



# An overview of Renewable Energy Technologies

WORLD BANK, AFGHANISTAN. 2016

# Report Format and Organization

- ▶ The Report includes:
  - ▶ Abstract
  - ▶ Introduction/Objective
  - ▶ Background
  - ▶ Technologies Overview
  - ▶ Best Practices
  - ▶ References

# Report Format and Organization

## ▶ Abstract:

- ▶ As renewables progressively become cost-effective resources and practical assets for off-grid systems, it is important to have a clear picture of their current status, their prospects and the methodological improvements to track the development.
- ▶ Many renewable technologies are suited to small off-grid applications, and good for rural, remote areas, where energy is often crucial in human development. Such small energy systems can contribute to the local economy and create local jobs.
- ▶ In order to compare and aggregate the applications and to provide a global perspective on the scale of deployment, a characterization of off-grid renewable energy systems in a systemic way is useful.

# Report Format and Organization

- ▶ Objectives:
- ▶ The overview of renewable Energy Technologies (RETs) gathers comprehensive information on status of most practiced and successful RETs across the developing countries which could be chosen for being developed in Afghanistan.
- ▶ With a look to the technicality nature and financing issues, the RETs report aims to increase the knowledge to either sides of RETs among the

# Report Format and Organization

- ▶ Objectives:
- ▶ Due to widely dispersed rural communities, difficult terrains, additional infrastructure and resources, there is huge need of support to distributed RETs, and hence the report looks to the reliability and sustainability of each technology in terms of long term use and easy maintenance, which could be offered to rural areas.
- ▶ The work will inform the Afghanistan Energy Study of available options and successful practices in developing countries.

# Report Format and Organization

## ▶ Main report:

An overview to:

- ▶ Small Hydropower
- ▶ Solar Stand-alone System
- ▶ Wind Power.
- ▶ Geothermal Power
- ▶ Biogas
- ▶ And quick glance to Mini-grids for community based approaches.

# Report Format and Organization

## ▶ Main report

For each technology it summarizes:

- ▶ Technical status,
- ▶ Implementation issues,
- ▶ Opportunities and challenges,
- ▶ Cost and economics
- ▶ Quality standard
- ▶ And basic Recommendation for the Operation and Maintenance

# References:

- ▶ The main sources:
  - ▶ World Bank
  - ▶ IRENA
  - ▶ Alliance for Rural Electrification
- ▶ Sources include:
  - ▶ Reports and Publications
  - ▶ Books
  - ▶ Articles





# **Comments and Recommendations**