



Governo dos Açores



INNOVATION
sustainable islands' growth
INNOVATION
croissance durable des îles



The Cayman Islands Renewable Energy initiative for 2017 and beyond

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OVERSEAS COUNTRIES
AND TERRITORIES
INNOVATION
PAYS ET TERRITOIRES
D'OUTRE-MER



YOUR LOGO
(PNG, JPG)

Introduction

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Background

- The Cayman Islands, like many Small Island Developing States (SIDS) are primarily dependent on fossil fuels for their energy needs.
- Water, electricity and transport are all reliant on imported oil, as are the two sectors of the islands economy, tourism and offshore finance. Both these sectors require affordable sources of energy in order to remain competitive.
- Cayman Islands population is approximately 55,000
- Combined electricity companies sold 572.5 Gigawatt hours (GWh)
- On Grand Cayman 553.8 GWh and a maximum peak load of 102.1 MW
- On Cayman Brac 18.7 GWh and peak loads of approximately 3.2 MW and 0.8MW on Cayman Brac and Little Cayman.
- Approximately 12.5 kWh of electricity is required to produce 1,000 US gallons of potable water (desalination).
- In 2010, approx. 3.9% of the Cayman Islands' combined electricity demand was utilized for desalination.
- Cayman Islands are **99.99%** dependent on imported diesel fuel for electricity
- In 2010, 33.29M Imperial Gallons of Diesel Fuel was imported into the Cayman Islands
- In 2010, CUC consumed 32 million imperial gallons (IG) of imported diesel fuel (approximately 95%)
- In 2010, Cayman Brac Power and Light consumed 1.3 million IG of imported diesel
- 90% of public favour renewables (CFP)

Goals

- Secure, reliable and affordable energy supplies.
- Reduce the country's carbon footprint.
- Diversify energy supplies and develop renewable resources.
- Develop comprehensive regulatory frameworks.
- Encourage and promote energy conservation and efficiency throughout public and private sectors.

Vision

“Enhancing and embracing a sustainable lifestyle through responsible and innovative energy supply and consumption”

The vision of the Cayman Islands’ energy sector to 2032 is to be an efficient, diversified energy sector, supported by informed public behaviour within the Cayman Islands, which provides secure, reliable and affordable energy in an environmentally sustainable manner.



Solar park



Floating Power plant



Waste to energy

Outcomes

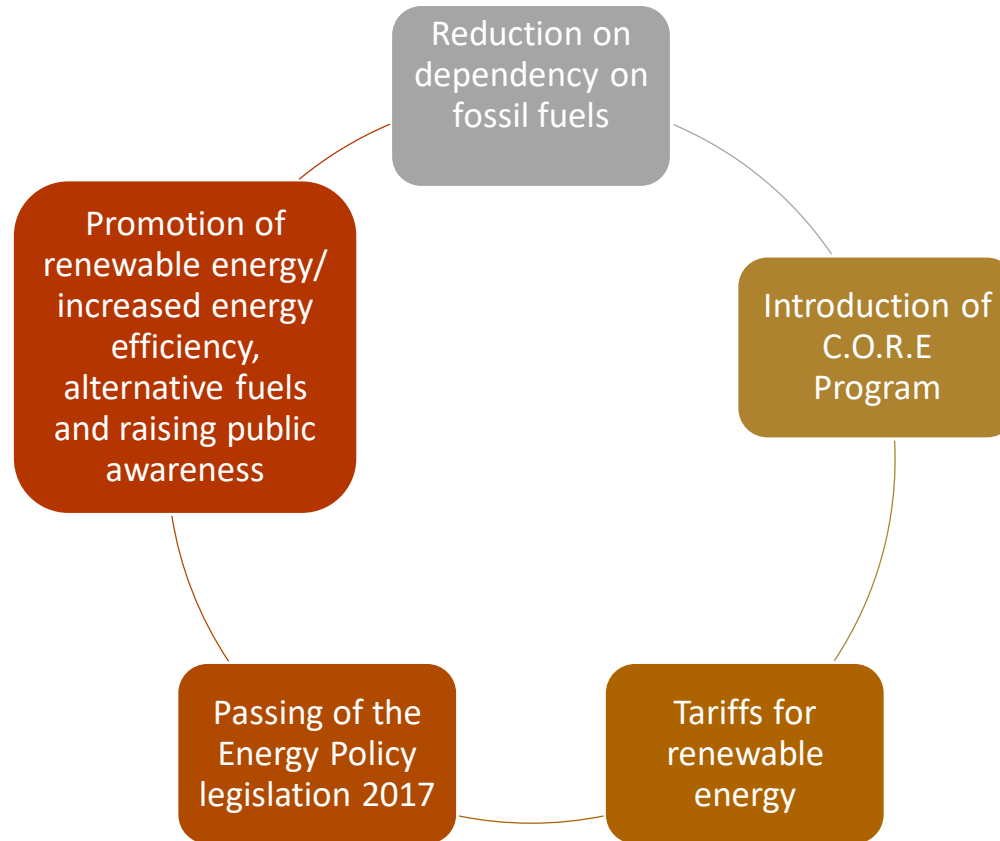
- Government building receives LEED silver rating
- Introduction of renewable energy custom tariffs
- Establishment of more energy efficient buildings
- Amendments to the national building code regulations.
- Creating charging stations for electrical vehicles
- Introducing electrical vehicles into Government fleet.

Current Energy production

Electricity production from 1996 – 2015

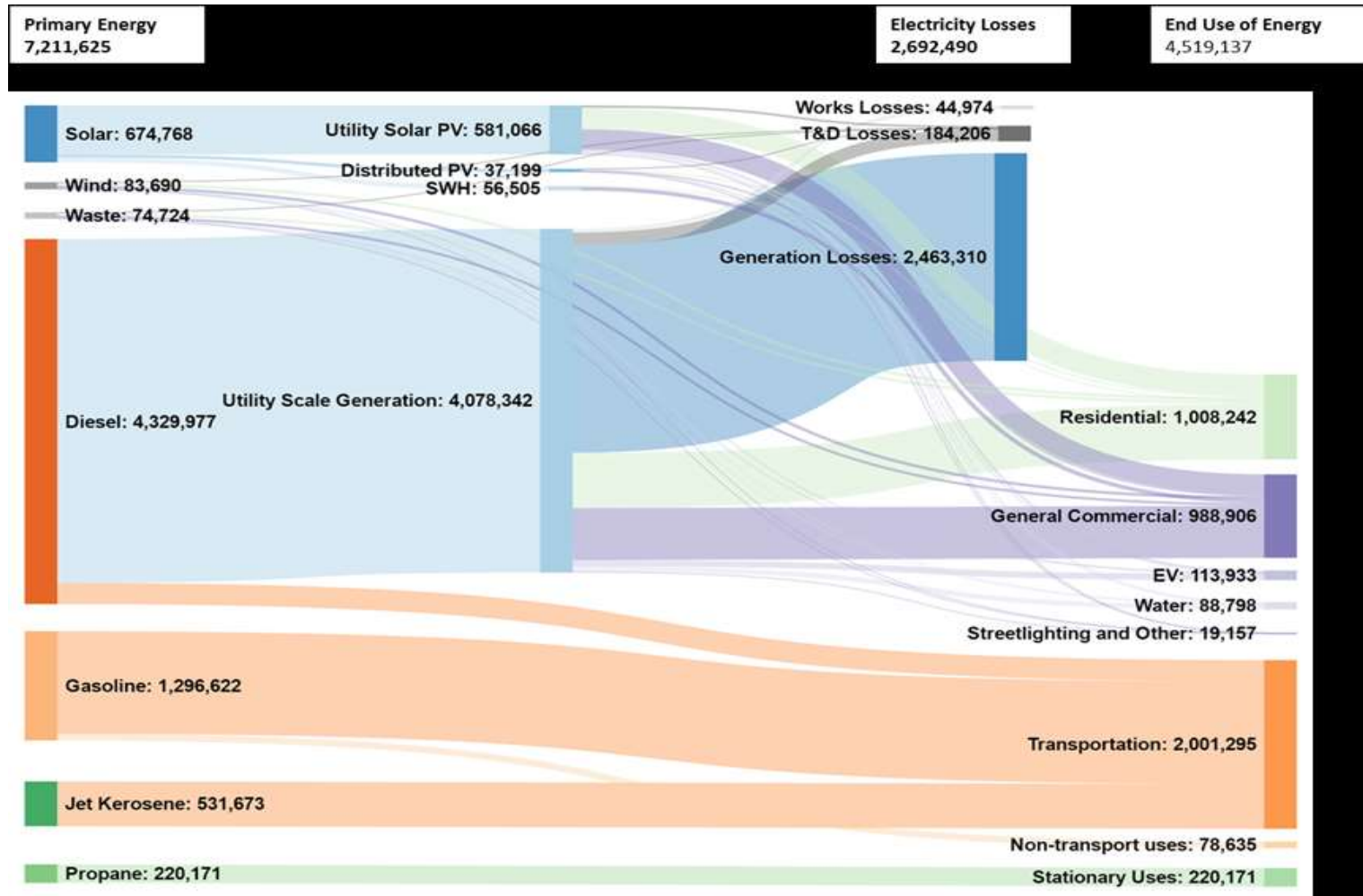
Year	Capacity (Mws)	Production (Mwhrs)	Consumption (Mwhrs)				Total	Percent Change
			Residential	Industrial/ Commercial	Public Lighting			
1996	71.8	309,717	124,580	153,756	3,113	281,449	4.7	
1997	88.4	347,766	140,344	168,662	3,286	312,292	11.0	
1998	97.2	381,121	158,877	181,293	3,293	343,463	10.0	
1999	94.8	390,370	168,153	191,527	3,322	363,002	5.7	
2000	115.1	426,465	179,451	203,122	3,409	385,982	6.3	
2001	115.1	449,300	189,667	213,880	3,502	407,049	5.5	
2002	115.1	466,136	200,389	221,005	4,238	425,632	4.6	
2003	123.1	489,693	211,237	228,498	4,533	444,268	4.4	
2004	95.4	433,379	183,142	191,521	4,069	378,732	(14.8)	
2005	106.8	463,158	200,330	222,434	5,020	427,784	13.0	
2006	120.6	535,692	228,160	258,034	5,287	491,481	14.9	
2007	136.6	584,370	249,426	279,424	5,391	534,241	8.7	
2008	136.6	596,782	251,698	290,288	5,702	547,688	2.5	
2009	152.6	608,782	263,110	290,655	5,985	559,750	2.2	
2010	151.2	605,119	262,545	284,855	5,193	552,593	(1.3)	
2011	151.2	606,508	258,765	289,043	6,174	553,982	0.3	
2012	149.5	587,100	254,397	287,080	6,332	547,809	(1.1)	
2013	149.5	595,600	261,002	288,114	6,596	555,712	1.0	
2014	131.7	604,700	266,742	290,745	6,740	564,227	1.5	
2015	131.7	623,700	276,944	298,285	6,748	581,977	3.1	

Proposed Changes



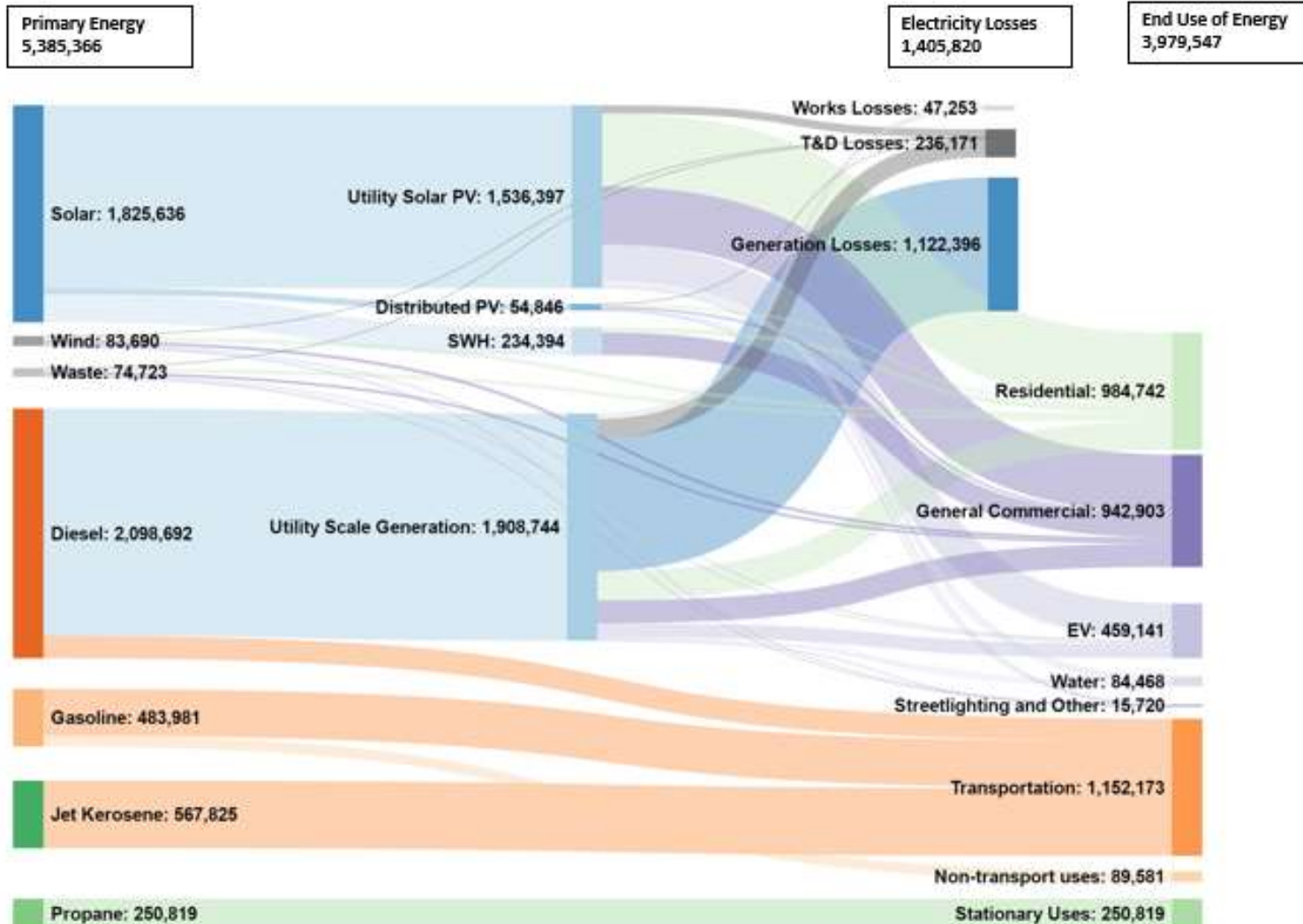
Proposed Changes

2027
figures
MMtbu



Proposed Changes

2037
figures
MMtbu



Predicted outcome

**Table 1: Forecast Potential Sources of Electricity Generation in 2037
(As forecasted in 2015)**

	Electricity Generation* (MWh)	Percentage of Total (%)
Diesel Generators	216,616	30
Wind Power	24,528	3
Solar PV - Utility Scale	450,292	62
Waste-to-Energy	21,900	3
Solar PV - Distributed	17,086	2
TOTAL	730,423	100

*Note: Gross electricity generation (before generation and transmission and distribution losses).

Construction, Building and land use

National Infrastructure	Buildings	Mixed-use Development	Zoning	Transportation relationship to land use
Renewable Energy	Adopt a code for energy efficiency for building:		Zoning Diversity	Public Transportation
Renewable energy types should be investigated for existing and new national infrastructure facilities and uses (e.g. seaport, airport, etc.) with a view for implementation where feasible.	Including materials, insulation, lighting, fenestration, ventilation, air conditioning, etc. (e.g. International Energy Conservation Code).	Provide for, or increase mixed use development in all districts of the Cayman Islands.	Diversity of zoning types within districts in addition to George Town should be considered to stimulate energy efficiency within districts and minimize excess energy usage between districts	The establishment of guidelines for creating land development and patterns that support public transportation

Petroleum Products and Transportation

Alternative fuel	Transportation
Existing Propane supplies offer opportunities for further reducing emissions.	Electric and Hybrid Vehicles offer considerable savings on fossil fuels but have high initial costs.
Options for alternative fuels such as Liquefied Natural Gas will offer lower emissions in the Electricity Generation sector.	Electrical Vehicles need an infrastructure for convenient recharging of batteries.
Renewable fuels such as Ethanol were also explored.	Introduction of charging stations throughout the Island.

Conclusion

- Energy efficient technologies at point of usage.
- Alternative power generation from renewable resources.
- Energy efficient water technologies and practices.
- Energy efficient wastewater treatment methods.
- More efficient ways to utilize existing power generation
- Enhance Construction, building and land use.
- Review operations for public transportation and Petroleum products and/or production.