



**BAYAT POWER, LTD.**

**ENVIRONMENTAL AND SOCIAL  
MANAGEMENT POLICY**

**2019**



## I. BACKGROUND

### 1.1 Introduction

Bayat Power aims to maintain the environmental and social integrity of the communities in which we work. Our environmental strategy is based on minimizing environmental impacts through planning and innovation, through complying with all environmental regulations and global best practices. We are working to maintain or decrease our carbon air and waste footprint. By training and developing our workforce to understand and apply our environmental procedures daily, we are privileging an environmental prevention work mindset instead of a reactive one.

It is unavoidable that our activity – generating electricity – implies potential environmental impacts on multiple levels: air emissions, waste production, water consumption, wastewater discharges, biodiversity (flora and fauna) effects, natural resources reduction, among others. Under this context, we seek continuously and in a dynamic way, to use innovative approaches to environmental management and to plan and implement suitable environmental management systems (EMS) to minimize any potential impact. Every EMS we develop is appropriate and tailored to the nature and scale of each project, promoting sustainable environmental performance and leading to improved environmental outcomes.

Therefore, while some minimal impacts may result from civil works and ongoing facility operations, Bayat Power is committed to conducting itself per the laws and regulations of the Government of Afghanistan and ensuring that we operate in a manner that is consistent with being a “good neighbor and citizen” for current and future generations of Afghan citizens, flora, and wildlife.

### 1.2 Environmental Stewardship

Our approach to environmental sustainability is aligned with the International Finance Corporation (IFC) Performance Standards and with United Nations Global Compact Principles. They are reflected in our core business principles, which guide our day-to-day operations and our sustainable business strategy to promote environmental stewardship:

- Pollution prevention and abatement
- Biodiversity conservation
- Sustainable natural resource responsible management

Expected environmental impacts from our projects may include dust and noise related to demolition and construction; disposal of construction waste; waste management during operation of the facilities, and minimal air emissions.

The potential adverse environmental impacts for the project are summarized below and are restricted in scope and severity:

- Dust and noise due to demolition and construction;
- Disposal of construction wastes;
- Risk from inadequate handling of wastewater and solid waste during operation of the building.
- Minimal risk of more polluted than expected air emissions being released.



These risks have been effectively anticipated in advance of project implementation and addressed by direct mitigation activities in the design, planning and construction supervision process as well as during the operation of the facilities.

### 1.3 Community Engagement

Bayat Power's mission is to improve lives by offering reliable and accessible electricity, to promote economic growth and social well-being through the elimination of poverty, and to make the places where we work better because we are there. To accomplish this, we are committed to engaging and consulting all relevant stakeholders, including communities and investing in social projects.

Our Social Investment Strategy, provides guidance to our businesses on the successful implementation of such projects. The key factors for assessing and managing the social environment where we work successfully are:

- Enlist the communities, where our businesses are inserted in, as partners in our projects
- Understand their specific environmental needs and concerns
- Share information about our projects,
- Invite social dialogue and solicit ideas for creative social investments

Through its "sister" organization, The Bayat Foundation, Bayat Power establishes social projects in which the population assumes its active role as an agent of change for its own development, while the company assumes a role of the facilitator. Working for Bayat Power during construction and operational phase of projects means: making the communities where we work better, because we are there. Ethics, transparency, respect. Respecting people, respecting differences and similarities, respecting cultures and beliefs, respecting animals, respecting the environment in which we live, respecting life.

## II ENVIRONMENTAL MANAGEMENT FRAMEWORK

### 2.1 Site Specific Environmental Screening and Review

As a part of our corporate policy, all Bayat Power supported projects will be subject to a detailed internal site-specific environmental screening and review process.

### 2.2 Monitoring and Supervision

The environmental issues including mitigation measures are supervised periodically by senior management and – where needed – with applicable international experts.

No major environmental impacts are anticipated under the proposed program given the size of the investments and the use of the most modern generation equipment, designed for use in European and other Western markets with extremely rigorous environmental standards. None of the units to be put into operation are expected to have any large scale, significant and/or irreversible impacts. The potential minimal negative environmental impacts are expected to be localized and to be mitigated during the construction and early operation stages.

Our Bayat Power Environmental Management Plan (EMP) template presented below identifies the potential environmental impacts and related mitigation measures for most of the activities under the rehabilitation the existing pre-school education facilities.

### Environmental Management Plan Template

<b>Environmental Component</b>	<b>Impacts</b>	<b>Mitigation Measures</b>
<b>Physical Environment</b>		
Soils	contamination from waste materials	<ul style="list-style-type: none"> <li>• protection of soil surfaces during construction;</li> <li>• control and daily cleaning of construction sites;</li> <li>• provision of adequate waste disposal services to assure regular waste discharge and soil</li> </ul>
Water	<ul style="list-style-type: none"> <li>• clogging of drainage works</li> <li>• introduction of hazardous wastes</li> </ul>	<ul style="list-style-type: none"> <li>• special attention to drainage, proper disposal of oil and other hazardous materials;</li> <li>• rehabilitation of adequate sanitary facilities and purifying constructions including appropriate disposal of wastewater and sewerage</li> </ul>
Air Quality	dust during construction, emissions during operation	<ul style="list-style-type: none"> <li>• dust control by water or other means to keep dust down if problem is evident</li> <li>• modern turbine technology has nmost advanced emissions control regime in the marketplace today</li> </ul>
Noise	noise disturbance during construction or operation	<ul style="list-style-type: none"> <li>• restrict construction to certain hours</li> </ul>
<b>Social Environment</b>		
Aesthetic and Landscape	<ul style="list-style-type: none"> <li>• risk of construction debris dumped into nearby water bodies;</li> <li>• disposal of construction waste</li> <li>• risk of unauthorized access to the construction areas</li> </ul>	<ul style="list-style-type: none"> <li>• the building site will be cleaned and all debris and waste materials will be disposed of in accordance with clauses specified in the bills of quantities;</li> <li>• the sites for disposal of construction waste will be government- approved sites;</li> <li>• maximal secondary use of wastes;</li> <li>• fencing of the construction areas to avoid unauthorized access;</li> </ul>
Human Health	<ul style="list-style-type: none"> <li>• construction accidents</li> <li>• working under an exposure of noise and dust</li> </ul>	<ul style="list-style-type: none"> <li>• specially designed systems for handling/disposal of hazardous wastes;</li> <li>• use of individual protection means;</li> <li>• prior health check-ups of workers involved in the renovation works;</li> </ul>

	<ul style="list-style-type: none"> <li>• potential negative impact of materials used in the construction</li> </ul>	<ul style="list-style-type: none"> <li>• ensure a use of only materials which have an appropriate permission;</li> </ul>
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### **III. ENVIRONMENTAL GUIDELINES**

#### **3.1 Introduction**

The Environmental Guidelines section details the specifics to be addressed by Bayat Power in the ecological/biologic concept, design and planning of power generation projects. The guidelines cover the handling of construction debris generated, selection of construction materials and construction methods with limited impact on the environment, and energy saving methods. The guidelines are a base for training and supervision.

#### **3.2 The Sites**

The site-specific screening and review should carefully assess the following issues:

- Prior consultation with the affected community to explain the planned works, potential impacts to note and address their concerns.
- Dust and noise due to the demolition and construction.
- Dumping of construction wastes, accidental spillage of machine oil, lubricants, etc.
- Ongoing emissions protocols

Dust from transportation and handling of construction material will be minimized by sprinkling water and by other means such as enclosure of construction sites. To reduce noise, construction will be restricted during certain hours. All debris, construction and wood waste will be stored within the work site. Wood waste will be stored separately and arranged to be recycled instead of disposing it. Open burning and illegal dumping will not be permitted. Proper sites for earth/clay and sand disposal will be determined and prior approval from relevant authority for disposal will be obtained. Stock piling of construction debris on site will be avoided and waste will be disposed of on a regular basis at the authorized government dumping ground.

It is necessary to arrange transport and make agreements with relevant organizations involved in waste and construction debris disposal.

If new equipment or systems (e.g., sewerage) are installed; it will be necessary to confirm the regularity of service and safety of each such equipment unit or system. It therefore will be necessary to create a working commission including representatives of Afghanistan's government tasked with protection the environment.

#### **3.3 Energy Efficiency, Insulation and Ventilation**

Insulation will be tailored to the seasonal impacts of climate, internal thermal load, and characteristics of exposure. Vapor barriers should prevent moisture intrusion in the roof insulation and outer wall cavities and using damp course.

Window location will be determined on view, ventilation, economy of light, thermal gain, privacy control and interior space functions.



High-efficiency systems for heating water (including solar systems) and for interior space heating should be selected with maintenance and long term running costs in mind. Plumbing should be coordinated to minimize plumbing works and also water service to toilets.

### **3.4 Electrical Systems**

Incoming cables should be located underground where/if possible. Main entrance feed and panel located away from places of work and waiting is prudent in avoidance of electromagnetic fields. Ground fault wiring near any plumbing fixture is a precaution. Selecting the most energy-efficient light fixtures, lamps, appliances and equipment will reduce energy demand.

### **3.5 Cabinetry and Wood**

Nontoxic finishes have been used where/when possible. Selecting the least toxic finishes is advised. All materials should have appropriate permissions on quality and safety (certificate of conformity).

### **3.6 Finishes**

Water-based interior nontoxic, non-allergenic paint for drywall or plaster surfaces is preferable to latex or oil-based paints from a respiratory standpoint. Any enamel coating for doors or other surfaces that require a more durable finish is advised to be applied away from interior spaces and be fully aired for over a month before installation. Indoor space should not be occupied until odor and toxins of the paint or finish has been adequately aired.

### **3.7 Flooring**

Traditional tile, marble, stone and terrazzo floors can be hard to stand and walk upon but have legendary durability. Nontoxic grouts and methods of installation should be used. Cleaning considerations should be included in the decision process.

### **3.8 Window Treatments**

Vertical blinds provide light control, are easy to maintain, and require minimal stacking room. Horizontal blind can in combination with a white or light ceiling reflect daylight more deeply into a room. Exterior roller blinds, operable from the interior, are particularly effective in controlling solar thermal gain and interior heat loss, and give the benefit of security. Direct solar radiation can be attenuated by fabric mesh.

### **3.9 Exterior and Interior Colors**

In climates with hot summers, reflective roofs provide a cooling advantage. When cold season occurs, darker-colored exterior walls will benefit by low-angle winter solar gains but be less heated by the light angle of the summer sun. White or very light-colored ceilings and interior side walls allow for deeper reflective penetration of natural light. Doors between interior room spaces can act as reflectors. Gloss white lacquer or enamel doors in the path of incoming daylight can lighten adjoining spaces. Interior paints and finishes can affect pupils and staff directly. Outdoor finishes with odorous and toxic emissions can also have an effect upon persons indoors through windows, doors and other openings.

### 3.10 Demolition work

If required, existing building elements (walls, foundations, ground cement slabs etc.) should be carefully demolished and the debris should be sorted and removed as directed by the site-specific EMP (to be determined during the preparation phase of the project). All valuable materials (doors, windows, sanitary fixtures, etc.) should be carefully dismantled and transported to the storage area assigned for the purpose. Valuable materials should be recycled within the project or sold.

### 3.11 Selection of Construction Materials and Construction Methods

Environmentally sound goods and services should be selected. Priority should be given to products meeting standards for recognized international or national symbols. Traditionally well-tried materials and methods should be chosen before new and unknown techniques. Construction sites should be fenced off in order to prevent entry of public, and general safety measures would be imposed. Temporary inconveniences due to construction works should be minimized through planning and coordination with contractors, neighbors and authorities. In densely populated areas, noisy or vibration generating activities should be strictly confined to the daytime.

## IV HAZARDOUS WASTE MANAGEMENT FRAMEWORK

### 4.1 Definition

**Waste** is used to define any material, which is unwanted or unusable. **Hazardous waste** is defined below.

It is the duty of all who generate hazardous waste to ensure that all hazardous waste is handled in a manner that is safe, environmentally friendly and complies with all government regulations. This is meant to include wastes that are not, by law, hazardous but which, if carelessly discarded, could possibly cause harm to the environment.

To avoid the possibility that a hazardous waste may be erroneously considered harmless, this definition is given as a guideline:

**A WASTE IS HAZARDOUS IF IT HAS THE PROPERTY OF IGNITABILITY, CORROSIVITY, IS TOXIC OR REACTIVE OR IS INFECTIOUS.**

Keep in mind this is an attempt to simplify definitions and that these are brief definitions and do not cover all possible cases.

Ignitability refers to a liquid whose flash point is below 140F, a solid that can ignite by friction, absorption of water or that burns vigorously when ignited, or is an oxidizer.

A substance is corrosive if its pH is 2 or less or 12.5 or greater. Waste considered hazardous only because of these criteria may be neutralized by qualified personnel and sewerage.

Toxic materials are those containing certain heavy metals or certain organic constituents. These are found in most laboratories.



A reactive substance is one that is unstable or explosive, will react violently with air or water or will release toxic gas when heated, burned or when mixed with another material.

There are certain chemicals that have previously been designated hazardous. Of interest to us would be those whose prefix is K, U, or P. For these lists, refer to appendix 2.

## **4.2 Waste Accumulation**

Every Bayat Power site will have a designated hazardous waste accumulation site. This is a safe location that has a sign indicating that it is an area for accumulating hazardous waste. This area should have good ventilation and, where possible, secondary containment in case the primary container leaks.

### 4.2.1. Chemical waste

#### Containers and labeling

Containers must be compatible with the substances they are to contain. Glass is preferred but plastic bottles as well as steel cans are acceptable in some cases. Containers for accumulating hazardous waste must be labeled with the words "Hazardous Waste" and there must be available a list of the contents of the container (and the approximate concentration or amount of the hazardous substance), either on the label or on a sign adjacent to the container. Complete names must be used on this list, not chemical formulae or initials. This list must accompany the waste when it is taken to the hazardous waste storage area. All other labels on the containers must be removed or obliterated.

### 4.2.2 Waste removal

Once a container is full, the hazardous waste coordinator should be contacted to arrange to deliver it to the main hazardous waste storage area. This main storage area will be inspected every week and the conditions will be reported on a form kept in the hazardous waste storage area.

Signed and dated:

A handwritten signature in blue ink, appearing to read "Montgomery Simus". The signature is fluid and cursive, with a large loop at the end.

Montgomery Simus

Vice President

10 July 2018





## Appendix 1

### ENVIRONMENTAL GUIDELINES FOR BAYAT POWER CONTRACTORS

The contractors are required to use environmentally acceptable technical standards and procedures during the implementation of construction of works. All construction contracts will contain the following requirements:

- Take precautions against negative influence on environment, any environmental damage or loss through prevention or suppression measures (where it is possible) instead of liquidation or mitigation of negative consequences.
- Observe all national and local laws and rules on environmental protection. Identify officers responsible for the implementation of activities on environmental protection conforming to instructions and directions received from the construction and design or local environmental protection agencies.
- Store and dispose of construction waste consistent with national regulations.
- Minimize dust emission to avoid or minimize negative consequences influencing air quality.
- Provide pedestrian crossing and roads and access to the public places, if applicable.
- Prevent or minimize vibration and noise from vehicles during explosive activities.
- Minimize damages and assure vegetation recovery.
- Protect underground water and soil from pollution. Assure water collection and distribution.



## Appendix 2

# Chemical Compatibility Chart

(From Boston Univ. Medical Center)

### Group 1-A

Alkaline Liquids

### Group 1-B

Acid Liquids

**Potential consequences: Heat generation, violent reaction**

### Group 2-A

Aluminum  
Beryllium  
Calcium  
Magnesium  
Sodium  
Other reactive metals and metal hydrides

### Group 2-B

Any waste in Group 1-A or 1-B

**Potential consequences: Fire or explosion generation of flammable hydrogen gas**

### Group 3-A

Alcohols  
A or 1-B  
Water

### Group 3-B

Any concentrated waste in Groups 1-

Calcium  
Lithium  
Metal hydrides  
Potassium  
SO<sub>2</sub>Cl<sub>2</sub>, SOCl<sub>2</sub>,  
PCl<sub>3</sub>,  
CH<sub>3</sub>SiCl<sub>3</sub>  
Other water-reactive wastes

**Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.**

### Group 4-A

Alcohols  
wastes  
Aldehydes  
Halogenated hydrocarbons  
Nitrated hydrocarbons  
Unsaturated hydrocarbons  
Other reactive organic compounds and solvents

### Group 4-B

Concentrated Group 1-A or 1-B

Group 2-A wastes

**Potential consequences: Fire, explosion, or violent reaction.**

### Group 5-A

### Group 5-B



Spent cyanide and sulfide solutions

Group 1-B wastes

**Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas**

**Group 6-A**

Chlorates  
Chlorine  
Chlorites  
Chromic acid  
Hypochlorites  
Nitrates  
Nitric acid, fuming  
Perchlorates  
Permanganates  
Peroxides

**Group 6-B**

Acetic acid and other organic acids  
Concentrated mineral acids  
Group 2-A wastes  
Group 4-A wastes  
Other flammable and combustible wastes

**Potential consequences: Fire, explosion, or violent reaction.**