



Executive Summary

The Afghanistan power system contains four different networks that are not fully interconnected. A completely integrated and developed national grid is expected by 2019-20. In addition, the country's power system is comprised of 10 isolated grids or islands supplied through different power systems by 220KV and 110KV. The current grid based electricity only covers 30-35 percent of the population. Moreover, lack of grid connectivity and inadequate supply have resulted in electricity inaccessibility in rural areas and power failures in major cities like Kabul. The current Afghanistan's electricity consumption stands for 130KWH/year/person which is considered very low compared to south Asia average of 667KWH/year/person.

The demand for power since the last decade has significantly grown up with household and metered connections by 65% and 200% respectively. For instance, the demand for power in four largest cities of Afghanistan is growing by 19% annually. It is forecasted that the demand for power in these cities will reach to 3500MW by 2032. Whereas the supply of power in Afghanistan lacks. Overall 19% of the plants are either in shut down mode or operating at lower efficiency. Moreover, the increased demand for heating, and non availability of hydropower in the winter further created demand and supply gap. Currently the country generates 623MW and imports 1753MW.

Afghanistan has a high potential in terms of power production. The country has 440bcm of proven gas reserves in the northern and west regions, 73m tons of coal reserves in central highlands, and hydropower potentials amounting to 25,000MW in the eastern and southern regions. The country has the opportunity to play as an important energy resource corridor between Central and south Asia and there is the potential to develop off-grid renewable energy projects like solar, wind and biomass.

The Ministry of Energy and Water (MEW) is the main regulatory body that is governing while DABS is operating the power sector in Afghanistan. Apart from that, There are several other regulating bodies that are indirectly involved in power sector like Ministry of Finance (MoF), Ministry of Rural Rehabilitation and development (MRRD), Ministry Urban Development and Housings (MUDH), Ministry of Economics (MoEC), and National Environmental Protection Agency (NEPA).

There are several projects which have been planned by MEW to improve power sector in Afghanistan. The projects are classified into two categories: generation and transmission. Generation projects are for the purpose of linking Central Asia with South Asia via Afghanistan. Whereas the transmission projects are classified into hydropower, Solar power, Geothermal, Biomass, Wind, and Gas.

GoRA has taken milestone steps to develop the competitiveness of Afghanistan power industry. The interested companies can send us their proposal and sign Power Purchase Agreement (PPA) with DABS. The detailed process map is at the end of this PowerPoint.

In 26/08/2015, THE ELECTRICITY LAW HAS BEEN APPROVED BY THE CABINET OF AFGHANISTAN

De Afghanistan Breshan Sherkat

- DABS is an independent entity established under the corporations and limited liabilities law of the Islamic Republic of Afghanistan. It was created in order to commercialize the power sector
- DABS operates and manage electric power generation, import, transmission, and distribution throughout Afghanistan on a commercial basis.

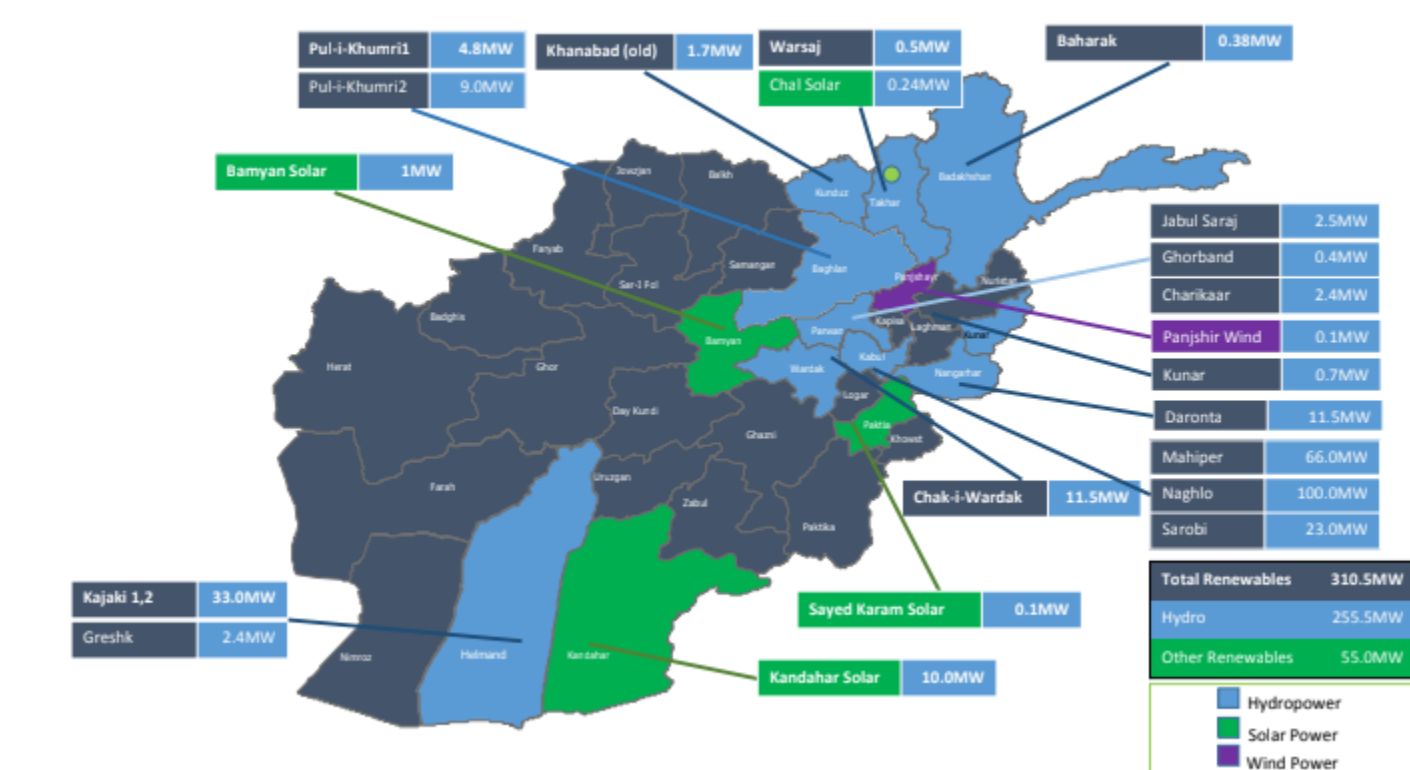
Ministry of Electricity & Water

- The Renewable Energy Department (RED) has been established by the MEW to increase affordability and access to renewable energy services and accelerate market development for renewable energy technologies by reducing existing barriers (regulatory, technological, capacity building, economic/financial)
- The (RED) of the Ministry of Energy and Water (MEW) is responsible for directing Afghanistan's available renewable energy resources for maximum social and economic benefit

Afghanistan Electricity Regulatory Authority (AERA)

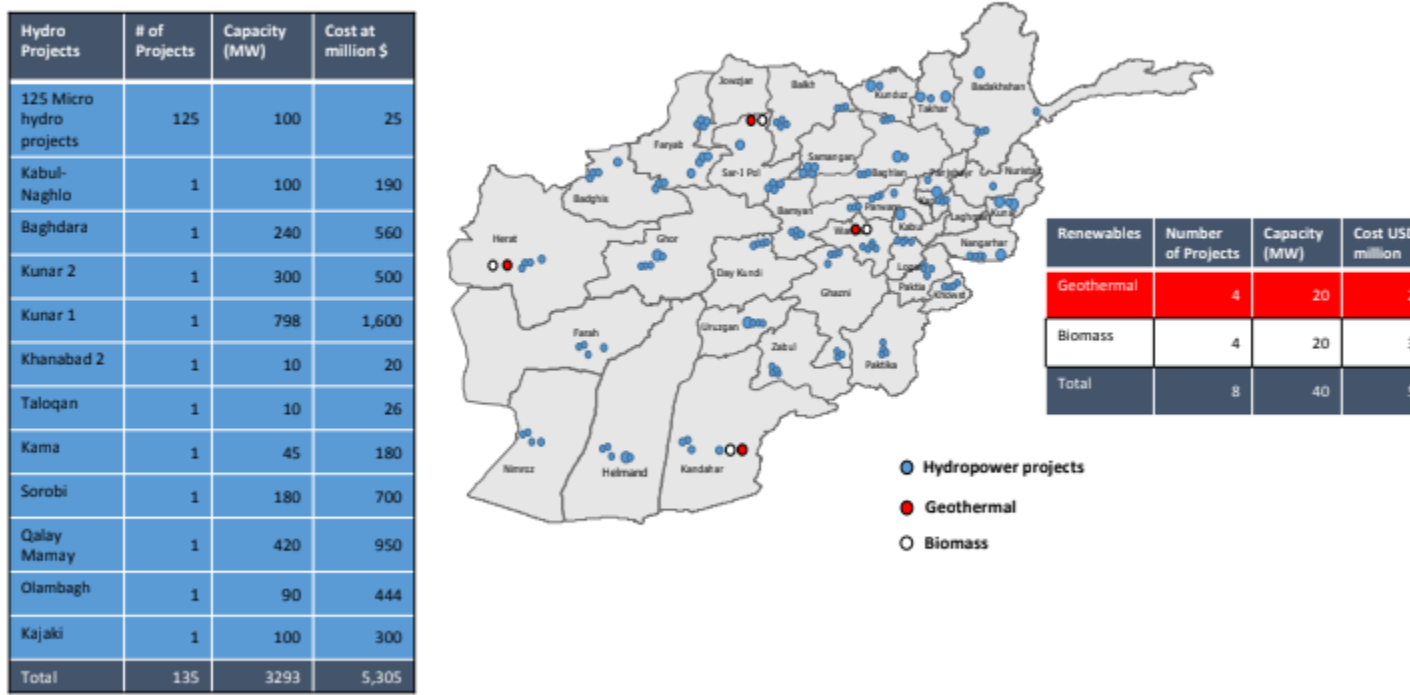
- Based on the electricity law, the Afghanistan Electricity Regulatory Authority (AERA) is soon to be formed under the framework of MEW.
- AERA will be responsible to regulate the electricity service market and to assure a properly functioning market.
- AERA shall be supported by revenues from electricity service licensee fees and by grants from donor agencies.
- AERA shall be comprised of five members commission with more than five years experience to lead and regulate the relevant affairs of the AERA.

Current Available Domestic Supply of Power From Renewable Sources



Afghanistan has number of potential power generation sources such as hydropower, Gas, Wind, Solar, Geothermal, and Biomass. Based on MEW's planned projects, the country is going to fully utilized from the potential sources by the end of 2024.

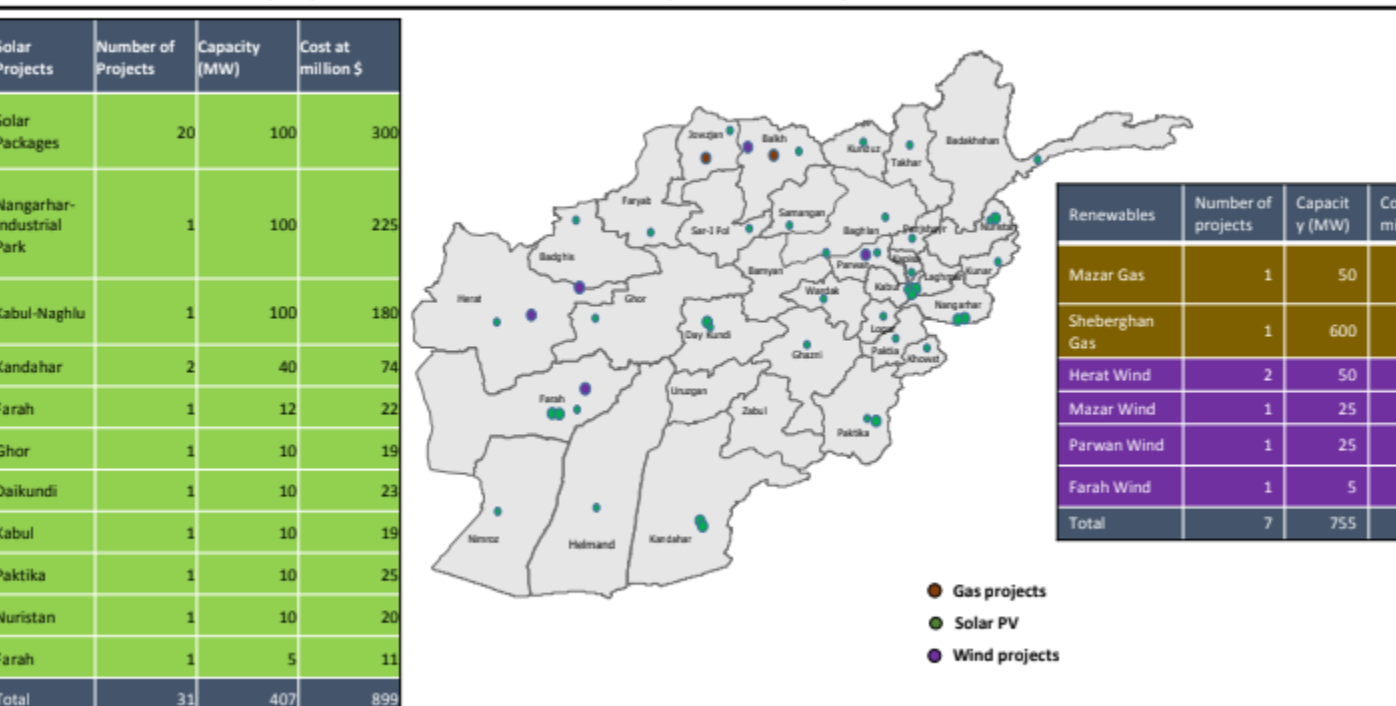
The map below illustrates the total number of planned hydropower, Geothermal, and Biomass projects to developed until 2024



Source: National Power Sector Overview & Afghanistan Energy Information Center (AEIC)

Investment Opportunities

Total Number of Planned Hydropower, Geothermal, and Biomass Projects to be Developed Until 2024



Investment Plan for Hydro & Alternative Energies

| Projects Investment Plan million USD | | | | | | | | | |
|--------------------------------------|---------------------------------|-------------|-------------|-------|-------|---------|---------|-------|---------|
| No | Generation Projects | Status/Fund | Source | MW | 2016 | 2017 | 2018 | 2019 | 2020 |
| 1 | Mazar Gas Power Plant | Yes | Gas | 50 | | | | | |
| 2 | Kandahar | Yes | Solar | 10 | | | | | |
| 3 | Kandahar | Yes | Solar | 30 | | | | | |
| 4 | Farah | No | Solar | 12 | | | | | |
| 5 | Sheberghan Gas Power Plant | No | Gas | 600 | | | | | |
| 6 | Kabul-Naghro Solar-Hydro Hybrid | No | Solar/Hydro | 100 | | | | | |
| 7 | Herat Wind | No | Wind | 50 | | | | | |
| 8 | Noristan Solar-Hydro Hybrid | No | Solar | 10 | | | | | |
| 9 | Industrial Park | No | Solar | 100 | | | | | |
| 10 | Mazar Wind | No | Wind | 25 | | | | | |
| 11 | Parwan Wind | No | Wind | 25 | | | | | |
| 12 | Farah Solar and Wind Hybrid | No | Solar/Wind | 10 | | | | | |
| 13 | Ghor Solar - Hydro Hybrid | No | Solar/Hydro | 10 | | | | | |
| 14 | Daykundi Solar | No | Solar | 10 | | | | | |
| 15 | Kabul Solar Rooftop | No | Solar | 10 | | | | | |
| 16 | Paktika Solar | No | Solar | 10 | | | | | |
| 17 | Geothermal | No | Geothermal | 20 | | | | | |
| 18 | Municipal Biomass | No | Biomass | 20 | | | | | |
| 19 | 125 Micro Hydro | No | Hydro | 100 | | | | | |
| 20 | Herat | Yes | Solar/Wind | 2 | | | | | |
| 21 | Naghro | Partial | Solar | 100 | | | | | |
| 22 | Solar Package | No | Solar | 100 | | | | | |
| 23 | Nangarhar | No | Solar | 40 | | | | | |
| 24 | Kajaki Dam - Phase II | No | Hydro | 100 | | | | | |
| 25 | Khan Abad II | No | Hydro | 10 | | | | | |
| 26 | Taloan | No | Hydro | 10 | | | | | |
| 27 | Baghdara Dam | No | Hydro | 240 | | | | | |
| 28 | Kunar 2 (Shail) | No | Hydro | 300 | | | | | |
| 29 | Kunar 1 (Shail) | No | Hydro | 798 | | | | | |
| 30 | Karna | No | Hydro | 45 | | | | | |
| 31 | Sarobi II HPP | No | Hydro | 180 | | | | | |
| 32 | Datal Mamay Dam | No | Hydro | 420 | | | | | |
| 33 | Clamagh Dam | No | Hydro | 90 | | | | | |
| Total in million USD | | | | 3,637 | 720.6 | 1,632.7 | 1,282.2 | 762.6 | 1,039.9 |

Source: MoPE

Process Map for Power Sector Projects



Investment Proposal Submission Process

| Description | |
|-----------------------------|--|
| Required information | <ul style="list-style-type: none">Detailed business planCompany profileList of past projectsHistorical & forecasted financials |
| Proposals' submission Email | afgproposals@gmail.com |
| Contact number | |
| Proposal Submission Process | There are three entities through which investors can submit their business proposals including: (1) Office of Senior Economic Advisor to H.E. the President, (2) PPP office of MoF, and (3) High Economic Council. Once one of these three relevant authorities receive a business proposal, they will do their evaluation and will send their feedback to HEC. Upon HEC authorization, the proposal will be put on the agenda for approval. If the proposal gets finalized by HEC, the company would then sign MOU with GoRA and will start the agreement implementation process by signing three contracts including: (1) Land Lease Agreement with MoMP, (2) Gas Sales Agreement with MoMP, and (3) Power Purchase Agreement with DABS. |