



ANTIGUA AND BARBUDA

ENERGY REPORT CARD (ERC) FOR 2022



ST. JOHN'S



INTRODUCTION



This is the Energy Report Card (ERC) for 2022 for Antigua and Barbuda.

The ERC provides an overview of the energy sector performance, highlighting the following areas:

- Installed Conventional and Renewable Power Generation Capacity
- Annual Electricity Generation, from Conventional and Renewable Plants
- Other Electricity Sector Metrics, such as Losses, Consumption, and Tariffs
- Renewable Energy Targets
- Renewable Energy Resource Potential

The ERC also includes sectoral data and information on policies and regulations; workforce; training and capacity building; and related areas.

The data and information that are available in the ERC were mostly provided by the government ministries, agencies, and departments, that have responsibility for statistics and planning, in general, and the energy sector and electricity subsector including the electric utilities, in particular. The data and information collected was supplemented by desk based research and, in instances, information was generated from calculations and analyses that were performed by the CCREEE.

Quality Assurance

The collection and treatment of data and information that is produced for the ERC is consistent with the International Recommendations for Energy Statistics (IRES), which provides a comprehensive methodological framework for the collection, compilation, and dissemination of energy statistics in all countries irrespective of the level of development of their statistical system. The ERC is produced in accordance with these performance standards that seek, as far as is possible, to ensure the quality (i.e., objectivity, utility, and integrity) of data and information that it disseminates to the public.

The CCREEE strives for transparency on the information and methods that are used within the production of the ERC, with a view to improve understanding on how the information should be treated and to facilitate reproducibility of the information. Nevertheless, the Centre recognizes that quality may be limited by the nature and source of the data and information disseminated.

Disclaimer

The ERC includes data and information that is contained in a variety of public sources and, though every effort is made to validate the accuracy and validity of the contents, reliance on the information herein is strictly at the user's risk.

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If a substantive error is detected after the ERC is disseminated, the CCREEE will make corrections and issue an errata notice, or other notification as appropriate. Also, the information contained within the ERC may be revised, after initial dissemination to reflect more complete information or other significant changes in the underlying data. The ERC may, from time to time, include information that is preliminary and is expected to be revised, or information that is revised from previously disseminated versions. In such instances, those cases are clearly noted.

Requests for Correction

The CCREEE has established administrative mechanisms to allow persons to seek and obtain, where appropriate, legitimate correction(s) to information maintained and disseminated through the ERC. Any request for corrections should be sent to: energyreportcard@ccreee.org, under the subject: REQUEST FOR CORRECTION TO ERC 2022 FOR ANTIGUA AND BARBUDA.

Acknowledgements

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ENERGY SECTOR SUMMARY

SOCIOECONOMIC POLICIES

Medium Term Strategic Development Plan of Antigua and Barbuda (2016-2020) [6]

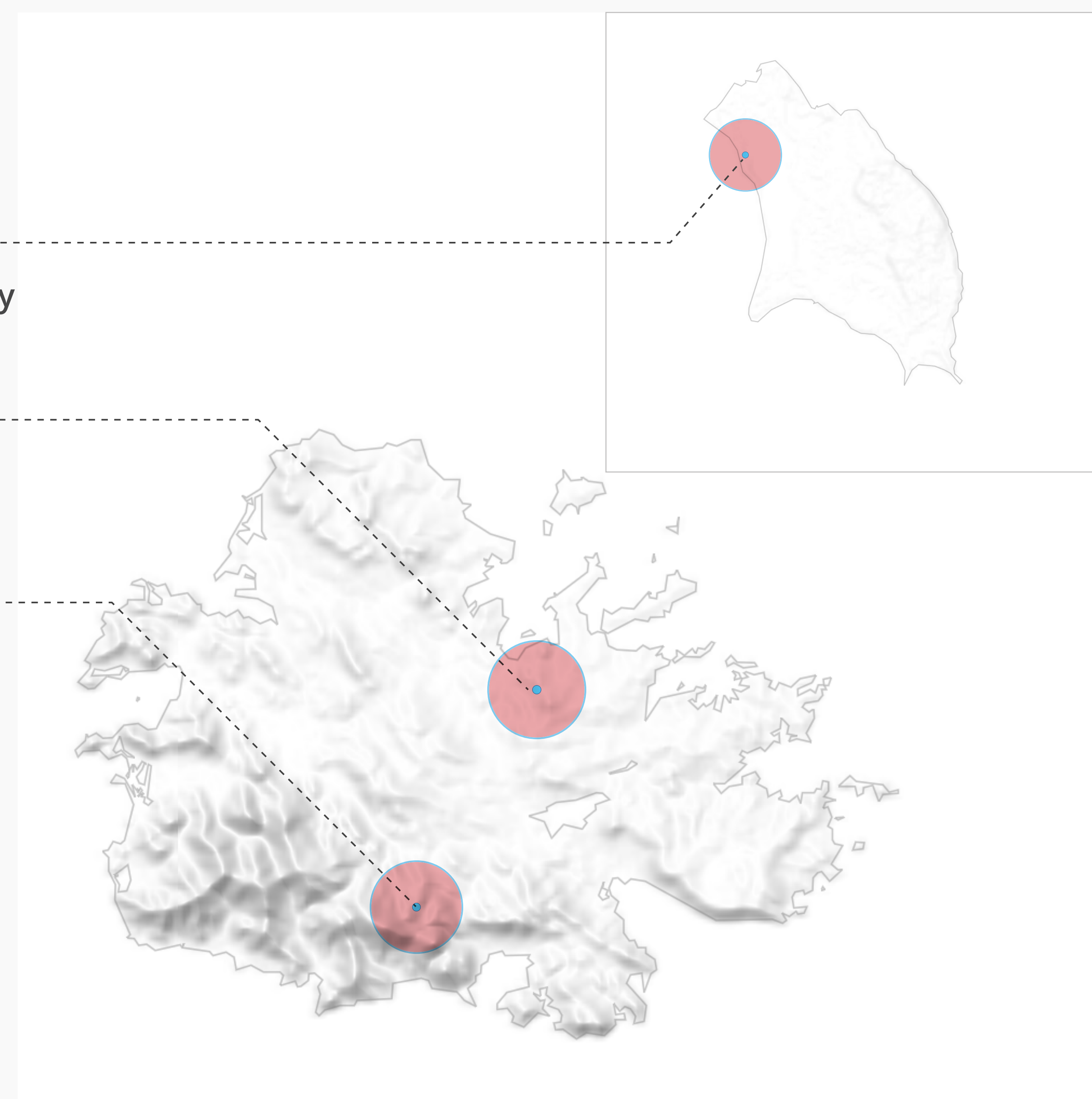
National Development Plan/ Overall Country Development Strategy

Antigua and Barbuda National Energy Policy (2011) [7]

National Energy Policy

None²

Renewable Energy (RE) Policy



OTHER ENERGY SECTOR SUB-POLICIES

Climate Change Policy	Antigua and Barbuda Sustainable Energy Action Plan [9]
National Determined Contributions (NDC) [10]	<ol style="list-style-type: none"> 1. 86% renewable energy generation from local resources in the electricity sector by 2030. 2. 100% of all new vehicle sales to be electric vehicles by 2030. 3. Explore potential for emissions reductions in the waste sector by 2025. 4. Explore potential for emissions reductions in the Agriculture, Forestry and Other Land Use (AFOLU) sector by 2030.

SOCIOECONOMICS

Population/ Projection	100,772 [1]
GDP (USD)	\$ 1,457,368,534.05 [2]
GDP (USD) Per Capita	\$14,466.12 ¹
Gross National Income (GNI) Per Capita (USD)	\$ 19,050 [3]
Debt as % of GDP	79.56% [4]
Human Development Index	0.788 [5]
RE Target	100% in Power/Electricity Sector by 2030 100% in Transportation Sector by 2040 [8]

Total Installed Conventional Capacity (MW)	72.8 MW [12]
Total Installed RE (MW)	10.4 MW [12]
Electricity System Losses (%)	13.5% [12]
Energy Use (kWh) Per Capita	2,988 kWh
Total Vehicle Stock	44,275 [13]
Electric Vehicle Stock	36 [13]
National Repository for Energy Data	None

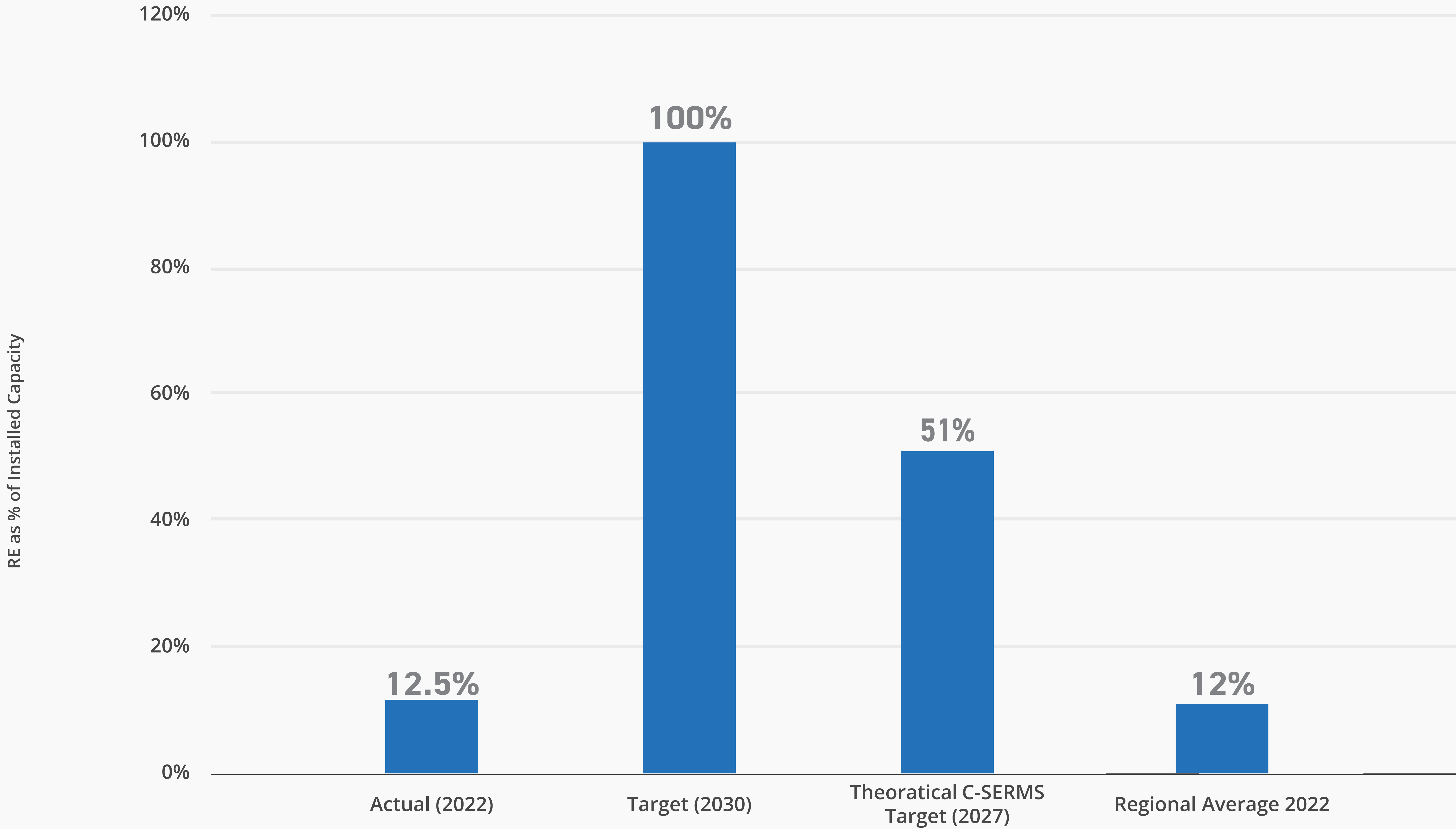
Energy Performance Standards/Appliance Labelling [11]

1. National Energy Efficiency Building Code [2018 CARICOM Energy Efficiency Building Code] Effective April 30, 2021
2. 2016 Self-ballasted compact fluorescent lamps for general lighting services - Performance requirements (2nd Edition)
3. 2013 Self-ballasted LED lamps for general lighting with supply voltages >50V - Performance requirements
4. 2015 Household refrigerating appliances- characteristics and test methods - Part 1: General requirements
5. 2015 Household refrigerating appliances- characteristics and test methods - Part 2: Performance requirements
6. 2015 Household refrigerating appliances- Characteristics and test methods - Part 3: Energy consumption and volume
7. 2018 Energy labelling - Refrigerating appliances
8. 2018 Energy labelling - Compact fluorescent lamps and light emitting diode lamps
9. 2019 Energy labelling - Air conditioners

1. Calculated
 2. There is no Renewable Energy Policy in place, however the country follows the Antigua and Barbuda: Renewable Energy Roadmap.



RENEWABLE ENERGY INSTALLED CAPACITY AGAINST TARGETS





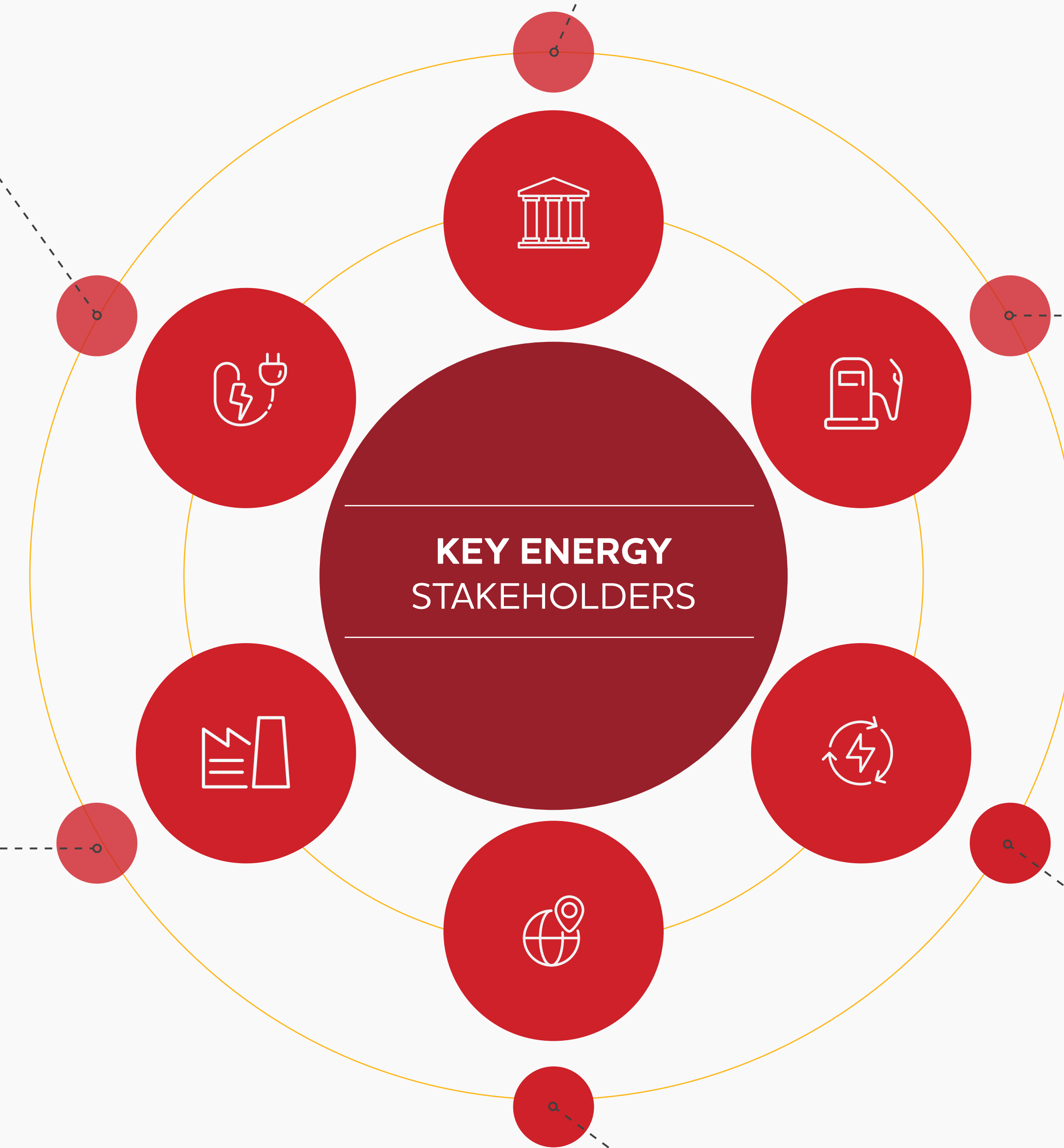
KEY ENERGY STAKEHOLDERS

Electricity Regulator

Antigua Public Utilities Authority (APUA) ^[16]

Independent Power Producer

Antigua Power Company ^[17]



Government Ministries, Departments and Agencies

Ministry of Public Utilities, Civil Aviation, Transport and Energy ^{3 4 [15]}

- Energy
- Antigua Public Utilities Authority (APUA) ^[16]

Ministry of Health, Wellness and the Environment ^{5 [17]}

- Department of Environment ^[18]

Ministry of Finance and Corporate Governance ^{6 [19]}

Fuel Importers & Suppliers

West Indies Oil Company Limited ^[20]

Rubis Caribbean ^[21]

Electric Utility

Antigua Public Utilities Authority (APUA) ^[16]

Other

Antigua and Barbuda Bureau of Standards ^[23]

Development Control Authority ^[24]

3. Renamed to the Ministry of Information, Communication Technologies (ICT's), Utilities and Energy in January 2023.
 4. As of January 2023, Transportation is under the Ministry of Tourism, Civil Aviation, Transportation & Investment
 5. Renamed to the Ministry of Health, Wellness, Social Transformation & The Environment in January 2023.
 6. Renamed to the Minister of Finance, Corporate Governance & Public Private Partnerships in January 2023.



POLICY, LEGAL AND REGULATORY (PLR) FRAMEWORK

POICIES RELEVANT TO THE ENERGY SECTOR

National Energy Policy [25] ●

Antigua and Barbuda aims to radically change the way it sources, distributes and uses energy with:

- Energy Cost Reduction through targeted efficiency and conservation measures designed to reduce the overall energy intensity of the economy by 10% below a 2010 baseline within 10 years.
- Diversification of Energy Sources through reformed market framework and mandated targets to achieve 15% renewable energy in the electricity supply by 2030.
- Electricity Reliability Improvement through regulatory reform designed to protect consumer interest and improve the quality of electricity supply.
- Environmental Protection through the establishment of laws and regulations which ensure that environmental considerations are an integral part of the energy permit process and in the planning and execution of energy related projects.
- Stimulate new Economic Opportunities through incentives and market mechanisms to create an enabling environment for private investment in renewable energy and energy efficiency measures, including support for education and training.

2011

Antigua and Barbuda Sustainable Energy Action Plan [9] ●

Defines strategies to address barriers to:

- Institutional and regulatory framework
- Energy Conservation and Energy Efficiency
- Renewable Energy Development
- Education and Awareness

2013

Medium Term Strategic Development Plan of Antigua and Barbuda (2016-2020) [6] ●

Flagship priorities of the Plan include reducing the cost of energy and improving Energy Security. Efforts will focus on improving energy efficiency through:

- significantly increasing the use of renewable energy,
- improving the business structure for the generation and distribution of energy,
- incentivising the use of more efficient and more environmentally friendly technology and energy sources,
- and enhancing the tariff framework and the framework for public sector regulation.

2015

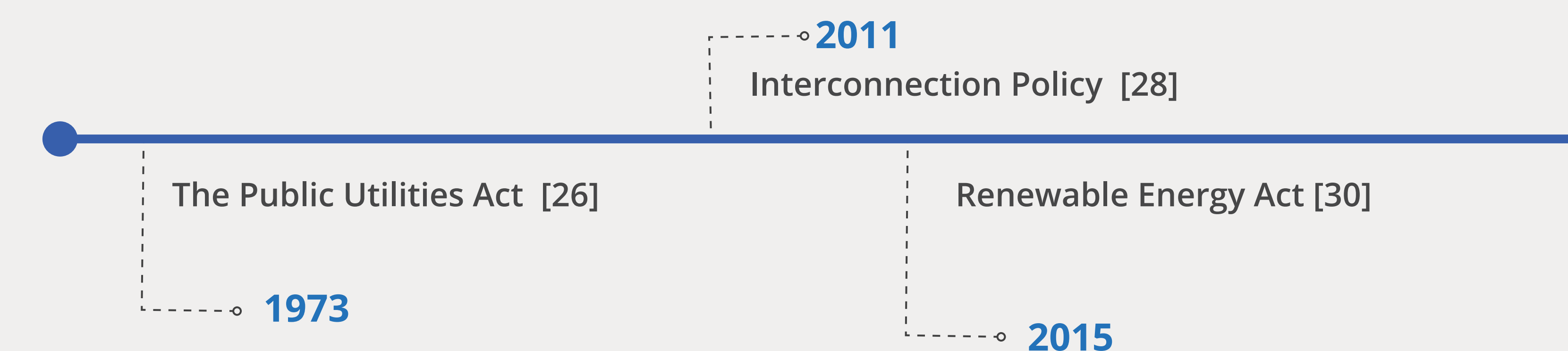
2018 CARICOM Regional Energy Efficiency Building Code (Adopted) [31] [32] ●

This model code regulates minimum energy conservation requirements for new buildings and was developed by the CARICOM Regional Organization for Standards and Quality (CROSQ) and the CARICOM to meet the specific needs of nations in the Caribbean and other countries with tropical climates.

2021

	YEAR
Energy Policy and Energy Action Plan [25]: ●	2011
RE Target [8]: ●	2021
EE Target: ●	2019
Electricity Regulator [26]: ●	1973
Net Billing/Net Metering [27]: ●	2017
Interconnection Policy/Standards [28]: ●	2011
Feed-in-tariff: ●	
RE/EE Act [29]: ●	2015

KEY ACHIEVEMENTS: PLR FRAMEWORK TIMELINE FOR ELECTRICITY SUB-SECTOR



Antigua and Barbuda: Renewable Energy Roadmap [8] ●

The RE Roadmap assessed 5 scenarios for the energy sector:

1. Optimal system - Least-cost based on net present cost. This is considering solar, wind, and storage, and not considering hydrogen
2. Optimal system + EVs
3. 100% RE (no hydrogen)
4. 100% RE (with hydrogen) - Includes hydrogen electrolyser, storage and fuel cell for power-to-hydrogen and hydrogen-to-power.
5. 100% RE (with hydrogen + EVs)



POLICY, LEGAL AND REGULATORY (PLR) FRAMEWORK

LEGISLATION RELEVANT TO THE ENERGY SECTOR

The Vehicles Road Traffic Act (Amended 1989) [33] ●

1947 The Act outlines the duties of the Commissioner of Inland Revenue, control of the importation, registration and licensing of vehicles, the road usage for all users and the licensing of drivers.

The Petroleum Act [34] ●

1949 The Act seeks to provide legal, governance, regulatory framework for the importation, storage and licence to sell petroleum.

The Transport Board Act [35] (Amended 2020) [36] ●

1995 Establishes the management in ground transportation and provides guidance to manage, maintain and organize the use of Government vehicles in an efficient and economical manner.

The Petroleum Industry (Encouragement) Act [37] ●

1963 Facilitates the agreement made between the West Indies Oil Company and the Government of Antigua and Barbuda, allowing the West Indies Oil Company the right to process and bunker petroleum in Antigua.

The Public Utilities Act [26] (Amended 1993 and 2004) ●

- Incorporation of the Public Utilities Authority giving the right to supply electricity.
- The 1993 amendment states that the Authority may, on application, and on such terms and conditions as it thinks fit, grant a licence to any person to generate and supply electricity.
- In the 2004 amendment, the tariffs charged by the Authority for public utilities supplied or provided by it to its customers shall be such as may be determined from time to time by the Authority after consultation with such persons or groups of persons representing the public and private sectors and with the approval of the Minister.

Renewable Energy Act [30] ●

2015 An Act to establish the legal, economic, and institutional basis to promote the use of renewable energy resources and other related matters including net-billing, feed-in-tariff and Energy Wheeling.

Environmental Protection and Management Act [38] ●

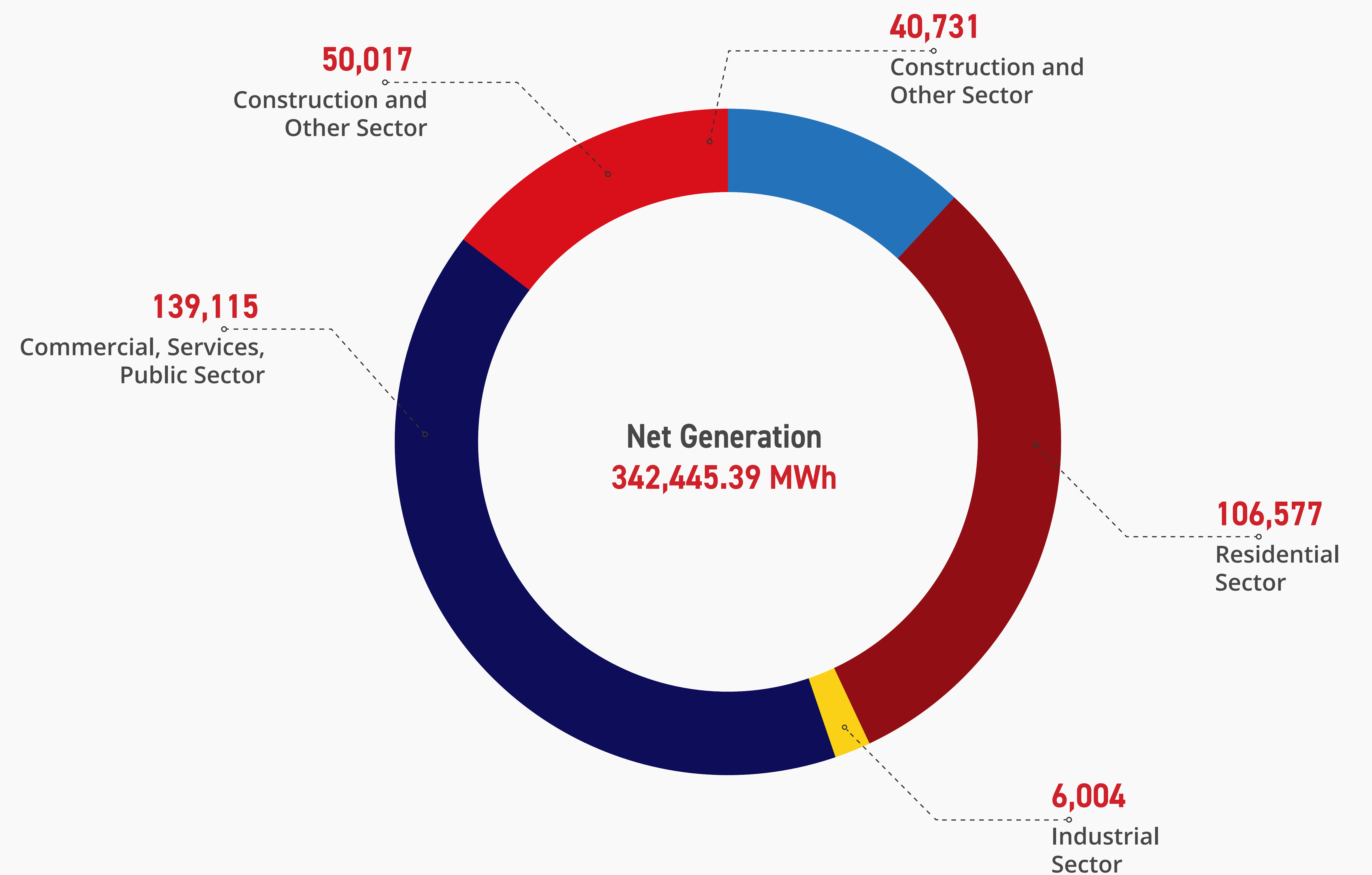
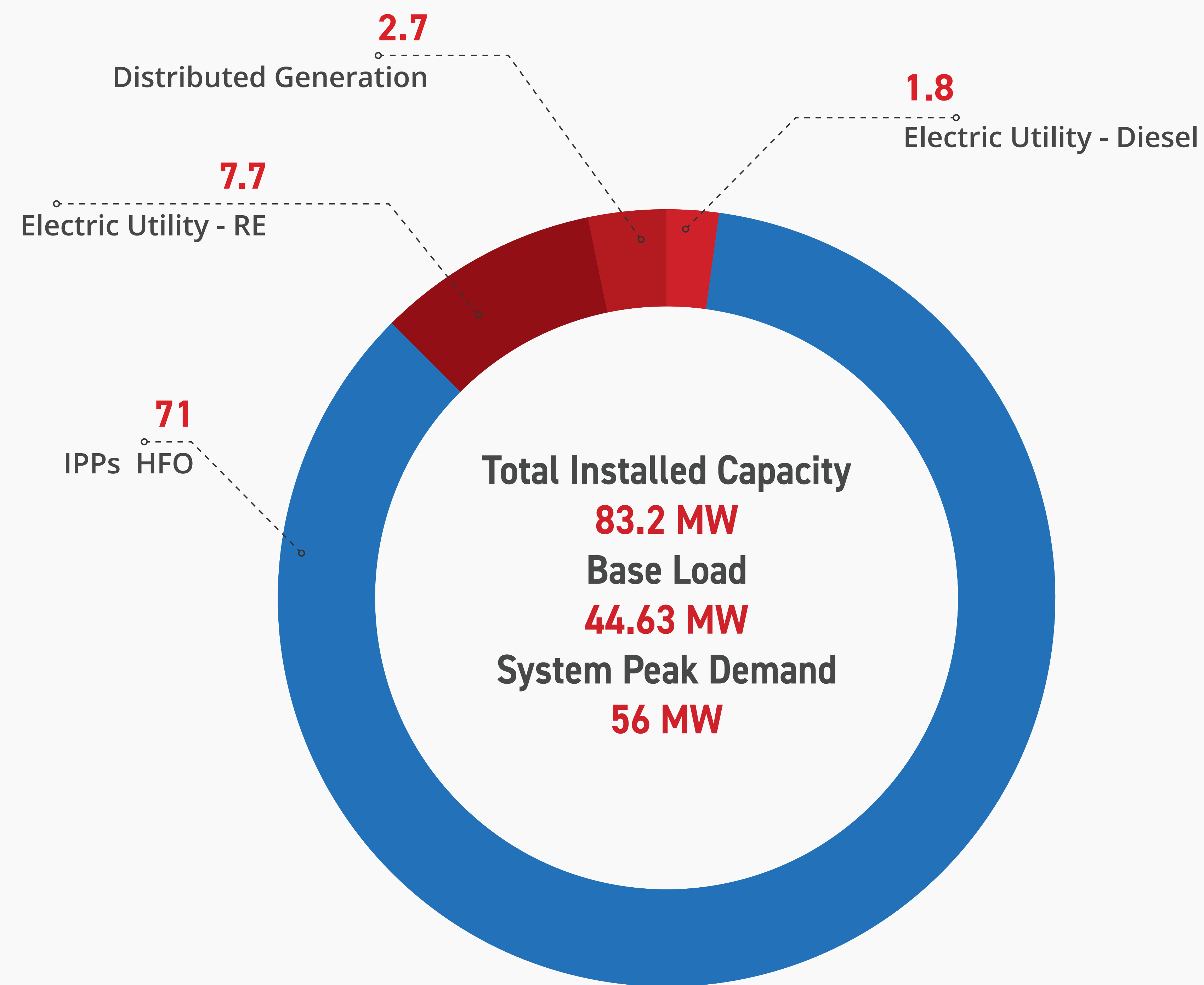
2019 An Act to provide for sustainable environmental protection and management of natural resources, to allocate administrative responsibility for the management of environmental matters, to give effect to Antigua and Barbuda's treaty obligations concerning the environment, and to provide the framework financial mechanism to satisfy the requirements of the Act and for other related matters.



ELECTRICITY & ENERGY EFFICIENCY ^[14] ^[12]

+ INSTALLED CAPACITY (MW)

+ ENERGY CONSUMPTION (MWh)





ELECTRICITY TARIFFS ⁷ [12]



	US\$/kWh
Residential Tariff	0.51
Commercial	0.52
Industrial/Large Power	0.53
Streetlights	0.53

7. A fuel charge of US\$ 0.18 was incorporated into the tariff rates.



PROJECTS IN THE PIPELINE



+ PROGRAMMES

There were no programmes reported for 2022.

+ ENERGY EFFICIENCY PROJECTS

Project Description	Development Partner	Project Description	Resource and Projects Capacity (kW)
Energy Audit of Government Buildings	Energy Division	Energy Division	Government Buildings

+ SUSTAINABLE TRANSPORTATION PROJECT

Renewable Energy Source	Project Description	Resource and Projects Capacity (kW)	Implementing Partner	Total Estimated Cost	Renewable Energy Source
Solar Phot-Voltaic [39]	Sustainable Low-Emissions Island Mobility (SLIM)	150	Department of Environment and UNEP	3,245,000.00 (GEF Project Grant) 9,719,315.00 - Co-financing	Global Environment Fund (GEF)



PROJECTS IN THE PIPELINE



RENEWABLE ENERGY PROJECTS

Renewable Energy Source	Project Description	Resource and Projects Capacity (kW)	Implementing Partner	Total Estimated Cost (USD)	Funding Source
Solar Photo-Voltaic [40]	Sustainable Pathways - Protected Areas and Renewable Energy (SPARE)	696	Department of Environment	652,692.71	UNEP, GEF, IRENA/ADFD
		5111.76	Department of Environment	1,175,826.00	Abu Dhabi Development Fund (ADFD)
		12	Department of Environment	60,000.00	UNEP, GEF, IRENA/ADFD
	Caribbean Development Bank Projects	142.22	Department of Environment	1,078,000.00	Caribbean Development Bank: Sustainable Energy Facility (SEF)
	Grid-Interactive Solar PV Systems for Schools and Clinics (GISS)	132.95	Department of Environment	825,000.00	Italian Government
	Energy for Sustainable Development in the Caribbean Buildings (ESD Project) Antigua and Barbuda ⁸ [41]	9	CARICOM Community Centre for Climate Change (CCCCC), Bureau of Standards		Global Environment Fund (GEF)
	Adaptation Fund Project	900	Department of Environment	450,000.00	Adaptation Fund
	Enhancing Direct Access in the Eastern Caribbean- Antigua	650	Department of Environment	900,000.00	Green Climate Fund (GCF)
	GCF Build [42]	1500	Department of Environment	46,164,630.00 (Total) 32,706,595 (GCF Grant) 4,899,665 (Co-financing Grant) 508,370 (Co-financing In-kind)	Green Climate Fund (GCF)
Adaptation Fund Innovation Grant [43]	16	Department of Environment	250,000.00	Adaptation Fund	
Solar and Wind Hybrid [40]	IRENA/ADFD Phase 2 [44]	1800	Department of Environment	15,000,000.00	IRENA/(Abu Dhabi Fund for Development)ADFD Facility
Hybrid Solar Power Plant, and Diesel Power Plant And Battery Storage [40]	Green Barbuda [45]	720	Ministry of Energy and Masdar	56,000,000.00	UAE
Wind Energy [40]	Sustainable Pathways - Protected Areas and Renewable Energy (SPARE)	4125	Department of Environment	13,900,417.00	UNEP, GEF, IRENA/ADFD

8. This is a regional projects to include Antigua and Barbuda, Belize, Grenada, St. Lucia and Trinidad and Tobago.



TERTIARY PROGRAMMES OFFERED



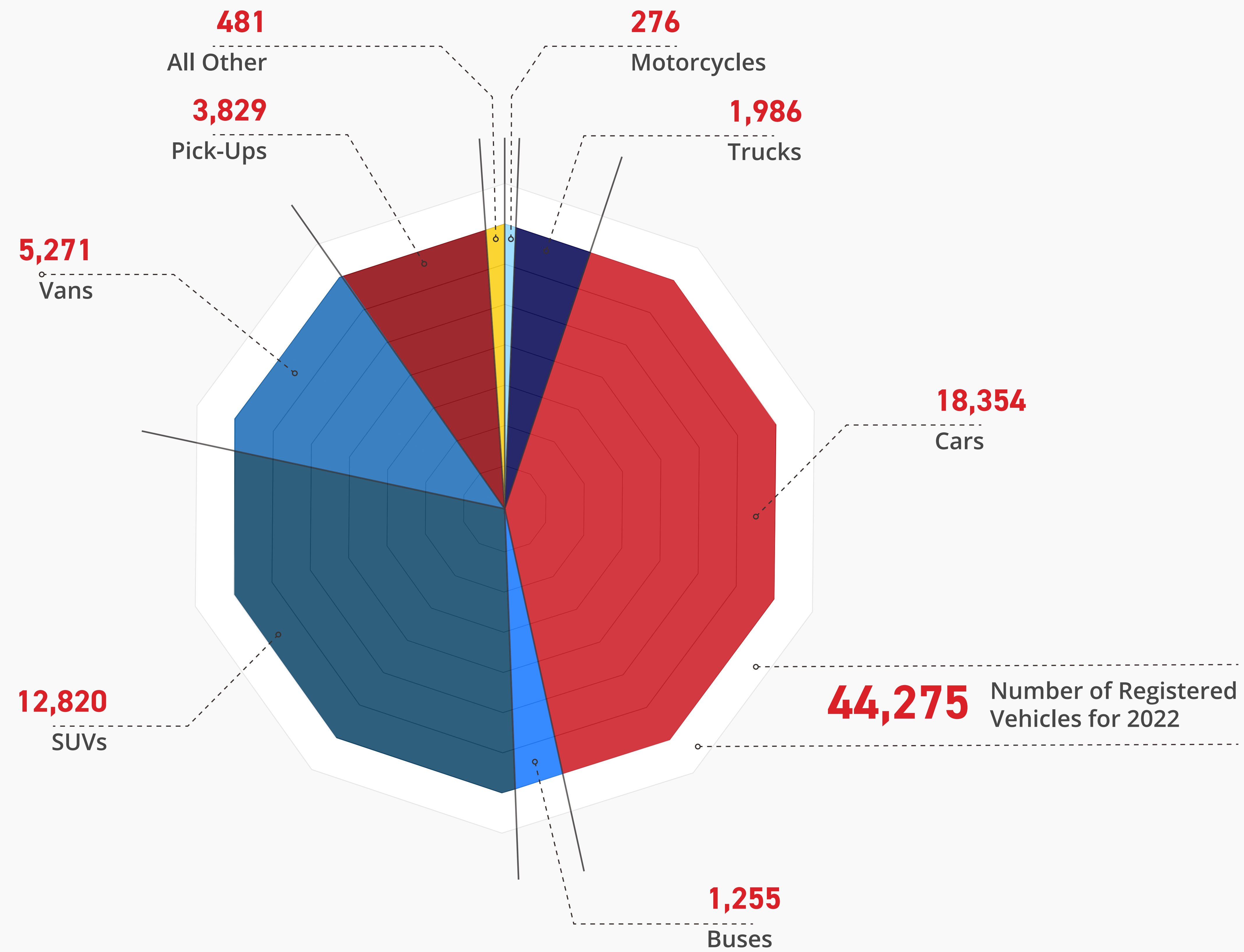
Name of Education Programme Provider	Associate Degree
Antigua State College	Green Engineering ⁹

9. A course in the associate degree programme awarded by CXC. Participants will earn dual certification of an associate degree and Caribbean Advanced Proficiency Examination (CAPE) Certification



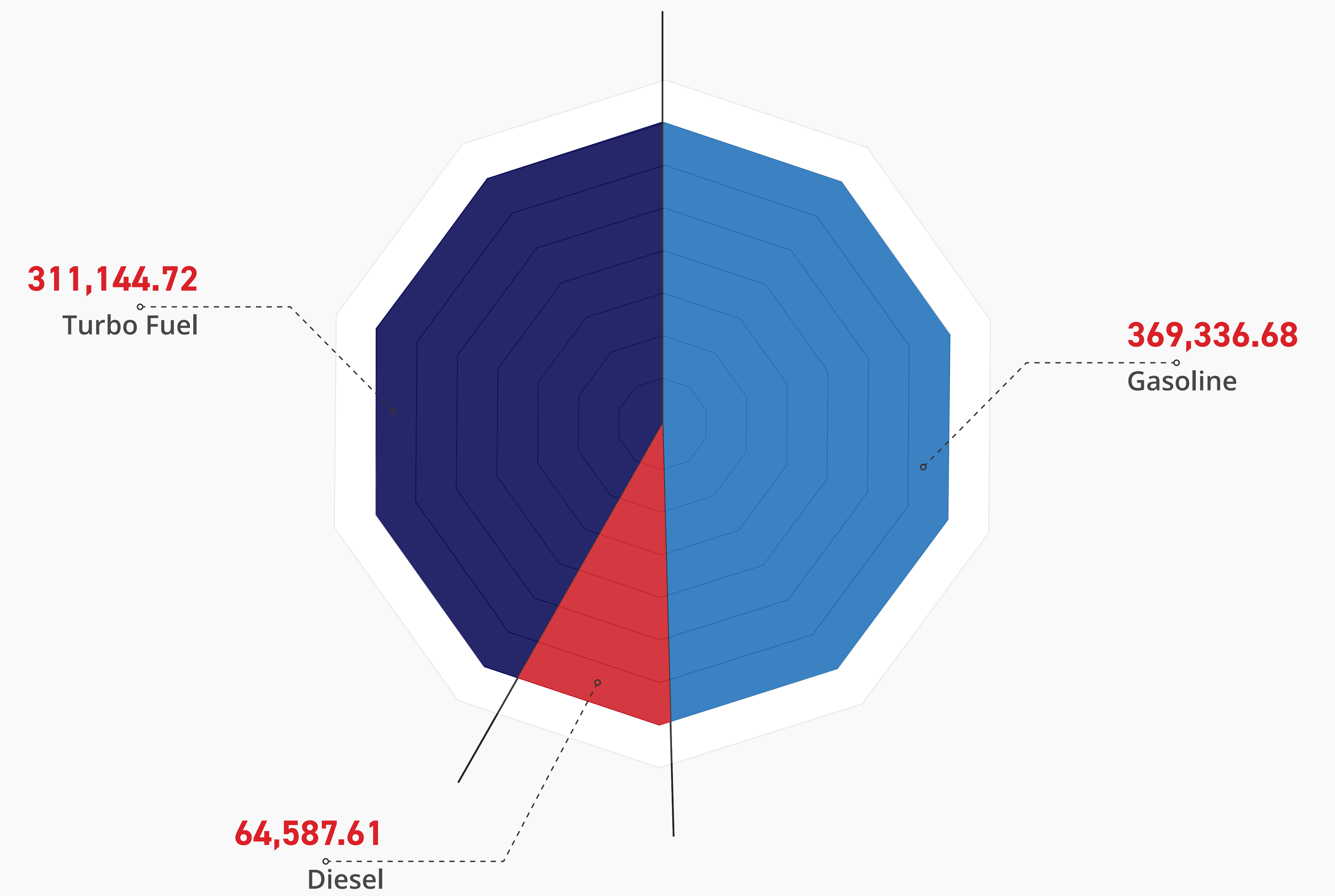
TRANSPORTATION SECTOR [13]

REGISTERED VEHICLES AS OF 2022



*There were also **36** Electric Vehicles

QUANTITY (BOE)





CLIMATE CHANGE FRAMEWORK



Climate Change Policy	Antigua and Barbuda Sustainable Energy Action Plan [9]
National Determined Contributions ¹⁰ [10]:	<ol style="list-style-type: none"> 86% renewable energy generation from local resources in the electricity sector by 2030. 100% of all new vehicle sales to be electric vehicles by 2030. Explore potential for emissions reductions in the waste sector by 2025. Explore potential for emissions reductions in the Agriculture, Forestry and Other Land Use (AFOLU) sector by 2030
Emissions Reduction Target:	86% renewable energy generation in the electricity sector [10]
Priority Sectors for NDC [10]	<ul style="list-style-type: none"> Energy Sector Industrial Processes and Products Use Agriculture, Forestry and Other Land Use Waste Electricity Transportation
National Communications (NC) to the UNFCCC:	Antigua and Barbuda's Initial National Communication on Climate Change (2001) [46]
	Antigua and Barbuda's Second National Communication on Climate Change (2009) [47]
	Antigua and Barbuda's Third National Communication on Climate Change Under the United Nations Framework Convention on Climate Change (2015) [48]

SUMMARY OF ANTIGUA AND BARBUDA GHG EMISSIONS AND REMOVALS (Gg) FOR 2015 ^[49]

Categories	Emissions (Gg CO ₂ Equivalents)				
	CO ₂	CH ₄	N ₂ O	HFCs	NMVOCS
Total National Emission and Removals	844.25	1.52	0.049	6.051	0.035
Energy	648.75	0.026	0.005	0	0
Industrial Processes and Product Use	3.14	0	0.002	6.051	0.035
Agriculture, Forestry, and Other Land Use	191.53	0.629	0	0	0
Waste	0.83	0.8624	0.042	0	0

10. These targets are in addition to the 2030 targets set in the INDC.



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