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# **ANNEXURE E**

## **METHODOLOGY**

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## METHODOLOGY OF ASSESSING THE SIGNIFICANCE OF POTENTIAL ENVIRONMENTAL IMPACTS

This Annexure outlines the proposed method for assessing the significance of the potential environmental impacts outlined above. As indicated, these include both operational and construction phase impacts.

For each impact, the **EXTENT** (spatial scale), **MAGNITUDE** and **DURATION** (time scale) would be described. These criteria would be used to ascertain the **SIGNIFICANCE** of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described in the EIA Report would represent the full range of plausible and pragmatic measures but does not necessarily imply that they would be implemented.

The tables below indicated the scale used to assess these variables, and defines each of the rating categories.

**Table 1 | Assessment criteria for the evaluation of impacts**

CRITERIA	CATEGORY	DESCRIPTION
Extent or spatial influence of impact	Regional	Beyond a 10km radius of the candidate site.
	Local	Within a 10km radius of the candidate site.
	Site specific	On site or within 100m of the candidate site.
Magnitude of impact (at the indicated spatial scale)	High	Natural and/ or social functions and/ or processes are <i>severely</i> altered
	Medium	Natural and/ or social functions and/ or processes are <i>notably</i> altered
	Low	Natural and/ or social functions and/ or processes are <i>slightly</i> altered
	Very Low	Natural and/ or social functions and/ or processes are <i>negligibly</i> altered
	Zero	Natural and/ or social functions and/ or processes remain <i>unaltered</i>
Duration of impact	Construction period	Up to 4 years
	Short Term	Up to 5 years after construction
	Medium Term	5-15 years after construction
	Long Term	More than 15 years after construction

The **SIGNIFICANCE** of an impact is derived by taking into account the temporal and spatial scales and magnitude. The means of arriving at the different significance ratings is explained in Table 2.

**Table 2 | Definition of significance ratings**

SIGNIFICANCE RATINGS	LEVEL OF CRITERIA REQUIRED
High	<ul style="list-style-type: none"> <li>High magnitude with a regional extent and long term duration</li> <li>High magnitude with either a regional extent and medium term duration or a local extent and long term duration</li> <li>Medium magnitude with a regional extent and long term duration</li> </ul>
Medium	<ul style="list-style-type: none"> <li>High magnitude with a local extent and medium term duration</li> </ul>

	<ul style="list-style-type: none"> <li>• High magnitude with a regional extent and construction period or a site specific extent and long term duration</li> <li>• High magnitude with either a local extent and construction period duration or a site specific extent and medium term duration</li> <li>• Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term</li> <li>• Low magnitude with a regional extent and long term duration</li> </ul>
<b>Low</b>	<ul style="list-style-type: none"> <li>• High magnitude with a site specific extent and construction period duration</li> <li>• Medium magnitude with a site specific extent and construction period duration</li> <li>• Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term</li> <li>• Very low magnitude with a regional extent and long term duration</li> </ul>
<b>Very low</b>	<ul style="list-style-type: none"> <li>• Low magnitude with a site specific extent and construction period duration</li> <li>• Very low magnitude with any combination of extent and duration except regional and long term</li> </ul>
<b>Neutral</b>	<ul style="list-style-type: none"> <li>• Zero magnitude with any combination of extent and duration</li> </ul>

Once the significance of an impact has been determined, the **PROBABILITY** of this impact occurring as well as the **CONFIDENCE** in the assessment of the impact would be determined using the rating systems outlined in Table 3 and Table 4 and respectively. It is important to note that the significance of an impact should always be considered in concert with the probability of that impact occurring. Lastly, the **REVERSIBILITY** of the impact is estimated using the rating system outlined in Table 5.

**Table 3 | Definition of probability ratings**

<b>PROBABILITY RATINGS</b>	<b>CRITERIA</b>
<b>Definite</b>	Estimated greater than 95 % chance of the impact occurring.
<b>Probable</b>	Estimated 5 to 95 % chance of the impact occurring.
<b>Unlikely</b>	Estimated less than 5 % chance of the impact occurring.

**Table 4 | Definition of confidence ratings**

<b>CONFIDENCE RATINGS</b>	<b>CRITERIA</b>
<b>Certain</b>	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
<b>Sure</b>	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
<b>Unsure</b>	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

**Table 5 | Definition of reversibility ratings**

<b>REVERSIBILITY RATINGS</b>	<b>CRITERIA</b>
<b>Irreversible</b>	The activity will lead to an impact that is in all practical terms permanent.
<b>Reversible</b>	The impact is reversible within 2 years after the cause or stress is removed.