

ISLAMIC REPUBLIC STATE OF AFGHANISTAN



Ministry of Energy and Water

Renewable Energy Department Country Presentation

By

**Abdul Jamil Musleh
Acting Director**



ISLAMIC REPUBLIC STATE OF AFGHANISTAN

Part 1

About Afghanistan

Part 2

Renewable Energy in Afghanistan

Part 3

Renewable Energy Framework

Part 4

Biogas in Afghanistan





ISLAMIC REPUBLIC STATE OF AFGHANISTAN

Part 1

About Afghanistan





ISLAMIC REPUBLIC STATE OF AFGHANISTAN

- **Location:** located between Central and South Asia
- **Population:** Around 32.5 M
- **36%** of population **living in poverty** (UNDP 2013 HDR)
- **Agriculture** is the **largest sector** contributing **33%** of GDP and employing **78.6%** of labor
- Over the past three decades, **forest cover** has decreased by **50%**. Today forests cover only **2% of Afghanistan** (UNEP 2013)
- One of the most vulnerable countries to climate change (UNEP 2014)



ISLAMIC REPUBLIC STATE OF AFGHANISTAN

Part 2

Renewable Energy in Afghanistan





RENEWABLE ENERGY IN AFGHANISTAN

No	Type	Potential
1	Hydro Power	<ul style="list-style-type: none">• 23,000MW of Energy• Current collective installed capacity of Hydro Power energy is over 270 MW.• 125+ sites have been identified for MHP, with potential of over 600MW of electricity• Micro/Mini hydropower (MHP) prefeasibility studies plants have been done in nine provinces.
2	Wind Energy	<ul style="list-style-type: none">• Commercially exploitable wind resources exist in many parts of the country.• 68000 MW Potential, 5MW/km²• 31,600km² windy land area i.e. 5% of Afg. total land area.• The most windy areas of Afghanistan are; Herat, Farah, Balkh, Naimroz and Takhar Provinces.



RENEWABLE ENERGY IN AFGHANISTAN

No	Type	Potential
3	Solar Energy	<ul style="list-style-type: none">• Afghanistan has excellent solar energy resources throughout its regions.• 300 Sunny day in one year.• 3,000 Hours of Sun.• 6.5 kWh/m² per day solar radiation average• Over 100,000 (over 650 Villages) solar home systems (SHSs) have been installed in various parts of the country.• Solar street lights have been put in place at different parts of the country.• Solar water pumps at different part of the country used for irrigation and drinking water.





RENEWABLE ENERGY IN AFGHANISTAN

No	Type	Potential
4	Bio-Mass	<ul style="list-style-type: none">• More than 85% of Afghanistan's energy needs are met by traditional biomass, mainly wood and dung, however this has led to severe deforestation.• Other sources of Biomass in Afghanistan are; Human/Animal waste, Municipality Waste (Garbage) etc.• An estimated 350 small biogas digesters have been installed in different parts of Afghanistan.
5	Geo-Thermal Energy	<ul style="list-style-type: none">• Prospects of low to medium temperature geothermal resources are widespread all over Afghanistan.• 3 big possible regions of geothermal (Heart-Panjshir, Chaman – Moqor and Sarobi – Altimore)• Tectonic structure of Afghanistan suggests the presence of vast hot water circulation systems underground - 27 Geysers has been identified• Power plants to be built in Afghanistan could range from 5 to 20MW each



ISLAMIC REPUBLIC STATE OF AFGHANISTAN

Part 3

Renewable Energy Framework





ISLAMIC REPUBLIC STATE OF AFGHANISTAN

Name of the Document	Dated and Version	Remarks
AREP	2016, Approved	
PSMP	2013, Final	
RAGA	2015, Draft	
Strategy and Guidelines for Implementation of AREP	2015, Draft	
Energy Service Law	2015, Approved	
Feed-in-Tariff Policy	2015, Final Dari Version	
Investment Policy	2015, Final Dari Version	
RREP	2014, Draft Version	
EOI for 100 MW	2016, Final Version	



ISLAMIC REPUBLIC STATE OF AFGHANISTAN

Part 4

Biogas in Afghanistan





ISLAMIC REPUBLIC STATE OF AFGHANISTAN

Biogas Potential in Afghanistan

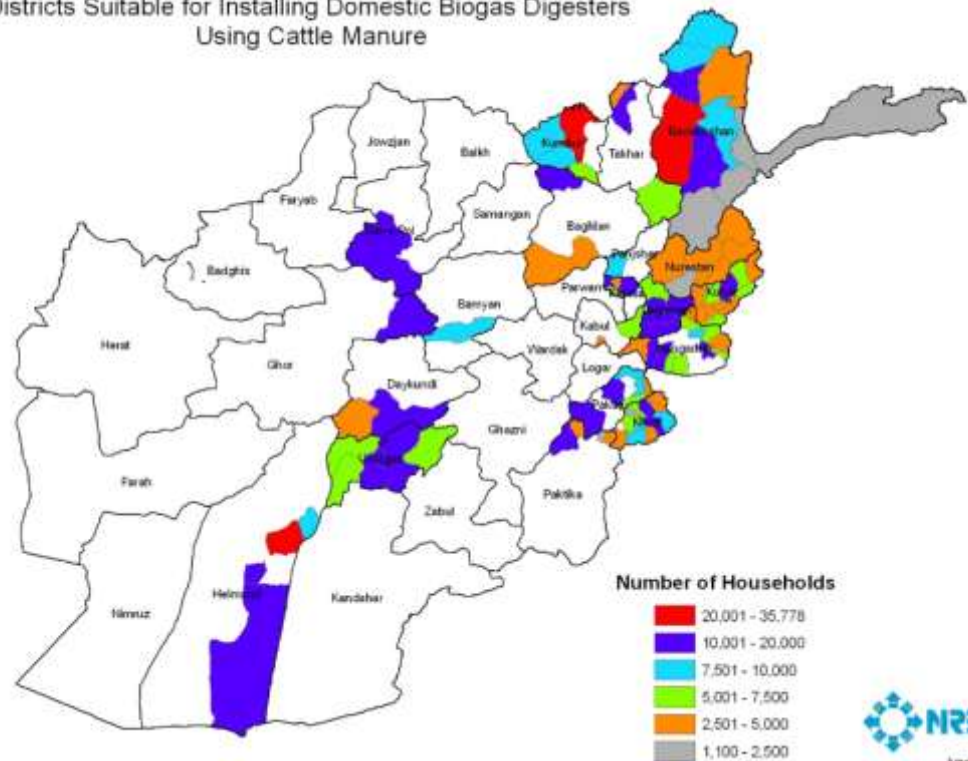




ISLAMIC REPUBLIC STATE OF AFGHANISTAN

- Total animal manure produced is 39.187 MT annually.
- This volume can produce 1567 MCM of biogas.
- This is equivalent to produce 7367 GW h of energy.

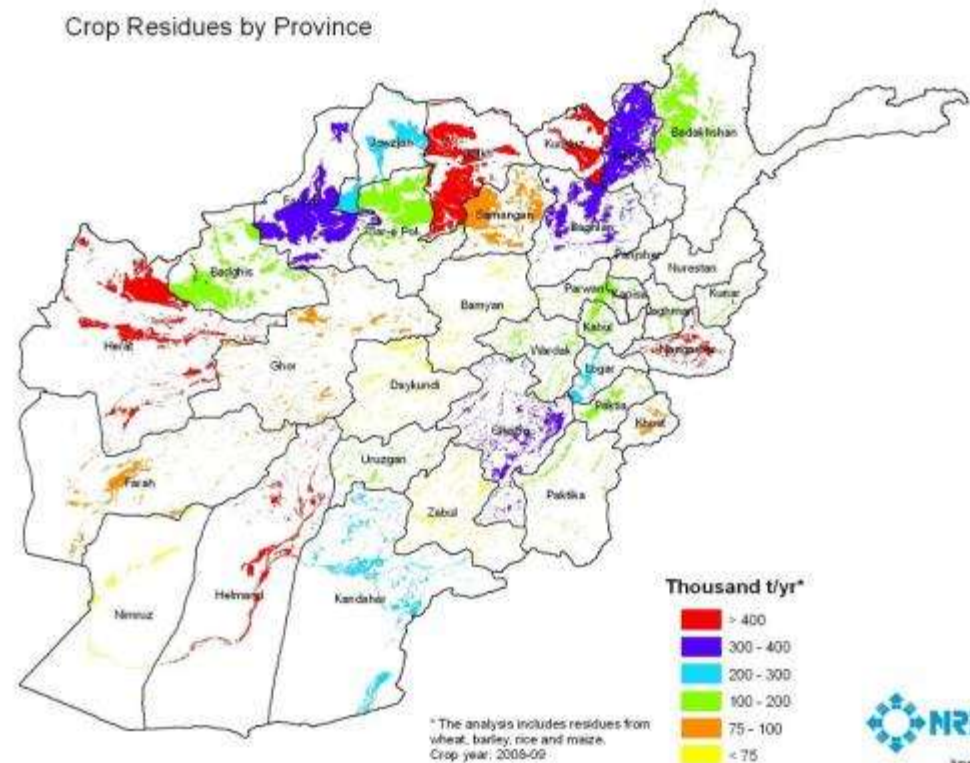
Districts Suitable for Installing Domestic Biogas Digesters Using Cattle Manure





ISLAMIC REPUBLIC STATE OF AFGHANISTAN

- Total crop residues produced is 6.49 MT annually.
- This is equivalent to produce 27.083 Gwh of energy



June 2010

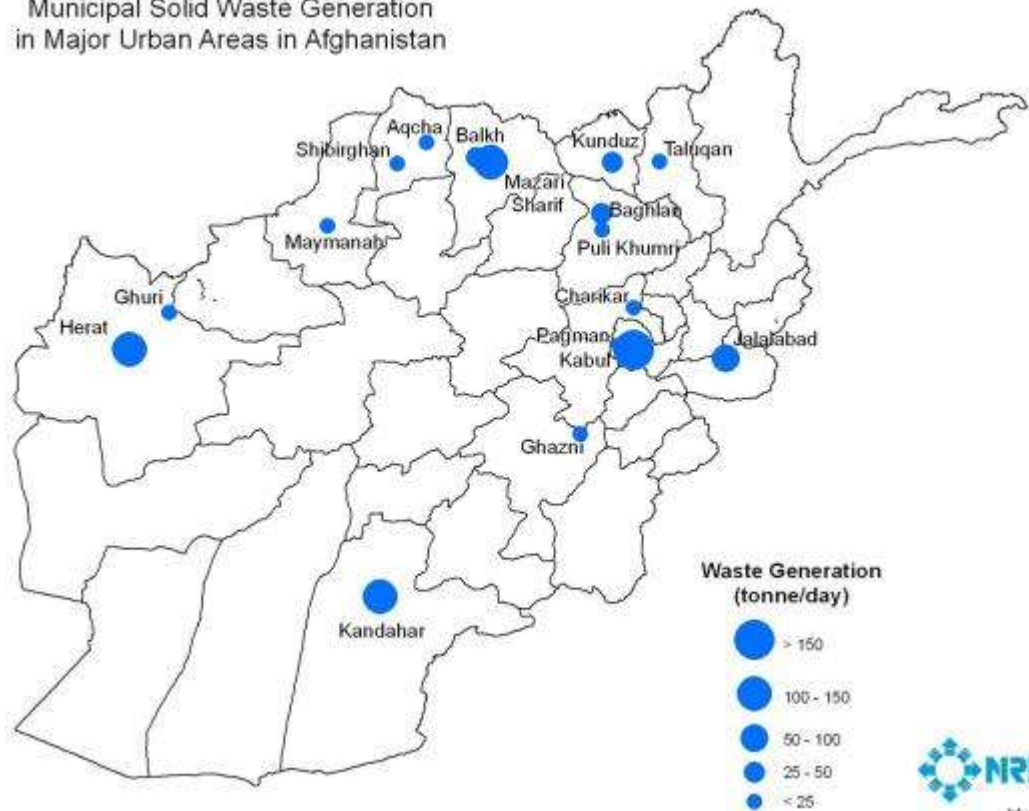




ISLAMIC REPUBLIC STATE OF AFGHANISTAN

- Total municipal solid waste produced is 3.72 MT annually.
- This is equivalent to produce 819 Gwh of energy.

Municipal Solid Waste Generation in Major Urban Areas in Afghanistan





ISLAMIC REPUBLIC STATE OF AFGHANISTAN

Current Status





ISLAMIC REPUBLIC STATE OF AFGHANISTAN

- **Approx. 350 domestic biogas projects are implemented by different stakeholders**
- **Biogas Consortium Afghanistan is developed for knowledge sharing and coordination**





ISLAMIC REPUBLIC STATE OF AFGHANISTAN

- Cold climate biogas is initiated
- Capacity building programs for small/medium enterprises and local craftsmen
- Ongoing research





ISLAMIC REPUBLIC STATE OF AFGHANISTAN

*Thank
You*

