

Overview of ESCOs and Performance Contracting

Zooming in on T&T and the wider Caribbean

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Virtual workshop on "Project Finance for Energy Efficiency: Dedicated Financing Structures for Energy Service Companies (ESCOs) and Energy Performance Contract (EPC) Projects"

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EUROCHAMTT

CARIBBEAN energy



Energy efficiency – "*The first fuel*"

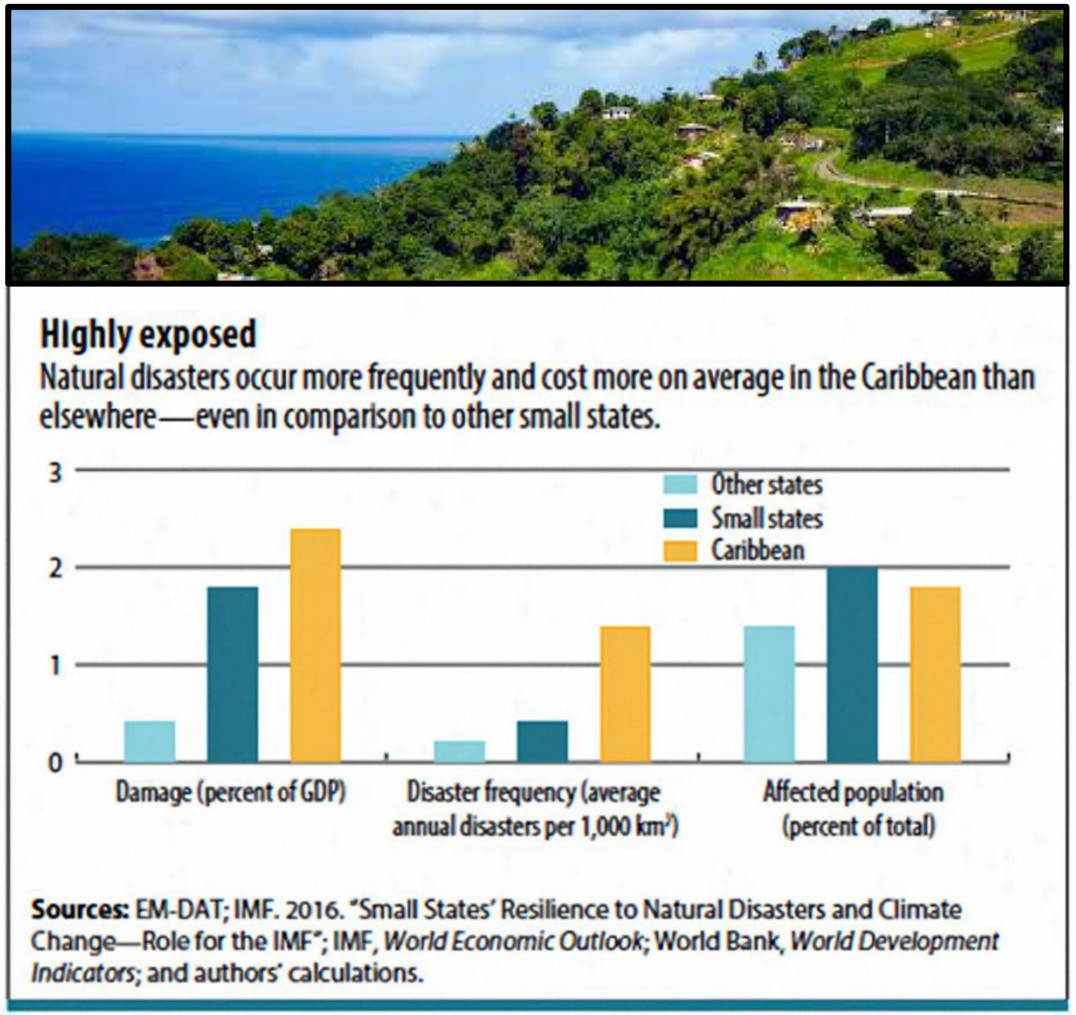
- **Readily available**, **cost-effective resource** that can lower energy consumption and emissions, without major investments or technological breakthroughs
- Supports **energy security**, **affordability**, and the clean energy transition
- Reducing energy demand helps **controlling the level of investments needed for the renewable energy transition** ("*Energy efficiency first principle*")

EE is not only about lowering energy bills! It's also about a more SUSTAINABLE approach to limited resource use and transitioning to a more RESILIENT society

The unique context of SIDS

- Negligible impact on global GHG emissions but **home to some of the most climate-vulnerable populations**, facing unique social, economic and environmental pressures

- Caribbean SIDS are **more frequently affected by severe weather events**, such as droughts, increasing surface air temperatures, and tropical storms



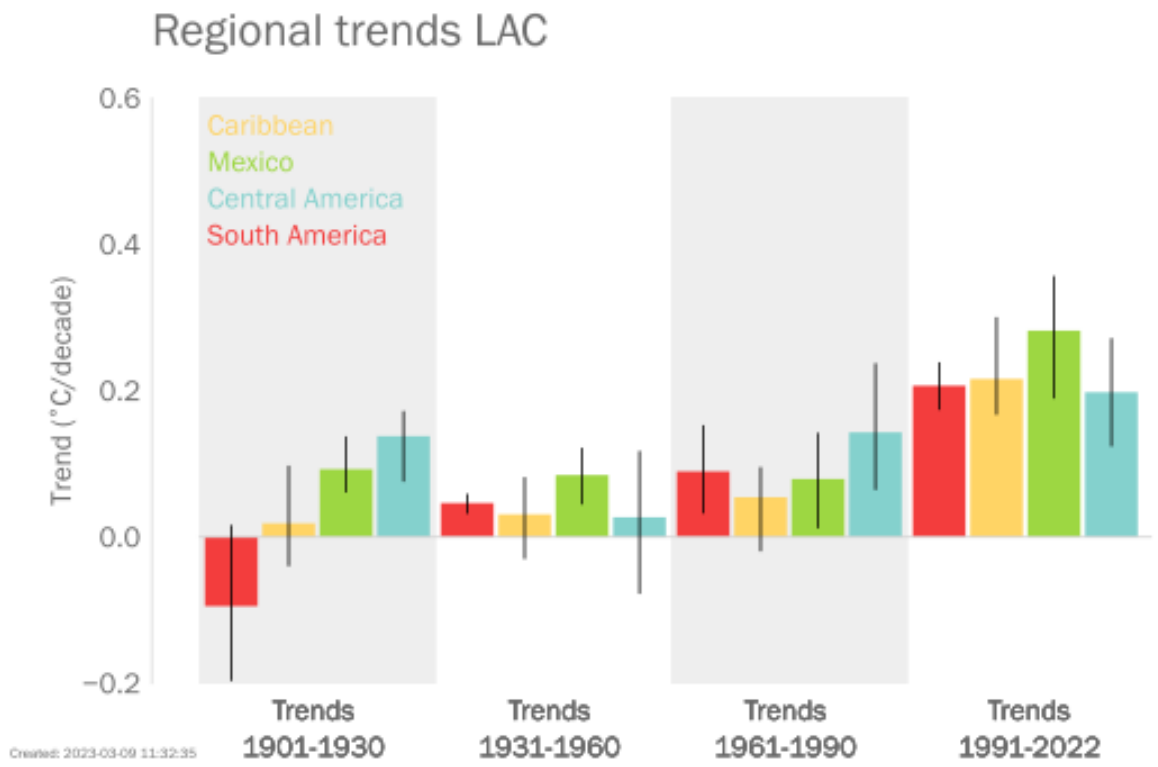
LUT Group Confidential - Other information (3Y)

Rising energy demand in buildings

WORLD METEOROLOGICAL ORGANIZATION

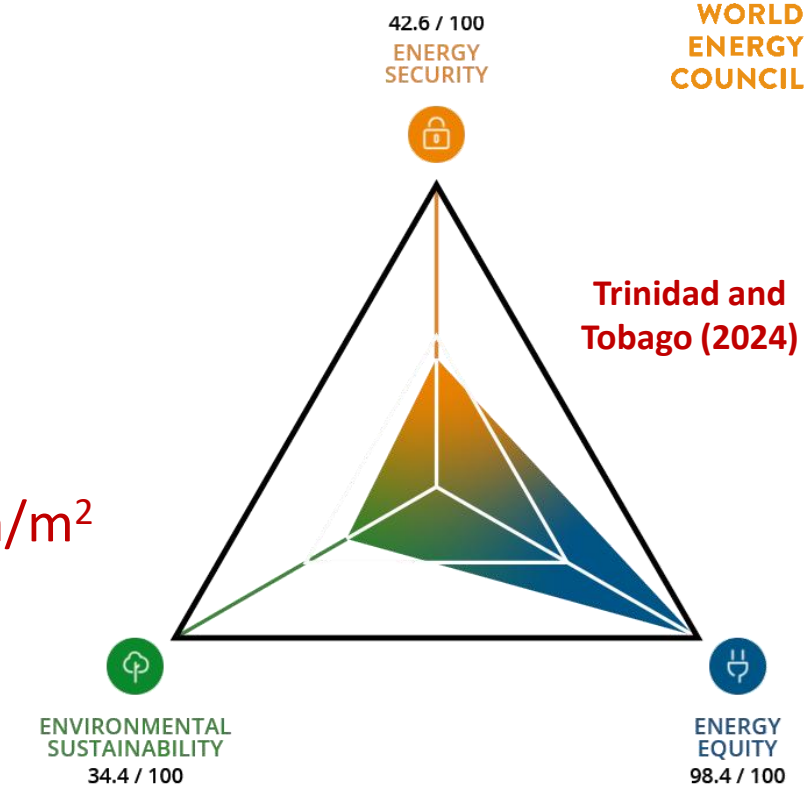
- Electricity consumption in Caribbean buildings has been on the rise for decades and is today aggravated by **intensive use of air conditioning**, as a result from increasing temperatures (40-60 share % of electricity consumption in buildings)

- This trend, coupled with the **high reliance on fossil fuels for electricity**, poses challenges for energy security and affordability in the region



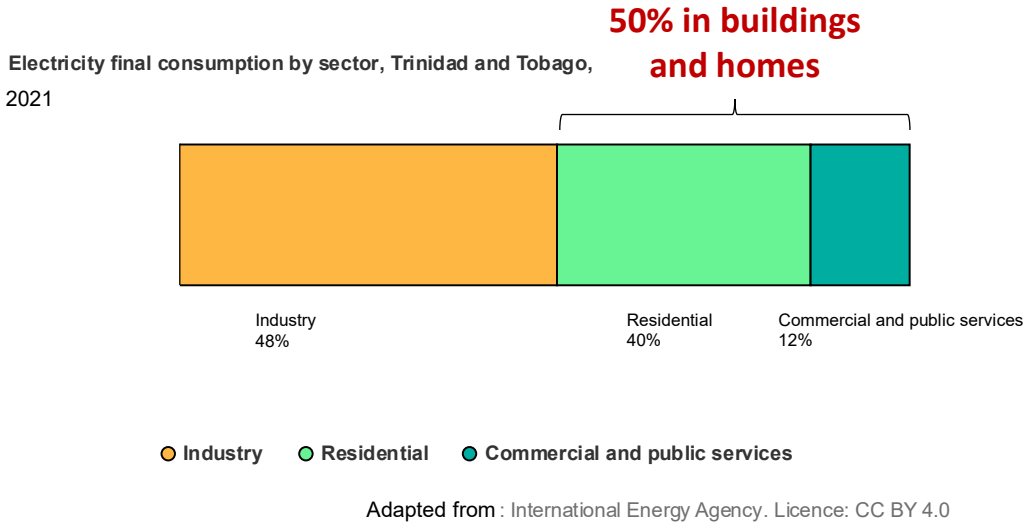
Caribbean energy diagnosis vs T&T

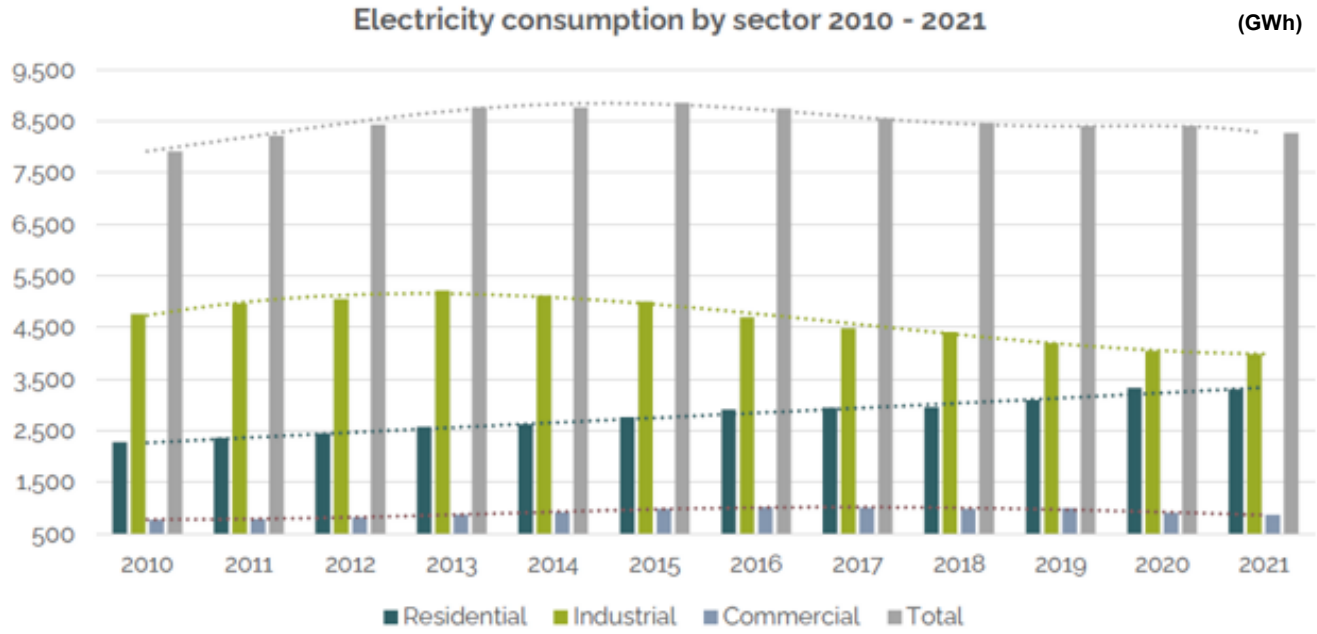
- Share of power from **diesel/HFO imports**: ≈85% | T&T 0%
- Average **T&D grid losses**: 15% - 20% | T&T 8% - 10%
- Regional **RES penetration**: 10 - 12% | T&T ≈ 0%
- Annual **building energy intensity**: 160 kWh/m² | T&T 260 kWh/m²
- Very HIGH **electricity rates** due to fossil import dependency | T&T Very LOW, heavily subsidized electricity rates



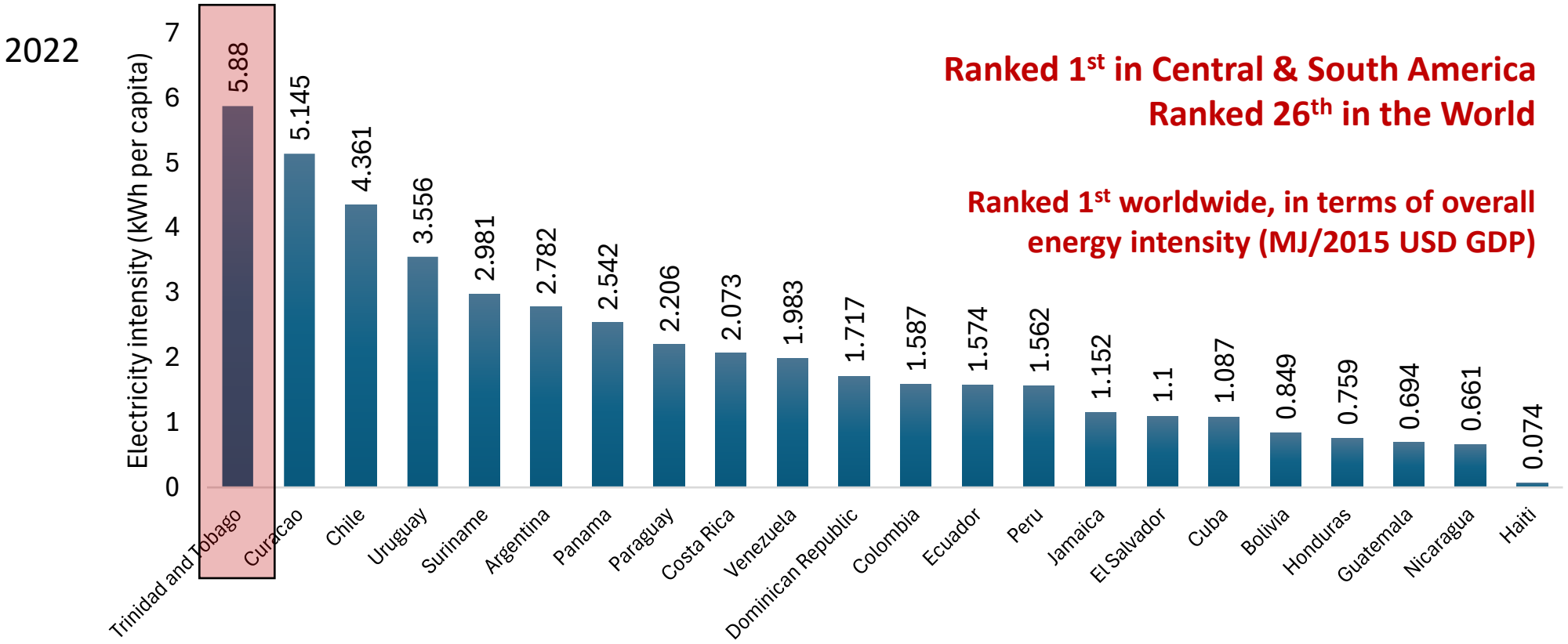
Buildings are major electricity consumer in T&T

- Recent shifts in demand structure place B&H on par with industry





T&T among top energy-intensive economies



Ranked 1st in Central & South America
Ranked 26th in the World

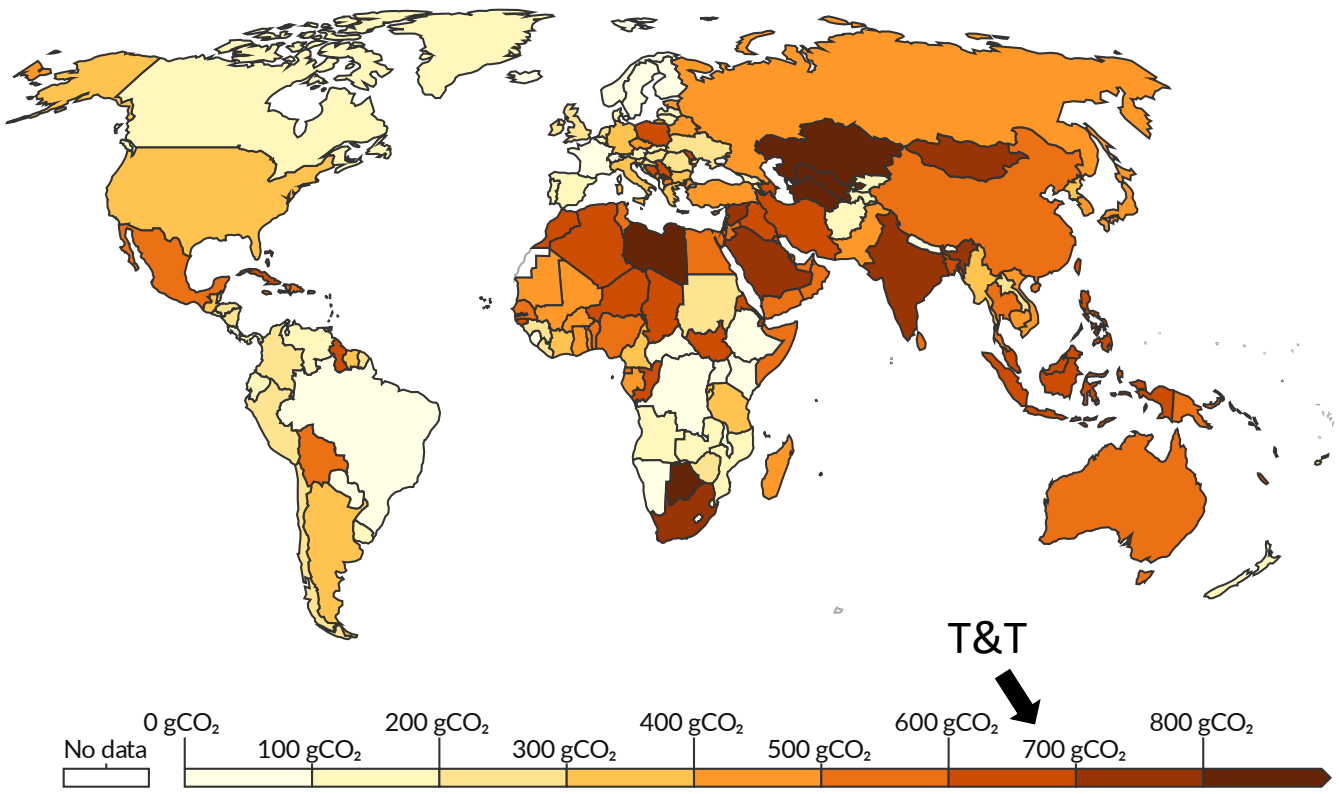
Ranked 1st worldwide, in terms of overall energy intensity (MJ/2015 USD GDP)

Carbon footprint of electricity

Each MWh of electricity consumed in T&T carries 682 kg of CO_2eq.
(lifecycle basis for all GHG, including upstream, supply chain and manufacturing stages)

COMPARATIVE VALUES:

- China: 525 kg CO_2eq./MWh
- World: 458 CO_2eq./MWh
- USA: 384 CO_2eq./MWh
- EU: 210 CO_2eq./MWh



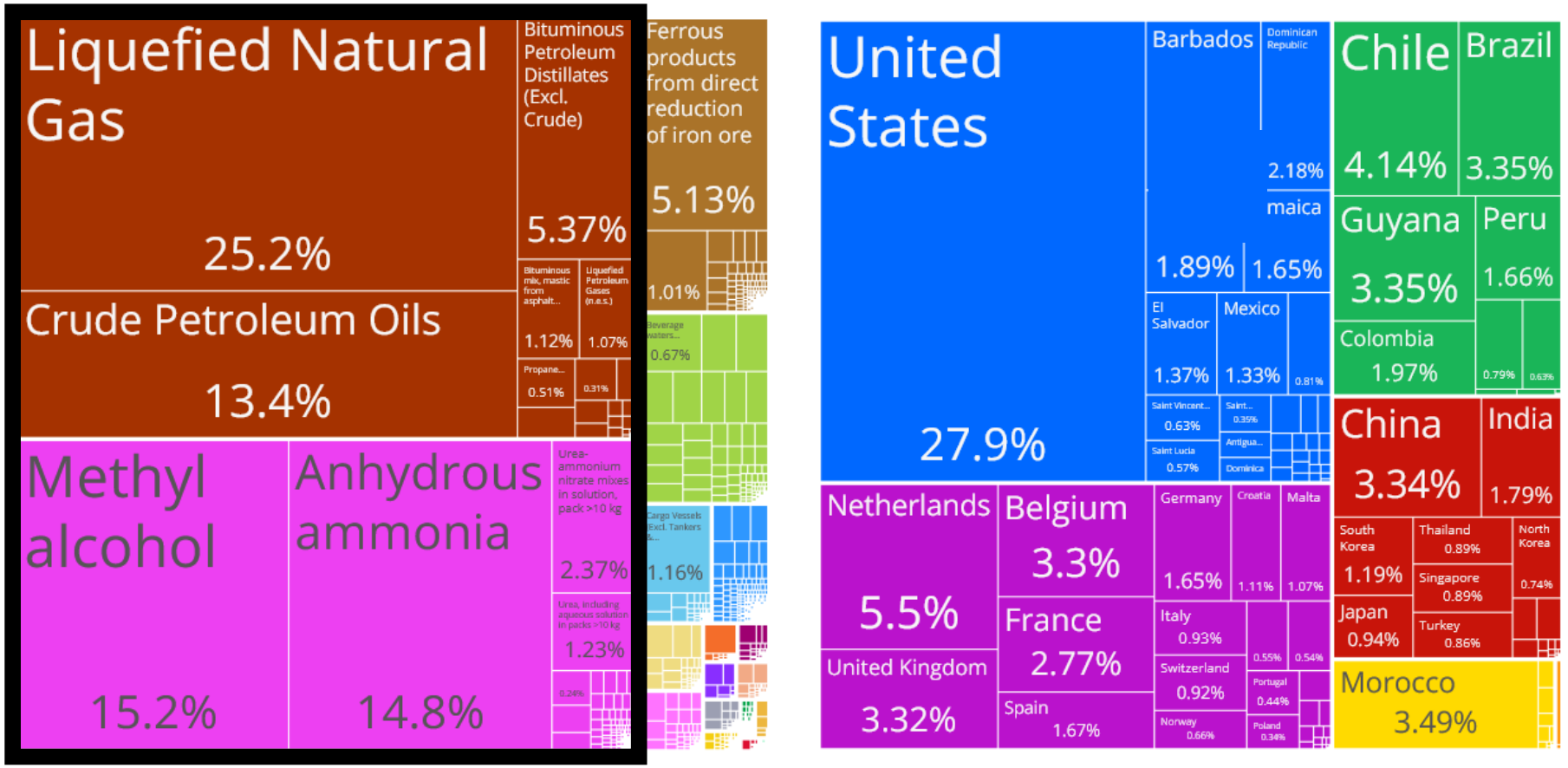
Data source: Ember (2024); Energy Institute - Statistical Review of World Energy (2024) OurWorldinData.org/energy | CC BY

T&T ranks among the top 20 global emitters, under coal and HFO-dependent Central Asian and African nations

T&T's dependence on Oil & Gas exports

>80%

T&T EXPORTS (2024)



Price signal incentives for EE in T&T

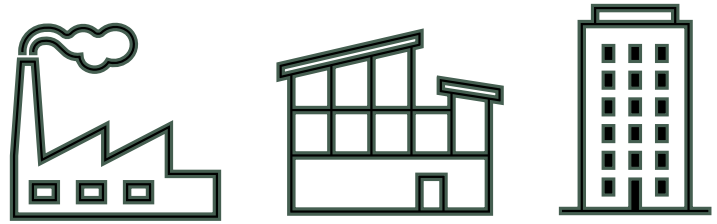
DOMESTIC CONSUMERS & SMALL BUSINESSES



Bi-monthly consumption tiers with increasing electric rates (≈≤2500 kWh, average bill of 15 USD/month – 150 USD/month)

For SMALL customers, the key incentive for EE action is moving down consumption tiers

LARGE COMMERCIAL & INDUSTRIAL SITES



Demand-based tiers with decreasing electric rates and monthly demand charges based on peak demand (≈≥2500 kWh)

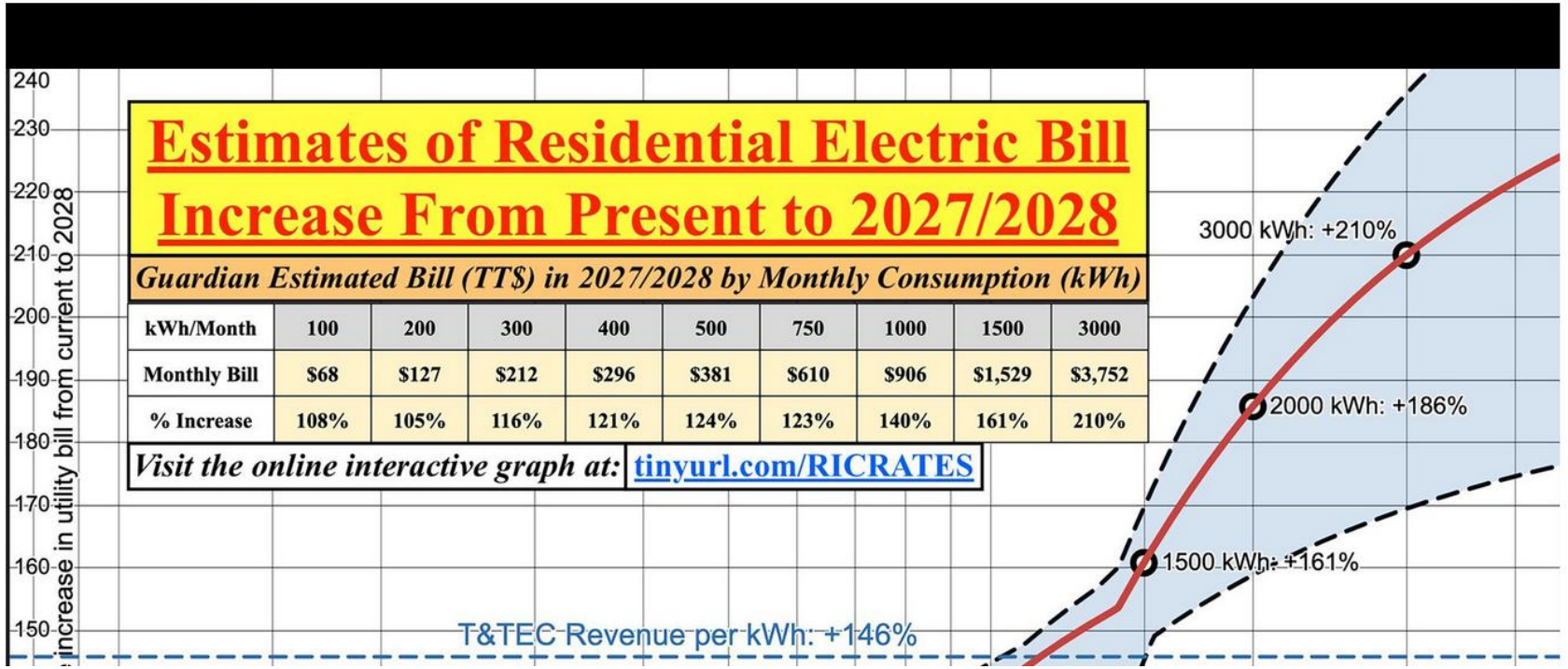
For LARGE customers, the key incentive for EE action is reducing peak demand charges

Proposed rate increases will further incentivize EE

Electricity bills could jump 124% by 2028

RIC proposal (currently rejected)

by Erik Lavoie 427 days ago 20240404



In late 2025, Trinidad & Tobago introduced a $0.05 per kWh electricity surcharge for commercial and industrial customers, effective January 1, 2026c

Trinidad & Tobago Guardian

Energy Service Companies (ESCOs)

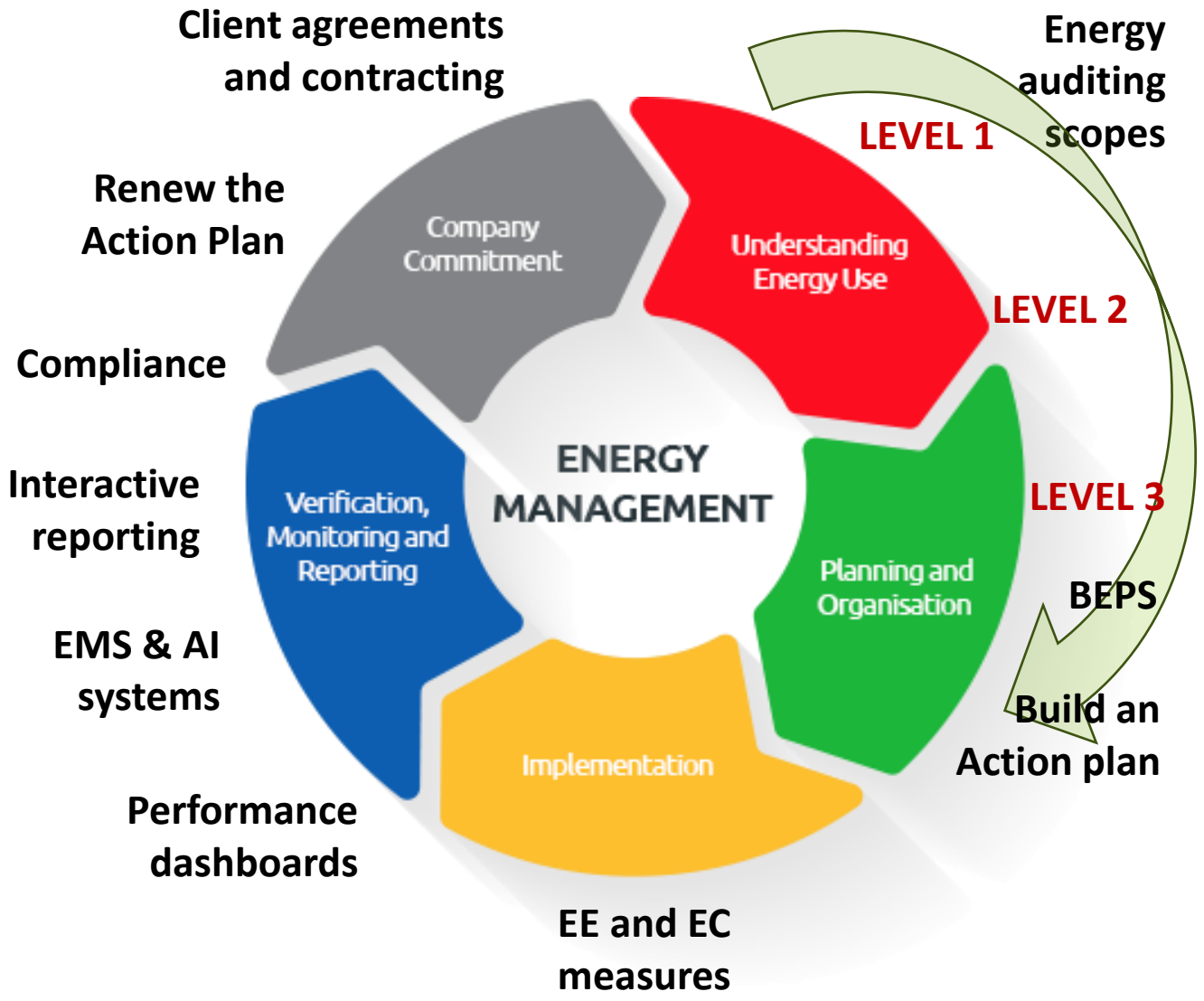
ESCOs provide energy services to final energy users, including **energy auditing, supply and installation of energy efficient equipment**, and **refurbishment of buildings' envelope**, with view to achieving energy and environmental goals

In which way are ESCOs different from traditional energy services companies?

ESCOs can finance or help facilitate the financing of the implementation of the solutions, and their remuneration is directly tied to the project's performance and resulting energy savings achieved – **PERFORMANCE CONTRACTING**

Competences of ESCOs

- Energy audits are first step, with goal being to **understand energy use before making energy investments**
- ISO 50001 standard establishes activities across the energy management cycle, including implementation of energy efficiency or conservation measures
- After energy investments, comes M&V



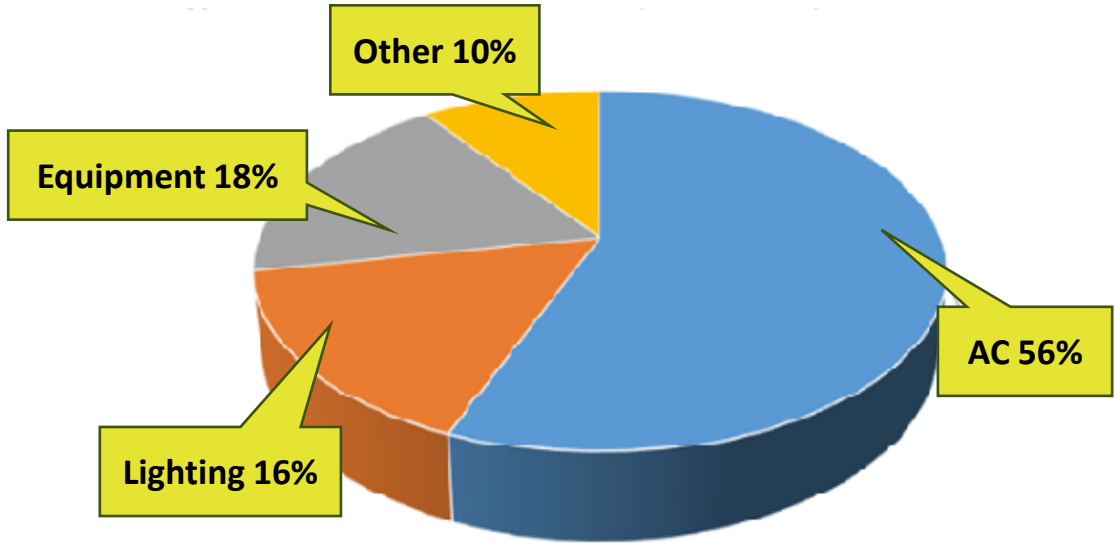
V.S Arunaachalam, 2023.

Popular energy measures for T&T

- **Low to medium-cost solutions**
  - Lighting substitution (80-90% savings) and lighting sensors (20-50% savings)
  - Behavioural change through training, and/or awareness campaigns…
  - Electric appliance timers
  - Create role of Energy Manager

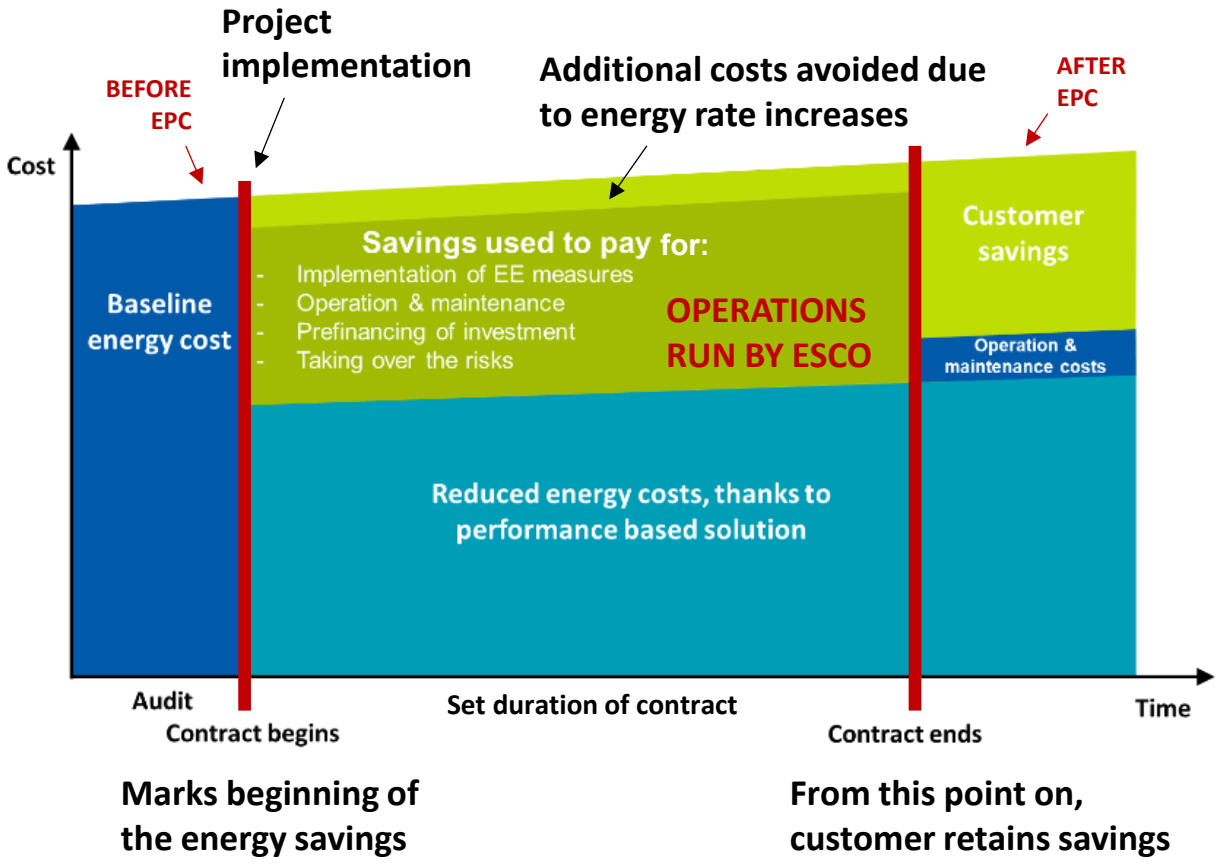
- **More capital-intensive solutions**
  - Absorption chillers (colling from source of heat – Up to ≈80% savings) and other efficient HVAC systems (wide variety, available/O&M?)
  - Solar thermal collectors where applicable
  - Implementation of BEMS

Typical building energy consumption in tropical climates



Katili et al., 2015.

How performance contracting works



1. With the implementation of the EE project, **come positive cash flows from savings**, as well as limited added costs with **M&V and debt**
2. **The savings originated by the EE project are used to pay for the project**, as stipulated in an energy services performance contract (ESPC)
3. The **payment period is agreed upon in the ESPC**, and varies with investment level
4. From the moment the ESPC expires and the project is paid, **the client retains the savings** and takes responsibility over the O&M costs

SECCA
Sustainable Energy Connectivity in Central Asia
Funded by the European Union

WORLD BANK GROUP

The *Guaranteed Savings* ESCO model



ESCO assumes the PERFORMANCE risk of the project

SECCA
Sustainable Energy Connectivity in Central Asia
Funded by the European Union

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The *Shared Savings* ESCO model



ESCO assumes both the FINANCIAL and PERFORMANCE risks of the project

ESCOs in T&T

- The opportunities offered by the unusual energy context of T&T make business appealing for ESCO operations, **even at low energy rates**, especially given the strong technical body of energy professionals from which T&T has historically benefited

ESCOS can also help tackle reluctance, mistrust, and lack of financial ability or unwillingness to fund transformational energy efficiency projects in T&T

- Key obstacles remain: The **lack of specialized funding structures** and of **standard contractual procedures**, particularly relevant under unclear government support policies

- Despite the clear opportunities to establish positive EE projects, market uncertainty has led to **a negligible number of ESCOs** in T&T

Conclusions

Energy efficiency (EE) is a critical vector of the clean transition, supporting energy security and affordability, while helping our society caring for the next generations

- For the Caribbean SIDS and T&T alike, which face uniquely complex energy and socio-economic challenges, such as **high energy intensity**, **lack of energy awareness**, and **widespread excessive consumption habits**, urgent EE action is logical and necessary
- ESCOs can play a major role in tackling these longstanding challenges, guaranteeing not only technical competences, but also carrying the **financial and performance risks** of the projects
- **Performance contracting approaches led by ESCOs** could help build confidence in the emerging EE markets, but a more favorable financing environment, featuring **dedicated products**, and the establishment of clear, **standardized project procedures** will be critical factors for success



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