

THE RECOVER BETTER WITH SUSTAINABLE ENERGY GUIDE FOR CARIBBEAN COUNTRIES

—



Special Representative
of the Secretary-General for
Sustainable Energy for All



The Recover Better with Sustainable Energy Guide for Caribbean Countries

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SETTING THE SCENE

The post-COVID-19 global economic environment will be defined by a prolonged recession, high levels of unemployment and reduced travel and tourism – all as countries worldwide seek to re-ignite their economies. In the midst of the COVID-19 pandemic and ensuing economic recovery, governments will have a unique, once-in-a-generation opportunity to reset their economies and support the underlying structures that enable sustainable development. Leaders with both the vision and political courage needed can help their countries *recover better* during the economic stimulus that will take place by integrating sustainable energy strategies to build more robust energy infrastructures and resilient economies that are less susceptible to global externalities.

COVID-19 has devastated tourism-based, import-dependent economies across the Caribbean. For example, in just one day, Saint Lucia lost 13,000 jobs - approximately 7 percent of the total population and 16 percent of the total labour force, which is estimated at 79,700. Some Caribbean power utilities reported a 50–60 percent loss in electrical load in March alone, a clear indicator that the economy is depressed.¹ Recovery from such devastation may be slow but it can also be revolutionary.

Of the fifteen Caribbean Community (CARICOM) Member States,² seven have energy access deficits, with Haiti having the largest deficit. Of the seven, four are expected to close the gaps by 2030 if they continue to deliver access to energy at the current rate of improvement.

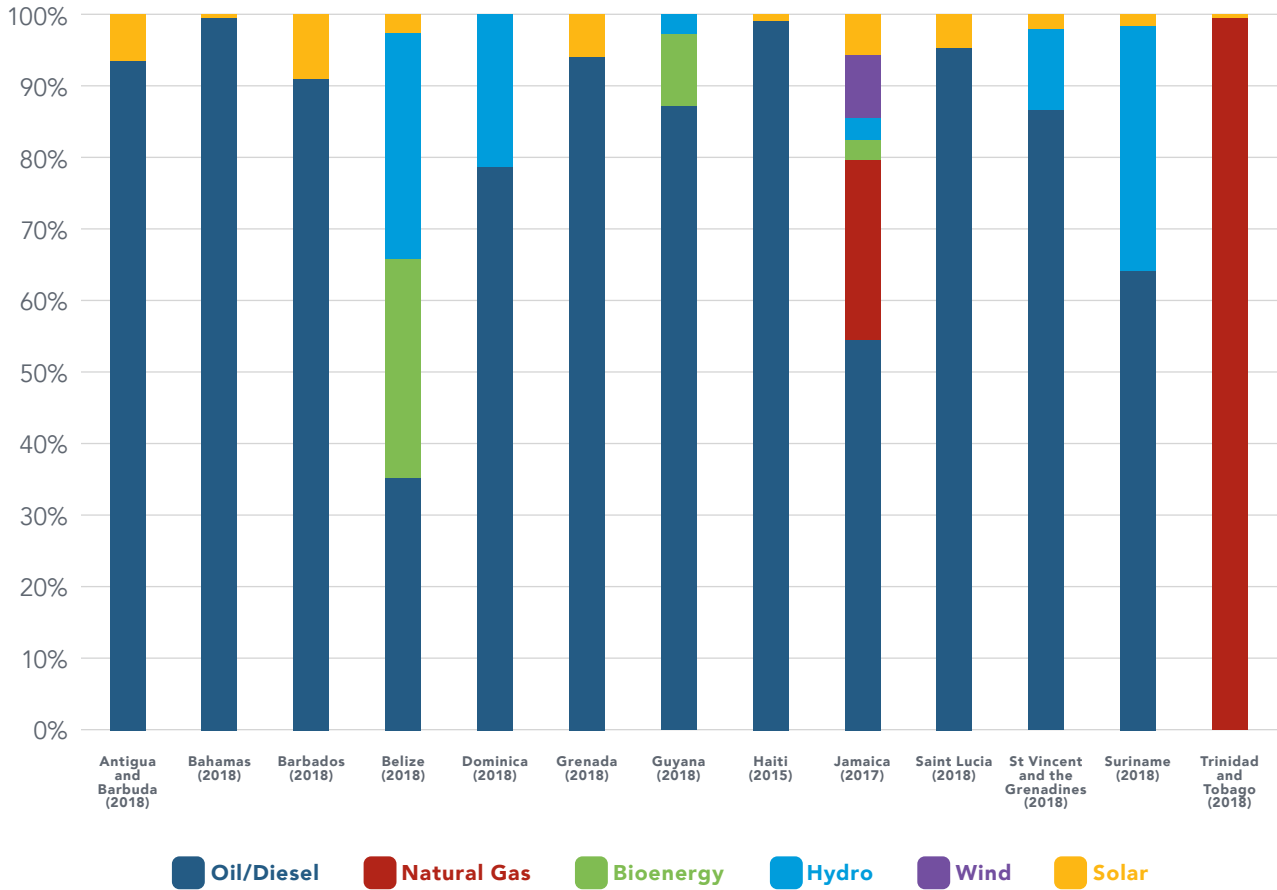
The Caribbean power sector is characterized by its heavy dependence on imported fossil fuel that results in some of the highest electricity costs in the world. One of the biggest sustainable energy challenges for the Caribbean region is to transition from fossil fuel-based economies to cleaner, more resilient and more abundant energy resources. By increasing the percentage of renewable energy in their energy mix, Caribbean countries have an opportunity to also increase their energy resilience and security.

¹ New Energy Events, 9 April 2020.

² CARICOM Member States: Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago

FIGURE 1

Installed Generation Capacity in Caribbean Countries (In Percent of Total capacity)



Sources: EU, IRENA, IMF, and NREL

In addition to their high costs for electricity, the predominantly centralized electricity systems in the Caribbean have shown themselves to be weak during hurricanes seasons and other extreme weather events with devastating effects. For example, two months after Hurricane Irma struck Puerto Rico in 2017, more than half the population still had no access to electricity. Off-grid systems, such as solar based mini-grids, can keep communities' lights on when the centralized system fails and ensure delivery of critical services, including for health facilities.

This sustainable energy guide highlights the opportunities, benefits and enablers that will help leaders guide their countries onto a sustainable long-term development trajectory. Furthermore, delivering sustainable energy for all paves the way for Caribbean countries to recover better while building resilient economies and demonstrating their unwavering commitment to the Paris Agreement.

THE OPPORTUNITIES

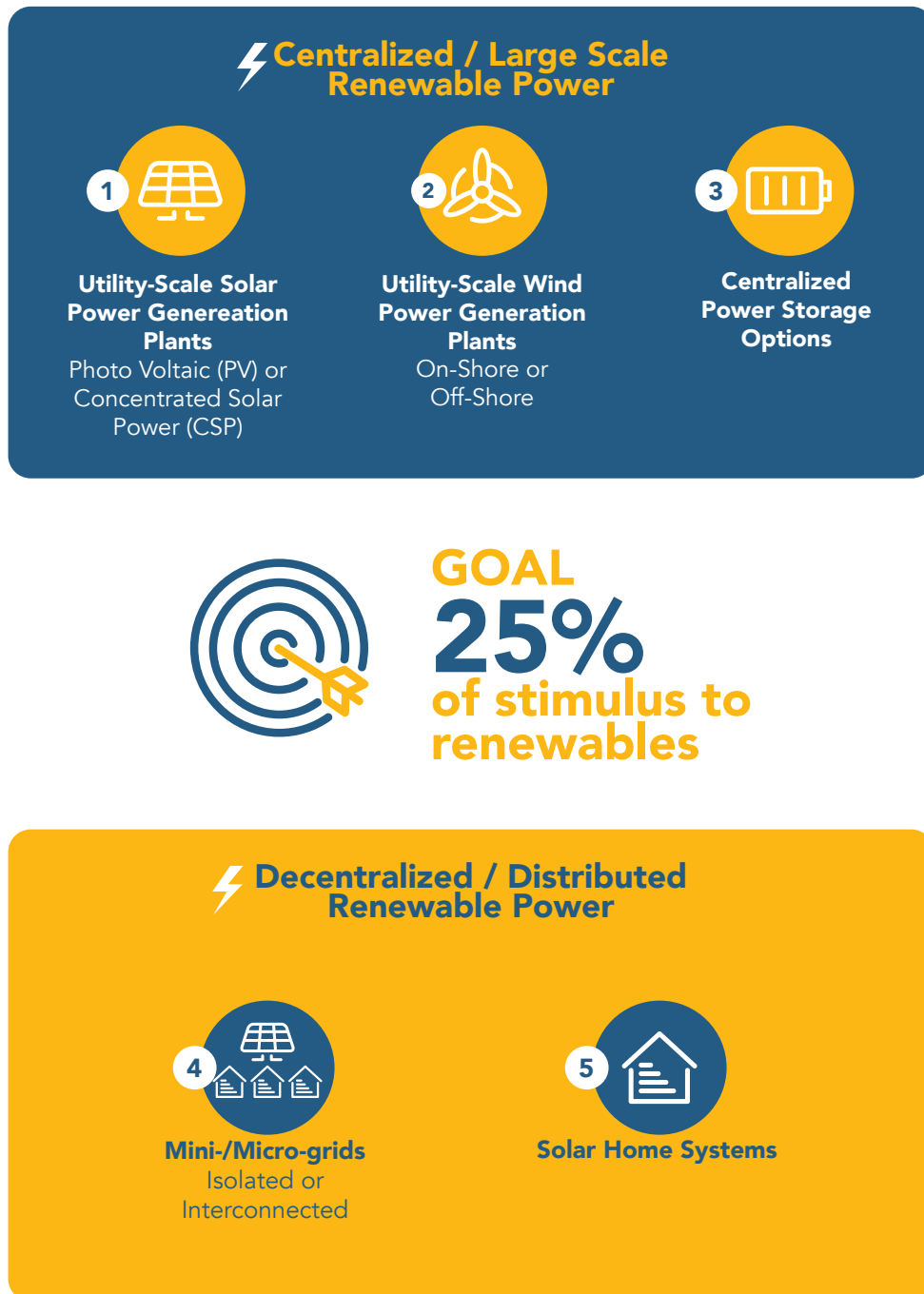
The global economy of the future will be based on increasingly renewable sources of energy and countries that take advantage of this moment to re-think their energy supplies will develop a competitive advantage.

Caribbean countries should pursue significant investments in renewable energy and energy efficiency as an impactful way to immediately recover jobs that have been lost during COVID-19. These investments will also provide benefits in support of diversifying local economies and allow developers to expand into emerging sectors.

- We could imagine countries aspiring to invest 25 percent of their stimulus budgets for on-grid and off-grid renewable energy (a combination of solar, hydro, geothermal and wind) (Figure 2).
- Investment in distributed energy resources will benefit electricity systems as well as communities and help diversify economies. Tourism is central to the economies of Caribbean countries and building back through investment in local renewable resources can enhance competitiveness, lower energy costs, build resilience and unlock opportunities that stimulate local industry.
- Investing in energy efficiency by upgrading outdated equipment and greening facilities can bring immediate benefits from energy cost savings to solid job creation opportunities.
- Caribbean countries rely heavily on imported foods for as much as 80 percent of food requirements by some estimates. By investing in distributed energy, farmers will have access to improved technologies, lower energy costs and an opportunity to expand markets and, importantly, enhance food security. By strengthening local food production, the tourism sector will be able to increase its income, avoid the loss of valuable foreign earnings, and at the same time improve its resilience.

FIGURE 2

Opportunities in centralized and decentralized renewables



- Governments should target direct and indirect investments that can bring down the cost of renewable energy systems considerably. Direct investment includes loan guarantees or contributing capital for the upfront investment. Indirect investments that should be considered include reducing or eliminating import duties and value-added taxes (VAT).

THE BENEFITS

Countries that pursue the opportunities of recovering better with sustainable energy for all will achieve a range of key benefits:

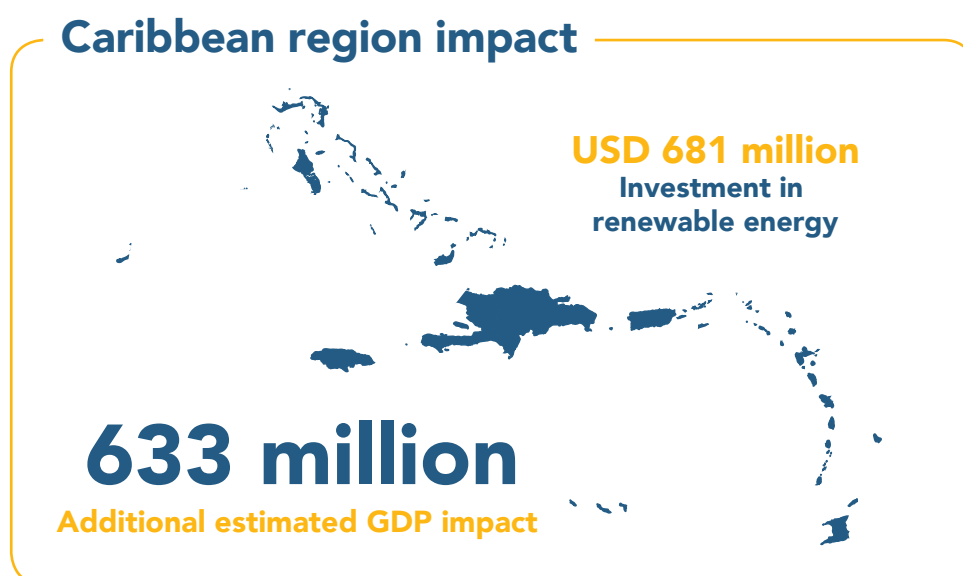
GDP multiplier.

Investments in sustainable energy have a significant GDP multiplier that will benefit the country and the economy.

- For every US dollar invested in the transition towards renewable energy, an additional 93 US cents of additional GDP growth above business as usual is expected to occur.³
- Investing in renewable energy in the Caribbean can produce ~USD 633 million in overall additional GDP impact.

FIGURE 3

Estimated GDP impact



³ IRENA 2019. "Global Energy Transformation". Link.

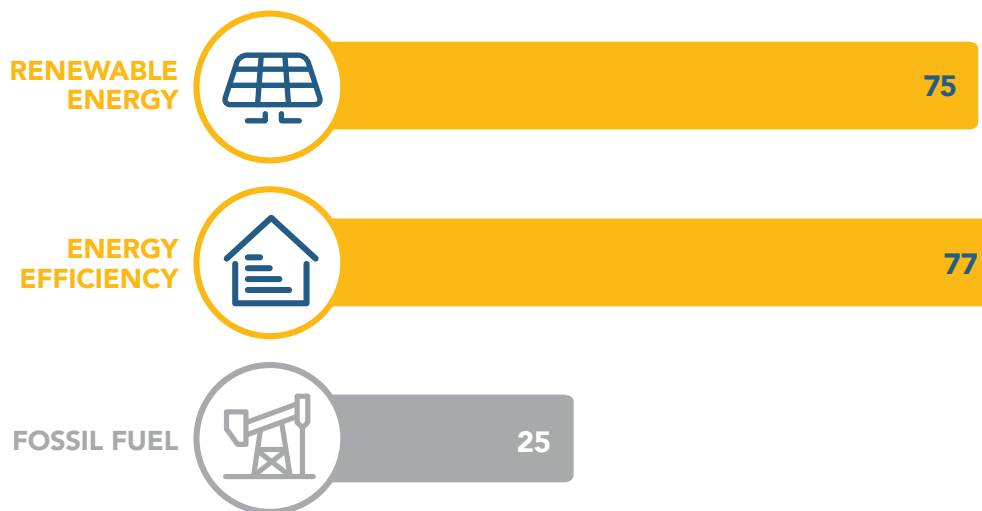
Job creation.

There is significant job creation potential from both investing in renewable energy and investing in the supply chain and local content associated with renewable energy. Further, introducing (and enforcing) improved energy efficiency standards for buildings (and retrofitting existing building stock) will trigger the construction industry and cost less than large infrastructure investments.

- An econometric study of government spending on energy technologies showed that spending USD 1 million on renewables creates 7.49 full time jobs, five more jobs than a similar investment in fossil fuels (2.65 full time jobs).⁴
- Every 1,000 customers connected to decentralized energy solutions (solar home systems or solar mini-grids) supports approximately 25 jobs.⁵
- For every USD 1 million invested in retrofitting buildings, 16-21 jobs are created.⁶

FIGURE 4

Jobs created by investing in clean energy versus fossil fuels (Per \$10 million in spending)



Economic Modelling, February 2017: Heidi Garrett-Peltier "Green versus brown Comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model"

⁴ Garrett-Peltier, Heidi, 2017. Green versus Brown: Comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model. [Link](#)

⁵ Power for All et al. Powering Jobs Census 2019: The Energy Access Workforce. July 2019.

⁶ McKinsey & Company, "How a post-pandemic stimulus can both create jobs and help the climate" [Link](#), May 27, 2020.

Cheaper energy provision.

Increasingly, renewable technologies cost the same as or less than fossil fuel alternatives.

- Levelized cost per unit of electricity from new utility-scale solar photovoltaic (PV) power plants has dropped about 90 percent over the last decade.⁷ Renewables are now the most cost-effective source of electricity in almost every country worldwide.⁸
- Because of being highly dependent on imported fossil fuels, the retail electricity price in Jamaica is around USD 30 cents/kWh. A renewable energy project, Paradise Park, has produced clean energy at USD 8.5 cents/kWh.⁹
- An estimated USD 9 billion in fuel costs would be saved annually by transitioning all 31 countries in the Caribbean to 90 percent clean energy by 2030.¹⁰

Improved tourism and agricultural outcomes.

Energy investments should be targeted at transforming energy systems to use abundant sun, wind and geothermal resources available in the region and close to where they are consumed, benefitting tourism, local communities and farmers.

- By transitioning to renewable energy, Caribbean countries can attract travellers for whom eco-friendly energy is important and reduce the air and water pollution that can damage the region's vital ecosystems.¹¹
- With a growing movement to grow local and eat local, lower energy costs through renewables would support the industry's ability to scale.¹² Transforming the agroindustry would not only create an opportunity to build food security and improve the health of residents, but also contribute to a substantive economic stimulus.

⁷ Lazard: Levelized Cost of Energy and Levelized Cost of Storage 2018.

⁸ Carbon Tracker, COVID-19 and the Energy Transition: [Link](#), April 7, 2020

⁹ Deetken Impact, 22 April, 2020

¹⁰ New Energy Events, April 9, 2020

¹¹ IRENA 2014. Renewable Energy Island Tourism Report. [Link](#)

¹² RMI (June 2020) "GREEN STIMULUS IN THE CARIBBEAN: Resilient Distributed Energy Resources Can Support Job Creation and Economic Diversification". [Link](#)

Improved gender outcomes.

Investing in renewable energy and energy access can also ensure women benefit from the green recovery.

- Women represent about 32 percent of the renewable energy workforce versus just 22 percent of the oil and gas industry, and the renewable industry is more appealing to women.¹³
- Wages for women with access to energy are 59 percent higher than those without, a gain that puts women on equal footing with men.¹⁴

FIGURE 5

Benefits of sustainable energy for all



¹³ IRENA 2019. Renewable Energy Jobs Report. [Link](#)

¹⁴ Rewald, Rebecca (2017) "Energy and Women and Girls: Analyzing the Needs, Uses, and Impacts of Energy on Women and Girls in the Developing World," Oxfam Research Backgrounder Series. Pg. 23.

THE ENABLERS

As countries seek to recover better, there are eight key dimensions that need to be established in order to ensure a successful transition and execution:

(1) Ease of doing business. Several activities can be put in place to ensure that investments are driven as fast as possible. This includes faster approval processes and transparent investment policies (price discovery, reverse auctions etc.) for renewable energy and energy efficiency. Fiscal incentives such as reducing or eliminating import duties and VAT for renewable energy equipment and energy efficient appliances should be considered.

- Countries that make it easier to do business increase entrepreneurship and generate jobs, incomes and government revenue.¹⁵
- Caribbean countries have been carrying out a record number of reforms recently to make it easier to do business, particularly in the areas of streamlining the clearance process for both exports and imports, starting a business and accessing electricity.¹⁶ As one example, in Barbados the time it takes to connect a new warehouse to electricity has been reduced by 10 days.

(2) Robust policies and institutions in support of renewables and energy efficiency.

In order to effectively deliver this approach, governments need to work now to establish or empower institutions such as regulators and other relevant agencies and ensure the right frameworks are in place to successfully drive the development of renewables and energy efficiency.

- Cross-border energy cooperation is needed to seek economies of scale, encourage regional energy cooperation and strengthen regional energy security.

¹⁵ World Bank (2019). Doing Business 2020 – Sustaining the pace of reforms. [Link](#).

¹⁶ World Bank (2020). Doing Business 2020: Caribbean Economies Continue to Reform to Improve Business Climate, World Bank, October 24, 2019 [Link](#).

- Costa Rica is an example of a country in the Latin America and the Caribbean region with robust policies driving a sustainable energy transition. The country has electricity coverage for 100 percent of its territory, and 98 percent of that is from renewables.
- In February 2019, Costa Rica adopted an ambitious National Decarbonization Plan to reach net-zero emissions by 2050, in line with the objectives of the Paris Agreement.¹⁷ The plan outlines the policies and measures to achieve the vision, with Costa Rica's President Quesada noting the plan will maintain "an upward curve in terms of economic growth and at the same time generating a downward curve in the use of fossil fuels."

(3) Investment in data. Countries can support rapid investments in renewables and energy efficiency through the effective provision of data. Data should include information on optimal renewable sites, least-cost options and communities that are optimally positioned for commercial investments.

- To do this, countries should invest in better data that can be made public for all market actors to utilize and that will pay dividends in the long run. Clear indications on least-cost solutions will help pave the way for private sector developers and financiers.

(4) Move towards cost reflective tariffs. The natural tendency for countries will be to cut the cost of electricity, but this should be avoided at all costs. The reality is that electricity is largely consumed by wealthier residential or by industrial / commercial clients. There are ways that the poor can be protected from tariff increases, without reducing the tariff for all customers.

- Governments should move towards cost-reflective tariffs. Allowing cost-reflective tariffs also allows the utilities to perform better and increases investments in renewable energy and efficiency.

¹⁷ Teske, S., Morris, T., Nagrath, K (2020) 100% Renewable Energy for Costa Rica. Report prepared by ISF for the World Future Council/Germany and the One Earth Foundation, USA, February 2020. Link

(5) Elimination of fossil fuel subsidies. Governments should take the opportunity to eliminate fossil fuel subsidies. With the price of oil the lowest it has been for 18 years, now is the time to float liquid fuel prices, which, if anything, will result in a short-term benefit for consumers.¹⁸ When the price of fossil fuels rises again, governments should refrain from re-introducing the subsidy.

- Measures to reduce exposure to oil price movements can help improve growth and competitiveness over the short and medium term, and alleviate pressures on the region's public accounts. The Nigerian Government recently announced an end to fossil fuel subsidies, a move that is expected to save the government USD 2 billion a year.¹⁹
- With a 1.2 percent global increase in green investment and a mere 0.4 percent decrease in fossil fuel investments, valuable jobs can be created, and the world can be on track to achieve the Paris Agreement.²⁰
- Total direct subsidies for all energy sources reached at least USD 634 billion in 2017, with 70 percent of those directed towards fossil fuels. The supply-side subsidies for renewable energy (both power generation and transport) were estimated at just USD 167 billion in 2017.²¹
- In 2050, it is estimated that USD 316 billion in renewable and energy efficiency subsidies would save eight to twenty times more in reduced externalities. By 2050, as fossil fuel use is reduced even more substantially, the annual benefit would increase to between USD 2.5 trillion and USD 6.3 trillion.²²

¹⁸ Bloomberg News, 30 March 2020. Link.

¹⁹ <https://www.nytimes.com/2020/06/11/business/energy-environment/countries-slash-energy-subsidies-coronavirus.html>

²⁰ Climate Analytics 2020. Climate Action Tracker: Update.

²¹ IRENA 2020, Energy Subsidies Evolution in the Global Energy Transformation to 2050, Link.

²² IRENA 2020, Energy Subsidies Evolution in the Global Energy Transformation to 2050, Link.

(6) Shifting electricity sector investments to renewable energy plus storage. For power generation, new investments in renewables are cheaper than new investments in fossil fuels in all major markets today. By adding storage, Caribbean countries can also increase resilience, use homegrown energy, avoid creating future fossil fuel stranded assets and reduce the significant negative consequences both to the public's health and to the fragile ecosystems of the region.

- With continuing cost reductions, renewables plus storage are now cheaper for many Caribbean countries than conventional fossil fuels and provide reliable power for up to 14 hours a day.²³
- By investing in systems designed for more resilience, i.e. built to withstand category 4 or 5 hurricanes, power can be maintained or restored quicker after severe weather events.

(7) Investment in energy efficiency. Investment in energy efficiency saves on energy bills, creates jobs and is the cheapest way to reduce emissions. For instance, cold chain is integral to the tourism and agriculture sector of the Caribbean region, and energy-efficient cold chain systems would ensure not only significant cost savings for businesses, but also strengthen food security across a region that is vulnerable to various climate risks.

- Between 2017 and 2037, more than half of the new buildings that will exist in 2060 will be constructed – two-thirds of them in countries without building codes.²⁴ Stimulus programmes that promote energy-efficient buildings are necessary and can create green jobs immediately.
- Every USD 1 million invested in energy-efficiency building retrofits will produce approximately 16–21 jobs.²⁵
- Investing in energy efficiency can help support sustainable tourism. Energy accounts for up to 60 percent of the operational costs in some hotels. Implementing energy-efficiency measures can generate cost savings of 60 percent or more.²⁶
- Globally, energy efficiency can deliver 40 percent of the CO₂ abatement necessary to achieve the Paris Agreement.²⁷

²³ IDB 2020, Sustainable Energy Paths for the Caribbean

²⁴ World Green Building Council, Global Status Report, 2017.

²⁵ McKinsey & Company, "How a post-pandemic stimulus can both create jobs and help the climate" [Link](#), May 27, 2020.

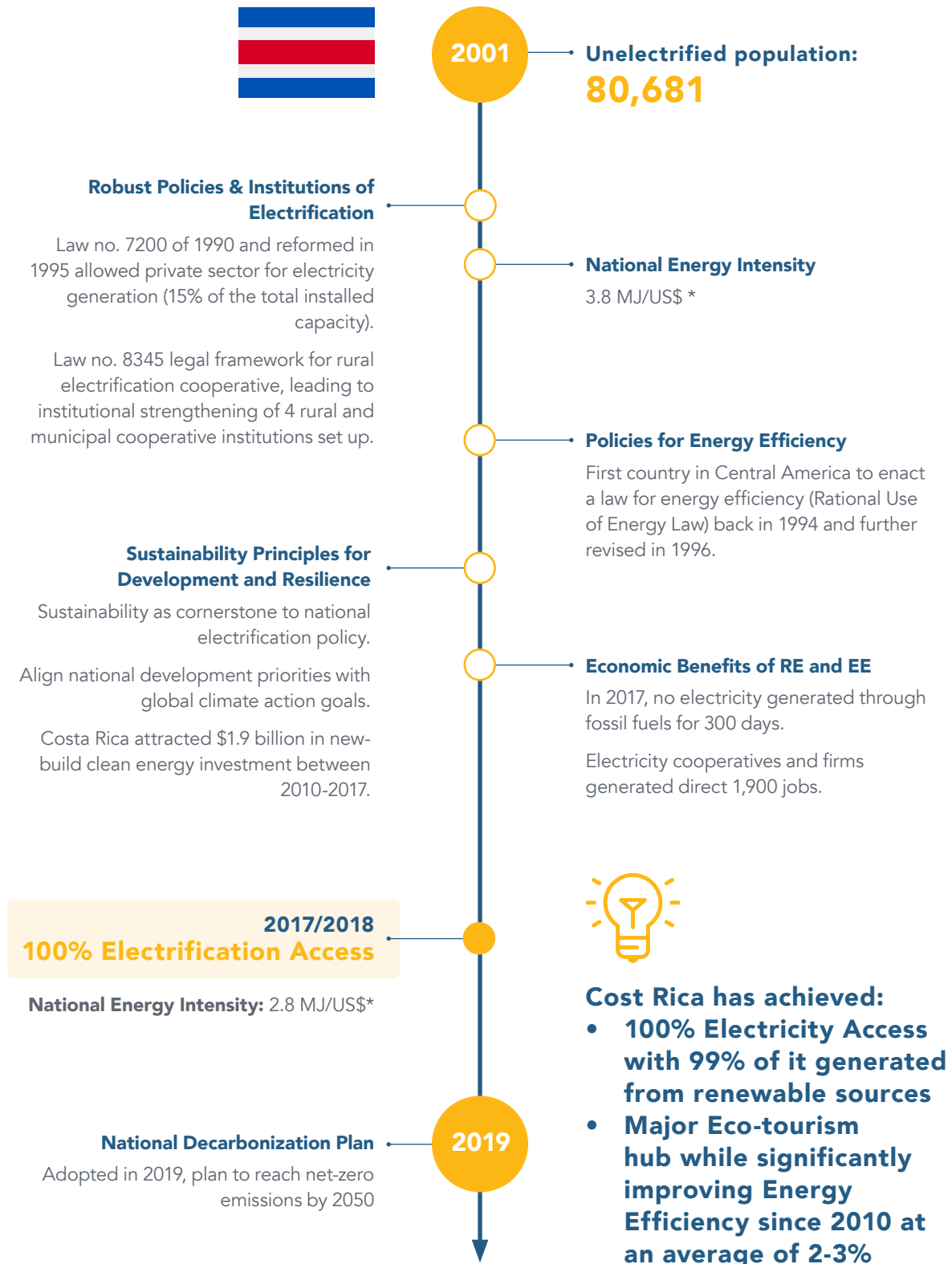
²⁶ Caribbean Hotel Energy Efficiency and Renewable Energy Programme. [Link](#)

²⁷ IEA. (2018) Energy Efficiency: Analysis and Outlook to 2040.

(8) Investment in people to ensure access to jobs. If governments really seek to take advantage of the job creation potential of recovering better, there should be concurrent investments in human capital in order to ensure the talent pool can meet the needs of local sustainable energy industries. Technical, business and entrepreneurship training are all necessary to localize industry and meet the needs of the domestic market. Governments also need to invest in the people within their institutions tasked with developing and implementing energy programmes. This includes, but is not limited to, regulators, state-owned utilities, implementing agencies and ministries.

FIGURE 6

Costa Rica’s enabling environment: A snapshot of energy access and transition progress



TAKING THE RIGHT NEXT STEPS

The benefits of recovering better with sustainable energy for all are clear: a demonstrable return on investment, a more resilient economy, energy security, healthier people and a cleaner environment.

Governments across the Caribbean are taking unprecedented steps to respond to the immediate health and economic impacts of COVID-19. Today's decisions will impact tomorrow's ability to recover better over the long term. There are important measures governments can take to recover better by delivering sustainable energy for all while also growing resilient economies and creating new green jobs. Moreover, every investment to recover better reflects greater ambition towards the Paris Agreement that can be reflected in the 2020 review of Nationally Determined Contributions (NDCs).

These ideas can be turned into action with committed leadership and drive towards greater long-term competitiveness. Governments in the Caribbean can begin by providing a whole-of-government mandate to prioritize and implement the enabling measures necessary to recover better. This includes empowering Ministries of Finance, Budget and Planning to make the necessary investments in sustainable energy projects that create jobs and that can jump-start their economies.

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Vienna (Headquarters)

Andromeda Tower, 15th Floor
Donau City Strasse 6
1220, Vienna, Austria
Telephone: +43 676 846 727 200

Washington, DC

1750 Pennsylvania Ave. NW
Washington, DC 20006 USA
Telephone: +1 202 390 0078

New York

420 5th Ave
New York, NY 10018 USA

Website: www.SEforALL.org

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