**ASERD** 

DCDR ~

**Programs** 

#### Afghanistan Sustainable Energy For Rural Development

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#### Introduction

The Afghanistan Sustainable Energy for Rural Development (ASERD) programme developed by MRRD and UNDP builds on the existing efforts to provide energy to rural areas of Afghanistan. Rural areas of Afghanistan which remains socio-economically underdeveloped in terms of education, incidence of poverty, and access to infrastructure. Lack of access to

modern forms of energy has serious health implications on rural Afghani's and predominantly affects women and children. Lack of access to energy also constrains the productivity of private enterprise and limits delivery of public services. Rural areas of Afghanistan are also blessed with renewable energy resources such as hydro, solar, wind and biomass which, when combined with appropriate technologies and institutional approaches, could significantly support the development of rural areas.

The project contributes significantly to increasing the access to thermal energy and electricity through a technology neutral approach, in 19,500 households in 194 rural communities in Afghanistan. This will result in increasing the access to electricity, clean cooking and heating options and will contribute to a tangible reduction in the pre-mature deaths of women and children due to indoor air pollution. The project will pilot seven innovative financing models which once successful will be mainstreamed. The project will also establish conducive policy and regulatory frameworks and capacity development of key stakeholders. It is envisaged that, the project will establish a sustainable rural energy supply approach which can be scaled up beyond the project period.

#### Goal

Promote energy use for enterprise led economic development, and Prevention of indoor air pollution. The main goal of ASERD is rural economic development, energy services, environmental protection, social justice and women empowerment for rural communities in Afghanistan.

To reach the Project Outcome, ASERD programme will consist of the following four output

Output 1: Rural Energy Services increased in targeted areas: This output will seek to provide rural energy services

electricity using mini and micro-grids with a clear preference for larger mini-grids and will provide thermal energy

- both electrical and thermal energy to 194 rural village communities/CDC. The output will involve providing

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services through renewable energy and energy efficient systems and devices through a finance-service arrangement.

Output 2: Rural energy policy and regulations developed: This output will create a favourable policy environment for rural energy efforts. The output will sue development of technical and environmental protection standards and a quality assurance framework for rural energy equipment, specific legal and policy instruments to implement and

enforce the RREP; regulations for governing interface between mini-grids and the national grid and creating a fiscal

**Output 3: Innovative approaches to delivering rural energy piloted in target areas:** This output will involve the piloting of seven pilot rural energy service delivery models such as a 5P model, a rural economic zone, a private investment de-risking mechanism, migrant remittances linked rural energy service model, women's thermal energy service linked to carbon finance. Kuchi women's portable energy pilot and a mobile telephony linked rural energy service model.

**Output 4: Capacity of rural communities and relevant institutions developed**: This output will support the institutional capacity development of REED, MRRD, training and capacity building of banks/FIs; build capabilities of research, education and training institutions; carry out generic promotion and outreach; establishment and maintenance of a website; establish an MIS for the program; carry out analytical and policy research and publication of key reports.

### Theory of Change

and financial incentive framework.

If access to rural energy services are increased, robust rural energy policies and regulations are developed, innovative approaches to the delivery of rural energy are proven effective along with increased capacity of rural communities to manage the energy services, and the capacity of select institutions are strengthened; then there will be increased access to affordable energy in rural Afghanistan.

### ASERD strategic plan

Based on the existing experience in Afghanistan and the challenges and problems identified, the program will follow a three-pronged strategy:

to establishing a technology-neutral sustainable energy service delivery arrangement. Integrate thermal energy services provided through appropriate technologies into this proposition.

2. Expand the energy coverage in rural areas to support existing economic activities that can improve their

1. Graduate from the current approach of commissioning electricity generating infrastructure in rural communities

- productivity and also expand to public service institutions in rural areas such as schools and hospitals which could act as anchor customers. Strengthen the rural energy and renewable energy policy and regulatory framework to ensure sustainability of the delivery models.

  3. Pilot innovative implementation and delivery models for rural energy that leverage skillsets and resources from
- communities, private sector and financial institutions with a view to mainstreaming successful ones. These delivery models should be consistent with the financing principles of global financing mechanisms for climate change and energy.

# Border District Electrification Project (BDEP)

provision of electricity packages in rural Afghanistan those are bordering the Islamic Republic of Pakistan and the Islamic Republic of Iran was approved by H.E The president of Islamic Republic of Afghanistan on 25<sup>th</sup> March-2018 in High Economic Council. It was practically commenced in the MRRD ASERD in Sep 2018 as one of the Afghanistan Border District Electrification project.

In terms of scope and coverage area working across the 55 districts in 13 border provinces (Nangarhar, Konar, Nooristan, Herat, Kandahar, Helmand, Zabul, Khost, Paktya, Paktika, Farha, Nemroz, and Logar) of the country. The

BDEP (Border District Electrification Project) aiming to improve the living condition statues of households through

project development efforts are focused on helping the poor who dealing with many of the risks they face in their lives such as, lack of accessibility to read and write, lack of education, home and health facilities, lack of awareness to protect their environment, low economic growth and poor social condition.

The technical specification and design of the project has been prepared. Looking to the household's demand and their economic statues to apply the subsidy application, the solar home system has been considered in three

different packages (50, 75, 100) Watts with three different costs. Looking to the financial statues of border districts household's, majority of the people are living under poverty line. Therefore; the 80/20 business model was designed as subsidy application, because they cannot afford to contribute more than 20% of the kits. The electricity package includes: Solar panel, Battery, Charge controller, TV, Radio, Electric lights and protective equipment's. The purpose of the survey is to evaluate the people's poverty, electricity needs, current energy uses, households demand for the designed kits and required load capacity of the packages. Based on these mentioned assessments the survey is under process and till date it has been 54% progressed which is around 256,667 households in 48

In addition to socio and technical survey, the project team carried out a socioeconomic survey of BDEP targeted households using a combination of assessment, interviews, focus group discussions and case studies. The assessments were undertaken for their current lightening and energy expenses. In order to quantify BDEP project benefits, and support to border resident's economy of Afghanistan; a joint economic analysis is carried out. Several households are randomly selected and analyzed based on 7% discount rate to find an average EIRR, NPV and BCR values as shown below:

Internal Rate of Return (IRR) Net Present Value NPV (USD) Benefit Cost Ratio BCR

1.67

The above economic values prove BDEP as a beneficial project for improving local economy and households living condition through solar home system. And by the end of 10 years, project will earn approximately USD

149,841,445.62

149,841,445.62 million.

Expected results:

## At the end of the project following outcomes are estimated to be achieved:

border districts.

20.11%

Access of 556,757 households to electricity

Total 47 MW Electricity will be produced
People will have access to media
Better education

Access of 3,279,908 people to electricity

- Facilities for womenReduce eye and respiratory diseases
- Connect people with the governmentGet people support in remote areas
- Achievements
  - 1. Awarding the first hybrid mini grid project with the capacity of 340KW in Dara e noor district of Nangarhar Province that will cover 7 villages with more than 2000 HH along with SMEs.
  - implemented the installation of 17 solar hot water systems in 4 provinces (Hirat, , Parwan and Nangarhar) in 17 public health clinics .
     Purchased 79 Renewable Energy standards for Afghanistan National Standards Authority (ANSA
  - 5. Develop and Finalization of the Rural Renewable Energy strategy6. Distribution of 4400 efficient cook stoves in four provinces of the country (Kabul, Nangarhar, , Hirat and Parwan).
  - 7. ASERD has also included the design for mobile technology in collecting the energy tariffs for the power plants in the current project in Shemol. The system will be used once the power plant is functional8. Awareness workshop on use and benefits of Cook stove in four provinces (Hirat, Balkh, Parwan and Nangarhar)

2. Completion of the designs and initiated the procurements for the construction of 4 power plants, 1 hydros and 3

solar, for 79 communities (covering about 10 000 households) to provide access to affordable energy

- Installation of Demonstration models (MHP, Wind turbine, Solar Street lighting) in Rural Technology Park of MRRD.
   Provided Laboratory equipment for Kabul University and establishment of a library in Kabul Polytechnic University.
   Conducting Renewable Energy Technical Course for energy stakeholders in American University.
- 13. installed 10KW solar energy for ASERD HQ building.14. The feasibility study of 25 mini grids completed in 17 provinces of the country.
- ASERD's Website

HR

12. Provided several capacity building trainings inside and outside the country.

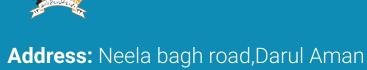
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**Donors & Contracts** 



FAQ





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