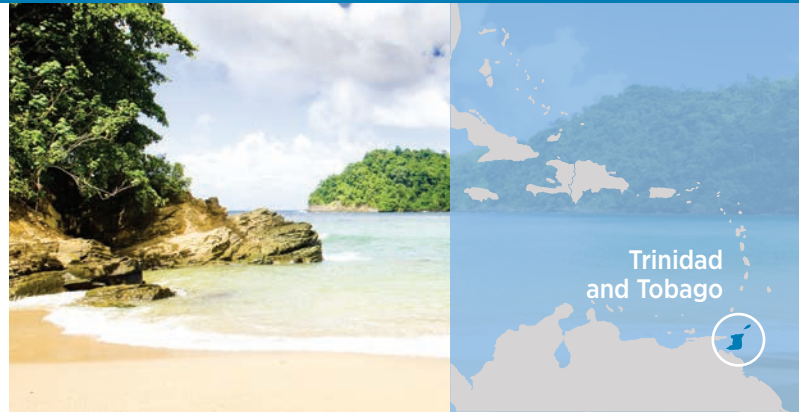


## Energy Snapshot Trinidad and Tobago

This profile provides a snapshot of the energy landscape of Trinidad and Tobago, a two-island nation located off the coast of Venezuela. Trinidad and Tobago's electricity rates are some of the lowest in the Caribbean at approximately \$0.04 per kilowatt-hour (kWh), well below the regional average of \$0.33/kWh. Unlike many island nations, Trinidad and Tobago has significant oil and natural gas reserves and is a net exporter of these fuels. However, subsidies for domestic energy consumption have created a fiscal burden on the government that could be reduced through the expansion of alternative transportation fuels, energy efficiency, and renewable energy.



**Trinidad and Tobago's Renewable Energy Goal:**  
60 megawatts (2.7% of 2015 capacity) by 2020.<sup>4</sup>

<b>Population</b>	1,223,916 <sup>1</sup>
<b>Total Area</b>	5,128 sq. km
<b>Gross Domestic Product (GDP)</b>	\$27.14 billion USD
<b>Share of GDP Spent on Fuel and Imports</b>	Electricity – 1% <sup>2</sup> Total – N/A <sup>3</sup>
<b>GDP Per Capita</b>	\$20,300 USD
<b>Urban Population Share</b>	13.7%

<sup>1</sup>Trinidad and Tobago is a net exporter of petroleum fuels.

### Electricity Sector Data

The Trinidad and Tobago Electricity Commission (T&TEC) is the sole transmission and distribution company serving Trinidad and Tobago. In 1994, it divested from its generation holdings on the larger island of Trinidad and now purchases energy from three Independent Power Producers (IPPs): the Power Generation Company of Trinidad and Tobago, which purchased the former T&TEC-operated plants and presently controls 1,386 megawatts (MW) of gas-fired capacity across

### Government and Utility Overview

<b>Government Authority</b>	<b>Ministry:</b> Ministry of Energy and Energy Affairs	
	<b>Key Figure:</b> Hon. Kevin C. Ramnarine	
<b>Designated Institution for Renewable Energy</b>	Energy Research and Planning Division, Ministry of Energy and Energy Affairs	
<b>Regulator</b>	Regulated Industries Commission	
<b>Utilities</b>	<b>Name:</b> Trinidad and Tobago Electricity Commission	Government-owned corporation

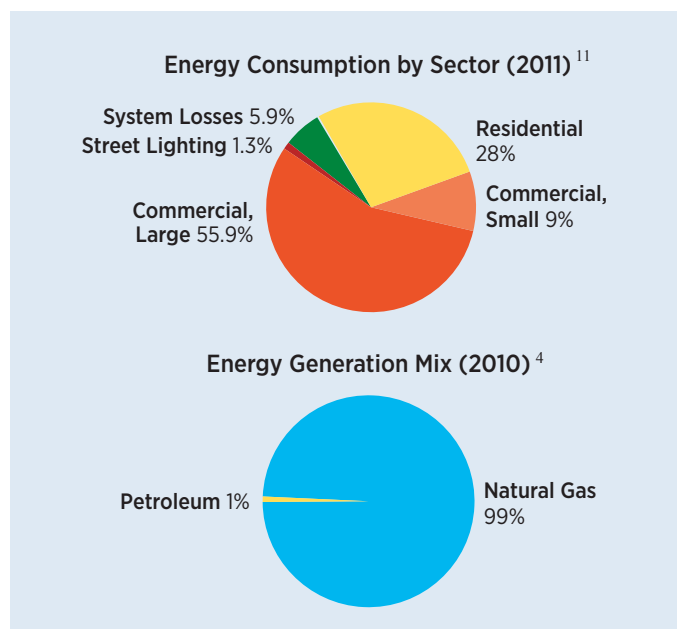
three facilities in which T&TEC holds a 51% ownership interest; Trinidad Generation Unlimited, which operates a 720-MW natural gas combined cycle power plant and is solely owned by the government of Trinidad and Tobago; and Trinity Power Limited, which owns a 225-MW simple cycle natural gas plant.<sup>5</sup> However, T&TEC is still the sole owner and operator of generation on Tobago, where it maintains two power plants with a combined capacity of 75 MW. The two islands are separated by a distance of roughly 30 kilometers and are not electrically interconnected.

## Electricity Sector Overview

<b>Total Installed Capacity (2014)<sup>10</sup></b>	75 MW (T&TEC) 2,080 MW (IPPs)	
<b>Peak Demand<sup>10</sup></b>	1,322 MW	
<b>Total Generation (2011)<sup>11</sup></b>	8,589 gigawatt-hours	
<b>Renewable Share (2011)<sup>11</sup></b>	0%	
<b>Transmission &amp; Distribution Losses (2011)<sup>11</sup></b>	5.9%	
<b>Electrification Rate<sup>10,12</sup></b>	97%	
<b>Average Electricity Tariffs (USD/kWh)<sup>13</sup></b>	<b>Residential</b>	\$0.04
	<b>Commercial</b>	\$0.08
	<b>Industrial</b>	\$0.03

Trinidad and Tobago's economy is dominated by energy-intensive industries that consume more than half of the country's electricity. The nation is the world's largest exporter of both ammonia and methanol and is the world's seventh largest liquefied natural gas exporter.<sup>4</sup> These industries and others benefit from the low industrial rates provided by T&TEC, which are themselves enabled by abundant domestic natural gas resources. The national emphasis on industry is reflected in T&TEC's rate schedule, which features 10 industrial rate classes with energy prices as low as \$0.02 USD/kWh. Several studies have been conducted to explore the export of natural gas to other Caribbean nations, including via an eastern Caribbean gas pipeline to Barbados, St. Lucia, Martinique, and Guadeloupe.<sup>6,7,8</sup>

The regulatory framework for the electric sector is established by the Regulated Industries Commission (RIC). T&TEC reports annually to the RIC on various service quality metrics such as frequency and duration of outages and resolution of customer complaints. In past proceedings, RIC has pointed to quarterly fluctuations in T&TEC's system loss rates as an opportunity to improve T&TEC's metering and billing operations.<sup>9</sup>

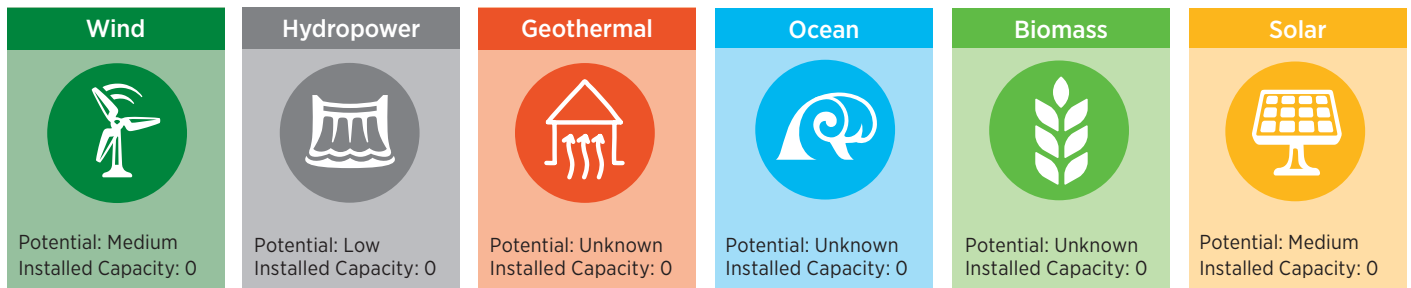


## Existing Policy and Regulatory Framework

Renewable Energy <sup>15, 16</sup>	
Feed-in Tariff <sup>16</sup>	■
Net Metering/Billing <sup>16</sup>	■
Interconnection Standards	■
Renewables Portfolio Standard/Quota	
Tax Credits <sup>14</sup>	●
Tax Reduction/Exemption <sup>14</sup>	●
Public Loans/Grants	
Green Public Procurement	
Energy Efficiency	
Energy Efficiency Standards <sup>4</sup>	■
Tax Credits <sup>14</sup>	●
Tax Reduction/Exemption <sup>14</sup>	●
Public Demonstration	
Restrictions on Incandescent Bulbs <sup>4</sup>	■
Appliance Labeling Standards <sup>4</sup>	■
Targets	
Renewable Energy	●
Energy Efficiency	

● In Place ■ In Development

## Renewable Energy Status and Potential<sup>19</sup>



## Clean Energy Policy Environment

Given its abundant domestic fossil fuel resources, Trinidad and Tobago has limited economic motivation to explore and expand renewable energy generation. In addition, the government notes that the subsidization of petroleum fuel has undermined the economic case for renewables while simultaneously creating a significant financial burden on the government.<sup>4</sup> Past policy support for renewable energy and energy efficiency includes tax credits for installations of equipment, tax exemptions for imported equipment, and accelerated depreciation accounting benefits.<sup>14</sup>

Government interest in supporting renewable energy and energy efficiency is increasing, for the multiple purposes of addressing climate change, developing new economic sectors, and reducing the government's fuel subsidy liabilities. The Sustainable Energy Action Plan, released in 2013, describes possible enabling policies and estimates a budget to evaluate those policies in addition to proposing which efforts to prioritize.

The framework document emphasized the importance of capacity building and public awareness, a critical challenge in communities where renewable energy is not widespread. The legal and regulatory policies suggested in the framework have seen varying degrees of progress; for example, the United Nations Environmental Program (UNEP) is conducting a pilot project for the development of feed-in tariffs in Trinidad and Tobago.<sup>15</sup>

## Energy Efficiency and Renewable Energy Projects

Renewable energy projects in Trinidad and Tobago have been limited to the pilot scale. Two 2-kilowatt (kW) off-grid photovoltaic (PV) systems have been in operation at both the

University of Trinidad and Tobago and T&TEC's Mt. Hope compound, while twenty-one 1-kW PV systems have now been installed at schools around the country.<sup>17,18</sup> The first grid-tied renewable energy system was a combined 2.5-kW PV and wind facility at the Islamic Children's Home in South Trinidad and was interconnected in August 2012.<sup>17</sup> These projects demonstrate the technical feasibility of renewable energy and are key components of the campaign to build public awareness of the benefits of renewable energy.<sup>16, 17</sup>

No other renewable electricity projects are currently under construction, though MEEA is undertaking a wind resource assessment to identify up to five potential development sites for utility-scale wind power projects. The most successful renewable technology to date has been solar water heating systems. Figures from MEEA suggest that more than 25,000 customers with solar water heaters in 2009 reduced their annual electricity consumption by an average of 37%, or roughly 7,500 kWh per household per year.

## Opportunities for Clean Energy Transformation

Trinidad and Tobago has abundant local fossil fuel resources, but is taking steps to prepare the societal, legal, regulatory, and economic foundations necessary to support renewable energy and energy efficiency technologies. By partnering with international groups such as UNEP, assessing potential wind resources, and increasing public awareness the government is positioning the country for a more diverse and environmentally sustainable energy system. A policy and regulatory environment in which alternative fuels, efficiency, and renewable energy can thrive could reduce financial burdens on the government, preserve the economic value of domestic energy reserves, and spur the creation of a domestic clean energy economy.

## Energy Transition Initiative

This energy snapshot was prepared to support the Energy Transition Initiative, which leverages the experiences of islands, states, and cities that have established a long-term vision for energy transformation and are successfully implementing energy efficiency and renewable energy projects to achieve established clean energy goals.

Through the initiative, the U.S. Department of Energy and its partners provide government entities and other stakeholders with a proven framework, objective guidance, and technical tools and resources for transitioning to a clean energy system/economy that relies on local resources to substantially reduce reliance on fossil fuels.



<sup>1</sup> All information in this table is from the CIA World Factbook, unless otherwise noted; <https://www.cia.gov/library/publications/the-world-factbook/geos/td.html>.

<sup>2</sup> [http://ngc.co.tt/wp-content/uploads/pdf/annual-reports/2011\\_NGC\\_ANNUAL\\_REPORT\\_FAW\\_WEB.pdf](http://ngc.co.tt/wp-content/uploads/pdf/annual-reports/2011_NGC_ANNUAL_REPORT_FAW_WEB.pdf).

<sup>3</sup> <http://comtrade.un.org/data/>.

<sup>4</sup> <http://www.energy.gov.tt/wp-content/uploads/2014/01/Framework-for-the-development-of-a-renewable-energy-policy-for-TT-January-2011.pdf>.

<sup>5</sup> <http://www.energy.gov.tt/our-business/electric-power/>.

<sup>6</sup> [http://www.caricom.org/jsp/community\\_organs/energy\\_programme/electricity\\_gifs\\_strategy\\_final\\_report\\_summary.pdf](http://www.caricom.org/jsp/community_organs/energy_programme/electricity_gifs_strategy_final_report_summary.pdf).

<sup>7</sup> <https://openknowledge.worldbank.org/bitstream/handle/10986/2738/594590ESW0WHIT1icity0Supply0Options.pdf?sequence=1>.

<sup>8</sup> <http://www.trinidadexpress.com/commentaries/State-of-energy-insecurity-290484891.html>.

<sup>9</sup> <http://www.ric.org.tt/wp-content/uploads/2014/08/Performance-Monitoring-Report-for-TTEC-2010-2011-March-2013-FINAL.pdf>.

<sup>10</sup> <http://www.ttparliament.org/reports/JSCgroup2.pdf>.

<sup>11</sup> [http://www.credp.org/Data/CREDP-GIZ\\_Interconnection\\_Report\\_Final\\_Oct\\_2013.pdf](http://www.credp.org/Data/CREDP-GIZ_Interconnection_Report_Final_Oct_2013.pdf).

<sup>12</sup> [https://ttec.co.tt/about\\_us/](https://ttec.co.tt/about_us/).

<sup>13</sup> <https://ttec.co.tt/services/tariffs/images/TTECRatesSummaryEffective1Sept2009.gif>.

<sup>14</sup> <http://www.energy.gov.tt/our-business/alternative-energy/renewable-energy-and-energy-efficiency-fiscal-incentives/>.

<sup>15</sup> <http://www.energy.gov.tt/our-business/alternative-energy/inter-american-development-bank-idb-sustainable-energy-program/>.

<sup>16</sup> <http://trinidadandtobago.acp-cd4cdm.org/media/353735/re-ee-policy-trends-initiatives-tt.pdf>.

<sup>17</sup> <http://www.energy.gov.tt/our-business/alternative-energy/pilot-projects/>.

<sup>18</sup> <http://www.newspday.co.tt/hotline/0,208479.html>.

<sup>19</sup> [http://www.worldwatch.org/system/files/nPhase%201%20C-SERMS%20Summary%20for%20Policymakers%20\(1\).pdf](http://www.worldwatch.org/system/files/nPhase%201%20C-SERMS%20Summary%20for%20Policymakers%20(1).pdf).

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