CARILEC
An Association of Electric Utilities
CARILEC Services

✓ Training & Development
✓ Networking and Knowledge Sharing: Conferences & CAREC
✓ Technical Studies and Surveys
✓ Disaster Restoration Coordination (CDAP)
✓ Advocacy
CDAP: Post Irma & Maria

• **Anguilla**: 11 line crews totaling 55 linemen from 10 utilities to assist ANGLEC.

• **British Virgin Islands**: 13 line crews totaling 68 linemen from 9 utilities to assist BVIEC.
CDAP: Post Irma & Maria

• Dominica: CARILEC deployed 8 line crews totaling 45 linemen, 1 transformer technician, 1 Hydraulic Tool Technician, and 1 Mechanic from 8 utilities to assist DOMLEC.

• Total: 171 from 14 Electric Utilities
CARILEC: Current Vision

To be the Premier Association of Electric Utilities and Industry partners; facilitating the development of world class electric energy services for all peoples of the Caribbean

Renewed Vision

To be the Premier Association of Energy Service Providers and their partners, facilitating the development of world class sustainable electric energy solutions for all peoples of the Caribbean Region
Renewed Mission

CARILEC will enhance the effectiveness of its members by providing industry related services, creating regular networking, training and knowledge sharing opportunities; supporting mutual assistance programs and accelerating the Caribbean Region’s energy sector transition, through innovation and advocacy.
CARILEC: Current Values
Perseverance, Professional Standards, High Ethical Standards, Socially Responsible

Renewed Values
Collaboration
Innovation & Agility
High Ethical & Professional Standards
Social & Environmental Responsibility
Sticks in a bundle are unbreakable.

~ Kenyan Proverb
Resilience through Collaboration

- CARILEC
- CANTO
- CARICOM
- CDEMA
- Association of Caribbean States
- CHTA
Port of Spain, 25th November, 2017 – From May 2017, discussions have been ongoing between CARILEC and CANTO in the formulation of a Memorandum of Understanding (MOU), which included, inter alia, agreement on the joint promotion of the current CARILEC Smart Grid Symposium in Trinidad, October 23-26, 2017.

The MOU articulates the agreement between the parties to explore and implement initiatives focused on the following areas of common interest and priorities in the energy and information and communications technology (ICT) sectors: Training and Capacity Building; Conferences and Networking; Smart Grid Infrastructure and Applications, Business Development and Consulting opportunities.
The MoU between the ACS & CARILEC commits to work toward improving regional resilience of electrical systems after disasters.
Digitalization & Energy
Global Trends in Connectivity

Key message: Connectivity is increasing rapidly, particularly in the developing world.

Notes: * denotes estimate for 2017; “Internet access” is defined as households with internet access at home; developed/developing country classifications are based on the UN M49.

**Key message:** Investment in digital electricity infrastructure and software grew over 20% annually between 2014 and 2016, overtaking global investment in gas-fired power generation.
Key message: Digitalization in the power sector has the potential to bring benefits to the owners of power sector assets, the wider electricity system, consumers and the environment.
Potential Worldwide Cost Savings from Enhanced Digitalization in Power Plants & Electricity Networks: 2016-2040

USD billion (2016)

- 5% lower O&M costs
- Efficiency: 5% more electricity output per unit of fuel
- Efficiency: 5% lower total network losses
- 5-yr life extension for power plants
- 5-yr life extension for networks
Key message: Data and analytics can improve performance and enable cost savings, but, without connectivity, do not fundamentally change the way the electricity sector functions.
The Role of Connectivity in Reshaping the Electricity Sector
Yesterday
Centralized Power

Tomorrow
Clean, local power

Transmission network

Distribution network

House

Factory

Commercial building

Local CHP plant

Solar PV power plant

Storage

Wind power plant

House with domestic CHP
**Steps in Digital Transformation of the Electricity Sector**

- **From energy silos**
  - Inflexible demand
  - Centralised supply

- **To digitally interconnected systems**
  - Demand response large consumers
  - Centralised supply (Competitive markets)
  - Aggregators (low share of demand)
  - Distributed sources (low share of supply)

**Key message:** The deployment of digital technologies is creating a more interconnected and responsive electricity system, with the potential to help increase flexibility, efficiency and reliability.
Anguilla Solar Farm

Before
Anguilla Solar Farm

After
Smart Grid: The “Energy Internet”

2-way flow of electricity and information

Electrical Infrastructure

“Intelligence” Infrastructure

Enabled by ICT Infrastructure
Smart Grid

• an automated, widely distributed energy delivery network characterized by a two-way flow of electricity and information, capable of monitoring and responding to changes in everything from power plants to customer preferences to individual appliances.

• the electricity delivery system (from point of generation to point of consumption) integrated with communications and information technology for enhanced grid operations, customer services, and environmental benefits

Smart Grid

• **Improve electrical power generation and distribution system**
  – Integration of electric infrastructure and ICT infrastructure
  – More efficient & better management of power infrastructure

• **Increase use of renewable energy sources**
  – Wind, solar generation, power storage
  – Integration of distributed energy sources into power infrastructure

• **Better management of energy usage**
  – Use of smart meters and Demand Response systems to reduce and balance energy usage
  – Enable use of plug-in electrical vehicles
What Will the Smart Grid Look Like?

- High use of variable renewables
- Distributed generation and microgrids
- Ubiquitous networked sensors
- Smart meters and real time usage data
- Electric vehicles
- Dynamic pricing
- Energy management systems
- Distributed storage
- Bidirectional metering
- Smart appliances
Smart Grid: Energy & ICT

- Wide Area Situational Awareness
- Cyber Security
- Network Communications
- V2G
- AMI
- Distribution Grid Management
- Electric Storage
- DR and Consumer Data
STRATEGIC OBJECTIVES
2018 to 2022

1. Re-position CARILEC as the premier provider of energy solutions in the Caribbean region
2. Revise CARILEC business model for greater sustainability, resilience and impact
3. Restructure Secretariat and build capacity at institutional and individual levels
4. Become the leading advocate and partner for energy solutions and resilience in the region

5. Act as a catalyst for the adoption of green and innovative business models for energy solution providers

6. Enhance networking, business opportunities and engagements for our members