



GEOPARK

IDENTIFICATION OF CLIMATE CHANGE RELATED RISKS IN GEOPARK

Management of Climate
Change Risks

2022



GeoPark considered 4 climate scenarios for its evaluation of risks.

Each with a consistent combination of inputs from IEA and IPCC scenarios*

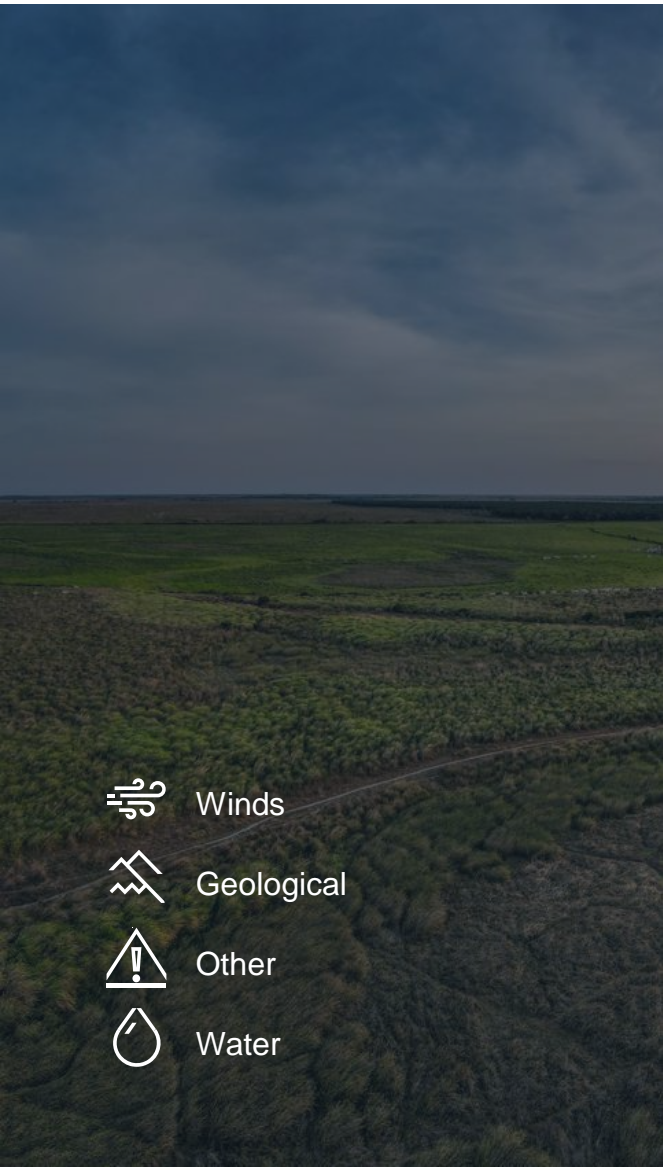
Long term, 2050

Scenario	Regulation	Emissions	Energy transition	Consumption	Δ Temperature	Climate
#1	No new licenses for O&G	Total reduction of energy sector emissions	New energy matrix based on renewables	Responsible consumption, electric mobility	+1.2 to 2.0 °C	Infrequent severe events <i>Severe Climate Events: 4.2 to 5.1 per year</i>
#2	Very restricted exploitation of O&G	Emissions are controlled, monitored and penalized	New energy matrix based on renewables with little support from fossil fuels	Responsible consumption, mobility mostly electrified	+1.3 to 2.2 °C	Infrequent severe events <i>Severe Climate Events: 4.3 to 5.4 per year</i>
#3	O&G exploitation is allowed assuming certain emission commitments	Emissions are controlled, promoting compensation projects	New energy matrix based on oil and gas, with some renewables	Mobility partly electrified	+1.7 to 2.6 °C	Frequent severe events. Rain pattern modified. Increased sea level. <i>Severe Climate Events: 4.8 to 5.8 per year</i>
#4	Trend towards deregulation of the O&G industry	Loosened regulations on emissions	Coal, oil and gas continue to dominate the energy matrix	No tendency to increase responsible consumption	+1.9 to 3.0 °C	Very frequent severe events <i>Severe Climate Events: 5.0 to 6.3 per year</i>

Considered as “base” scenario

* IPCC scenarios SSP1-1.9, 2.6, 4.5, 7.0 and 8.5 - which indicate potential changes in the physical weather system, such as temperature, rain and climate events - and IEA Net Zero and Sustainable Development scenarios, and announced and current policies, show a range of policies, market trends and regulations that help identify transitional risks.

Physical climate change-related risks impact GeoPark's assets depending on their location



- Winds
- Geological
- Other
- Water

Exposure to climate change-related risks per Asset








	<div><div></div>N/A</div> <div><div></div>Low</div> <div><div></div>Mid</div> <div><div></div>High</div> <div><div></div>Critical</div>	<div><div></div></div> Llanos 34	<div><div></div></div> Platanillo	<div><div></div></div> Fell	<div><div></div></div> Espejo
<div><div></div></div> <div>Extreme winds</div>			<div><div></div></div>		
<div></div> <div>Volcanic activity</div>		<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	
<div><div></div></div> <div>Earthquakes</div>	<div><div></div></div>	<div><div></div></div>		<div><div></div></div>	
<div><div></div></div> <div>Land slides</div>	<div><div></div></div>	<div><div></div></div>		<div><div></div></div>	
<div></div> <div>Instability near river channels</div>	<div><div></div></div>	<div><div></div></div>		<div><div></div></div>	
<div><div></div></div> <div>Extreme temperatures</div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	
<div><div></div></div> <div>Forest fires</div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	
<div><div></div></div> <div>Electric storms</div>	<div><div></div></div>	<div><div></div></div>		<div><div></div></div>	
<div><div></div></div> <div>Flooding</div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	
<div></div> <div>Water scarcity</div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	
<div></div> <div>Tsunamis</div>			<div><div></div></div>		
<div></div> <div>Droughts and soil erosion</div>	<div><div></div></div>		<div><div></div></div>		
<div></div> <div>Change in river levels</div>		<div><div></div></div>			

Source: Kearney Analysis; Global Facility for Disaster Reduction and Recovery – World Bank; National Adaptation Plans; Climate Change Laws in countries where GeoPark operates



GeoPark has identified various adaptation initiatives against physical risks, some of which are implemented







Risk		Adaptation initiatives
 Extreme winds		<ul style="list-style-type: none">– Continuously monitor weather– Improve mechanical conditions of facilities
 Land slides		<ul style="list-style-type: none">– Identify alternative access routes
 Instability near river channels		<ul style="list-style-type: none">– Continuously monitor weather
 Extreme temperatures		<ul style="list-style-type: none">– Continuously monitor weather– Always have equipment available to remove snow– Improve processes to avoid leaks
 Forest fires		<ul style="list-style-type: none">– Work with nearby communities around proper practices to handle fires– Build firebreaks– Improve local governments' capabilities through training and equipment
 Electric storms		<ul style="list-style-type: none">– Continuously monitor weather– Use early storm-detection systems– Install lightning rods near critical facilities– Design power transmission lines with sufficient distancing to avoid wind-induced short circuits
 Flooding		<ul style="list-style-type: none">– Continuously carry out preventive maintenance of critical equipment– Continuously monitor weather– Build barriers around critical facilities

Transitional risks related to climate change are those generated by human actions in connection with climate change

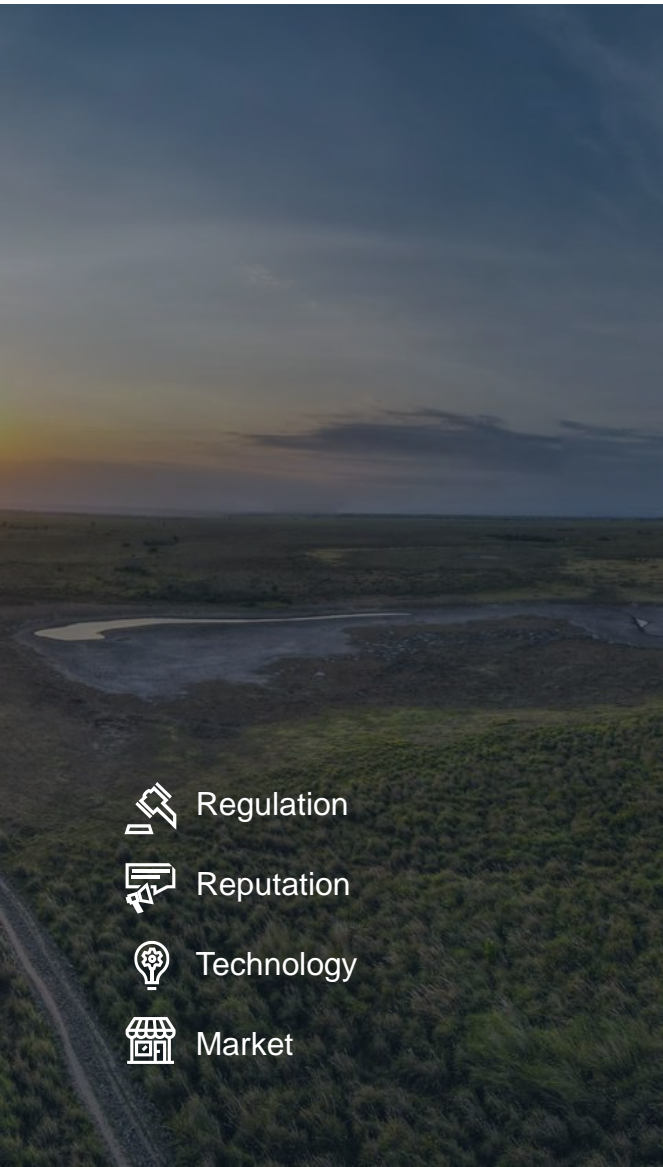


LIST OF KEY TRANSITIONAL RISKS





 Regulation	 Reputation	 Market	 Technology
<div><ul style="list-style-type: none">Operational restrictions from new laws, mandates and regulations</div> <div><ul style="list-style-type: none">Cost increases, taxes, penalties and limitations to GHG emissionsMandatory use of low-emission energy and technologiesInvestigations or complaints against the company's operationsFrequent regulatory changes, regulatory instability</div>	<div><ul style="list-style-type: none">Increased negative perception of O&G companies by key stakeholders</div> <div><ul style="list-style-type: none">Climate-related impacts in nearby communities</div>	<div><ul style="list-style-type: none">Volatility in oil, gas and general commodities markets</div> <div><ul style="list-style-type: none">Change in consumers' preferences</div>	<div><ul style="list-style-type: none">Restricted access to low-carbon energy sources</div>

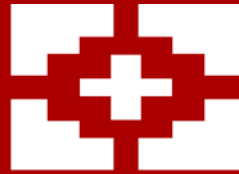


GeoPark has identified various adaptation initiatives against transitional risks, some of which are implemented



-  Regulation
-  Reputation
-  Technology
-  Market

Risk		Adaptation initiatives	
	Operational restrictions from new laws, mandates and regulations	<ul style="list-style-type: none">– Monitor the development of new regulations and laws– Coordinate work with authorities and industry associations– Include varying levels of regulation in planning exercises– Vary the project portfolio to include more gas and, in the future, low-emission technologies	
	Increased negative perception of O&G companies by key stakeholders	<ul style="list-style-type: none">– Continue to implement compensation projects for communities near operation areas– Invest (beyond compensation) for the development of nearby communities– Establish partnerships and joint projects with nearby communities– Develop a robust management system for interaction with stakeholders	
	Volatility in oil, gas and general commodities markets	<ul style="list-style-type: none">– Implement financial planning scenarios to identify impacts of various price levels	
	Restricted access to low-carbon energy sources	<ul style="list-style-type: none">– Monitor and benchmark peers' strategies towards the energy transition– Establish partnerships and joint projects with <u>competitors</u> for the development of low-carbon initiatives– Invest in projects to facilitate access to low-emission energy	



GEOARK

CREATING VALUE AND GIVING BACK