activities.

A. There should be a clear separation between the state's ownership function and other state functions that may influence the conditions for state-owned enterprises, particularly with regard to market regulation.

B. Stakeholders and other interested parties, including creditors and competitors, should have access to efficient redress through unbiased legal or arbitration processes when they consider that their rights have been violated.

C. Where SOEs combine economic activities and public policy objectives, high standards of transparency and disclosure regarding their cost and revenue structures must be maintained, allowing for an attribution to main activity areas.

D. Costs related to public policy objectives should be funded by the state and disclosed.

E. As a guiding principle, SOEs undertaking economic activities should not be exempt from the application of general laws, tax codes and regulations. Laws and regulations should not unduly discriminate between SOEs and their market competitors. SOEs' legal form should allow creditors to press their claims and to initiate insolvency procedures.

F. SOEs' economic activities should face market consistent conditions regarding access to debt and equity finance. In particular:

1. SOEs' relations with all financial institutions, as well as non-financial SOEs, should be based on purely commercial grounds.
2. SOEs' economic activities should not benefit from any indirect financial support that confers an advantage over private competitors, such as preferential financing, tax arrears or preferential trade credits from other SOEs. SOEs' economic activities should not receive inputs (such as energy, water or land) at prices or conditions more favourable than those available to private competitors.
3. SOEs' economic activities should be required to earn rates of return that are, taking into account their operational conditions, consistent with those obtained by competing private enterprises.

G. When SOEs engage in public procurement, whether as bidder or procurer, the procedures involved should be competitive, non-discriminatory and safeguarded by appropriate standards of transparency.

VII. The responsibilities of the boards of state-owned enterprises

The boards of SOEs should have the necessary authority, competencies and objectivity to carry out their functions of strategic guidance and monitoring of management. They should act with integrity and be held accountable for their actions.

A. The boards of SOEs should be assigned a clear mandate and ultimate responsibility for the enterprise's performance. The role of SOE boards should be clearly defined in legislation, preferably according to company law. The board should be fully accountable to the owners, act in the best interest of the enterprise and treat all shareholders equitably.

B. SOE boards should effectively carry out their functions of setting strategy and supervising management, based on broad mandates and objectives set by the government. They should have the power to appoint and remove the CEO. They should set executive remuneration levels that are in the long term interest of the enterprise.

C. SOE board composition should allow the exercise of objective and independent judgement. All board members, including any public officials, should be nominated based on qualifications and have equivalent legal responsibilities.

D. Independent board members, where applicable, should be free of any material interests or relationships with the enterprise, its management, other major shareholders and the ownership entity that could jeopardise their exercise of objective judgement.

E. Mechanisms should be implemented to avoid conflicts of interest preventing board members from objectively carrying out their board duties and to limit political interference in board processes.

F. The Chair should assume responsibility for boardroom efficiency and, when necessary in co-ordination with other board members, act as the liaison for communications with the state ownership entity. Good practice calls for the Chair to be separate from the CEO.

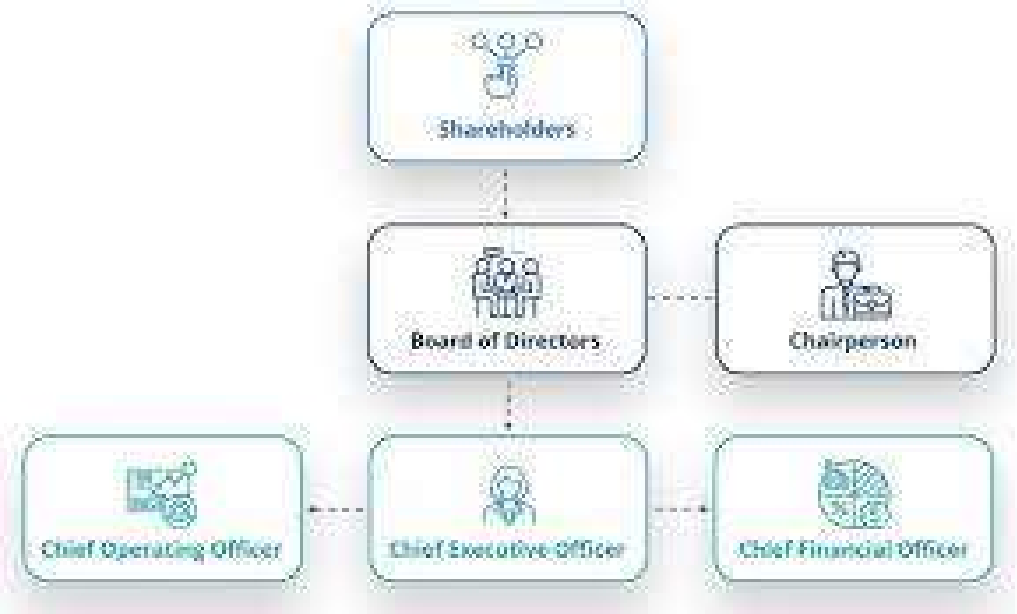
G. If employee representation on the board is mandated, mechanisms should be developed to guarantee that this representation is exercised effectively and contributes to the enhancement of the board skills, information and independence.

H. SOE boards should consider setting up specialised committees, composed of independent and qualified members, to support the full board in performing its functions, particularly in respect to audit, risk management and remuneration. The establishment of specialised committees should improve boardroom efficiency and should not detract from the responsibility of the full board.

I. SOE boards should, under the Chair's oversight, carry out an annual, well-structured evaluation to appraise their performance and efficiency.

J. SOEs should develop efficient internal audit procedures and establish an internal audit function that is monitored by and reports directly to the board and to the audit committee or the equivalent corporate organ.

Utility boards



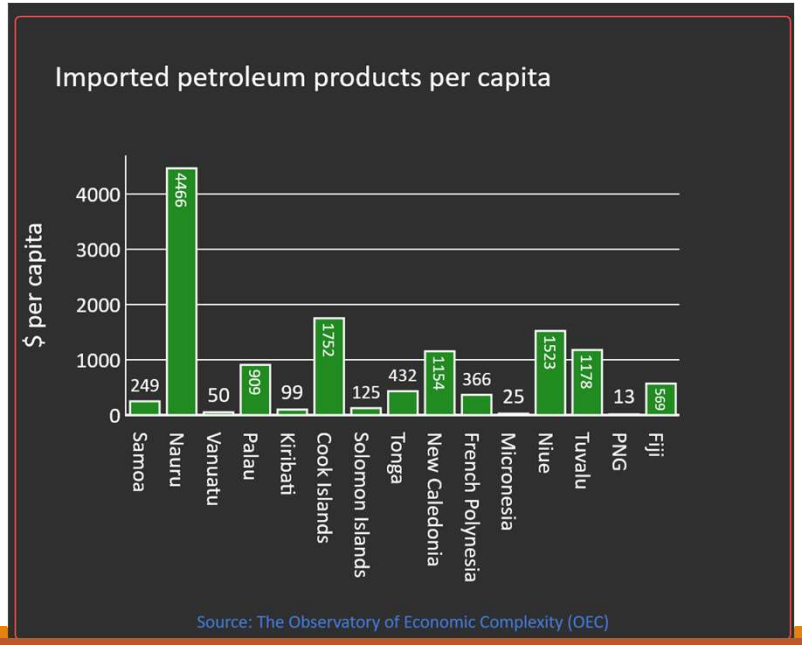
The boards of SOEs should have the necessary authority, competencies and objectivity to carry out their functions of strategic guidance and monitoring of management. They should act with integrity and be held accountable for their actions.

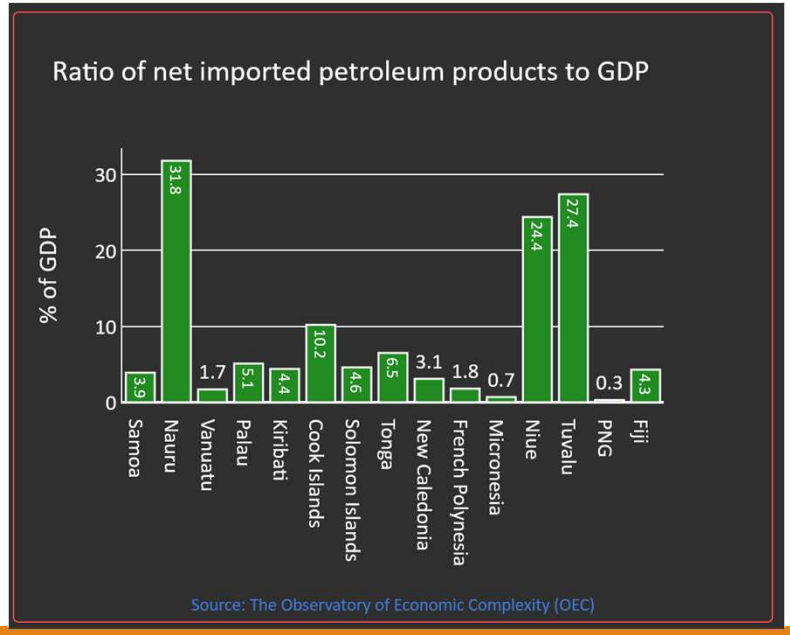
Some workshop insights

- Customers vs communities?
  - Industry has transitioned from energy users as clients to citizens to consumers to customers to, now, communities, competitors, 'exiters'
  - energy user participation – from paying the bill and complaining when the power goes out, through to actively engaged energy 'prosumers' with distributed r
- Tariffs
  - A social construct with focus on fairness vs cost-reflective subject to participant consumption behaviour
  - Additional challenges with distributed energy resources – net metering and wealth transfers
  - How best to deliver on social objectives – separate tariff from support?
- Energy access for remote communities
  - Solar appliances – solar home systems – microgrids – minigrids – larger grids
  - What role for utilities
  - Clean cooking fuels – very challenging for electrification

Financial implications

- Region has high cost structure electricity sector – higher project capital costs, very high **diesel** price exposure
- Supply chain for renewables also high cost, but PV highly competitive





Fossil fuel dependence

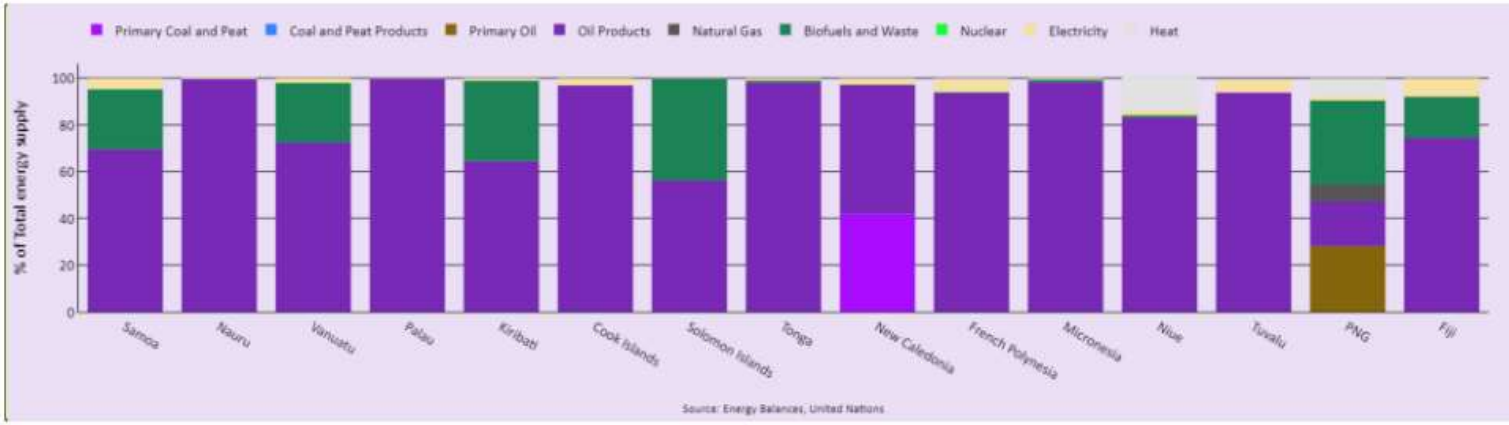
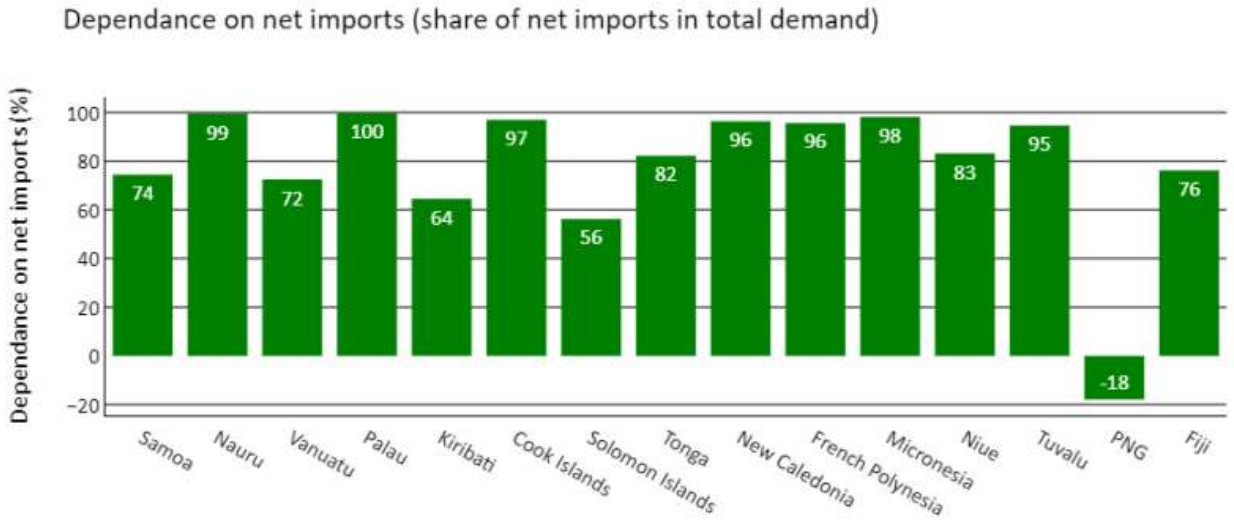
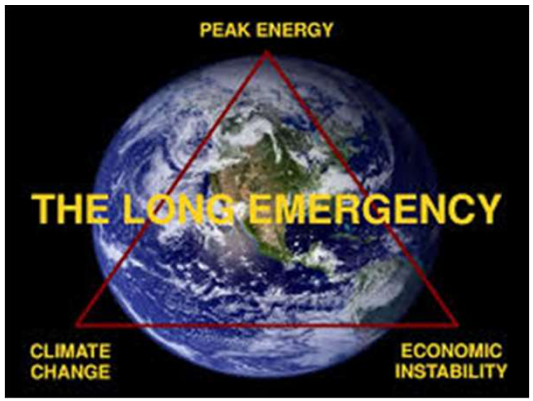


Figure 2: Fuel mix for total energy demand for the PICTs.



Energy resilience:



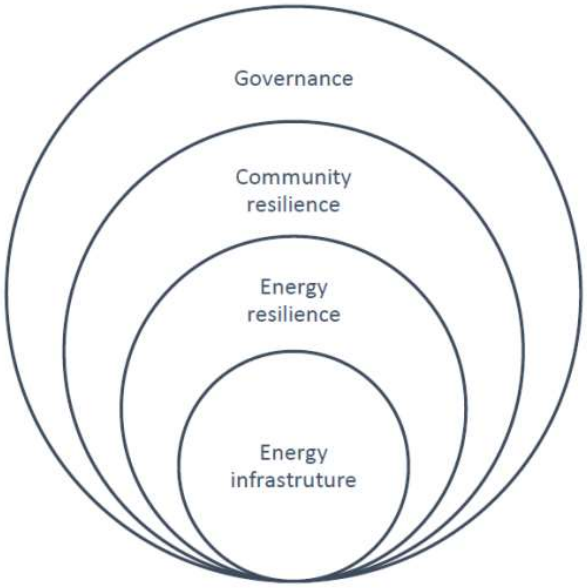
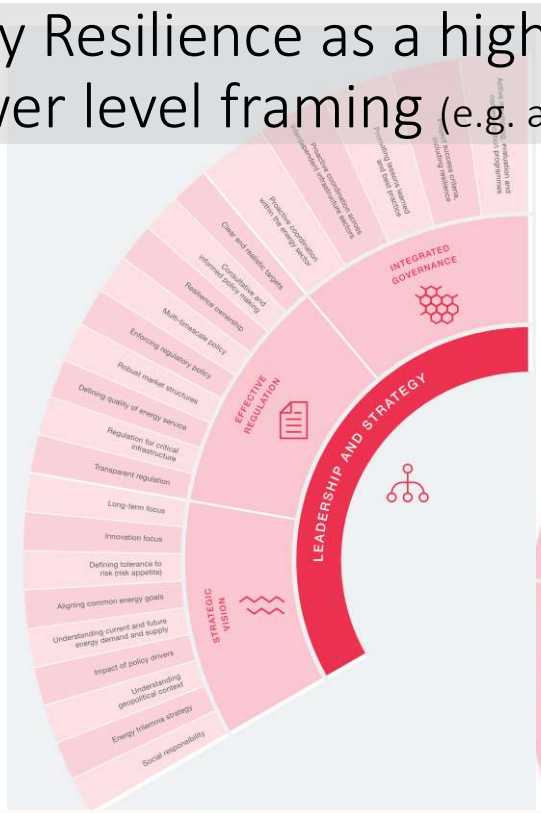


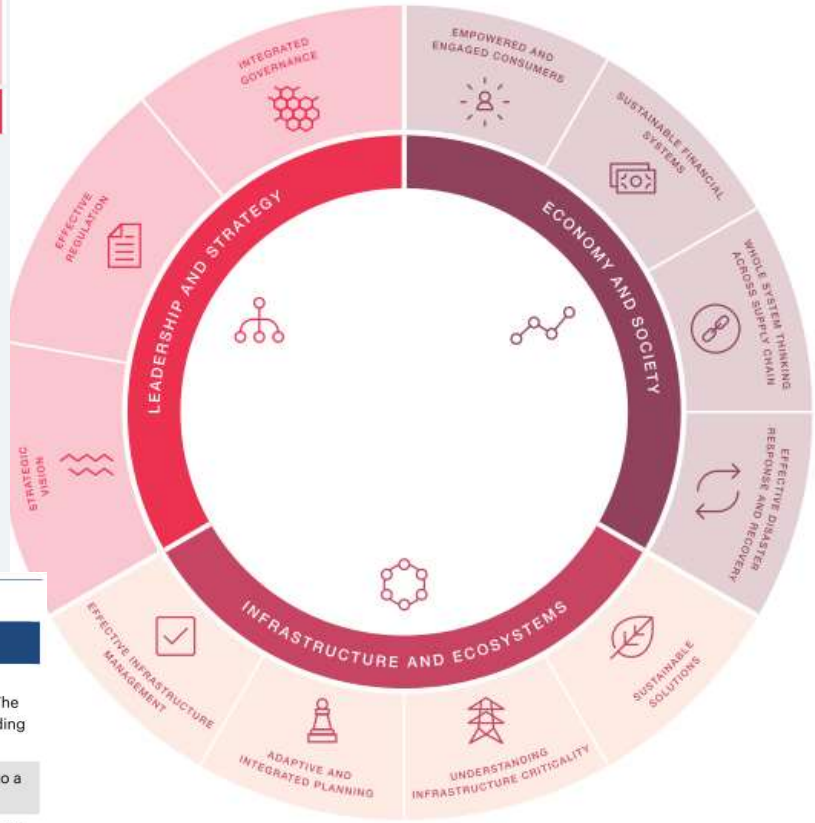
Figure 2: Framework for Community Resilience (To 2019)

TERMINOLOGY

Build back better (BBB)	'The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment.'	UN 2016
Climate change adaption (CCA)	'The ability of a system to adjust to climate change to moderate potential consequences or to manage the consequences of those impacts that cannot be avoided.'	ICAO 2020
	'Anticipating the adverse effects of climate change and taking appropriate action to prevent or minimise the damage they can cause, or taking advantage of opportunities that may arise.'	EU 2020
Climate change mitigation	'A human intervention to reduce emissions or enhance the sinks of greenhouse gases.'	IPCC 2018
Community resilience	'The ability of individuals, communities, organizations or countries exposed to disasters, crises and underlying vulnerabilities to anticipate, prepare for, reduce the impact of, cope with and recover from the effects of shocks and stresses without compromising their long-term prospects).'	IFRC 2014
Disaster risk reduction (DRR)	'The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to 11 hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.'	UNISDR 2009
Energy access	'A household having reliable and affordable access to both clean cooking facilities and to electricity, which is enough to supply a basic bundle of energy services initially, and then an increasing level of electricity over time to reach the regional average.'	IEA 2019
Energy resilience	'Resilience in an energy system can be defined as its ability to reduce the impact of shocks and stresses, including the capacity to anticipate, absorb, adapt to, and rapidly recover from such events and to transform where necessary.'	ARUP 2019
Energy security	'The umbrella term for energy availability, resource affordability, environmental sustainability, energy efficiency and technology.'	Raghoo et al. 2018

Energy Resilience as a higher level or lower level framing (e.g. arup vs IEA)





ENERGY RESILIENCE IN AN INTERCONNECTED WORLD

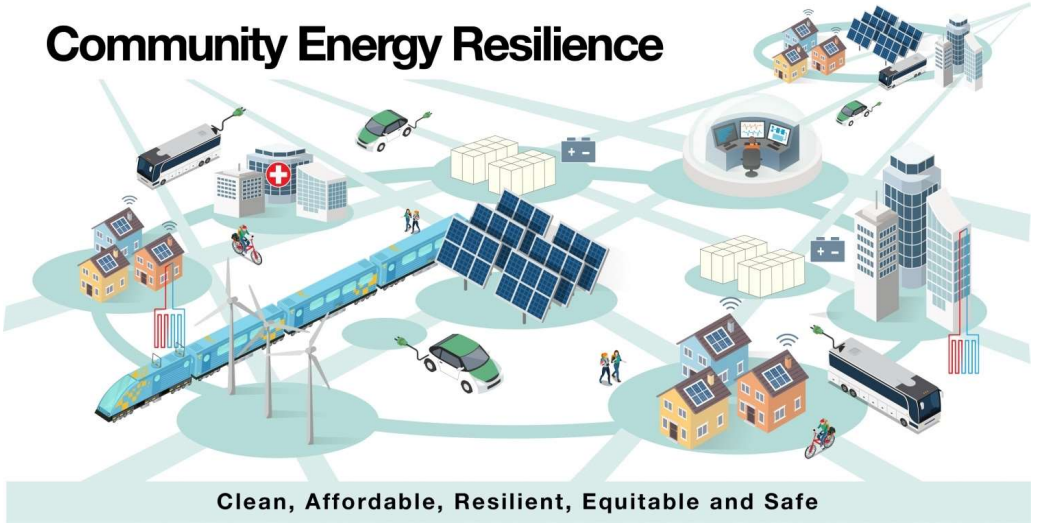
Future-proofing energy systems: The Energy Resilience Framework

Table 1 Key electricity security terms and definitions

Term	Definition
Adequacy	The ability of the electricity system to supply the aggregate electrical demand within an area at all times under normal operating conditions. The precise definition of what qualifies as normal conditions and understanding how the system copes with other situations is key in policy decisions.
Operational security	The ability of the electricity system to retain a normal state or to return to a normal state after any type of event as soon as possible.
Resilience	The ability of the system and its component parts to absorb, accommodate and recover from both short-term shocks and long-term changes. These shocks can go beyond conditions covered in standard adequacy assessments.

Sources: Based on European Commission JRC and IEA Electricity Security.

Community energy resilience – context still matters

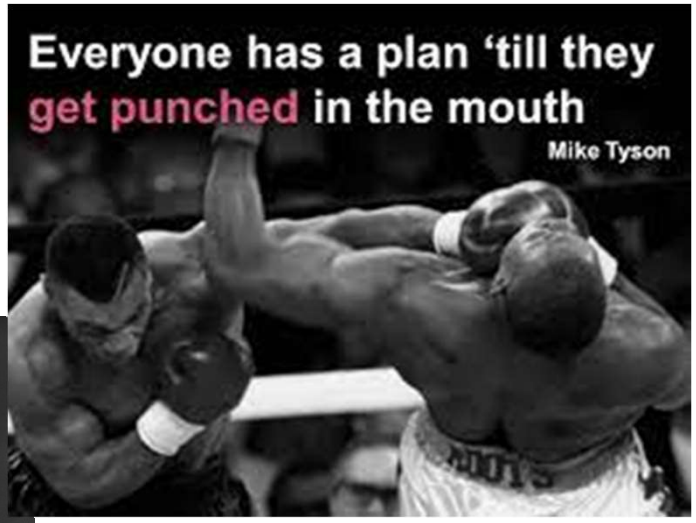


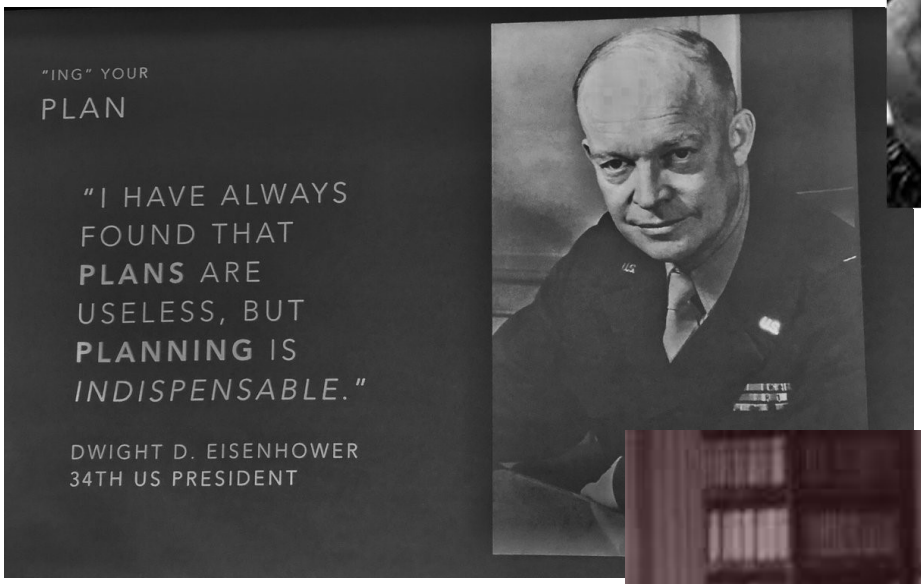
vs

Insights (continued)

- Fossil fuel exposure for the electricity sector, other energy-use sectors
  - Transport a greater challenge than electricity wrt fossil fuel dependence
  - E-mobility delivers liquid fuel consumption regardless of renewables, but also a pathway to renewable based transport
  - Electricity tariffs when you have diesel generation on the margin in a high renewables mix
- Government interventions
  - Inevitable when things go wrong
  - Perhaps required to drive clean energy transition
  - The challenge of cross subsidies – across services, across customer classes writ fairness, possible energy user departures from utility supply
  - Mechanisms – regulatory, legal, executive appointments, board appointments, best practice incorporating transparency, independent review
- Planning

Plans vs planning





The real exec summary of every consultant plan?

Important notice

PURPOSE

AEMO has published the Integrated System Plan pursuant to its functions under section 49(2) of the National Electricity Law (which defines AEMO's function as National Transmission Planner) and section 5.20 of the National Electricity Rules and its broader functions to maintain and improve power system security.

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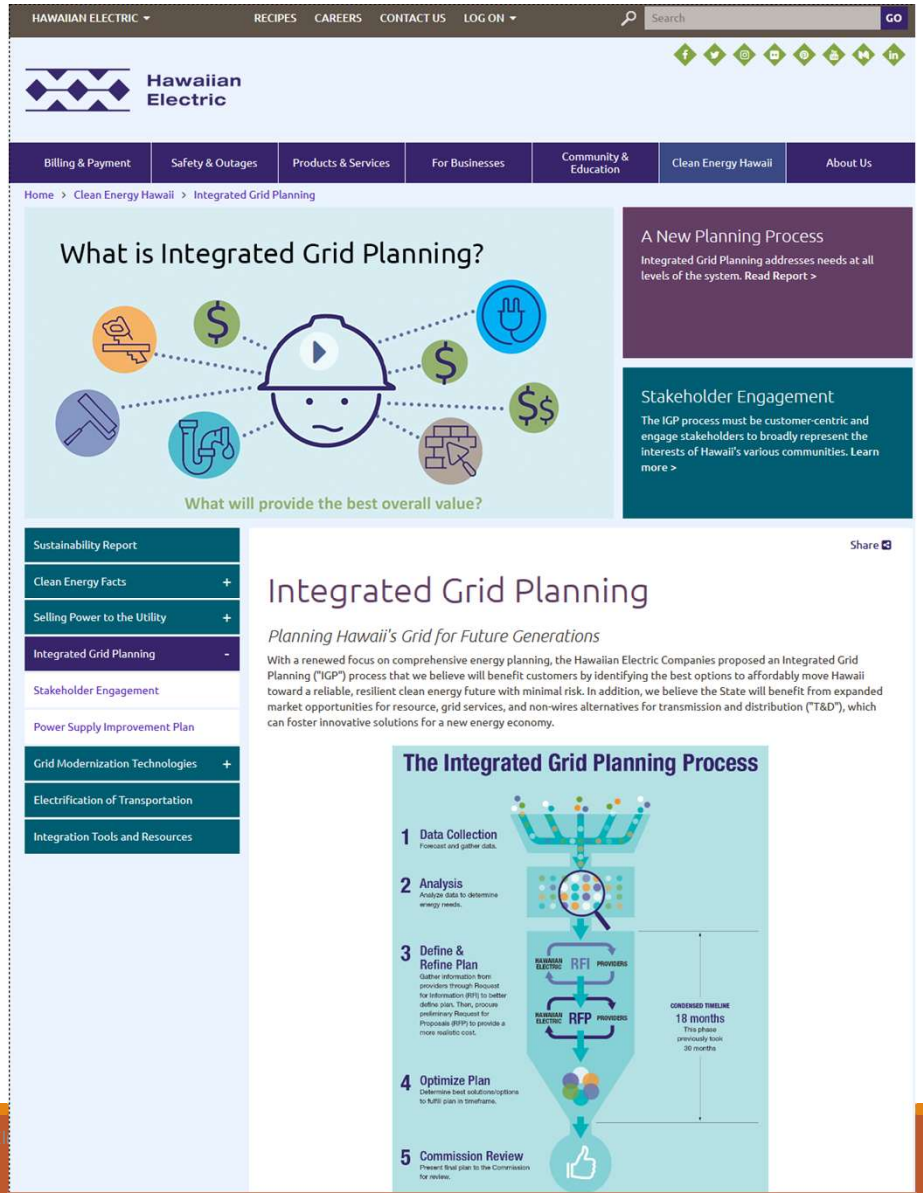
Current best practice for central utilities – *integrated resource planning*



Decision making

- A **decision** is the commitment to irrevocably allocate valuable resources *with consequences*.
- Decision-making framework
  - What objectives?
  - What decisions *(available choices)*
  - How are they taken *(process)*
- Good decision making likely to require
  - Clear and agreed objectives
  - Clarity on what options are actually available
  - Well informed decision makers
  - With a good process that includes all stakeholders
  - Autonomy for the decision maker (decision theirs to make)
  - …but also accountability
- A continuum between centralised (government and social norms) and decentralised (commercial) frameworks
- Governance – *the process whereby societies or organisations make important decisions, determine whom they involve and how they render account*
- *Boards*

COP 27 ends on a high with loss and damage fund for vulnerable countries

Broadcast 8h ago

The COP 27 climate talks have come to an end in Egypt with an agreement on a new loss and damage facility for vulnerable countries. *(Supplied: UNFCCC)*

Share

The COP27 summit has ended with countries agreeing to a climate deal, including a loss and damage fund for vulnerable countries.

Fiji's Prime Minister Frank Bainimarama praised Pacific negotiators for their work at COP 27.

"Vinaka Vaka Levu from the bottom of my heart ...you have worked hardest to see climate justice delivered"