ENERGY RESILIENCE 
IN SAINT LUCIA

ECPA Ministerial Dialogue Series 
Building Urban Resilience 
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Saint Lucia
Climate change
WARMING PLANET

Data from Berkeley Earth (www.BerkeleyEarth.org)
Global temperature anomalies relative to 1850-1900 average
<table>
<thead>
<tr>
<th>RANK</th>
<th>YEAR</th>
<th>ANOMALY °C</th>
<th>ANOMALY °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2016</td>
<td>0.95</td>
<td>1.71</td>
</tr>
<tr>
<td>2</td>
<td>2015</td>
<td>0.91</td>
<td>1.64</td>
</tr>
<tr>
<td>3</td>
<td>2017</td>
<td>0.85</td>
<td>1.53</td>
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<tr>
<td>4</td>
<td>2018</td>
<td>0.79</td>
<td>1.42</td>
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<tr>
<td>5</td>
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<td>6</td>
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<td>0.70</td>
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<td>7</td>
<td>2013</td>
<td>0.67</td>
<td>1.21</td>
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<tr>
<td>8</td>
<td>2005</td>
<td>0.66</td>
<td>1.19</td>
</tr>
<tr>
<td>9</td>
<td>2009</td>
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</tr>
<tr>
<td>9</td>
<td>1998</td>
<td>0.64</td>
<td>1.15</td>
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</tbody>
</table>
HURRICANE DORIAN-CAT 5
185mph

MORE INTENSE HURRICANES
## EXISTENTIAL THREAT

<table>
<thead>
<tr>
<th>HURRICANE</th>
<th>COUNTRY</th>
<th>YEAR</th>
<th>DAMAGE (Million USD)</th>
<th>%GDP</th>
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<tbody>
<tr>
<td>Ivan</td>
<td>Grenada</td>
<td>2004</td>
<td>1100</td>
<td>186</td>
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<tr>
<td>Tomas</td>
<td>Saint Lucia</td>
<td>2010</td>
<td>336</td>
<td>34</td>
</tr>
<tr>
<td>Gilbert</td>
<td>Jamaica</td>
<td>1988</td>
<td>4</td>
<td>122</td>
</tr>
<tr>
<td>Maria</td>
<td>Dominica</td>
<td>2017</td>
<td>1370</td>
<td>226</td>
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<tr>
<td>Irma</td>
<td>Barbuda</td>
<td>2017</td>
<td>220</td>
<td>15</td>
</tr>
<tr>
<td>Irma</td>
<td>BVI</td>
<td>2017</td>
<td>3600</td>
<td>350</td>
</tr>
<tr>
<td>Dorian</td>
<td>Bahamas</td>
<td>2019</td>
<td>7000</td>
<td>56</td>
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<tr>
<td>Maria</td>
<td>Puerto Rico</td>
<td>2017</td>
<td>94000</td>
<td>89</td>
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</tbody>
</table>
COASTAL COMMUNITIES
SEA-LEVEL RISE

- Up to 1m
- Displacement of people
- Devastation to tourism industry
- Ports
- Agriculture
- Water Sector
- Energy Sector
- Permanent loss of land
Other Implications

- Decreased rainfall
- Drought frequency
- Coral bleaching
- Flood frequency
ENERGY SECTOR VULNERABILITY

- Dominica- Hurricane Maria destroyed 98% T&D network
- Barbuda -Hurricane Irma -100% electricity grid wiped out and severely damaged generation assets
- Essential services and productive sectors disrupted
- High dependence on imported fossil fuels
- Many vulnerabilities throughout energy value chain
- Far reaching economic and social consequences
- TIMELY ACTION IS REQUIRED IN SIDS!!!
Climate Resilience in Energy Sector

“the ability of the energy system to cope with or recover from a hazardous event, trend, shock or stress that is climate related, such as rising sea level, increasing temperature, hurricanes, flood and the like”
Integrated Risk Management Framework

1. Enhanced capacity to better withstand adverse situations through; improved planning, improved systems operations, “hardening” of energy assets, and deployment of distributed generation; and

2. Being better prepared for rapid resource deployment and response when damages are sustained, and to efficiently and quickly recover from such events.
FOUR PILLARS

- Climate Risk Assessments
- Power System Vulnerability Assessment
- Emergency Response Preparedness
- Power System Planning (with resilience)
WORLD BANK SUPPORT

- Caribbean Energy Resilience Initiative
- Saint Lucia, Saint Vincent, Saint Kitts and Antigua & Barbuda
- Use assessments from all four pillars to develop investment plan
Saint Lucia

- Preliminary Climate Risk Assessments done
- REOI for Power System Vulnerability Assessment
- Project to conclude in 3rd quarter 2020
Saint Lucia

- Policy and legislative changes
- Market reforms
- Regulation
- Anticipated Entry of IPPs
- Preparation of National Energy Transition strategy and IRP
Increasing Renewables in National Energy Matrix

- National Energy Policy
- Renewable Energy Sector Development Project - WB
- Solar PV Demonstration Project - WB
- UAE-CREF
- Caricom-Italy MOU
- RMI- Readiness Phase Fleet Transition Strategy - Govt
CHALLENGES TO ACHIEVING A RESILIENT ENERGY SECTOR

- Policy framework
- Finance
- Capacity
THANK YOU