

ACHIEVING SUSTAINABLE GRADUATION FOR LDCS

- ACCESS TO SUSTAINABLE ENERGY TO FOSTER
SUSTAINABLE GRADUATION – *BHUTAN'S EXPERIENCE*

OUTLINE

- Country and economic profile
- Bhutan and LDC Graduation
 - Performance in the 2015 triennial review
 - Opportunities and challenges
- Access to sustainable energy as tool for graduation
- International framework/commitments
- Bhutan's efforts toward ensuring sustainable energy for all
- Challenges

COUNTRY AND ECONOMIC PROFILE

- Area: 38,394 sq.km
- Population: 770000 (est. 2016)
- GDP: US \$ 2.2 billion
- GDP growth rate: 7.99% (2016)
- GDP per capita : US \$ 2879 (2016)
- Unemployment rate: 2.5%
- Economic structure: mostly agrarian and services

BHUTAN AND LDC

- Categorized as a LDC in 1971
- Fulfilled the graduation threshold for the first time in the 2015 Triennial Review.
- Met graduation threshold for two criterion:
 - Per capita Gross National Income (GNI)
 - Human Asset Index (HAI) criterion.
- Not met the Economic Vulnerability Index (EVI) criteria

BHUTAN'S PERFORMANCE IN THE 2015 TRIENNIAL REVIEW

Criteria	Graduation Threshold	Bhutan's score	Score as a % of threshold
Per capita GNI	US \$1,242	US\$ 2,478	+ 83.3%
HAI	66	67.9	+ 2.9 %
EVI	32	40.2	- 25.6 %

CHALLENGES AND WAY FORWARD

- Low diversification and high dependence on a single sector
- High export concentration (single market)
- Highly vulnerable to effects of climate change
- Therefore, need to ensure graduation is irreversible and sustainable.
- Tools for sustainable graduation: access to sustainable energy

ACCESS TO SUSTAINABLE ENERGY AS A TOOL FOR SUSTAINABLE GRADUATION

■ Why?

- Nearly one person in five on the planet still lacks access to electricity (SE4ALL 2017).
- Around 62 per cent of people in LDCs have no access to electricity, compared with 10 per cent across other developing countries. I.e four out of five people in LDCs lack access to electricity and nine out of ten lack access to modern cooking fuels. Only 27% of urban dwellers have access to modern fuels, while a mere 3% of rural dwellers have access.
- Energy Access Dividend by SE4ALL estimates show that delayed access to electricity for large numbers of households will delay any direct or indirect contribution to the SDGs, and potentially constrain the achievement of several SDG targets by 2030.

INTERNATIONAL FRAMEWORKS/COMMITMENT TO SUSTAINABLE ENERGY FOR ALL

- The IPoA for the LDCs recognizes access to affordable, reliable and renewable energy, and technologies as being critical for growth and improving livelihoods.
- SE4ALL launched with the objectives of:
 - ensure universal access to modern energy services;
 - double the global rate of improvement in energy efficiency; and
 - double the share of renewable energy in the global energy mix.
- The 2030 Agenda for Sustainable Development and SDGs places a very strong emphasis on sustainable energy for all.
 - SDG goal 7 'Ensure access to affordable, reliable, sustainable and modern energy for all'

BHUTAN AND ACCESS TO SUSTAINABLE ENERGY

- RGoB places strongest emphasis on access to energy, its sustainability and increasing the share of renewable energy in the total energy mix.
- Vast hydropower resources that meets all the electricity needs of the country and earn revenues (major source of revenue for the government).
- Techno-economically feasible hydropower potential of 23,765 MW (current installed capacity of 1606 MW, under construction 3658 MW)
- No other major energy resources and dependent on import of fuels. Need to diversify energy mix and improve energy security
- Energy development strategy is to tap its vast hydropower resources and develop additional renewable energy resources.

BHUTAN AND ACCESS TO SUSTAINABLE ENERGY

■ **Access**

- The government recognizes the importance of access to energy to meet basic needs and improve livelihood.
- Target to ensure electrification to all in the 11th Five Year Plan
- Currently 99.5% has access to electricity through grid and off grid systems. Off grid electrification done through Solar PV, biogas etc.
- Bhutan will achieve 100 per cent electrification for all by the end of 2017 by connecting the last four villages

■ **Affordability**

- Energy subsidized to consumers by the government
- Provision of free electricity for the first 100 units to the rural consumers to ensure access to affordable and clean energy.

BHUTAN AND SUSTAINABLE ENERGY FOR ALL

- **Energy efficiency improvement:**
 - Energy Efficiency & Conservation Policy under formulation to promote, incentivize, govern and monitor actions and behaviour on EE&C front
 - Technical studies and energy audits conducted across the economy in energy consuming sectors such as industry, transport, building, and appliances.
 - Revealed significant energy saving potential
 - Demand side management through efficiency in appliances, buildings and industrial processes and technologies
 - Continuous awareness program on EE conducted

BHUTAN AND SUSTAINABLE ENERGY FOR ALL

- **Emphasis on Renewable Energy**
 - Energy mix:
 - Biomass: 36%
 - Electricity: 28%
 - Diesel 16%
 - Coal: 15%
 - The need to diversify the energy mix and therefore the focus on enhancing renewable energy generation

BHUTAN AND SUSTAINABLE ENERGY FOR ALL

■ Renewable energy resources

- Hydropower (<25 MW)
- Wind energy
- Solar PV and thermal
- Biomass energy

■ Initiatives

- 2392 sets of Solar PV Home lighting System distributed for free to rural households
- 2,849 domestic biogas plants installed through subsidy program
- 11,561 Improved Cook Stoves rolled out through subsidy program.

BHUTAN AND SUSTAINABLE ENERGY FOR ALL

■ Policies

- Sustainable Hydropower Development Policy 2008
- Alternative Renewable Energy Policy 2013 - to promote the use of available RE sources to strengthen national energy security and promote clean renewable energy technologies.
- Domestic Feed in Tariff Policy (Draft)
- The country has committed to remain carbon neutral where emissions of GHG will not exceed carbon sequestration capacity of the forests.

BHUTAN AND SUSTAINABLE ENERGY FOR ALL

■ Challenges

- Mobilization of Investment Funds
 - No funds for Implementing Solar Power Plant
 - Lack of Public-Private partnerships
- Limited Domestic Markets (Supply of Technology and Affordability)
- Building up the required institutional capacity as it requires high investments.

BHUTAN AND SUSTAINABLE ENERGY FOR ALL

■ **In conclusion**

- Recognize the need for a forward looking transition strategy
- Better utilization of the critical ISMs
- Special consideration for the LLDCs and their vulnerabilities
- Consider fulfilling EVI threshold a mandatory criteria?
- Expedited international support measures during the transition phase (DPs, UN systems)



THANK YOU