

Integrating Renewable Energy and Energy Efficiency in mainstream energy to meet SDG Goals

Dr. Narayan Prasad Adhikari

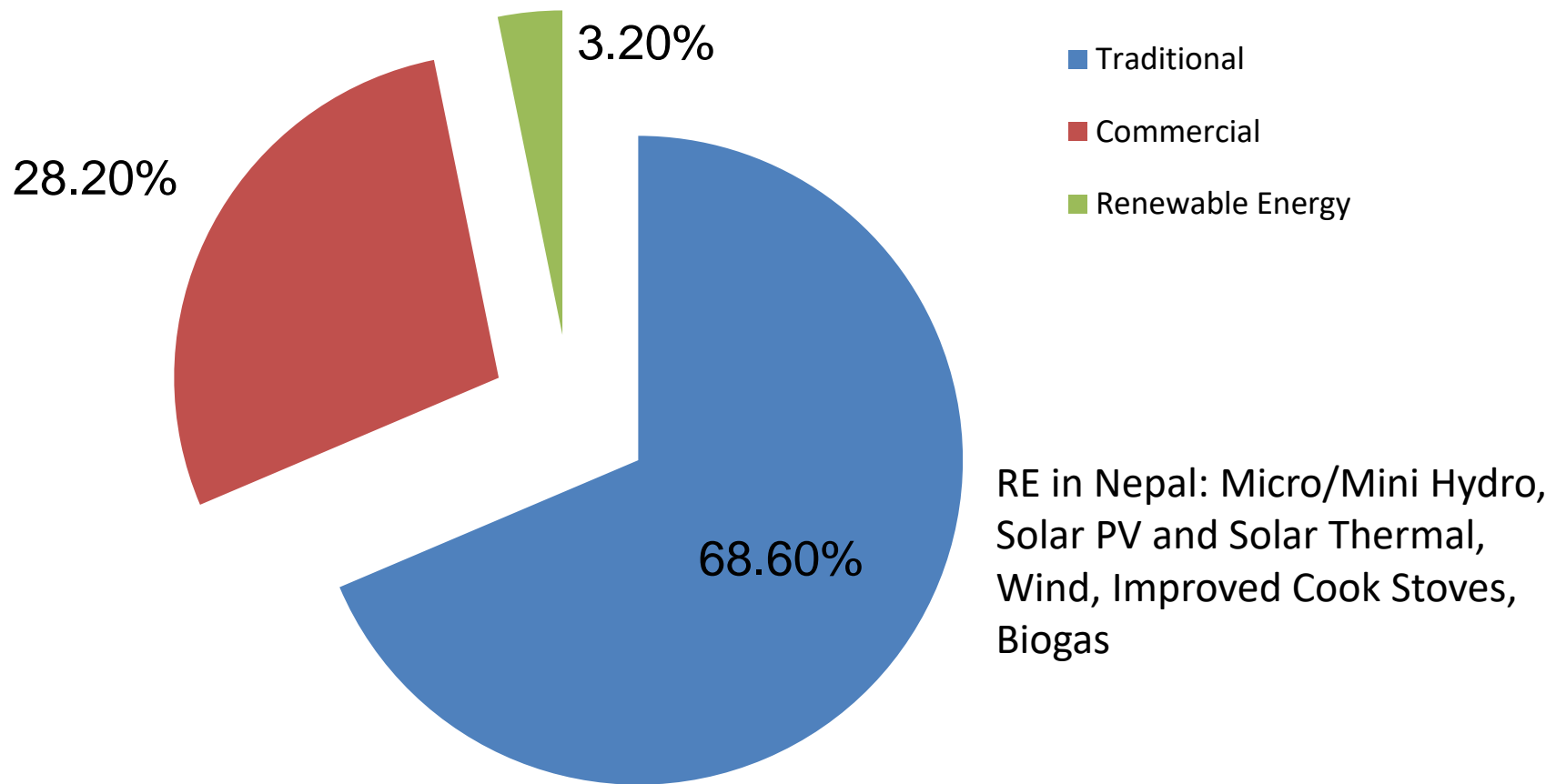
Director

Alternative Energy Promotion Center (AEPC)

Ministry of Energy, Water Resources and Irrigation

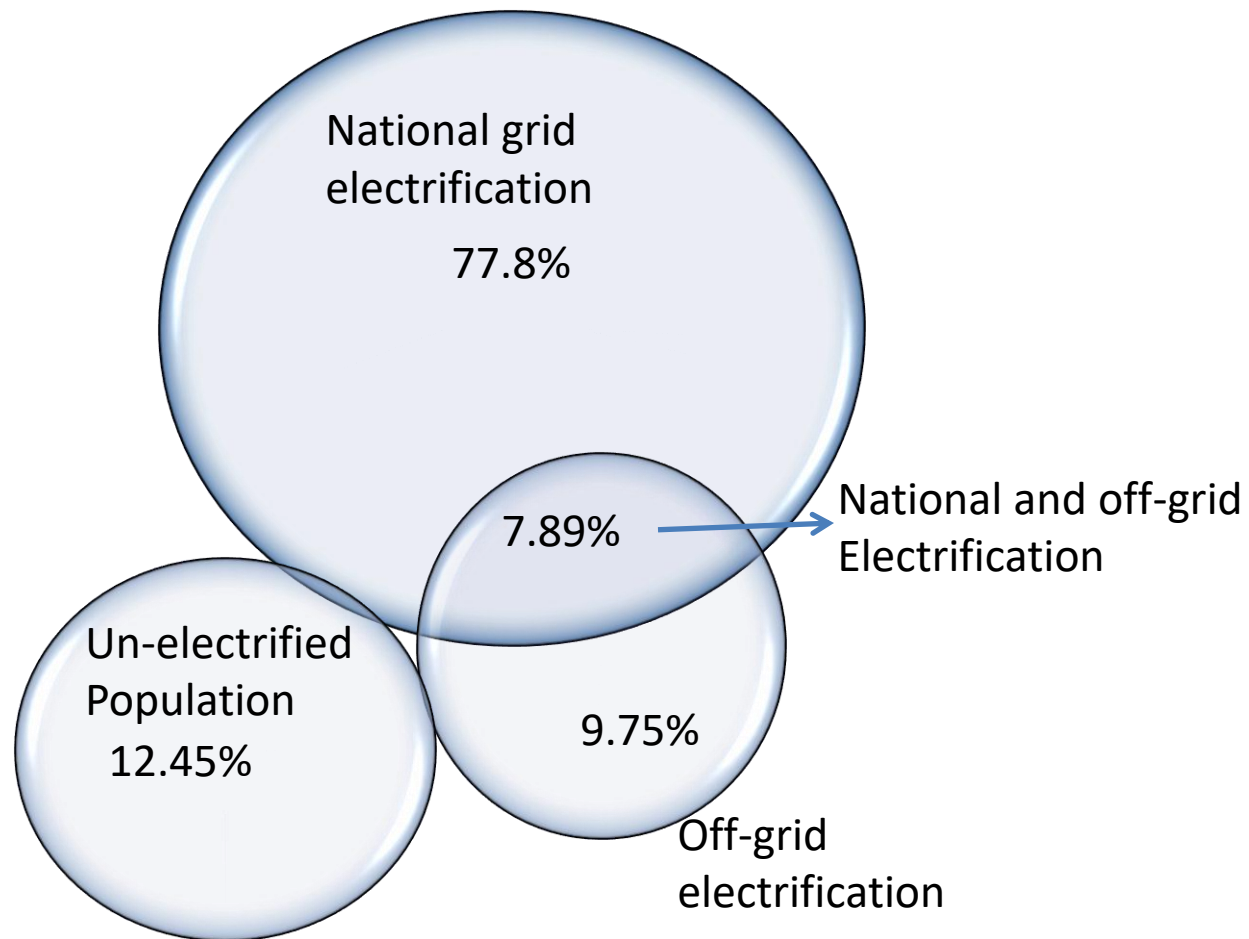
21 August 2019

Energy consumption in Nepal



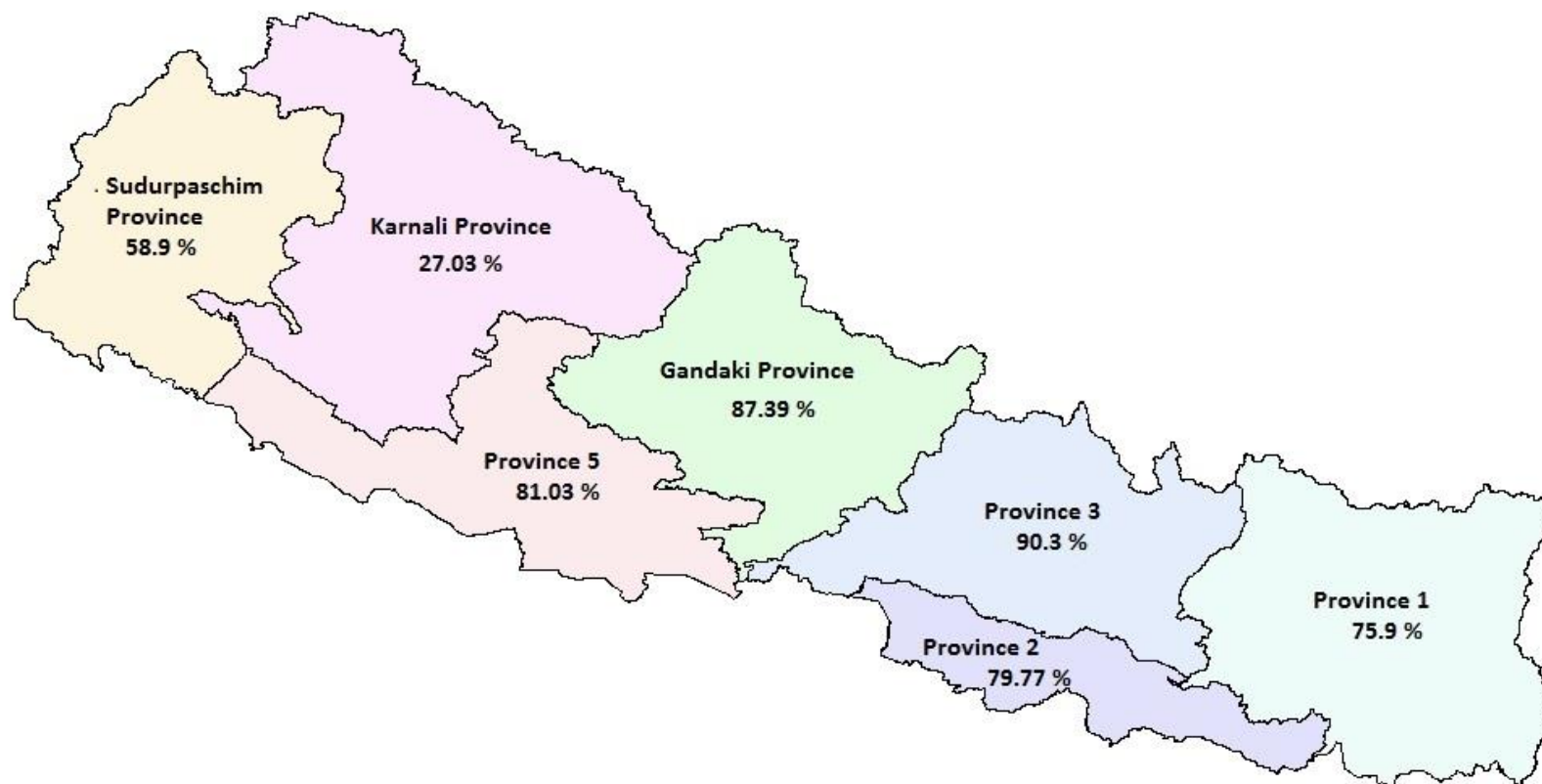
Source : Economic Survey 2018/19 (Ministry of Finance)

Electrification status (AEPC & NEA, July 2019)



Total HH without Electricity = 740,511 HHs

National Grid Electrification Status of Provinces



0 35 70 140 210 280
Kilometers

Prepared by AEPC
Data Source: NEA 2019

National Grid Electrification Status

Sudurpaschim Province

Karnali Province

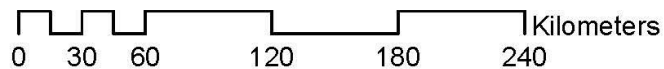
Gandaki Province

Province 3

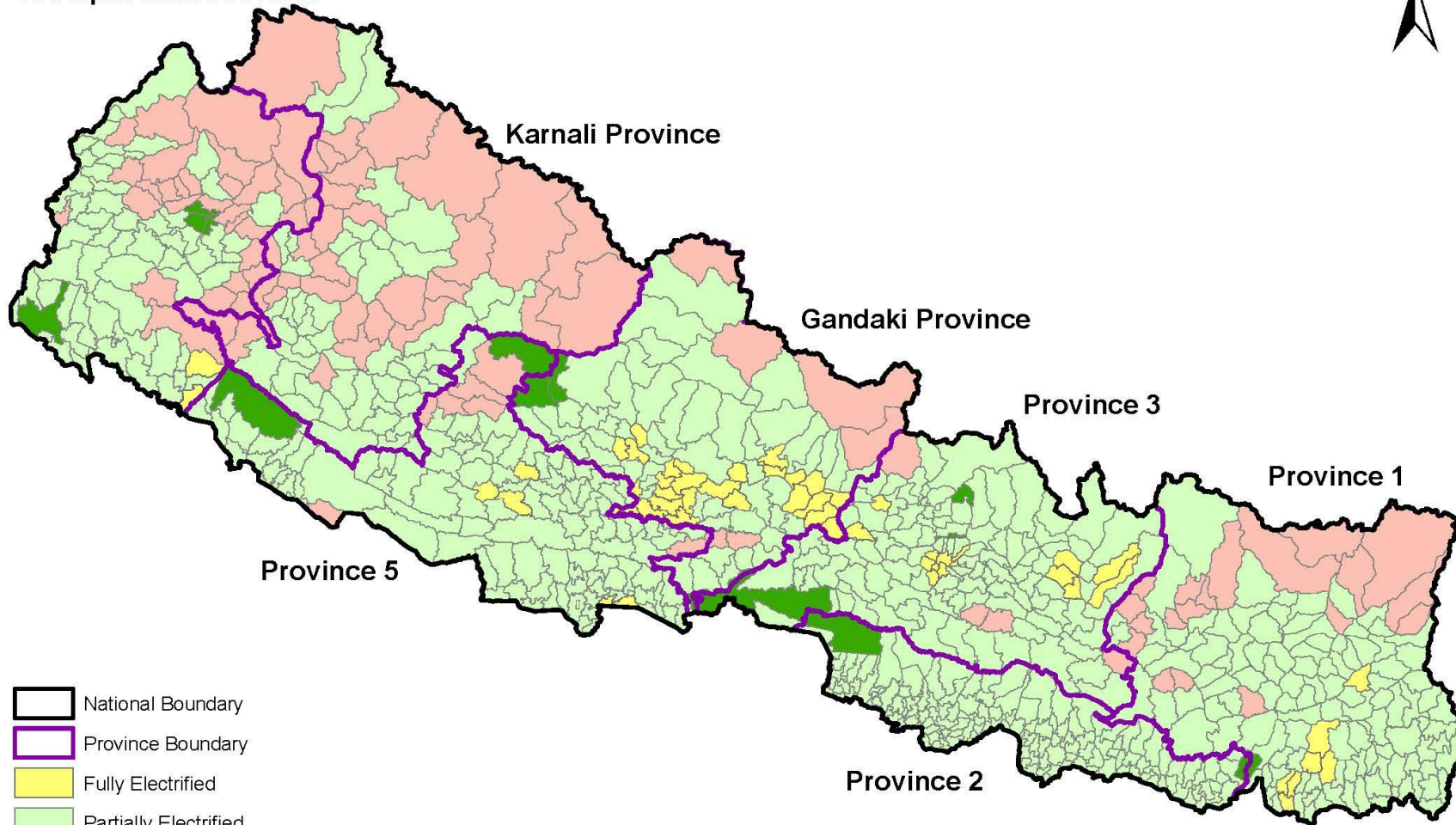
Province 1

Province 5

Province 2



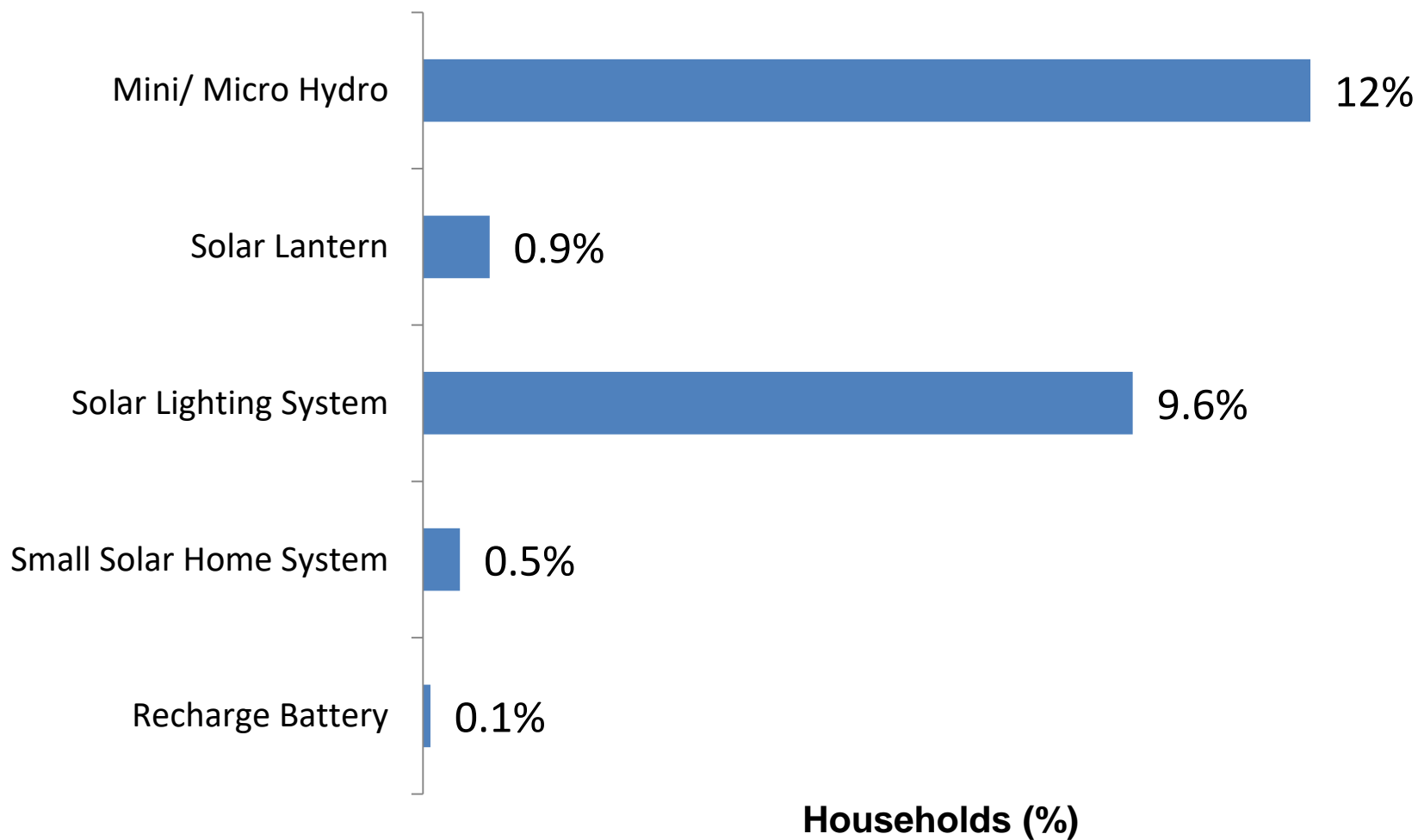
Developed By: AEPC
Data Source: NEA 2019



Nepal's SDG 7 Situation

Attribute	Base year 2019	Target by 2030
Installed Capacity	1,200 MW	15,000 MW
Annual per capita electricity consumption	245 kWhr	1500 kWhr
Electricity Access (HH)	87.55%	99%
Firewood use (HH)	62.5%	30%
LPG use (HH)	22.5%	39%

RE Share in Electricity Access



Source: WB MTF Survey

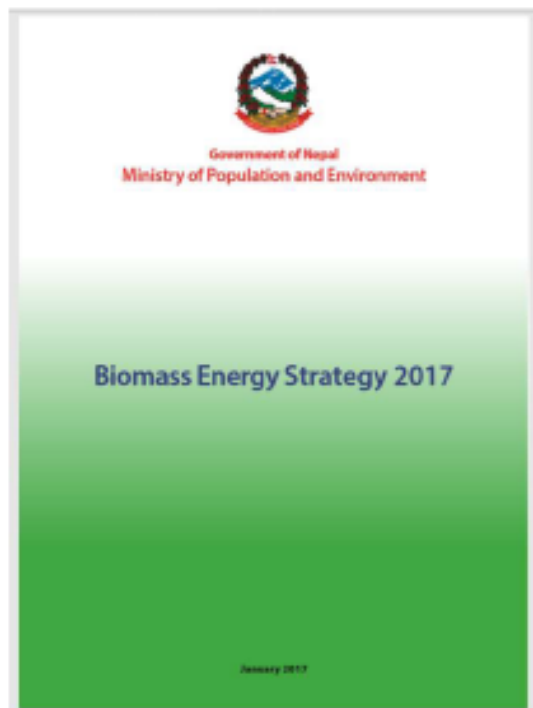
Key RE official documents

- Rural Energy Policy, 2006
- RE Subsidy Policy & Delivery Mechanism 2016
- Biomass Energy Strategy 2017
- Nepal Energy Efficiency Strategy 2018
- Financial Act - Exemption of VAT & Custom Duty in RE equipments/materials
- Energy White Paper
- National Planning Commission – 15th periodic plan Approach Paper

Mainstreaming RE

- White Paper 2018
 - RE as long term solution for off-grid areas
 - RE in National Energy Mix for Energy Security
 - 5-10% generation from RE for Power Generation Mix
 - 100 to 500kW of distributed generation in each of 753 local units
 - “Providing Energy Access to Every Settlement” (“हरेक बस्ति उर्जा बस्ति”)
 - Promotion of electric cooking
- 15th Periodic Plan Approach Paper
 - RE as main stream energy source
 - RE as means for Gender Empowerment and Social Inclusion
 - New, Sustainable and Efficient Technologies will be promoted
 - RE for Carbon Market
 - Private Investment in RE Projects

Biomass Energy Strategy 2017



Some Specific Targets on Biomass and Biofuel (2030):

1. To provide clean cooking technologies of at least tier -3 to all households
2. To reach the annual production of 20,000 metric tonnes of pellets, briquettes by enhancing the production capacity.
3. 10% of the total consumption of petrol and diesel consumed in Nepal will have been replaced by biodiesel & bioethanol

Ongoing Activities

- Formation of coordination committee (NEA & AEPC)
- Distributed System/Rural Electrification Master Plan – (NEA study final stage)
- MoU with provincial and local governments
- Preparation of provincial and municipality energy plan
- Solar mini-grid in remote locations- “Himali Solar Mini Grid” & “Ujjyalo Nepal Programme”
- Replacement of dung cake with clean fuel in 22 Terai districts
- Solar irrigation and drinking water program
- Domestic/institutional /commercial biogas
- Mini-hydro promotion – local grids in off grid areas
- RE challenge fund

GoN adopted National Energy Efficiency Strategy 2075

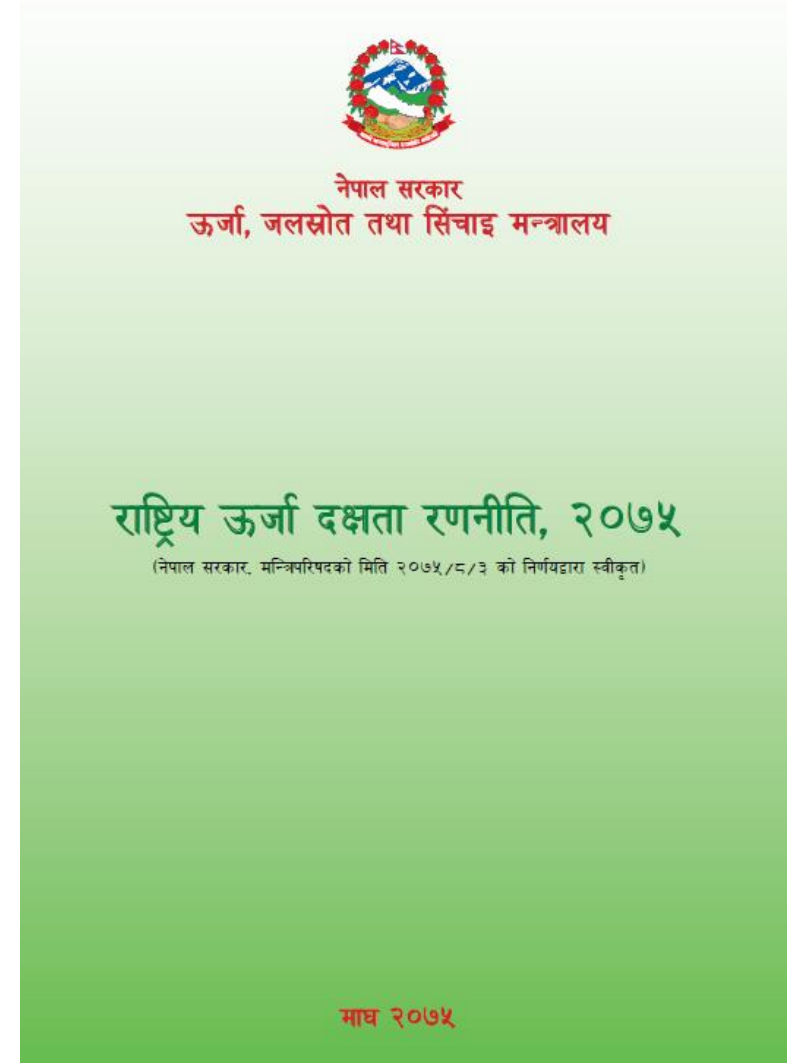
Vision :

To assist in energy security by increasing the energy access through efficient use of available energy.

Goal :

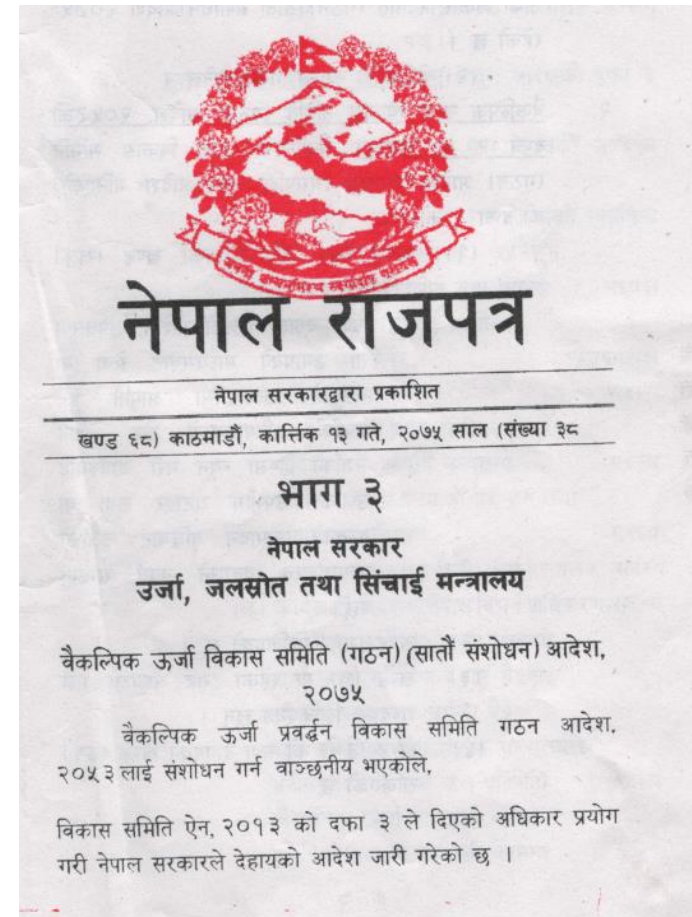
Doubling EE from 0.84%* per year, to 1.68% per year by 2030.

* Baseyear 2015



Cabinet order mandates AEPC to institutionally lead on EE

- AEPC Formation Order 7th amendment 2075 directs AEPC to lead an implementation of EE strategy
- AEPC able to coordinate renewable energy and energy efficiency into the broader energy strategy



Key element of EE strategy

- **Awareness** - Generate Awareness on EE from the consumer's level to policy maker's level
- **Institution**- Establish policy, legal and institutional framework for resources management, resources mobilization, infrastructure development and Human resources development required for EE
- **Standards** - Develop National Standards for energy efficiency based on established international and regional standards as well as to develop equipment and means for measuring EE
- **Production**- Make Services and production cost effective and competitive by reducing energy consumption needed for production of goods and services
- **Imports** - Reduce Energy Import by Energy conservation

Ongoing EE activities

- Organizational assessment and business plan
 - Conducting an organization assessment on how EE could be structured within AEPC
 - Developing a business plan for EE activities
- Legal and regulatory framework
 - Supporting GoN to prepare energy efficiency and conservation act
- Coordinating with MoEWRI, GIZ/ NEEP and other stakeholders on ongoing EE related activities
- GoN has allocated dedicated budget for EE for FY 2076/77

Challenges and way forward

- Nepal is likely to meet Electricity Access target under SDG 7 but Clean Cooking Solution for all is big challenge
- Energy for cooking in households still accounts for the largest share in Nepal
- Regional Standards , Labeling, Star Ratings etc for cooking appliances and Energy Efficiency will be cost effective compared to National Standard
- Standard for injection of electricity from intermittent sources in the national grid
- Energy Planning
 - Need “Integrated National Energy Policy”
 - Limited capacity of Provincial and Local Governments
 - Methodology, Modeling, Tools and Software necessary
 - Customize NEXSTEP (National Expert SDG Tool for Energy Planning) for Municipal/Provincial Energy Plan



Our Partners in Achieving SDG 7 Targets



GREEN
CLIMATE
FUND



Thank you

Email: narayan.adhikari@aepec.gov.np