



BACKGROUND PAPER

Regional Transformation Through Innovation

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Summary

Background

This is the fourth edition of the Growth and Resilience Dialogue. The theme selected is **Regional Transformation Through Innovation**. The Dialogue is a wide regional network of business and civil society groups, governments and multilateral institutions. Many of the solutions to meet the interconnected needs of the varied stakeholders, reduce social inequalities and engender economic growth reside within this group.

The purpose of this paper is to introduce participants to the focus areas that will be featured in the three panel sessions during the 2020 dialogue.

Key Messages

From the times of the plantocracy to the modern ECCU, there have been many structural changes to the economies but **persistent constraints to growth remain**.

The economies have had volatile business cycles but leveraging the opportunities in the focus areas; **digital economy, payment systems and renewable energy can deliver macroeconomic benefits** through the efficient use of productive assets and financial inclusion for long-term growth and shared prosperity.

Focus Areas



1 Introduction

The first Growth and Resilience Dialogue (“GRD” or the “Dialogue”) was hosted four years ago. The Dialogue was held against the backdrop of concerns raised by policy makers, the private sector and communities regarding low growth performance and what some perceived as stagnation of the Eastern Caribbean Currency Union¹ (ECCU). At the start of the GRD, key issues for both public and private partners encompassed high unemployment, low productivity, poverty, achieving fiscal and debt sustainability, as well as financial sector stability. These thorns remain. Social partners were optimistic about the Dialogue with high expectations to chart a sustainable way for growth, competitiveness and employment. That said, forging the way is not a one-day commitment. Instead, it is an ever-present consciousness of where we are and where we desire to be as a region with the accompanying hard work.

The ECCU is a monetary union comprised of a group of heterogeneous islands that are also transitioning to an economic union by virtue of the revised Treaty of Basseterre. There is physical separation with the sea, which adds transactional costs for transporting goods, people and information. As the islands are not part of a political union, there is political separation that impedes the movement of, inter alia, money, capital and ideas that result in difficulties in the decision-taking process and in the passage of uniform legislation across the space. There is relational separation as trust is required of buyers and sellers, intermediaries, the ECCB and public officials. Developmental separation is also an issue as the member countries may not be

moving in tandem; and also there is imperfect intraregional labour mobility for occupations.

Further, and probably more importantly, the members share geo-political and cultural similarities, economic experiences and a common currency. The GRD shrinks the divide and allows participants to network- gaining trust, sharing information and building familiarity not just among persons but legal systems and institutional frameworks.

In 2013, a Growth Working Group at the Eastern Caribbean Central Bank (ECCB) identified that critical investments were required in Energy, Environment, Education and Skills Training, Governance, Information Technology, Research and Development and Transportation. Deliberately or coincidentally, these have been the areas of focus for successive GRDs. The theme of the fourth GRD is ‘**Regional Transformation Through Innovation**’ and will bring to the fore opportunities that can be leveraged to narrow the gaps in the Digital Economy, Payment Systems and Renewable Energy Technology.

1.1 Aim and Objectives of the Growth and Resilience Dialogue

The aim is to develop a programme and/or motivate the advancement of project(s) for addressing the constraints to growth, competitiveness and employment in the ECCU and develop a framework for monitoring and reporting on the plan.

¹ The Eastern Caribbean Currency Union comprises Anguilla, Antigua and Barbuda, The Commonwealth of Dominica

(referred to as Dominica), Grenada, Montserrat, Saint Christopher (St Kitts) and Nevis, Saint Lucia and Saint Vincent and the Grenadines.

The fourth GRD has a number of objectives to:

- **Focus with greater intensity** on Innovation in the key thematic areas of digital economy, payment system and renewable energy.
- **Encourage the exchange of ideas** while providing clarity from present and past implementers of methodologies and technologies of productivity.
- **Gain consensus** on key elements of the digital economy that are implementable, including the pilot of the digital EC currency (DXCD).
- **Inform stakeholders** on the international programmes available for financing renewable energy projects.

1.2 Statement of the Problem and Definition of Key Terms

The vulnerabilities of the ECCU are demonstrated through its growth performance associated with diseconomies of scale, openness, various frictions and impediments in the markets and limited awareness and/or access to financial resources. Boosting productive efficiency will require innovation to advance the state of technology and transform the ECCU to more stable and higher economic growth. Technological progress must be powered, and the existing energy tariffs and physical infrastructure gaps restrict technical options.

Innovation is about meeting future needs of stakeholders and developing digital propositions and processes. Building on the aforementioned concept is **digitalisation**, which is the proposition of new business models, machinery and processes; and generating new smart products and services, with lower costs and more timely delivery. A digital agenda often has a focus on online delivery via broadband Internet, cloud computing, and mobile

technologies; therefore, a **digital economy** transforms service delivery within the industries of an economy to its customers. To facilitate an effective digital economy, the ECCU will require reliable internet services and low-cost energy for viability.

The **state of technology** is the degree of technological development in a country or industry. **Technological progress** is the improvement in the state of technology and requires a skill-bias as workers are required to bring greater digital skills to bear in activities.

Growing digital usage means more extensive use of digital payments and e-commerce platforms. Generally, a **payment system** is the mechanisms which, when coupled with rules and procedures, provide an infrastructure for the payment and settlement of transactions between entities. Today's digital age demands a greater standard of efficiency and speed akin to the real-time payment of cash for other payment modes. Moreover, delivery of the OECS economic union will require efficient and cost effective means of payments to ensure enhanced cross border trade in goods and services.

Digitally advanced economies also have greater energy needs. **Renewable resources** are those that can be replaced or replenished by natural processes and/or not depleted by moderate use; examples include solar, geothermal and wind energy. **Renewable Energy Technologies** (RETs) use renewable resources to generate mechanical or electrical energy for use in facilities or other activities. The countries in the ECCU are endowed with an abundance of renewable resources. The thrust to using more renewable energy means that the governments would be able to save more money in the longer term as fossil fuel is more costly.

The ECCU will require a tailored delivery context for importing innovative technologies from advanced countries or developing their own innovative products to complement its market size, geography, and demographic characteristics. Therefore, this fourth Dialogue is one tool to discover mechanisms to tackle the issues and take full advantage of opportunities.

1.3 Outline of the Background Paper

Following the introduction presented in Section 1, the rest of the background paper is organised as

follows. Section 2 contextualises the modern ECCU through a historical reflection of the distinctive stages in the evolution of the ECCU economies and the major trends describing the growth in the last few decades. Section 3 presents the general policy framework and initiatives and institutions available to ECCU member countries relevant to the digital economy, payment systems and renewable energy. Section 4 summarises the paper and presents policy implications of transformational interventions.

2 The ECCU Growth Story

2.1 Development History

Before we explore the growth story, let us take a brief look at the development of the ECCU. Development economics is sometimes perceived as synonymous with economic growth. While the two concepts may not always align, economic growth sets the context for the distinctive stages of development of an economy. Moreover, the practices of yesteryear may constrain future development unless there are structural reforms.

From the 17th century to the introduction of the West Indies Federation in 1958, the development of our islands in terms of the technology, resources (capital and people) and markets were all imported and there was a similar outflow of the produced goods and profits. To be fair, if output were not exported, it would have been wasted as having a small population meant that there was insufficient demand and outward looking, export-oriented policy was necessary.

The predominant industries were labour intensive. Painful but true, slaves were regarded as capital and not even considered as labour during the plantation period. At the end of slavery, freed persons were involved in petty trades and domestic services. They were deficient in the 'know-how', training and savings to set up businesses, and lacked access to export markets.

For the most part, women were not part of the formal labour force and many of the men had transitory work-lives, travelling to more developed Caribbean islands to harvest crops or emigrating to more advanced economies outside the region. In spite of low participation rates and emigration, these islands were considered to have an oversupply of labour. There was widespread poverty, with low per capita incomes, and subsistence living. The economy was a monoculture of sugar, bananas, cocoa or nutmeg and mace.

Development History of the ECCU Member Countries

Pure Plantation 1600

Economic Institution of Slavery, where slaves were capital. Golden age of sugar. Profits were expatriated.



Plantation Economy Modified 1838

Slaves were freed resulting in a labour shortage, indentured labourers or servants were introduced. Small farmers (ex-slaves) growing crops for subsistence this was the development of peasantry.

1846 Sugar Duties Act – this United Kingdom legislation equalised import duties on sugar with a devastating impact on the plantocracy.



New Staples and Industrial "Invitation" 1938

Entry of Multinational Corporations who continued to expatriate profits and exploit workers.

New sectors were developed in the region, like manufacturing.



Start of Regional Integration and Decolonisation 1948

Localisation of decision making. Indigenisation of enterprises. More state involvement in the provision of infrastructure and services - resulting in a de-emphasised private sector. Thought to be overpopulated for the level of output.

1973 Treaty of Chaguaramas
1974 Grenada Independence



Green Gold and Commodity Producing Era 1975

Period of unilateral trade concessions or preferential trade agreements. Major exports of the Windward Islands were bananas, cocoa, nutmeg and other spices, root crops, fruits and hot peppers. Preferential access to the EU market under the Lomé Convention was the driving force for the development of banana exports.

Establishment of the Lomé Convention 1975
Dominica Independence 1978
Saint Lucia and St Vincent and the Grenadines Independence 1979



Shift to service economies 1980

Drive to diversify economies.

1981 Treaty of Basseterre Antigua and Barbuda Independence
1983 The Eastern Caribbean Central Bank Agreement St Kitts and Nevis Independence
1984 World's very first Citizenship by Investment Programme in St Kitts and Nevis



Modern ECCU 2000

Note: Timelines and groupings adapted from both the Best-Levitt Plantation Economy models and Lewis's dual economy model

The West Indies Federation collapsed in 1962, but regional integration continued with the establishment of the British Caribbean Currency Board, the Eastern Caribbean Currency Authority (ECCA), the Caribbean Community, Organisation of Eastern Caribbean States (OECS) and the ECCB. Despite varying achievements over time with the afore-mentioned institutions, member countries have been criticised for displaying more competition than cooperation, exhibiting what appears to be a 'race to the bottom' in areas such as tax incentives and more recently, the Citizen by Investment Programmes (CIPs).

In the 1980s and 1990s, the ECCU members were able to attract foreign capitalists who invested heavily in the tourism industry. Indeed, the 1980s were when the ECCU had its strongest growth rates in recent history. This period was also marked by globalisation and trade liberalisation which resulted in the demise of banana and sugar exports, as the ECCU industries were not competitive. During this period, but at varying stages, the islands of the ECCU transitioned to services economies. Antigua and Barbuda would have completely transitioned to tourism as its main economic driver in the 1980s. Whereas Saint Lucia had an overlapping period producing both commodities and services; and narrowed its focus to services more so in the 1990s. Saint Kitts and Nevis would have been the last member country to shift gears to services having stopped producing sugar in 2005.

National efforts to be responsive to persistent poverty and low growth included the introduction of social safety nets and capital investments to close the infrastructure gap. These initiatives, along with fiscal imprudence, resulted in an increasingly difficult fiscal space and high debt levels.

Many sectors and state owned enterprises were privatised and liberalised to improve efficiency. The electricity and telecommunications sectors either

were a legal monopoly or dominated by a few players that controlled the market and some reforms were made.

In the 1990s, the ECCU financial system also started to demonstrate a greater level of financial deepening. The market was developed through the creation of the Eastern Caribbean Home Mortgage Bank (1994), Eastern Caribbean Securities Exchange (2001), Regional Government Securities Market (2002), Eastern Caribbean Enterprise Fund (2012) and Eastern Caribbean Automated Clearing House (2014) which promoted increased inclusion, more opportunities for investment and wider payment mechanisms. Offshore financial services also grew in this period. In 2004, the foreign exchange market was liberalised across the ECCU. Member countries also followed the lead of Saint Kitts and Nevis with CIPs, and more recently economic residency.

The modern polity of the ECCU is six independent countries and two British Overseas Territories, all of which are liberal democracies. The ECCU is a currency union guided by the 1983 ECCB Agreement. The Revised Treaty of Basseterre provides the foundation for an economic union among OECS member states with no strict criteria to enter or exit. In the context of the currency union, the Monetary Council has agreed to growth and fiscal benchmarks to preserve the integrity of the currency union and ensure fiscal sustainability.

Many of the aforementioned constraints to growth still exist in present times. Chiefly: small populations; a need to diversify exports; inadequate knowledge of export market outlets; high unemployment poverty; limited natural resource base; high costs to doing business; low competitiveness; and reliance on foreign direct investment. Accompanying the reliance on foreign direct investment (FDI) are unpredictable incentive frameworks and associated rising value of tax

concessions. This often leads to harmful competition among member countries for FDI projects.

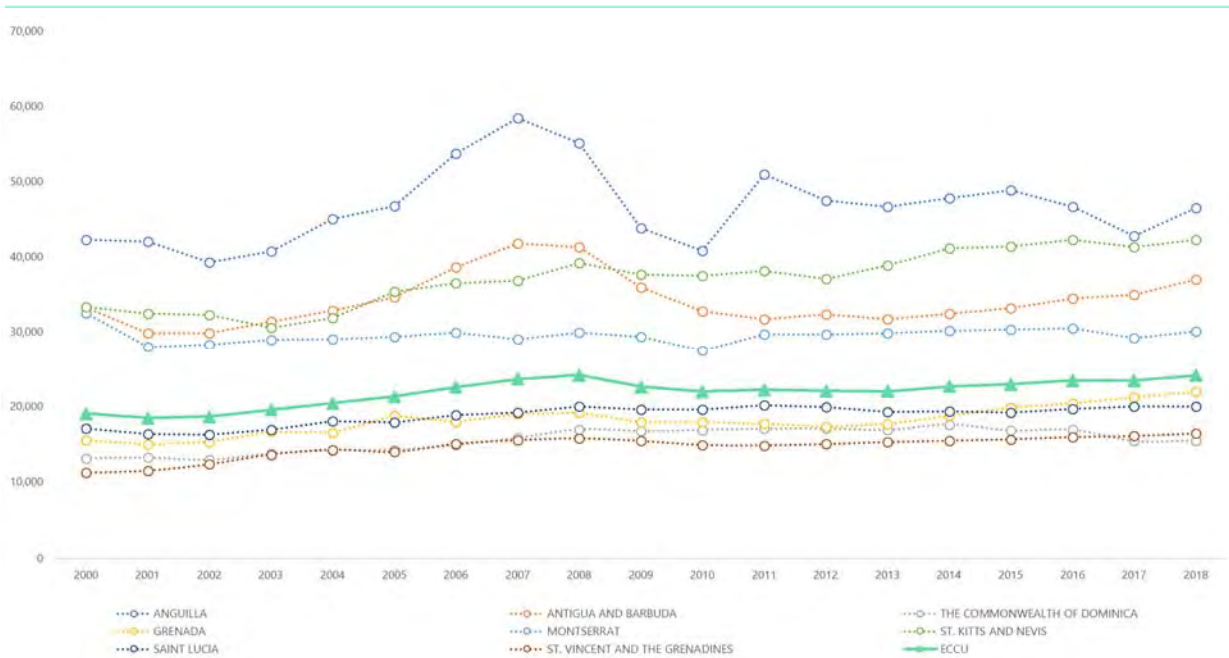
2.2 Major Trends in the Recent ECCU Growth Story

The ECCU-area standard of real per capita GDP in 2018 was EC\$24,143. In real terms, per capita

growth has been flat (see Fig 1). From 2000 to 2018 ECCU-area economic growth rate averaged 2.1 per cent, almost 3 percentage points below the growth target of 5.0 per cent (see Fig 2).

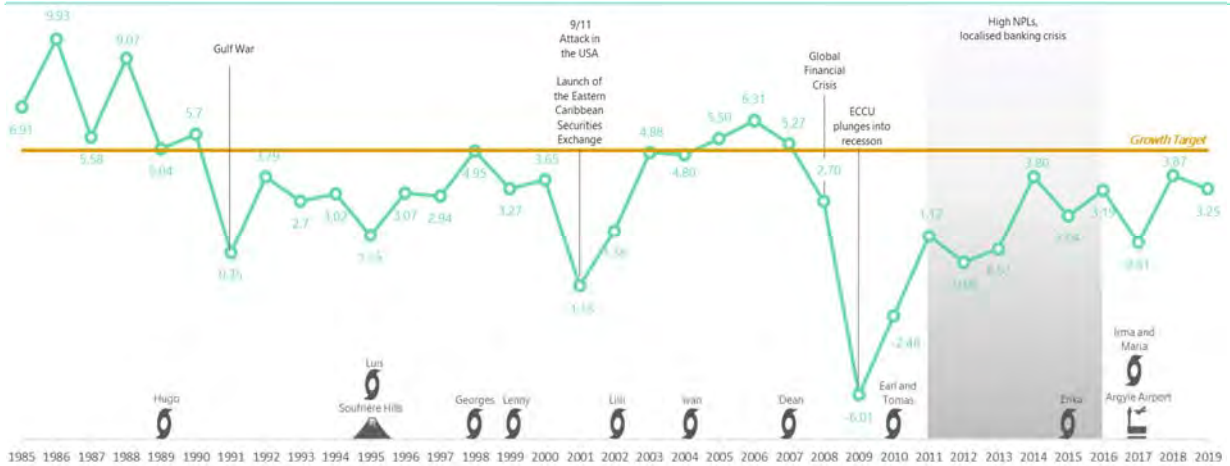
Since the start of the 2000s, the ECCU growth target has only been exceeded three times, and not once in the recently concluded decade. As depicted in the chart, big dips in economic growth

Figure 1: Real GDP Per Capita 2000 to 2018, in EC dollars



Source: Country Authorities and ECCB

Figure 2: Real GDP Growth Rate (2006 Market Prices) 1985 to 2019



Source: Country Authorities and ECCB

The figure for 2019 was a forecast.

were attributed to an external shock that reverberated in the region, reflecting the ECCU’s sensitivity to movements in the global economy, particularly the United States.

Table 1: Demographic Indicators

Country	Area Population		Per capita income (in dollars)
	(square km)	(thousands)	
Anguilla	91	15.2	46,480
Antigua and Barbuda	442	95.0	37,010
Dominica	751	74.9	15,490
Grenada	344	112.1	22,006
Montserrat	102	5.1	30,109
Saint Kitts and Nevis	261	49.0	42,274
Saint Lucia	539	178.7	20,027
Saint Vincent and the Grenadines	388	110.5	16,435

Source: Country Authorities and ECCB

The below target growth rate in the ECCU may be partly a result of the slow pace of technological progress that is limiting its production potential. This is supported by Martin (2017) who found that adopted technology in the ECCU is merely consumed as opposed to retooled or reconfigured for productivity gains. Hodge and Woods (2017) also found that structural reforms in the ECCU could lead to an increase in growth of 1.4 per cent

on average. One of the big components that the authors identified was the incorporation of Information and Communication Technologies (ICT) into tradable and non-tradable sectors.

The world has long been experiencing a digital age. Rich countries are more technologically advanced and reaping the productivity gains. While there is a proliferation of digital devices in the ECCU, there has not been a digital revolution of the industries or economy. In the ECCU, firms are not major investors in research and development and therefore need to import the technology from advanced countries to bridge the gap. A great portion of the improvement in productivity experienced in the ECCU is from the adaptation of foreign technologies.

Digitalisation of the ECCU, in terms of digital assets, usage and retooling of labour will be a critical determinant of the rate of growth if the economies are to move from behind and have a convergence of productivity levels with more advanced countries.

3 Innovating the ECCU

Innovation and disruptive technologies with respect to a digital economy, financial development through modernised payment systems, coupled with the growth of renewable energy sources can have both market-enabling and market-harnessing effects in the ECCU. This section presents how short- to medium-term responses to the thematic areas can hasten growth and resilience.

3.1 Digital Economy

The fourth industrial revolution is rapidly driving transformational disruption across every sector worldwide. It is expected by 2022 that over 60 per

cent of the global GDP will be digitalised. It is for this reason that the countries of the ECCU must adapt and implement a strategy to harness all the potential that the digital economy offers the region. Technology is changing the way the world does business and an example of this is the increasing use of robots, computers and machines for what was once jobs done by humans. This is an important factor for the ECCU as one of its competitive advantages is the cost of labour in the region is relatively low. Notwithstanding significant service orientation of the economies that comprise the ECCU, limited adoption of emerging

technologies could constrain their growth potential.

While our economies are service export oriented there are spatial distribution challenges due to being island nations and the distance from existing and potential trading partners. ICTs are a valuable tool for the integration of peripheral countries such as the ECCU-area into the global market.

Additionally, ECCU member countries form part of the OECS and as a grouping under the Revised Treaty of Basseterre, have committed to deepening the process of economic integration. Digitally enabled services provide a platform for deepening the process of economic integration through the adoption of common platforms and systems that allow for the seamless transfer of data, information and payments that undergird economic activity.

If done correctly the digitalisation of the region's economy could result in achieving goals set out by both the OECS and the ECCB. One of those goals would be for a single financial space within the ECCU region. As payments throughout the region are made easier, businesses could reach more potential clients, leading to enhanced economic activity. Thus, building a digital infrastructure correctly could lead to stronger economic growth for the region.

3.2 Payment Systems

The theory of optimal currency areas mostly considers factor mobility as its crucial criterion, meaning that monies are able to move freely, and buyers and labour are able to expand the geographic territories that they can serve. The ECCB has been engaged in modernising the payment system in the ECCU to further: shorten settlement cycles, reduce transaction costs, ensure significant gains in payment system efficiency and

enhance intra-regional banking and economic activity.

In 2006, the ECCB has been modernising the payment system in the region with the establishment of the Eastern Caribbean Payment Council. Further impetus came with the harmonisation of payment system legislation across the region in 2008, the implementation of real time gross settlement and the automated clearing house. Those two systems have allowed persons and businesses in the currency union to process transactions in real time and settle payments in a much more efficient manner.

With the thrust to modernise the payment system in the ECCU, the ECCB has revitalised and expanded the Eastern Caribbean Payment Council (ECPC). The ECPC's aim is to ensure the efficient and stable functioning of the payment system in the ECCU, to promote innovative nature of payments, the safety of cashless payments and their accessibility to users. One of the critical functions is the cost and safety of cashless payments, hence the ECCB's push towards the introduction of a digital currency.

As one of the ways of modernising the payment system, the ECCB launched a pilot of its digital currency in March 2019. The digital currency, or the DXCD Caribe, as it is called is expected to revolutionise the way payment is or could be done in the region. The DXCD Caribe is being piloted in an effort to address the relative high cost of current payment instruments and the inefficient settling of cheque transactions, which slows the pace of commerce. The project was started in 2019 and is currently in the development and testing phase with the expectation of the live deployment during the second quarter of 2020.

The improvement and modernisation of the payment system can lead to a more efficient and productive business sector that in turn could

facilitate economic growth for the countries in the ECCU.

3.3 Renewable Energy

For both the digital economy and the payment systems, it has been identified that there is a need for reliable and cost effective electricity infrastructure to support the technologies. Unfortunately, power supply on some islands is less than reliable. Moreover, in all cases, the costs are very high. Typical bills for 100 kWh/ month show that the domestic tariff in the ECCU is among the highest in the Caribbean.

The cost of fuel-generated electricity is high and fluctuates with the pass through of high and volatile oil prices. Innovation has allowed for fast-evolving Renewable Energy Technology (RET) to become more economically competitive with fossil fuel technology. Additionally, while RET has higher implementation costs it has lower operating costs than fossil fuel generated electricity. Many of the best suited RETs for the ECCU (see Table 2) have falling costs as they are “mature technology”, that is, the generation of the technology is over fifty (50) years old.

Table 2: Types of Renewable Energy Resources in the ECCU

Renewable Resource
Ocean – example wave, tidal and hydropower. It can have ecological impacts; is more predictable and less volatile than wind or solar energy
Geothermal - sourced from volcanic islands where geothermal energy is found.
Wind - most promising renewable energy resource especially as it is very common in islands.
Solar - radiation that can be obtained for solar energy production on islands in the equatorial region is more than 4.5 kWh/m ² /day.
Biomass - example Biodiesel is biodegradable, non-toxic fuel that can be created from microalgae, macroalgae and crops (for example cane) that can be used in existing diesel engine technology with minimal to moderate modification required. Technology still developing.

The uptake of appropriate RET can improve energy security and produce savings in the ECCU allowing them to better handle seasonal volatilities in energy demand from phenomenon like tourism.

The slow implementation of RET, according to one academic paradigm, highlights the systemic character of innovations which is heavily influenced by the environment in which it is developed. The reality is that the ECCU has not been innovating in this field. Other barriers exist that are exclusive of the environment that hinder the development and diffusion of innovations and can be found in the economic, political, regulatory and social spheres. These can exasperate the gaps in the knowledge of the existing techno-economic potential of renewable energy hybrid systems on small islands.

While RETs implementation costs and environmental impacts are usually mentioned as barriers, another major issue is that they can compromise the reliability of the power supply when intermittent renewable energy is used. Although battery storage is a key solution to support the grid and manage high shares of RET as well as to guarantee the flexibility of the power system.

Electricity generation in the ECCU is largely oil intensive, with all member countries relying on diesel/oil for more than 90 percent of their electricity generation.

While the member countries may be desirous of moving towards RETs, they may not be financially in a position to divert monies from budget allotments. The financial/economic challenges of the ECCU impedes the uptake of RET and as such would require external financial assistance. Appreciatively, there are different mechanisms that could be employed to improve the uptake of RET. One such mechanism being financing through concessionary loans if countries meet the criteria to apply. Additionally, partnerships with the private sector may assist with greater adoption of RET.

Figure 3: Commercial Banks’ Credits to the Utility Sector, EC\$ millions



Source: ECCB

All studies reviewed have highlighted that RET can be beneficial economically and environmentally once the appropriate implementation tools are employed. Policy orientation to inform energy related actions are often disconnected from the sector. CARILEC (2012) purports that good

regulation is essential for renewable energy to develop in the region and notes that very few regional utilities or regulators have established interconnection standards and tariffs. Laws and policies are also lagging behind technology and industry changes. The lag in legislation and incentives has created investment gaps. These gaps need to be addressed, as a strong electricity operator delivering a reliable supply is vital to a modern, digital economy.

Transformation of the energy sector too can lead economic growth and revolutionise growth potential across the industries of the ECCU.

4 Concluding Remarks and Reforms for Consideration

There are groups in the citizenry of the ECCU that experience multiple socio-economic disadvantages, exclusion and marginalisation. There are great potential returns in terms of economic growth, improved competitiveness and poverty reduction from digitalisation and greening. But for the region the question is how to forge the path for the take-up, use and policy surrounding the digital economy (including innovative fiat currency), payment systems and renewable energy projects.

The areas that need to be strengthened to support innovation and to transition to a digital economy include:

1. Improved coordination between public and private entities to promote exchange of information, experiences and financing.
2. Promotion of higher levels of education and skills training for the populace, particularly in information and technology.
3. Improved integration of the ECCU to remove some transaction costs.
4. Legislative reform to support RET including strengthened governance structure to facilitate the regulation of the energy sector.

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