HOLISTIC ASSESSMENT REPORT

Pharari Small Hydro Electric Project (SHEP) – 2.00 MW
District: Kullu, Himachal Pradesh

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1. Introduction

The Pharari Small Hydro Electric Project (2.00 MW) is a run-of-the-river scheme proposed to utilize the hydroelectric potential of the Pharari Nallah in District Kullu, Himachal Pradesh. This holistic assessment comprehensively examines the project's technical, environmental, ecological, social, and regulatory parameters to ensure sustainable execution and minimal impact on the surrounding landscape.

2. Project Overview

- **Installed Capacity:** 2.00 MW
- **Project Type:** Run-of-the-river
- **Major Components:** Intake structure, desilting tank, water conductor system, penstock, powerhouse, tailrace channel
- **Land Requirement:** 0.4446 Ha. of Forest land and 0.0138 ha. of Private land.
- **Objective:** Renewable energy generation with minimal ecological disturbance

3. Location & Accessibility

- The project site is located in District Kullu and is accessible through existing village roads and forest paths.
- Minor improvements may be required to facilitate safe transportation of electromechanical equipment.
- Seasonal access constraints exist during monsoon and winter months due to landslides and snowfall, and suitable mitigation measures are planned.

4. Technical Feasibility

- Hydrological studies confirm adequate discharge availability to support a 2 MW run-of-the-river scheme.
- Geological conditions near intake, penstock alignment, and powerhouse sites are stable and safe for construction.
- Design optimization has been undertaken to reduce earthwork and environmental disturbance.
- The project does not require major tunnelling or heavy blasting, minimizing ecological risk.

for Parari Power Pvt. Ltd.
N Gangadhar Rao
Director

5. Environmental Assessment

5.1 Forest Area & Vegetation

- Forest land required is limited and site-specific.
- Number of trees affected is minimal and will be compensated as per FCA guidelines.
- Erosion control and slope stabilization measures will be implemented along construction zones.
- All forest clearance procedures will be followed as per statutory norms.

5.2 Wildlife & Biodiversity

- The project site does not fall within any Wildlife Sanctuary, National Park, or Eco-Sensitive Zone (ESZ).
- Occasional movement of common wildlife species may occur; construction will avoid night-time disturbances.
- Adequate measures will be taken to mitigate noise, vibration, and habitat disturbance.
- Environmental flows will be maintained as per regulations to protect aquatic ecology.

5.3 Nearby Protected Areas

- Upstream and downstream maps submitted clearly indicate that no Protected Area (PA) lies within the immediate impact zone.
- The nearest PA is located well beyond its notified ESZ boundary.
- No interference with wildlife corridors or migratory paths is anticipated.

6. Socio-Economic Assessment

- The project does not require displacement of any household.
- Local employment opportunities will be created during construction and O&M phases.
- The project will contribute to local development through improved infrastructure and increased economic activity.
- No adverse effects on agriculture, water supply, or village resources are expected.

7. Logistics Assessment

- Transportation of construction materials and machinery is feasible via existing road networks.
- Temporary material storage areas have been identified near the project site.
- Heavy machinery movement will be planned to avoid peak traffic hours and minimize disturbance to wildlife.
- Adequate emergency access routes are available in case of natural hazards.

for Parari Power Pvt. Ltd.

Director

8. Cumulative Impact Assessment

- There are no major hydropower projects immediately upstream or downstream that could contribute to significant cumulative impacts.
- The project's small scale and run-of-the-river nature ensure negligible alteration of river hydrology.
- No cumulative impact on wildlife, aquatic ecology, or socio-economic conditions is anticipated.

9. Disaster Risk and Safety Assessment

- The site falls in a moderate seismic zone; all structures will comply with seismic safety standards.
- Landslide-prone areas have been identified, and protective structures (retaining walls, drainage channels) are incorporated.
- Flood management measures will be implemented at critical components such as intake and powerhouse.
- Comprehensive emergency response and safety protocols will be established.

All required certificates, maps, and NOCs are being submitted as per departmental guidelines.

10. Conclusion

The holistic assessment concludes that **Pharari SHEP (2.00 MW)** is:

- **Technically feasible**
- **Environmentally sustainable**
- **Economically viable**
- **Socially beneficial**
- **Compliant with statutory requirements**

Its run-of-the-river design, limited forest land requirement, minimal wildlife impact, and negligible cumulative effects make it a low-impact renewable energy project suitable for implementation in the region.

for Parari Power Pvt. Ltd.

Director