



Shuakhevi Hydro Power Project – Disclosure of Design Changes

The E&S impacts of the Shuakhevi HPP were assessed via a Lender approved ESIA, and granted a Permit from the Ministry of Environment in 2013, based on the basic / tender design produced for the Project in 2012. As the Project evolved and further investigations were undertaken on the Project, the design was refined to best meet the actual site conditions. Such changes and improvements to the design is not uncommon for a project of this size.

The majority of design changes, were determined to generate impacts consistent with those already addressed and mitigated through the approved ESIA; existing management plans and programs have been applied. In a few cases, additional E&S assessments were necessary and have been disclosed.

These design changes relate only to the Shuakhevi HPP and are not related to the Koromkheti HPP. No construction works have commenced on the Koromkheti HPP to date.

A summary listing of the design changes is provided in the following table:

Component	Summary of Change
Camps	Contractor's main camp and Employer's camp have been combined and moved downstream from Shuakhevi to Khichauri An additional worker camp for the Didachara works has been added at Pagsadzeebi
Spoil Disposal Areas (SDAs)	Location of some SDAs has changed Additional SDAs have been identified for Didachara (SDA 23) requiring overhead power lines to be relocated, and for the Akhaldaba surge tunnel portal.
Borrow Areas	Location of some borrow areas has changed and new borrow areas have been identified
Shkalta Dam	Dam design has changed from concrete to rockfill as a result of ground investigations. Consequently, the dam height and reservoir storage volume (and footprint) has reduced Changed to a bell-mouth (or 'morning glory') spillway. Outlet location has moved.
Approach road to Shkalta dam	Alignment of approach road has been amended. Initially proposed alignment was rejected by Government due to tree felling requirements. New road design follows valley floor.
Shkalta Powerhouse	Design has changed from outdoor to underground (within tunnel). This has resulted in powerhouse being moved further upstream but within existing tunnel footprint. Access berm along valley side to be extended.

Component	Summary of Change
	Turbine changed from 9 MW to 6 MW due to lower rating required by project
Didachara Dam	<p>Dam location has been moved upstream (within footprint of assessed reservoir) due to unfavourable ground conditions</p> <p>The change in dam location has resulted in the highway and slope upgrade being moved and the overhead power line relocation being adjusted</p> <p>A micro-hydropower plant has been added to the environmental flow system (details tbc)</p>
Shuakhevi Powerhouse	<p>The powerhouse has moved back into the hill side to reduce flood risk; therefore, the layout and footprint has changed</p> <p>Change in foundation excavation from open excavation to SBP wall (less excavation/fill)</p> <p>Switchyard changed to smaller pothead yard (GIS)</p> <p>Revetment – change in material – concrete to gabions – and dimensions</p>
Ghorjomi Bridge	<p>Location and dimensions have changed</p> <p>Structure change from a concrete to a steel</p> <p>Some foundations will be piled</p> <p>Approach road alignment was amended to suit revised bridge location</p>
Chirukhistsqali Weir	<p>Change in foundation type from compaction grouting and jet grout curtain to localised secant bored piles.</p> <p>Introduction of piles due to ground conditions</p>
Tunnels	<p>Pachkha adit was removed from the scope of works.</p> <p>The Chirukhistsqali to Shkalta rock-trap/intake adit has been relocated to shorten construction and bring portal within existing AGL land boundary.</p> <p>Minor change in Surge tunnel portal location in order to utilise existing road alignment within land boundary.</p> <p>Location of Diakonidze adit has changed in order to site the portal entrance away from the main road.</p>
35 kv Shkalta – Shuakhevi Transmission Line	A new ~23 km 35 kV transmission line has been added.