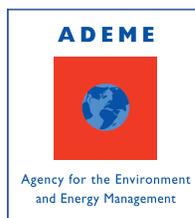


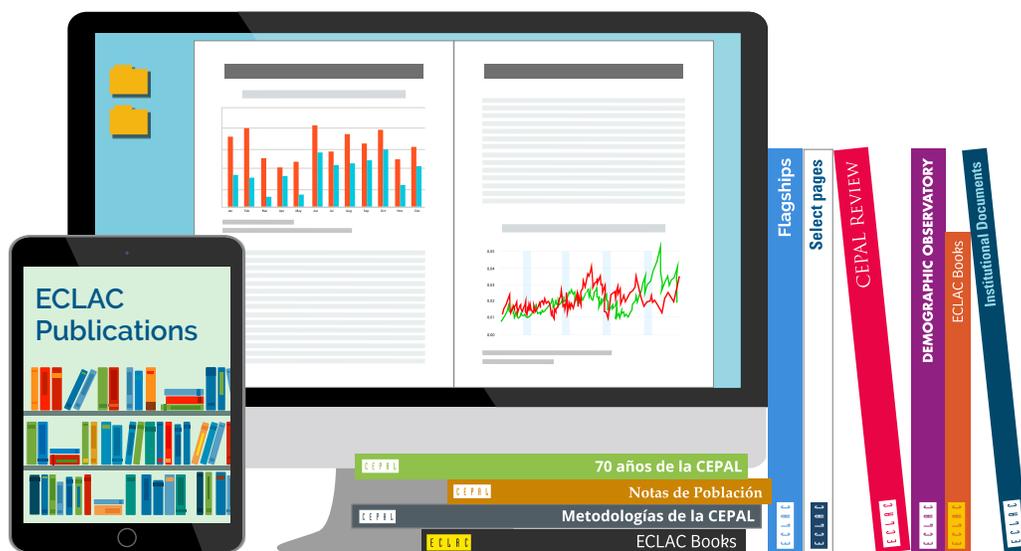
# National energy efficiency

## monitoring report of Trinidad and Tobago

Delena Indar



# Thank you for your interest in this ECLAC publication



Please register if you would like to receive information on our editorial products and activities. When you register, you may specify your particular areas of interest and you will gain access to our products in other formats.



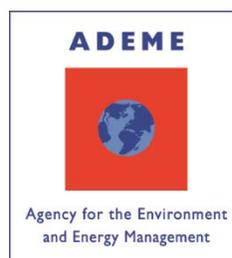
[www.cepal.org/en/publications](http://www.cepal.org/en/publications)



[www.cepal.org/apps](http://www.cepal.org/apps)

# National energy efficiency monitoring report of Trinidad and Tobago

Delena Indar



This document was prepared by officials of the Ministry of Energy and energy Industries in Trinidad and Tobago and the consultant, Delena Indar. Anita Hankey, Senior Planning Officer, and Zahra Cielto-Bowrin, Officer, both of the Ministry of Energy and Energy Industries, were responsible for the executive coordination and technical revision of the document. This document was produced within the framework of the United Nations Development Account project for a Regional Observatory on Sustainable Energy (ROSE), undertaken by the Economic Commission for Latin America and the Caribbean (ECLAC), with the support of the German Agency for International Cooperation (GIZ) and the French Agency for Environment and Energy Management (ADEME). The ECLAC officials responsible for the project were Rubén Contreras Lisperguer of the Natural Resources Division of ECLAC, and Willard Phillips of the ECLAC subregional headquarters for the Caribbean.

The authors wish to thank the French Agency for Environment and Energy Management (ADEME) and, in particular, Didier Bosseboeuf, Senior Expert in charge of International Studies, for the technical support provided. The authors are also grateful for the support of Enerdata, in particular, its Vice-President, Bruno Lapillonne, who carried out periodic revisions of the data and analysis.

Sincere thanks are also extended to the Airport Authority of Trinidad and Tobago; the Caribbean Community (CARICOM); the Central Bank of Trinidad and Tobago; the Central Statistical Office of Trinidad and Tobago (CSO); the Ministry of Agriculture, Land and Fisheries; the Ministry of Education; the Ministry of Health; the Ministry of Planning and Development (particularly the Town and Country Planning Division); the Ministry of Works and Transport (particularly the Transport Division); the National Energy Corporation; the Port Authority of Trinidad and Tobago; the Public Transport Service Corporation; Tracmac Engineering Ltd.; the Trinidad and Tobago Electricity Commission; the Trinidad Hotels, Restaurants and Tourism Association; the Trinidad and Tobago Manufacturers' Association; the Trinidad and Tobago National Petroleum Marketing Company Ltd., and all others who contributed to this report.

The views expressed in this document, which has been reproduced without formal editing, are those of the author and do not necessarily reflect the views of the Organization.

United Nations publication LC/TS.2019/74

Distribution: L

Copyright © United Nations, 2019

All rights reserved

Printed at United Nations, Santiago

S.19-00972

This publication should be cited as: D. Indar, "National energy efficiency monitoring report of Trinidad and Tobago", *Project Documents*, (LC/TS.2019/74), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), 2019.

Applications for authorization to reproduce this work in whole or in part should be sent to the Economic Commission for Latin America and the Caribbean (ECLAC), Publications and Web Services Division, publicaciones.cepal@un.org. Member States and their governmental institutions may reproduce this work without prior authorization but are requested to mention the source and to inform ECLAC of such reproduction.

## Contents

<b>Summary</b> .....	5
<b>I. Introduction</b> .....	7
A. Background .....	7
B. Objectives .....	8
C. Data collection and sources .....	8
<b>II. The background to energy efficiency</b> .....	11
<b>III. Energy consumption and intensity trends</b> .....	15
A. Economic trends .....	15
B. Primary and final energy consumption .....	17
C. Primary and final energy intensities .....	20
<b>IV. Energy efficiency trends in the power generation and energy sector</b> .....	25
<b>V. Energy efficiency trends in industry</b> .....	27
<b>VI. Energy efficiency trends in households</b> .....	31
<b>VII. Energy efficiency trends in transport</b> .....	37
<b>VIII. Energy efficiency trends in services</b> .....	41
<b>IX. Energy consumption in agriculture</b> .....	45
<b>X. Conclusion</b> .....	49
<b>Bibliography</b> .....	51

## Figures

Figure 1	Stacked share of petroleum and non-petroleum industry.....	15
Figure 2	GDP structure, 2000–2015.....	16
Figure 3	Growth rate of sectors contributing to GDP .....	17
Figure 4	Growth in primary and final energy consumption, 2000-2015.....	19
Figure 5	Primary energy consumption by sector, 2000.....	19
Figure 6	Changes in fuel mix in final consumption.....	20
Figure 7	Trend in primary and final energy intensity .....	21
Figure 8	Trends in primary energy intensity decomposition.....	21
Figure 9	Visualisation of primary intensity variations, 2000–2015 .....	22
Figure 10	Variations in sectoral intensities.....	22
Figure 11	Role of structural changes on final intensity .....	23
Figure 12	Trends in value added, energy consumption, electricity consumption and sectoral intensity of industry, 2000–2015.....	28
Figure 13	Natural gas utilization (excluding LNG), 2015.....	29
Figure 14	Trends in energy consumption, private consumption and households.....	31
Figure 15	Specific energy consumption per household .....	32
Figure 16	Household specific energy consumption by main end-use.....	33
Figure 17	Distribution of energy consumption by end-use .....	33
Figure 18	Trends in household ownership of electrical appliances.....	34
Figure 19	Number of cars/1000 inhabitants, 2015 .....	37
Figure 20	Variations in energy consumption (transport), 2000–2015 .....	38
Figure 21	Decomposition of road consumption variation, 2010-2015.....	39
Figure 22	Value added of services to GDP, 2000–2015.....	41
Figure 23	Value added of services to GDP by subsector, 2000, 2010, 2015 .....	42
Figure 24	Trends in GDP, final and electricity consumption, 2005, 2010, 2015 .....	42
Figure 25	Trends in value added, consumption and intensity, 2000-2015.....	43
Figure 26	Distribution of electricity by sub-sector, 2005 and 2015.....	44
Figure 27	Share of value added of agriculture in GDP .....	45
Figure 28	Electricity consumption of agriculture by sub-sector .....	46

## Diagrams

Diagram 1	Data sources .....	9
Diagram 2	Energy flows in a country .....	18

## Summary

Trinidad and Tobago is dependent on its oil and gas sector to support its economy and society. However, given the challenge of climate change, small economies of scale, and increased economic, social and environmental vulnerability, strategies are needed to ensure long-term sustainable development. A key aspect of this is greater levels of energy efficiency, which would allow for energy security in the long term, a reduction in greenhouse gas emissions and increased revenue and cost savings.

Trinidad and Tobago is unique in the sense of low energy prices, high per-capita energy consumption, lack of energy efficiency standards and low awareness regarding energy efficiency. Therefore, understanding trends in the usage of energy is necessary in order to craft appropriate policies and also plays an important role in ensuring the success of such initiatives.

In an effort to correct the deficiency of energy efficiency initiatives in Latin America and the Caribbean, the Economic Commission for Latin America and the Caribbean (ECLAC), with the support of the German Agency for International Cooperation (GIZ) and the French Environment and Energy Management Agency (ADEME), developed a Database of Energy Efficiency Indicators (BIEE) Programme for the Caribbean. An aim of the Programme is to create a database of indicators that measure the performance of energy efficiency policies in participating countries in seven sectors.

Assembly of the database involved the treatment of information at both an aggregate and sectoral level in the sectors of macro-economy, energy, industry, transport, households, services and agriculture for in-depth interpretation of indicators. This document is therefore the first national report containing recent trends in energy efficiency that have emerged from the BIEE Project in the Caribbean, specifically derived from the newly populated database.

In this report, Chapter I introduces the methodology of the BIEE; Chapter II discusses the background to energy efficiency in Trinidad and Tobago. Trends in overall primary and final energy intensities are discussed in Chapter III. Chapters IV to VIII discuss the varying trends in energy and electricity consumption as well as sectoral intensities.

Trends in the data allowed for analysis according to homogenous periods, indicating that in many cases energy intensities had faster growth rates in 2000 – 2008, as compared to 2008 – 2015. In each chapter, sectoral analyses utilize the value-added share to Gross Domestic Product (GDP), energy consumption and where possible, energy consumption by end-use to showcase trends in energy intensity.

The analysis allows for guidance in terms of crafting policy based on statistics, and therefore underscores the need for improved data coverage and subsequent monitoring of policies which have been weak in the past. The database is a much-needed tool that allows for the harmonization of data, but also highlights gaps in data collection especially by end-uses in the residential sector and by branches in industry, which has proven to be the most energy-intensive sector.

预览已结束，完整报告链接和二维码如下：

[https://www.yunbaogao.cn/report/index/reportId=5\\_478](https://www.yunbaogao.cn/report/index/reportId=5_478)

