

## LEKELA 250MW BOO – Supplemental Climate Risk Assessment (SCRA)

### Climate Risk Summary

Lekela has used the World Bank’s *Climate & Disaster Risk Screening Tool* to conduct a preliminary assessment of the Project’s exposure to climate change risks. This has been based on site-specific and regional historic climate data, as well as future scenarios as projected in climate modelling.

With our understanding of the project location the following risks have been considered in this analysis: extreme temperature, extreme precipitation and flooding, drought, and strong winds.

The project is currently deemed to have a low-level of climate risk and the project’s adaptive capacity can withstand most climate risk within its operational lifespan (20-25 years). Under the most extreme climatic change scenarios within this time frame, climate risk to the project is considered moderate, as extreme weather events could approach the operating parameters of the wind farm.

### Exposure to Climate Risks

#### Extreme Temperature

The average annual temperature of the region is between 22-23°C. The maximum temperature is around 35°C. These temperature ranges are within the wind farm’s operating parameters: the proposed model of turbine and associated balance of plant can operate in sustained temperatures of up to 40°C. The machinery is designed to be resilient and maintain output in these conditions, but it must be noted that increased temperatures reduce air density which could constitute a risk to wind energy yields. Due to these factors, the project is deemed **slightly exposed** to extreme temperature risks.

Given the inhospitable climate conditions and uncertainty with forecasting climate scenarios uncertainty we consider the project to be **moderately exposed** in the future to extreme temperature risks. Under the Paris climate agreement, the consensus is that the world will attempt to limit temperatures to within 2°C degrees above pre-industrial levels by 2100. Certain climate scenarios project that if policy does not become more ambitious, temperatures will surpass 2°C degrees significantly. It should be noted that if acute climate change impacts do occur, they are projected to happen after the operational lifespan of the project.

Extreme temperatures do pose a degree of risk with regards to project construction, and operations and maintenance activities. Heat exhaustion and other health impacts can arise if workers conduct extended periods of physical activity. Lekela will ensure that the project’s labour plans mitigate health risks associated with the prevailing environmental conditions.

<b>Timeframe</b>	<b>Risk Rating</b>
Historical/Current	Slightly Exposed
Future	Moderately Exposed

### Extreme Precipitation and Flooding

The Red Sea region in which the project is located is arid and on average experiences low-levels of precipitation. Between 1931 and 2015 the maximum daily rainfall values at the Suez weather station were 49.6mm, 32.3mm and 30mm. Since 1998 the annual average maximum daily rainfall in the area has been 20mm. Despite relatively low levels of precipitation, short periods of extreme rainfall can lead to flash-flooding in the region.

Lekela has completed hydrological and topographical studies to assess the project risks posed by precipitation and flooding. The studies have confirmed that these can be reduced significantly if the project design considers the site-specific hydrological factors. The proposed site layouts take into account wadis (dry watercourses), and a number of mitigation and flood protection measures have been proposed. As the risks are deemed to be manageable, and it is not anticipated that this risk profile will change significantly within the project lifespan, the project is considered to be **slightly exposed** to extreme precipitation and flooding risks.

Timeframe	Risk Rating
Historical/Current	Slightly Exposed
Future	Slightly Exposed

### Drought

The region in which the project is located is arid and there are few natural water resources available. Infrastructure to transport water to the site is accessible and it is understood that water supply is not a concern in the region.

If the region were to experience more significant drought as a result of climate change it should be noted that once operational, the project will not have a material demand for water to generate power. Increased incidences of drought will not impact the operational capacity of the wind farm, nor will the wind farm threaten the supply of other water users. As such the project is **not exposed** to drought risks, or drought risks that might arise in the future as a consequence of climate change.

Timeframe	Risk Level
Historical/Current	Not Exposed
Future	Not Exposed

### Strong Winds

The project site is located in an area of very significant wind resource. Annual average wind speeds of around 9.7m/s make the location ideal for wind energy generation. Gusty and turbulent wind speeds sustained over time can cause damage to turbines, however the region does not currently experience storms that would have the magnitude to do so. Current records show that maximum sustained windspeeds of the region are around 32 m/s. These do not threaten the structural integrity of the proposed machinery, which are designed to withstand gusts of up to 59.5 m/s. As such, the project is only considered **slightly exposed** to risks associated with strong winds.

Climate models generally suggest that one of the impacts of climate change will be an increase in the frequency and magnitude of severe weather systems. Within the project's lifespan it is unlikely that windstorms will increase in intensity to the point at which they threaten the structural integrity of the wind turbines and associated infrastructure. Potential impacts instead could arise from changing

wind patterns, which could reduce the wind farm’s energy yield. Research suggests that wind resources will shift between latitudes under high carbon dioxide emissions scenarios (Karnauskas *et al*, 2017). Once again there is uncertainty over the geographical scope, magnitude and timeframe of these changes. In recognition of this uncertainty the project is considered **moderately exposed** to wind risks in the future.

Timeframe	Risk Rating
Historical/Current	Slightly Exposed
Future	Moderately Exposed

### **Mitigation of Climate Risks**

The extent of impact that climate change will have on the Gulf of Suez is uncertain, and it is not clear whether these will come to bear within the operational life of the wind farm (20-25 years). Notwithstanding these uncertainties, the project site’s current environmental conditions are inhospitable, consisting of an arid desert landscape with strong, consistent winds. These conditions constitute some risk to the project, but these risks have been deemed mitigable following the completion of an extensive environmental and technical due diligence process.

Development does not require any economic or physical displacement of communities or individuals. While we understand that the social impacts of project development should be minor, Lekela commits to investing in local communities to promote education, enterprise and the environment. Lekela’s wider ESG strategy considers risks that might arise from climate change, and ensures that we consider these alongside our operations.

Overall our objective is to provide lasting benefit to local communities that create impact that outlasts the operational lifespan of our projects. In response to this aim, and the acute risks that will emerge under climate change scenarios, our community investment policy considers how we can make communities more resilient (physically, economically and environmentally) under these outcomes.

As discussed, the environmental conditions constitute an element of risk for workers on site. Lekela’s worker management plans, and those provided by our contractors, will reflect these risks and employ policies to ensure that the health and wellbeing of workers is protected.