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Republic of Palau

Republic of Palau

History and Background:

- Located in the western Pacific Ocean, 528mi (650km) south of the Philippines.
- Total Area: 177sq mi (458 sq km)
- Capitol: Melekeok State
- Population: 21,186 (2014 est.)
- Became an independent country in 1994
- Constitutional Government:
- Economy: Fishing, tourism, agriculture and arts and crafts.
- GDP Per Capita: 8,941USD (2014)
- Major Imports: Fuel, canned goods, meats, dairy products, clothing and others.
- Major export: Fish (tuna and reef fish), Arts and crafts and other.

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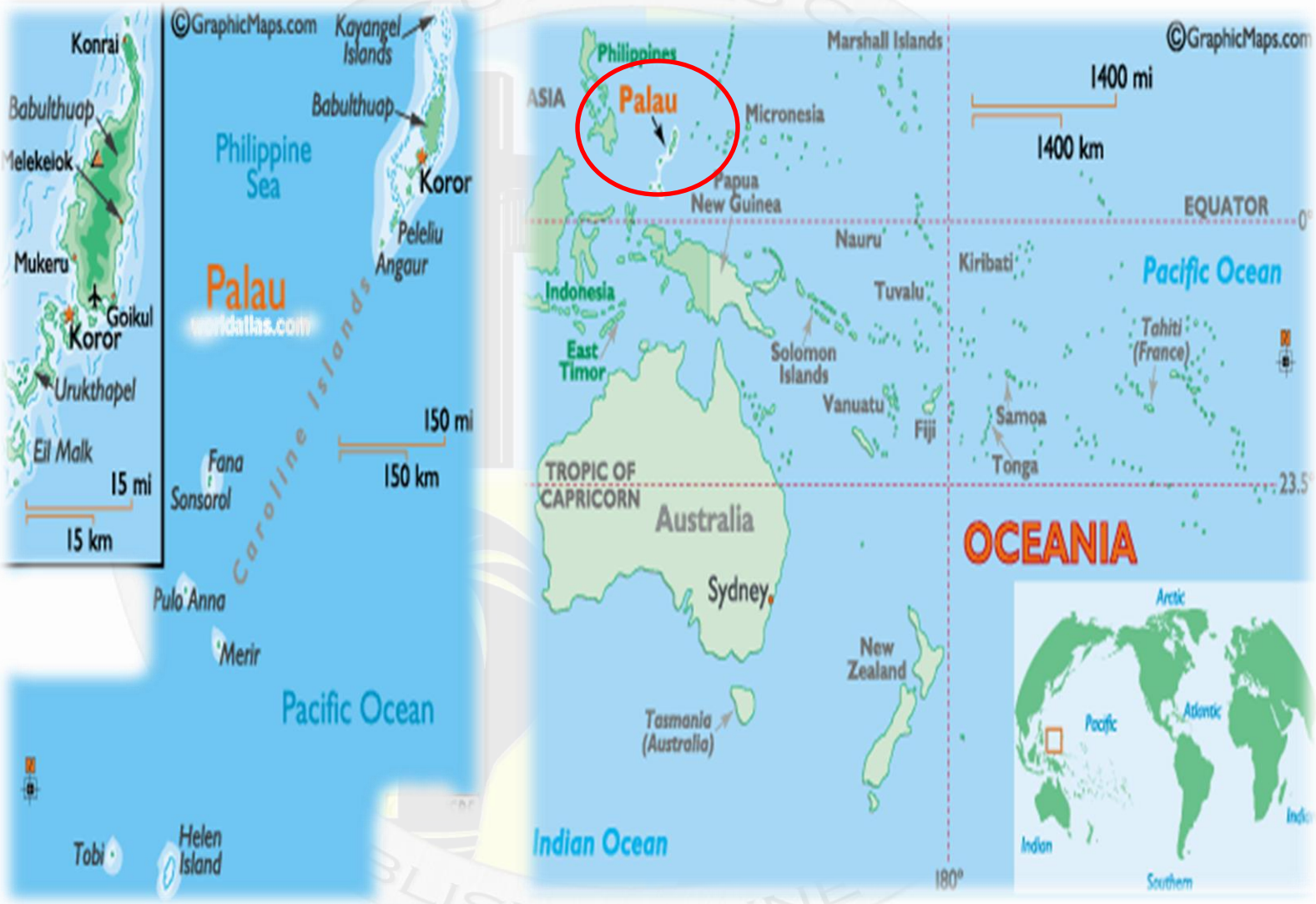

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Key Statistics:

Country Population	21,186
Total utility Customers	7,360
Total Utility staff	138
Electricity Access %	99
System Peak Demand MW	12
Total Line Loss %	17
Annual Generation MWh	79,182
Annual Sales MWh	74,431
Annual Fuel Consumption (gal)	4,200,00
Current Fuel Prize (US$ per gal.)	4.00
Solar Penetration%	5

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Energy Situation

Total Installed Capacity:

A.	Malakal Power Station	24,000KW
B.	Aimeliik Power Station	10,000KW
C.	Total Capacity	34,000KW

Peak Load:

A.	*Day Peak*	*11,500KW*
B.	*Night Peak*	*11,800KW*

Electricity Tariff:

A.	*Residential*	*$0.30 PER KWH*
B.	*Commercial*	*$0.40 PER KWH*
C.	*ROP/Government*	*$0.40 PERKWH*

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Renewable Energy Situation

Renewable Energy Penetration: (Grid Connect Solar)

Sector	Number	Capacity	Generation(KWH)
Residential	10	3.4KW	37,591.00
Government	9	40-250KW	412,280.00
Commercial	6	3.4-200KW	13,146.00
Total	**25**	**744KW**	**463,071.00**
Future Install	6		

Note: Not all grid connect systems data included on the total generation. PPUC do not have the data for some of the commercial and government solar system.

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Organization Mission and Visions

- Promoting environmentally sustainable energy technology with the aim to reduce the dependency of fossil fuel.
- Supporting consumers through the transition towards new energy sector.
- Prepare for , and adapt to, the impacts of change in our physical environment by responding to the risk and taking advantage of the opportunities they present.
- Maximizing cost-effective energy efficiency and renewable energy resources and conservation of energy while safeguarding our environment.

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Goals

- Reduction of 30% in overall natural energy consumption. 20% renewable energy penetration in to the Palau central grid by year 2020. (Palau National Energy Policy).
- Control and reduce our own green house emissions.
- Aim to substitute all fossil fuel use in the long term.
- Help introduce a alternative source of energy to the customer and help reduce the load on the existing generations.
- Reduce the overall fuel consumption of the power generation.
- Moving forward a more energy efficient and a greener country.

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Acts and Policies

- Palau National Energy Policy. 20/30/20 est. April 2009

  20% renewable energy penetration, 30% reduction of over all national consumption, by the year 2030.

- Net Metering Act. est. May 2009

  An act that allows a customer to install a renewable energy powered system to produce electricity for their own use and supply the excess electricity to the electric service provider.

- Guidelines, Standard and regulations for renewable energy generation system connecting to the Palau central grid. est. May 2012.

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Challenges and Issues

- Compliance to standards is largely voluntary rather than mandatory. Regulations regarding the conditions for connecting to the grid are lacking
- The technical capacity to implement, including knowledge about, the guidelines is lacking. Training would provide installers, technicians etc to be formally certified
- Lack or minimal of communication between agencies when promoting or installing RE into Palau.
- Weak implementation of regulations and policies.
- Lack of training certification for technicians and few number of certified technicians on island
- Lack of financial support from the government to conduct maintenance and repair of existing RE systems installed.

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Challenges and Issues

- The systems are still expensive since still being imported from outside.
- Limited subsidy programs offered to the residential customers.
- Still highly dependent on donor countries for RE projects fund.
- The roles of specific entities are often poorly defined and are not clearly supported by any specific laws or regulations. This leads to duplication of work and overlapping of responsibilities.
- With continuing growth of RE introduced into the Palau central grid which is about twenty years old with only two installed in the past five years. A thorough grid stability study needs to be conducted.
- With introduction of grid technologies to address the grid stability issues, financial backing from the government or other donors needed due to the prices of the technologies are expensive as well as the maintenance and operation cost which Palau is short of.

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In conclusion

- Full cooperation and communication from all involved entities in terms of sharing data collection and following the laws and regulations can help improve RE installation in Palau.
- Proper training and certifications of solar technicians is crucial for the overall development of RE.
- Awareness raising , networking with internationally available expertise and development and implementation of focused RE trainings for policy and other decision makers at the national and regional levels could prove beneficial for both policy design and implementation.
- Appropriating funding for existing systems already installed to ensure proper maintenance and repairs and provide necessary tools for the responsible sector in charge of maintenance of such systems.

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Conclusion Continued

- Thorough data collecting from both RE and power generation from all involved agencies for a accurate study of the central grid and RE penetration.
- Investment on grid stability technologies to address the affects of RE penetration into the central grid.
- Call for strict enforcement of policies and laws regarding RE to ensure installations follow all standard and laws to avoid poor quality products and installations that will only be causing problems in the energy sector.
- Strengthen all the involved agencies to make sure the proper steps are taken when dealing with RE and making sure that all agencies role are clear to avoid gaps and overlapping of responsible for the agencies.
- Make sure that all agencies involved with the RE programs be accountable for their responsibilities.

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With the ever changing and effects of climate change in the pacific island and the high dependency of imported fuel for power generation, it is important and vital for such small countries to seek and invest on alternative resources such as Renewable Energy to reduce their dependency from imported fuel and taking the necessary steps to becoming a more energy efficient and a more sustainable country.

With introduction of such RE technologies it requires the proper regulations, policies, standards and laws that help regulate and address the introduction and implementation of RE technologies into the Pacific islands.

With all the necessary resources in place it is up to the people in the involved agencies to make sure that all of the necessary steps are taken to ensure proper implementation, operation and maintenance of the RE technologies are done.

Full cooperation from all agencies, policy makers and all sectors are required to make sure that all the benefits from the RE are realized and to ensure that we make good progress and moving forward to reach and fulfill our countries mission and goals and improving our countries energy sector.

Kom Kmal Mesulang

Domo Arigato Gozaimasu

Thank You Very Much