



# Fifth Pacific Forum on Sustainable Development & Capacity Building Workshop

Ministry of Infrastructure & Sustainable Energy (MISE)  
Government of Kiribati

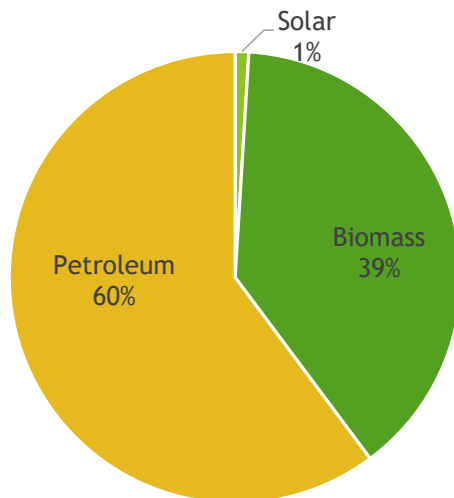
# Outline

- ▶ Kiribati Energy Overview
- ▶ Energy Policy Frameworks
- ▶ Energy Accessibility Status in Kiribati
- ▶ National Energy Achievements
- ▶ Gaps & Challenges
- ▶ Actions required for follow-ups



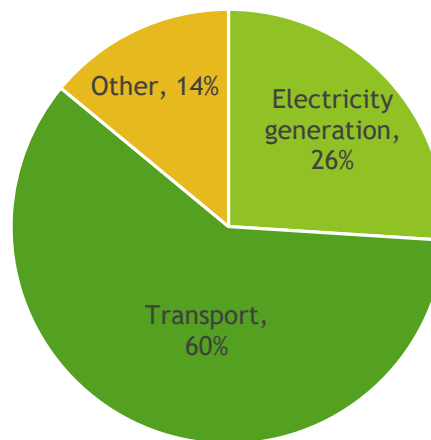
# Kiribati Energy Overview (2020)

## Source of Energy (Share)



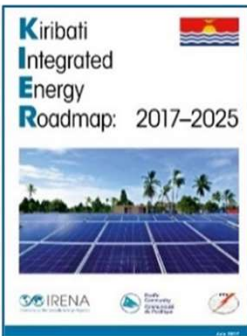
Petroleum: Grew at an AAGR of 3.09% from 2000 to 2020  
Solar (Lighting/Water): Grew at an AAGR of 21.64% from 2000 to 2020  
Biomass (Cooking/Drying): Grew at an AAGR of 1.66% from 2000 to 2020

## Petroleum Use by Sector (Share)



Transport: Grew at an AAGR of 2.79% from 2010 to 2020  
Electricity: Grew at an AAGR of 2.93% from 2000 to 2020  
Other: Grew at an AAGR of 5.90% from 2000 to 2020

# Energy Policy Frameworks



1. Sustainable Development Goals (SDG) 7 by 2030:
  - *Ensure universal access to affordable, reliable and modern energy services*
  - *Increase substantially the share of renewable energy in the global energy mix*
  - *Double the global rate of improvement in energy efficiency*
2. Nationally Determined Contribution (NDC) to reduce its greenhouse gas emissions (GHG) by:
  - 13.7% by 2025 or
  - 12.8% by 2023 compared to a BaU projection
3. Kiribati Integrated Energy Roadmap (KIER) to achieve the national energy targets by reducing fuel usage for electricity by 2025. That is for:
  - *South Tarawa* 45% compared to BaU (23% RE, 22% EE)
  - *Kiritimati* 60% compared to BaU (40% RE, 20% EE)
  - *Outer Islands* 60% (40% RE, 20% EE) for rural public infrastructures  
100% RE for rural public and private institutions

# Energy Accessibility Status (2020) in Kiribati

Electricity	Cooking	RE & EE Projects Progress
<ul style="list-style-type: none"> <li>• 39% HH connected to grid</li> <li>• 54% HH rely on SHS</li> <li>• 3% HH rely on battery</li> <li>• 1% HH rely on kerosene</li> <li>• 3% HH don't have access to electricity</li> </ul>	<ul style="list-style-type: none"> <li>• 10% HH rely on gas</li> <li>• 6% HH rely on electricity</li> <li>• 36% HH rely on kerosene</li> <li>• 47% HH rely on biomass</li> </ul>	<ul style="list-style-type: none"> <li>• 18 Solar Ice Plants each installed per island</li> <li>• 18 Solar Off grid systems each installed per island council</li> <li>• 6 Solar Off grid systems each installed at rural church communities</li> <li>• 8 Solar pump systems each installed at 8 rural boarding schools</li> <li>• 9 Solar RO Desalination Plants each installed at vulnerable villages/islets (another 7 RO system are yet to be installed)</li> <li>• 11 Off grid systems each installed at 11 boarding schools (7 became idle in 2019 but will be rehabilitated under POIDIER Project)</li> <li>• 6 Grid connected Systems for South Tarawa (3 systems - 1450 kWp currently in operation, 3 systems - 8100 kWp yet to be installed)</li> <li>• Upgrade to 18 Island Council Solar systems - 740 kWp to supply health clinics, tourism, agriculture, church communities, primary schools - POIDIER (GEF 6), yet to be installed</li> <li>• 70 kWp Solar hybrid systems for private institutions in 18 rural islands - POIDIER (GEF 6), yet to be installed</li> <li>• EE cook stoves for the communities in the Outer Islands - POIDIER (GEF 6), yet to be distributed</li> </ul>

Total number of households in 2020 - 20,354 HH

# National Energy (2020) Achievements

Energy Targets	2020 Achievement
<b>1. SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all by 2030</b>	
7.1 Ensure universal RE access to affordable, reliable and modern energy services	<p><i>Indicator 7.1.1: Proportion of population with access to electricity</i></p> <ul style="list-style-type: none"> <li>96% (an increase by 28% over 2010 proportion) of total households have access to electricity through Grid, battery and solar PV systems in 2020.</li> </ul> <p><i>Indicator 7.1.2: Proportion of population with primary reliance on clean fuels and technology</i></p> <ul style="list-style-type: none"> <li>96% (an increase by 30.33% over 2010 proportion) of total households rely on clean fuels and technology for electricity in 2020.</li> <li>100% of rural boarding schools members have access to water using solar pump systems.</li> <li>18 out of 18 Outer Islands with Ice plant powered by solar system.</li> <li>16% of total households rely on clean fuels and technology for cooking in 2020.</li> </ul>
7.2 Increase substantially the share of RE in the global energy mix	<p><i>Indicator 7.2.1: Renewable energy share in the total final energy consumption</i></p> <ul style="list-style-type: none"> <li>1% RE share in the national total energy mix in 2020 (an increase by 1% over 0% in 2014).</li> <li>13% of the total energy mix for South Tarawa electrification only in 2020 (an increase by 13% over 0% in 2014)</li> </ul> <p><i>Indicator 7.2.2: Installed renewable energy-generating capacity in developing countries (in watts per capita)</i></p> <ul style="list-style-type: none"> <li>18 Watts per capita in 2020 for the Gilbert Group (an increase by 17.09 W/capita over 2014 energy-generating capacity)</li> </ul>
7.3 Double the global rate of improvement in energy efficiency	<p><i>Indicator 7.3.1: Energy intensity measured in terms of primary energy and GDP</i></p> <ul style="list-style-type: none"> <li>The energy intensity declined from 7.12MJ/AUD (2014) to 6.63 MJ/AUD (2020), which somewhat indicate improvements in energy efficiency in Kiribati.</li> </ul>

# National Energy (2020) Achievements - Con't

2. Nationally Determined Contribution to the Paris Agreement	
Reduce its GHG by 13.7% in 2025 or by 12.8% compared to a BaU projection in 2023	<ul style="list-style-type: none"> <li>16.9% reduction estimated to have been achieved in 2020 based on data available.</li> </ul>
3. KIER - Fuel Use Reduction for Electricity by 2025	
South Tarawa	<p>45% compared to BAU (23% RE, 22% EE)</p> <ul style="list-style-type: none"> <li>Around 13% RE reduction has been achieved in 2020 with a remaining 10% to be achieved by 2025</li> <li>Zero out of 22% EE. Generation efficiency without solar is 3.78 kWh/litre (2014) and 3.66 kWh/litre (2020), therefore no savings from generation side. Average demand per consumer is 2.729 MWh/consumer (2014) and 3.148 MWh/user (2020), noting the continued increase of customers being connected to the grid.</li> </ul>
Kiritimati	<p>60% compared to BaU (40% RE, 20% EE)</p> <ul style="list-style-type: none"> <li>There were RE projects been implemented successfully in Kiritimati Island, but due to data gap for the whole island energy profile, unfortunately EPU cannot calculate the fuel use reductions for the power sector. Sharing of data is very crucial for target monitoring and updates.</li> </ul>
Outer Islands	<p>60% (40% RE, 20% EE) for rural public infrastructures</p> <ul style="list-style-type: none"> <li>35% RE, zero% EE was achieved in 2020</li> </ul> <p>100% RE for rural public and private institutions</p> <ul style="list-style-type: none"> <li>52% out of 100% was achieved in 2020</li> </ul>

# Gaps & Challenges

- ▶ The continued dependency on imported fossil fuel for power generation, transport and heating or cooking still remains a challenge to reaching the energy sector vision of “available, accessible, reliable, affordable, clean and sustainable energy options for the enhancement of economic growth and improvement of livelihoods in Kiribati”.
- ▶ The Kiribati Energy Sector is continually developing and progressing, and current actions are focused, inter alia, on updating and reforming legislative, regulatory and institutional frameworks.
- ▶ Poor coordination and sharing of energy data/information
- ▶ National EE Target for Power Generation
  - South Tarawa - Zero out of 22%. Generation efficiency without solar is 3.78 kWh/litre (2014) and 3.66 kWh/litre (2020), therefore no savings from generation side. Average demand per consumer is 2.729 MWh/consumer (2014) and 3.148 MWh/user (2020), noting the continued increase of customers being connected to the grid.
  - Rural public infrastructures - Zero out of 20%.



# Actions required for follow-ups

## ► Kiribati NDC revision

- 16.9% has been achieved which exceeds our NDC target and recognize the need to commit to revise our existing NDC targets, commensurate with other parties of the Paris Agreement.

## ► Funding support for RE and EE projects expansion to support SDG 7 goals

- 1% HH still rely on kerosene for lighting
- 3% HH still don't have access to electricity
- 47% HH still rely on biomass for cooking using inefficient cookstoves
- 36% HH still rely on kerosene for cooking - not clean

## ► Political support at the national level

- Energy Bill - is in draft form and is expected to be submitted for first reading in the April 2022 Sitting. This Bill will establish effective oversight, monitoring and regulatory mechanisms over the provision of energy services and energy service providers through the deployment of RE and EE. This requires political support at the national level to pursue the endorsement of such

THANK YOU - KAM RABWA

