

# National Renewable Energy Framework

Approved by 71<sup>st</sup> AEPC Board Meeting dated 2074/07/16 (2<sup>nd</sup> November 2017)

## 1. Background

Access to affordable and clean energy services remains a concern for Nepal. The Government of Nepal (GoN) and Development Partners (DPs) have supported the renewable energy (RE) sector in Nepal since the 1990s. Renewable energy refers to hydropower up to 10 MW (including improved water mills), solar energy (both photo voltaic and thermal), wind energy and bioenergy systems that are used in households, communities and institutions/enterprises for cooking and heating or generating electricity. Since its establishment in 1996, the Alternative Energy Promotion Centre (AEPC) has been the national focal point for the promotion and development of RE in Nepal. Close to 3 million households and many enterprises are benefiting from RE systems promoted and supported by the joint efforts of AEPC and its partners.

The 'National Rural and Renewable Energy Programme' (NRREP) managed by AEPC has been operational as a single programme modality since 2012 and has completed its five years in mid-July 2017. Under the NRREP, the Central Renewable Energy Fund (CREF) was set up as a financial intermediation mechanism to be responsible for the effective delivery of subsidies and credits to the RE sector.

In the new context, the 'National Renewable Energy Framework' aims to continue the integrated approach and coordinate the activities in the sector across all stakeholders. It will operate in a flexible and phased manner, building on the successes from other initiatives, in particular NRREP, to create shared ownership and mutual accountability in federal Nepal.

## 2. Opportunities and Challenges

Nepal's Constitution of 2015 has incorporated federalism as the cornerstone of Nepal's political governance system and established a federal, provincial, and local level governmental structure. The local level governments have been entrusted with responsibilities for implementing RE and other local level development projects. The Constitution has also given prominence to RE as an important development priority. Given the internationally agreed goals primarily Sustainable Energy for All (SEforALL), Sustainable Development Goals (SDG) and Nationally Determined Contributions (NDC) related to the Paris Climate Change Agreement and national (Periodic Plans) targets of attaining universal energy access<sup>1</sup> by 2030, there is a clear opportunity for further RE development.

Despite strong policies and delivery achievements, around 25% of Nepal's population still does not have access to electricity. Furthermore, over 3 million households still cook using traditional cook stoves that have adverse health impacts especially on women and children.

The RE sector faces numerous challenges. There is insufficient ownership across all stakeholders (government, private sector and civil society), and there are still coordination challenges within the

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<sup>1</sup> To be delivered through the 'Clean Cooking and Lighting for All Initiative' as recently reiterated in the National Budget 2017-2018.

sector and limited linkages with other sectors. Capacity at all levels has improved but is still inadequate and fiduciary risks are only partially mitigated. Awareness on energy and financing options are still not widespread enough, and limited organised effort is being made for demand creation. Significant economic barriers persist, the subsidy delivery model despite its positive impacts, has shortcomings, and the transition to a market-enabled model has been slow. Technological and business model innovation for upscaling is still at an infancy stage, and enhancing productive end use of RE has proved difficult because of bottlenecks and challenges related to various components of the enterprise value chain, of which RE is only a part. The RE market is not significantly benefitting from innovative approaches, best available technologies (BATs), and global best practices and free and fair competition in the private sector is yet to be achieved. There is still inadequate access to finance and RE projects are often not bankable. Furthermore, the shift to federalism is expected to create opportunities but also additional challenges for implementation.

### 3. The Framework

#### 3.1 Introduction

The name of the framework will be "**National Renewable Energy Framework**". It will be known as the "**RE Framework**" or "**NREF**" in the short form. The Annexes are an integral part of the RE Framework.

The RE Framework is an umbrella mechanism for AEPC to coalesce and coordinate policies and programmes in the RE sector behind a set of strategic objectives. It is jointly owned by the GoN and DPs, and aims to converge initiatives of GoN, DPs and other organisations behind a common over-arching vision delivered through an integrated results framework. The RE Framework will serve to jointly coordinate and track results of various RE initiatives, engage stakeholders and help mobilise finance.

The National RE Framework will come into effect after the necessary approval, replacing the NRREP single programme modality. It will be flexible and adaptive to the political and governance context and hence might need to be appropriately revised or restructured to align with the new planning process, plans, and institutions emerging from the federal restructuring process.

#### 3.2 Framework Principles

The RE Framework will be implemented based on the following principles:

- Alignment with the Constitution and the associated legal regime for the RE sector
- Enhancement of policy and institutional coherence and harmonization of DPs and the federal, provincial and local government efforts
- Engagement with the private sector to develop innovative market-enabled approaches for RE services
- Acceleration of the transition from a subsidy-centred to a credit-focused model, together with smart subsidy provisions
- Facilitation of gender-responsive and inclusive energy access and productive end use
- Delivery at scale, geographically and financially
- Building and operationalising of systems to improve Nepal's access to and utilisation of international technical assistance and finance.

#### 3.3 Objectives and Components

The overall aim of the RE Framework is: *Enhanced productivity and market-enabled expansion of Nepal's RE sector leading to improved access to energy for all.*

This aim will be achieved through the following objectives.

1. Governance: Strengthen the policy framework, governance systems, and public institutions needed to foster development of the RE sector in Nepal
2. Demand: Increase the demand for, access to, and effective use of RE technologies (including grid and off-grid electricity) and services, and micro, small and medium-scale enterprises (MSMEs)
3. Supply: Improve capacity of the players across the supply chain to supply high quality and competitive RE technologies and services in Nepal including supporting the production of high quality RE technologies/components locally.
4. Financing: Increase access to finance for RE products and services by buyers and sellers through increased access to credit, strengthened finance mechanisms, and enhanced capacity of lenders.

Additionally, activities in capacity building, knowledge management, gender and social inclusion and monitoring will be carried out in a cross-cutting manner to achieve the above objectives.

The outcomes and output areas for each objective are described in Annex 1.

## 4. Implementation

### 4.1 Framework Partnership and Stakeholder Alignment

Stakeholders engage in Nepal's RE sector in different ways and to varying degrees in accordance to their roles and responsibilities. However, under the leadership of AEPC at the federal government level, DPs and other relevant stakeholders including Civil Society Organisations (CSO), private sector and financial institutions in the sector must align with the provisions of the RE Framework in their activities and initiatives. DPs are also encouraged to align their funding commitments to the RE Framework and harmonise with other initiatives rather than setting up parallel programme modalities that duplicate efforts and resources. Activities of all stakeholders under the RE Framework will be harmonised and through an Integrated Results Framework. This Integrated Results Framework will help to ensure that the activities together will achieve the over-arching objectives and outcomes of the RE Framework, whilst promoting synergies and avoiding duplications.

Local and Provincial Governments will be encouraged through advocacy and capacity building efforts to consider the RE Framework as a guiding tool for RE planning in the new federal structure<sup>2</sup>.

### 4.2 Mainstreaming, Monitoring, and Reporting

The RE Framework will be fully aligned to and supportive of the Constitution and the relevant legal and policy regime for the RE sector. The RE Framework vision and targets will align with Nepal's national development priorities, the SEforAll Framework and the SDGs, among others. It will endeavor to be an integral part of the planning, budgeting and monitoring systems, at the federal, provincial, and local governments. It will also align with successive targets across different timescales, and enable aggregation and disaggregation of activities and results from the governments and other stakeholders. All results and funding related to the RE sector will be aggregated for effective and efficient tracking and

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<sup>2</sup>Annex 2 lists the stakeholders currently engaged in RE development in Nepal along with their commitments, achievement targets and time period. This is for illustration purposes only and includes information up to October 2017.

reporting. Reporting frequency will be consistent with prevalent federal, provincial and local government reporting systems as far as possible.

The RE Framework targets and model will be adapted to any restructuring to ensure its alignment with the new planning processes and policies of the federal, provincial, and local governments that may result from the restructuring.

#### 4.3 Phased Approach and Sustainability

The RE Framework will present a shared understanding of sectoral priorities for the short, medium, and long-term. It will adopt a progressive and evolving approach to allow capacities at different levels to be enhanced incrementally and federal structures and mechanisms to be institutionalised.

- Short term (1-2 years): Status updates will be prepared, whilst priorities will be identified and implementation will commence across all components.
- Medium term (2-4 years): Implementation across all components will continue, and new ideas and approaches will be piloted.
- Long term (after 4 years): With increased support, scaling out and rolling out of the RE Framework (across geographies or new technologies and partner networks) will be facilitated.

Sustainability will be ensured through adaptive, flexible and inclusive approaches, sustainable fund flow mechanisms, collaborative implementation models and the long-term vision of SEforALL based on a multi-tier energy access framework of SEforALL.

#### 4.4 Governance: the RE Framework Steering Committee

The RE Framework Steering Committee (SC) will replace the existing SC of NRREP and will have strategic oversight of the RE Framework design, implementation, monitoring and reporting. It will approve the Integrated Results Framework, steer the institutionalisation process of RE Framework, and review and approve reports and other documents produced under it. It will also consider new DP programmes, and will seek to integrate and align them with the RE Framework. Furthermore, it will also provide a forum and support platforms for cross-learning and knowledge sharing across programmes and initiatives.

The SC will be chaired by the Secretary of the related federal government Ministry (Ministry of Population and Environment) and membership will include but is not limited to Executive Director of AEPC, Chair of CREF IC, representatives (Joint Secretary Level) of the federal government : specifically Ministry of Finance, National Planning Commission, Ministry of Federal Affairs and Local Development, Ministry of Energy and Nepal Electricity Authority; representatives of provincial (Ministry or relevant agency) and local governments (Municipality and Rural Municipality), civil society organization, private sector, and Development Partners. The member secretary will be the AEPC Executive Director and AEPC will serve as the SC Secretariat. The terms of reference of the SC will be prepared by AEPC and approved by the first meeting of the SC.

An RE Framework Coordination Committee with a broader and gender-inclusive membership may also be established to ensure enhanced cooperation and coordination in the sector.

#### 4.5 Framework Management and Delivery

The Integrated Results Framework will be prepared under AEPC's leadership and endorsed by the SC and reviewed on a periodic basis for efficiency, effectiveness and value-for-money. All stakeholders (existing and new) will be committed to reporting on activities and achievements.

Other provisions related to procurement, handling of non-compliance, fiduciary risk, force majeure and disputes will be as per the relevant government standards and procedures or bilateral or multilateral agreements signed between DPs and the GoN. Detailed guidelines and procedures to operationalise the RE Framework will be formulated in due course. This will also include development of an Integrated Results Framework, detailing out the RE Framework governance structure, clarifying the roles and responsibilities of stakeholders, especially with respect to federalism.

# Annex 1

## Outcomes and output areas

### 3.3.1 Governance

The Governance objective will comprise the following outcomes:

- An enhanced and coherent policy regime that supports market enabled but inclusive renewable energy development
- Implementing agencies and partners at the federal, provincial, and local levels have become capable, empowered, and resilient to quickly adapt to the governance restructuring based on the provisions of the new Constitution
- Coordination between RE sector stakeholders, including inter-governmental, among DPs and between the federal government and DPs, is improved
- Implementing agencies and partners are fully compliant with agreed fiduciary standards and are accountable
- Effective planning and mainstreaming of RE has increased
- Capacity of institutions to source, access, mobilise, and effectively spend national and international finance is strengthened.

These outcomes are expected to be achieved through actions in the following areas:

#### *3.3.1.1 Stakeholder engagement and policy implementation*

Activities to improve the planning process, coordination between stakeholders (including DPs) and facilitate appropriate policy reforms will be carried out. Support (including capacity building) for RE planning, and development by provincial and local governments and their related institutions will be provided. Mainstreaming of gender equality and social inclusion, disaster risk reduction (DRR), and climate resilience in RE policies and technologies will also be an important action area.

#### *3.3.1.2 Fiduciary risk management and accountability*

Actions to help strengthen management and increase transparency of public financial systems of related public institutions will be carried out, with a view to increasingly and appropriately channelling funds, and to expedite accreditation to international climate funds.

### 3.3.2 Demand

The Demand objective will comprise of the following outcomes:

- Users are aware of Best Available Technologies (BATs) and benefits of RE solutions
- Users, especially the poorest and most vulnerable, are increasingly aware of and can access appropriate financial support
- Equitable access to RE technologies and services among the poorest, most vulnerable, and socially excluded has increased
- MSMEs improve their businesses using RE technologies and services
- Users are motivated to use RE more efficiently.

These outcomes will be achieved through actions in the following areas:

### *3.3.2.1 Awareness creation and Inclusive Outreach*

Activities will be carried out to help engagement of CSOs and technology suppliers to improve awareness and knowledge of RE technologies and services and their efficient use by households, communities, and institutions resulting in behavioural changes.

### 3.3.3 Supply

The Supply objective will comprise the following outcomes:

- Development of competitive market through reverse auctioning, best available technology criteria and other such innovative mechanisms with a focus on customer after sales service
- Access of end users and markets to RET and service providers is increased
- Access of RET suppliers and service providers to appropriate financial solutions is improved
- Quality and compliance of RET players' processes in the entire value chain is improved
- Exposure to, and uptake of, innovative and inclusive business models and technologies is accelerated for players of the RET value chain (including after-sales and maintenance)
- Disaster and climate resilience is effectively mainstreamed in the RET value chain.

These outcomes will be achieved through actions in the following areas:

#### *3.3.3.1 Developing the Value chain and Market Systems*

Actions to analyse the bottlenecks at various levels of the RE value chain or market systems and support to address them will be carried out.

#### *3.3.3.2 Innovation and Demonstration*

Actions to support the development, uptake, exposure, piloting and demonstration of innovations in technology and business models will be carried out. Effective collaboration between research institutions and the private sector will be promoted.

#### *3.3.3.3 Quality Assurance*

Actions to promote healthy and fair competition between suppliers in the various market segments to ensure cost-efficiencies, avoidance of malpractice and satisfactory levels of quality will be carried out.

### 3.3.4 Finance

The Finance objective will comprise of the following outcomes:

- Access to new and more reliable, affordable and sustainable sources of finance for Banks and financial institutions (FIs) will be improved
- Access by BFIs to end-users, especially the poorest and most vulnerable, and suppliers through effective partnerships with local financial institution (LFI) networks will be enhanced
- Awareness and capacity of financial institutions' and project developers' renewable energy deployment and financing including management of credit risk is strengthened, especially through facilitation by CREF
- Bankability and profitability of RET projects is improved
- Piloting and uptake of innovative financial instruments is increased

These outcomes will be achieved through actions in the following areas:

#### *3.3.4.1 Finance Access and Mobilisation*

Actions to enable BFIs to access new and more reliable sources of finance such as the international climate funds will be supported. This will include capacity building of banks and financial institutions to ensure that the right fiduciary, environmental and social safeguards, and gender policies are developed

and incorporated. Financial institutions will also be encouraged and supported to invest in renewable energy.

#### *3.3.4.2 Research, Design, and Piloting of Financial Instruments*

Activities to support the development, piloting and roll-out of new and innovative financial instruments, including risk management instruments, for RE uptake will be carried out.

#### *3.3.4.3 Awareness and Capacity Building*

Actions to sensitize the need for, and build capacity of, financial institutions to link with technology suppliers in the sector will be carried out. Capacity of banks to better understand financing of RE projects and, those of LFI to understand household level RE options, technologies and policies, as well as greater awareness of innovative business models will be developed.

### 3.3.5 Cross-cutting actions

The following cross cutting actions will be carried out with GESI responsive approach to achieve the four objectives.

#### *3.3.5.1 Capacity Building*

Actions to enhance capacity of institutions and enterprises (including MSMEs) to plan, design, manufacture, install, operate, maintain, use, manage, monitor and evaluate RE systems and services.

#### *3.3.5.2 Knowledge Management*

Knowledge management activities will be carried out to ensure that good quality evidence is generated across the sector, shared effectively to inform planning and decision-making and used effectively to ensure quality implementation. Activities to generate, analyse, document and disseminate data and carry out research in the RE sector will be undertaken.

#### *3.3.5.3 Monitoring and evaluation*

The monitoring and evaluation (M&E) will provide systematic feedback to stakeholders to review and adjust (if needed) implementation and coordination strategies to effectively achieve the RE Framework objectives. The M&E will be aligned to relevant national and international requirements.

## Annex 2

### Current Renewable Energy Development Stakeholders in Nepal (October 2017)

List of stakeholders along with their commitments, achievement targets and time period is presented below.

<b>Name of Organization:</b>	<b>UNDP/Sustainable Energy for All (SEforALL)</b>
<b>Name of Project/Program:</b>	<b>Capacity Building for SEforALL in Nepal</b>

Component of National Framework	Contributing Activities from the program/project/organization	Budget (in USD)	Geographical Location
i) Governance and Institution			
Support government and NPC on preparation of Country action agenda and Investment Prospectus for SEforALL implementation in Nepal and enhancing its outreach to various stakeholders.	Preparation of the document with wider stakeholder contribution.	140000	Nepal
Institutionalization of SEforALL activities in NPCCS.	Provide Capacity building support to NPCCS.	50000	Nepal
ii) Finance			
Preparation of investment prospectus with scenario analysis in achieving SEforALL targets and with thematic analysis.	Preparation of investment prospectus in wider stakeholder consultation.	60000	Nepal
iii) Demand			
iv) Supply			
v) Others (cross-cutting etc.)			

<b>Name of Organization:</b>	<b>GIZ</b>
<b>Name of Project/Program:</b>	<b>EnDev</b>
<b>Start Date</b>	<b>May,2009</b>
<b>End Date</b>	<b>December,2018</b>
<b>Targets</b>	<b>The objective is to help 250,000 people gain access to electricity, and disseminate improved Cooking solutions for 148,500 people. A further 33 social institutions and 1,000 small to medium-sized enterprises should have access to Modern energy services by 2018.</b>

<b>Achievements( by December 2016)</b>	<b>Access to electricity: 220,000 people</b> <b>Access to modern cooking energy: 62,000 people</b> <b>Access to modern energy services: 606 social institutions and 2,900 SMEs</b>
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<b>Component of National Framework</b>	<b>Contributing Activities from the program/project/organization</b>	<b>Budget</b>	<b>Geographical Location</b>
i) Governance and Institution			
ii) Finance			
<b>EnDev via GIZ</b>	Development of the Micro Hydro Debt Fund including financing and TA to AEPC on Fund management, M&E, and Technical advisory. EnDev also provides direct TA to communities and coordination for the rehabilitation of sites.	1.14 mil. Euros	Country wide (as per demand)
iii) Demand			
<b>EnDev via SNV Nepal</b>	IWMEs installation in rural areas (partial subsidies to the installation of sites, M&E, and local capacity development)	340,000 Euros	Districts: Kavre, Sindhuli, Khotang, Makawanpur, and Nawalparasi.
iv) Supply			
<b>EnDev via Practical Action Nepal</b>	Market based dissemination of ICS (RBF mechanism that works to support private companies with incentives)	1.67 mil Euros	Districts: Gorkha, Dhading, Makwanpur, Nuwakot, Rasuwa, Baglung, Parbat and Myagdi

<b>Name of Organization:</b>	<b>GIZ</b>
<b>Name of Project/Program:</b>	<b>NEEP</b>
<b>Start Date</b>	<b>July,2014</b>
<b>End Date</b>	<b>June,2018</b>

<b>Component of National Framework</b>	<b>Contributing Activities from the program/project/organization</b>	<b>Budget</b>	<b>Geographical Location</b>
i) Governance and Institution			
<b>NEEP component 1</b>	Support and advice to the NRREP subsidy policy and mechanism revision process,		

	donor coordination		
Clean Cooking, <b>NEEP</b>	Advise of and facilitation of users perspective towards ICS, coordination with stakeholders on benchmarking, training of testing procedures and establishment of online database of tested ICS.		
ii) Finance			
Clean Cooking, <b>NEEP</b>	advise to Review process of NRREP subsidies, particularly on ICS	30,000 Euro	
iii) Demand			
Clean Cooking, <b>NEEP</b>	Information Distribution campaign towards potential ICS users on stoves tested according to Nepal Interim Benchmark (NIBC 2016)	50,000 Euro	Kathmandu, potentially all districts in which AEPC has RSC's
iv) Supply			
Clean Cooking, <b>NEEP</b>	Design/performance and quality improvements of biomass burnings ICS via establishment and enforcement of meaningful but attainable performance benchmarks, and respective support to coordination with ISO TC 285 on international stove standards	500,000 Euro	Kathmandu

<b>Name of Organization:</b>	<b>ADB</b>
<b>Name of Project/Program:</b>	<b>South Asia Sub-regional Economic Cooperation Power System Expansion Project (SASEC)</b>
<b>Project Start Date</b>	<b>July, 2014</b>
<b>Project End Date</b>	<b>June, 2022</b>
<b>Targets</b>	<b>Additional 30,500 households to be benefitted.</b>

<b>Component of National Framework</b>	<b>Contributing Activities from the program/project/organization</b>	<b>Budget (in USD)</b>	<b>Geographical Location</b>
i) Governance and Institution			
ii) Finance	Subsidy and credit financing for solar mini grid and mini hydro.	10 million	Nepal

iii) Demand	Training support to RET suppliers and capacity development of AEPC	1.2 million	Nepal
iv) Supply	Training support to RET suppliers.		
v) Others (cross-cutting etc.)			

<b>Name of Organization:</b>	<b>World Bank</b>
<b>Name of Project/Program:</b>	<b>Scaling Up Renewable Energy Program in Low Income Countries (SREP)</b>
<b>Project Start Date</b>	<b>November, 2014</b>
<b>Project End Date</b>	<b>December, 2019</b>

<b>Component of National Framework</b>	<b>Contributing Activities from the program/project/organization</b>	<b>Budget (in USD)</b>	<b>Geographical Location</b>
i) Governance and Institution	Provision of capacity building and support to AEPC on all aspects of Project management and implementation, including monitoring and evaluation.	100,000	All over Nepal
ii) Finance	Financing of Bio-gas energy generation sub-projects.	6.9 million	
iii) Demand	Technical studies for market research, market mapping, business plans for Bio-gas projects	280,000	
iv) Supply	Carrying out technical studies related to the preparation of a pipeline of potential biogas sub-projects, including mapping studies in commercial and municipal potential sites, and conducting outreach and promotion activities to raise awareness of funding opportunities for biogas plants installation.	620,000	
v) Others (cross-cutting etc.)			