

TCFD Climate Risk

Section 01

INTRODUCTION

Climate Action

Addressing climate change induced by global warming and limiting global warming to an ambitious limit of 1.5 degrees remains one of the most pressing and complex challenges having the potential to affect and disrupt most businesses, the economy, and society. Several countries have introduced targets to achieve net-zero emissions by 2050. Though India has not formally committed to the net-zero goal, it is moving in this direction and may achieve the target earlier. These targets are included and achieved in the Sustainable Development Scenario (SDS), but increasingly the attention is turning to what it would mean for the energy and industry sectors to reach net-zero emissions by 2050.

The Energy Transition Commission (ETC) has estimated that achieving net-**zero** carbon economy by 2050 would require \$1-2 trillion annually and significant action up to 20% of the existing in the early decades could be in India. Such an investment is easily affordable given the current global savings and investments, particularly in the prevailing

macroeconomic context of sustained low interest rates. This is a responsibility of and an opportunity for financial institutions in India to direct investments towards climate-neutral economic action.

Despite global efforts to reduce GHG emissions and reach net-zero emissions by 2050, the physical changes in climate under the most likely scenario of limiting global warming to 2-3°C would have acute and chronic impacts including frequent occurrences of extreme weather events viz. cyclones, floods and droughts. Further, chronic impacts include a rise in sea levels and altered weather patterns. In addition to physical risks, there will be transitional risks due to changed regulations and technology. These will be some of the major risk factors for investments with long-term commitment. During this reporting period LTFH has conducted the risk assessment for its portfolio with long term exposure for investments more than INR 100 Cr. with tenure of more than 10 years.

Section 2

GOVERNANCE

Material Issues

LTFH has been regularly publishing Sustainability Reports since FY 2018-19. These reports provide a detailed account of economic performance, environmental footprint, and social responsibility.

LTFH identified material aspects in FY 2020-21 through extensive internal stakeholders' consultation and the same is presented in Fig.1.

The climate strategy is a part of the material issues



Figure 1 Material Issues

The Board: Board's check on climate change

LTFH considers climate change as an ESG focus area with significant strategic importance for its businesses. The Corporate Social Responsibility Committee and ESG of the Board oversees climate strategy and risk assessment. Further, the inputs related to climate risks are used by the Risk Management Committee (RMC). The RMC has control over

The Management

At LTFH, the Sustainability Task Force, with the direction and recommendations from the leadership, cogitates and steers the sustainability strategy, plan and actions. The task force forges ahead the sustainability practices after recognising the 'right initiatives and interventions'. These initiatives are in line with and connected to the strategy road map of LTFH 2.0. The sustainability task force is a team of

Sustainability Policy

The purpose of this policy is to define the framework for sustainability at LTFH and provide a governing platform to its sustainability initiatives. The policy steers the Company's journey in generating long term stakeholder

This policy is applicable to all of its operations and subsidiaries. The objective of the policy includes,

1. Developing and adopting sustainability strategy, goals, targets and risk mitigation measures
2. Promoting the development of business practices that are inclusive in nature

Climate Change Risk Management Framework

LTFH's Risk Management Framework (RMF), including its governance, risk-management practices and critical components that facilitate the identification, measurement, mitigation, and reporting of risks across the Company. The climate-related opportunities are further considered by the Board and such opportunities are tapped.

cross-functional leaders/managers who identify, discuss, and strategise ways to encourage as well as steer the desired culture of sustainability across the organisation. The Convener of the Sustainability Task Force is CSR and Sustainability team while Functional representation are from Strategy and Investor Relations, Group Secretarial & Group CSR and Sustainability, Corporate Communication, Human Resources.

value and contributing to the achievement of national objectives and United Nations Sustainable Development Goals (SDG

3. Providing products and services that contribute to the sustainable development of the Indian economy while ensuring application of environmentally friendly practices and propagating financial inclusion
4. Reduce adverse impact of climate change, promote energy efficiency and environmentally friendly operations
5. Enhancing customer satisfaction

LTFH has an established Risk Management framework constituted under the Risk Committee which assesses, manages, and reports on all significant risks, the impact on the business and mitigation measures. This provides a framework to manage risks while achieving strategic and operational objectives. LTFH’s risk management framework is based on COSO (The Committee of Sponsoring Organizations of the Treadway Commission) framework.

Demonstrating LTFH’s commitment to addressing and managing climate change, the organisation has integrated climate change risks including physical and transition risk as part of the organisation’s established Risk Management framework.

Climate-related initiatives in practice

Policy	Measures	Disclosures
<ul style="list-style-type: none"> • CSR policy • Sustainability policy • Environmental, Health and Safety Policy 	<ul style="list-style-type: none"> • Energy efficiency • Financing Renewable energy 	<ul style="list-style-type: none"> • Sustainability Report (GRI) • Business Resonsibility Report • CDP Climate Change and Water • TCFD • Dow Jones Sustainability Index

Section 3

Climate Strategy

LTFH recognises the emerging regulatory and technology transformation in response to the imperative of mitigating climate change. The energy sector decarbonisation is occurring through renewable energy technologies such as wind, solar, storage technologies, smart grids and intelligent energy management systems which deliver dispatchable/flexible renewable energy. Further, the mobility and industrial sectors are adopting electrification and advancing the hydrogen ecosystem is likely to transform much of economic activity. Similarly, the

rural and housing sectors will be impacted due this transformation. LTFH, a leader in India’s RE space with a significant share in rural, housing and mobility sectors, is in a unique position to expedite the transformation occurring due to decarbonisation, digitisation, decentralisation and electrification.

LTFH will identify and prioritise climate-friendly investments and will calibrate and graduate the approach. The evolving national policies, financing opportunities including climate and green finance, and

business-readiness to adopt decarbonisation would confirm to LTFH's calibration.

LTFH is advocating decarbonisation and suggesting to its customers to adopt GHG reduction measures, LTFH has affirmed to its commitment that the Company should act and demonstrate its initiatives in GHG emission reduction. Accordingly, LTFH reduces energy consumption, use renewable energy wherever feasible, cut GHG emissions in business

travel and commuting, and procure climate-friendly products and services in its operations.

LTFH recognises that despite the global efforts to mitigate GHGs and global warming, climate change will occur and it will pose material long-term risk to some of its investments. Accordingly, LTFH in some of the businesses undertakes climate-risk assessment and takes appropriate steps to mitigate such risks.

Financing Climate Neutral and Resilient Future

- Investments in renewable energy

LTFH is one of India's largest renewable investors. LTFH recognises this as the opportunity and the responsibility to use its leverage to help achieve the decarbonisation goals and ensure a speedy transition to a low-carbon future.

- Rural sector finance to adapt to climate change

The business intensively uses tehsil-level weather forecasts for decision-making. This will now be complemented by climate-change forecasts and uncertainties.

- LTFH has been focussing on adaptation to climate change through its CSR programme, Jalvaibhav for farmers to adopt climate resilient agricultural practices.

Climate Risks and Opportunities

LTFH has conducted in this reporting period, a comprehensive climate-risk assessment for its Infrastructure Finance projects with exposure of more than INR 100 Cr. and tenure beyond 10 Years and identified several risks,

making it easier to mitigate climate-related risks. Such risks will be communicated to the investee companies for implementation of mitigation measures, and identification and quantification of residual risk.

Climate-risk analysis is an essential step in the Company's focus to be 'Resilient to Create A Better Tomorrow'. Further, the Company has identified opportunities as well in the Climate Action Plan of India, and many similar policies and programmes to decarbonise the economy in order to reach net-zero goal well on time.

Climate-Related Risks for the identified portfolio till 2039

Physical Risk -Physical risks resulting from climate change can be event-driven (acute risks), including increased severity of extreme weather conditions such as cyclones, hurricanes, floods, etc. or longer-term shifts (chronic risks) in climate patterns that may cause a change in wind pattern, hydrological flows, sea-level rise, etc. Physical risks have the potential to impact the organisation directly damages to assets and indirectly by disruption to the supply chain.

- ✓ Acute Risk - According to the scenario-based climate risk assessment conducted,
- ✓ Chronic Risk – Projected increase in temperature due to climate change can significantly impact the transmission and distribution networks efficiency and reliability of networks due to energy losses.

The projected physical risks could significantly damage the LTFH's investment portfolio.

Transition Risks- Transition risks and opportunities created by climate change are driven by shifts in policy, legal, market, and technology, to address mitigation and adaptation requirements associated with a low-carbon economy.

Risk Type	Risk	Potential Financial Impact (-)	Magnitude	Mitigation strategy & Mitigation strategy already in place
Transition Risks	Renewable purchase Obligations	Electricity Price Increase	Not Significant	
	Energy Efficiency Regulations	Penalties/write offs of old energy intensive equipment, vehicles etc.	Not Significant	Limit Exposure

Physical risks	Increased frequency of Cyclones	Reduced revenues from business disruption and insurance costs	Significant	<ul style="list-style-type: none"> ◆ Review the designs to withstand increased intensity and frequency of cyclones ◆ Make provisions for emergency planning and disaster management ◆ Projects are insured against the risk
	Temperature	<ul style="list-style-type: none"> ✓ Disruption in operational working hours ✓ Increased O&M cost ✓ Employee health and safety 	Not very Significant	<ul style="list-style-type: none"> ◆ Review the designs for high temperature adaptability and take measures ◆ Provide shelter and water holes and adjust the working hours ◆ Cooling systems in the substations and transformers for temperature control ◆ Projects are insured against the risk
	Drought	Water availability	Not very Significant	<ul style="list-style-type: none"> ◆ Water harvesting and conservation measures ◆ Adopt air cleaning for wind and solar ◆ Projects are insured against the risk
	Floods Solar and Roads	<ul style="list-style-type: none"> ◆ Disruption of business and services ◆ Loss and damage to assets 	Significant	<ul style="list-style-type: none"> ◆ Review the design element to withstand the increase flood level ◆ Improve the storm water drainage

				<ul style="list-style-type: none"> ◆ Projects are insured against the risk ◆ Make provisions for emergency planning and disaster management ◆ Projects are insured against the risk
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	Floods Wind and Transmission	◆ Disruption of activities	Insignificant	◆ Projects are insured against the risk
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Climate-Related Opportunities

Opportunity Type	Potential Financial Impact (+)	Short	Medium	Long	Realisation Strategy
Products and Services	Growth of sustainable products in rural segments in agriculture and allied activities		✓		<ul style="list-style-type: none"> • Develop and launch the financial product to address sustainable agriculture
	Increased demand of Renewable and green buildings		✓		<ul style="list-style-type: none"> • Constantly seeks energy-efficient alternatives and initiatives to implement throughout offices for new construction, project upgrades, and retrofits

					<ul style="list-style-type: none"> Increased financing in Renewable segment
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	Increased demand of Electric vehicles		✓		Develop and launch the financial product to address sustainable mobility
	Growth of sustainable products in Storage solutions for energy	✓	✓		Develop and launch the financial product to address storage solution
Resource raising/mobilisations	Availability of climate and Green Finance	✓	✓		Improve the ESG rating and identify the projects and portfolios with significant climate benefits- Decarbonisation and Adaptation

Climate-Related Opportunities

LTFH undertook an assessment of the Company's current state, considered possible future scenarios (as below), and identified different risks and opportunities within these scenarios. In general, the risks to the business and

its financial consequences are more if the global effort is not directed to limit the temperature raise 1.5°C by raising the ambition above Paris climate agreement which targets to limit the global temperature to 2°C.

Scenarios considered for climate risk assessment
Global temperature raise is limited to 1.5°C
Global temperature raise is limited to 1.5-2°C
Global temperature raise is beyond 2°C

Post the conduct of climate risk assessment LTFH would engage with the investee company to take mitigative actions and identify the residual risk and financial implications if any.

Annexures

Criteria for Code and numbers

	Very Low 0	Low 1	Medium 2	High 3	Very High 4
Average Temperature (Projected Change in Hot Day; Tmax>40^c) <i>Ensemble Median Range</i>	0-5	5-10	10-15	15-20	20-25
Heat Wave Heat Index 35 <i>Ensemble Median Range</i>	0-10	10-20	20-30	30-40	40-50
Heat Wave (Annual Probability of Heat wave for India)	0-0.01	0.01-0.02	0.02-0.03	0.03-0.04	0.04-0.05
Drought <i>Ensemble Median Range(Projected change in Annual Mean Drought Index; SPEI)</i> Standardized Precipitation Evapotranspiration Index (SPEI)	Above 0	At Zero	0-(-0.080)	(-0.080)- (-0.050)	Less than (-0.050)
Severe Drought <i>Ensemble Median Range(Probability)</i>	0-0.05	0.05-0.10	0.10-0.15	0.15-0.20	0.20-0.25
Annual flooding (Projected Change in Days with Rainfall> 50mm)	0-0.1	0.1-0.2	0.2-0.3	0.3-0.4	0.4-0.5
Cyclones/storms	Based on the map of down to earth for Coastal cyclones and Climate central. https://www.google.com/url?q=https://www.downtoearth.org.in/factsheet/how-vulnerable-are-we-mapping-climate-change-in-india-66191&sa=D&source=hangouts&ust=1619775346368000&usg=AFQjCNHYA5NoEx4kHU37-QnPTLCojMg_tA				

Assessments

L&T Finance Climate Impacts Summary						
L&T Infrastructure Finance						
	Physical Risk		Temperature Increase	Water Availability	Flooding	Extreme events
Asset	Plant	Time Period	Average Temperature (Projected Change in Hot Day; Tmax>40^c), Ensemble Median Range	Drought (Ensemble Median Range(Projected change in Annual Mean Drought Index; SPEI))	Sea Level Rise/Annual flooding (Projected Change in Days with Rainfall> 50mm)	Cyclones/storms
Wind	Wind, Chitradurga, Karnataka-14.2251° N, 76.3980° E	Long term (2020-2039)	2	0	4	0
Solar	Solar, Rewa, MP-24.5362° N, 81.3037° E	Long term (2020-2039)	2	3	0	0
Solar	Solar, Rajasthan	Long term (2020-2039)	4	4	1	0
Solar	Solar, Gujrat	Long term (2020-2039)	3	4	4	0
Solar	Solar, UP	Long term (2020-2039)	1	4	0	0
Wind	Wind, Kutch, Gujrat- 23.7337° N, 69.8597° E	Long term (2020-2039)	3	4	4	0
Wind	Wind, Karnataka	Long term (2020-2039)	2	0	4	0
Road	Road, Yavatmal, Maharashtra-20.3899° N, 78.1307° E	Long term (2020-2039)	1	4	0	0
Road	Road, Rajgarh, MP- 23.8509° N, 76.7337° E	Long term (2020-2039)	2	4	2	0
Road	Road, Shajapur, MP- 23.4273° N, 76.2730° E	Long term (2020-2039)	2	0	4	0
Road	Road, Dewas, MP-22.9676° N, 76.0534° E	Long term (2020-2039)	2	0	4	0

Road	Road, Jharkhand-23.3441° N, 85.3096° E	Long term (2020-2039)	2	4	0	0
Road	Road, Ramgarh , Jharkhand-23.6363° N, 85.5124° E	Long term (2020-2039)	1	4	0	0
Road	Road, East Singhbhum, Jharkhand-22.4867° N, 86.4997° E	Long term (2020-2039)	1	4	0	0
Road	Road, West Singhbhum, Jharkhand-22.3651° N, 85.4376° E	Long term (2020-2039)	2	4	3	0
Road	Road, Saraikela Kharsawand, Jharkhand-22.8561° N, 86.0122° E	Long term (2020-2039)	1	4	4	0
Road	Road, Guntur, AP-16.3067° N, 80.4365° E	Long term (2020-2039)	1	0	4	0
Road	Road, Prakasam, AP-15.3485° N, 79.5603° E	Long term (2020-2039)	2	0	4	0
Road	Road, Nellore, AP-14.4426° N, 79.9865° E	Long term (2020-2039)	1	0	0	0
Road	Road, Nanded, Maharashtra-19.1383° N, 77.3210° E	Long term (2020-2039)	1	4	0	0
Road	Road, Latur, Maharashtra-18.4088° N, 76.5604° E	Long term (2020-2039)	2	0	4	0

L&T Infra Debt Fund						
	Physical Risk		Temperature Increase	Water Availability	Flooding	Extreme events
Asset type	Plant	Time Period	Average Temperature (Projected Change in Hot Day; Tmax>40^c) Ensemble Median Range	Drought, Ensemble Median Range, (Projected change in Annual Mean Drought Index; SPEI)	Sea Level Rise/Annual flooding (Projected Change in Days with Rainfall> 50mm)	Cyclones/storms
Solar	Solar – Daisar, Patan, Gujrat 23.9186° N, 71.5071° E	Long Term (2020-2039)	4	4	0	0
Solar	Solar-Nagaur, Rajasthan, 27.1983° N, 73.7493° E	Long term (2020-2039)	4	4	0	0
Wind	Wind-Jamgodarani Hills, Dewas, Madhya Pradesh-22° 59' 9", 76° 9'5 6.5"	Long term (2020-2039)	2	4	1	0
Road	Road (Moradabad, Uttar Pradesh (NH 24)- 28.8386° N, 78.7733° E	Long term (2020-2039)	1	4	0	0
Road	Road (Bareilly, Uttar Pradesh (NH 24)- 28.3670° N, 79.4304° E	Long term (2020-2039)	2	4	0	0
Solar	Solar, Manakondur, Karimnagar, Telangana- 18.4013° N, 79.1845° E	Long term (2020-2039)	1	0	0	0
Solar	Solar, Bujarampet, Karimnagar, Telangana-17.9025° N, 78.1393° E	Long term (2020-2039)	1	0	0	0

Solar	Solar, Dacharam, Karimnagar, Telangana- 18.2498° N, 79.0553° E	Long term (2020- 2039)	1	0	0	0
Solar	Solar, Saidapur, Medak Telangana- 17.5446° N, 77.9539° E	Long term (2020- 2039)	1	0	0	0
Solar	Solar, Veltoor, Mahbubnagar, Telangana-16.4742° N, 77.9532° E	Long term (2020- 2039)	2	0	0	0
Solar	Solar, Asnad ,Medak, Telangana-18.79994 , 79.83864.	Long term (2020- 2039)	1	0	0	0
Solar	Solar, Digwal , Medak, Telangana- 17.6635° N, 77.7137° E	Long term (2020- 2039)	1	0	1	0
Solar	Solar, Narsingi , Medak, Telangana- 17.3895° N, 78.3576° E	Long term (2020- 2039)	1	0	1	0
Solar	Solar, Talamadia, Medak, Telangana- 18.2275° N, 78.3558° E	Long term (2020- 2039)	1	0	1	0
Wind	Wind, Gunga, Rajasthan-26.2369° N, 71.2147° E	Long term (2020- 2039)	4	4	0	0
Wind	Wind, Barmer, Rajasthan-25.7521° N, 71.3967° E	Long term (2020- 2039)	4	4	0	0
Solar	Solar, Padaliya, Neemuch, MP- 24.4738° N, 74.8726° E	Long term (2020- 2039)	1	3	1	0
Wind	Wind, Tonk Khurd MP, 22.9676° N, 76.0534° E	Long term (2020- 2039)	1	3	0	0

Transmission	Transmission Sarni(Betul)-22.1187° N, 78.1663° E	Long term (2020-2039)	2	4	2	0
Transmission	Transmission Ashta(Sehore)-23.0180° N, 76.7160° E	Long term (2020-2039)	2	0	0	0
Road	Road, Godhra- Gujrat-22.7788° N, 73.6143° E	Long term (2020-2039)	2	4	0	0
Road	Road, Panchmahal, Gujrat-22.7770° N, 73.6330° E	Long term (2020-2039)	2	4	0	0
Solar	Solar, Nataram, Mandsaur, MP-24.0737° N, 75.3325° E	Long term (2020-2039)	2	2	0	0
Solar	Solar, Indoor, Rangareddy, Telangana-17.3891° N, 77.8367° E	Long term (2020-2039)	1	0	1	0
Solar	Solar, Kalipi, Anantapur, AP-13.9929° N, 77.4587° E	Long term (2020-2039)	1	0	2	0
Road	Road, Udaipur, Rajsamand, Rajasthan-25.0583° N, 73.8860° E	Long term (2020-2039)	1	4	0	0
Wind	Wind, Nana Asota, Dwarka, Jamnagar-22.2579° N, 69.4129° E	Long term (2020-2039)	2	3	2	4
Solar	Solar, Mograle, Satara, Maharashtra-17.8661° N, 74.5288° E	Long term (2020-2039)	3	3	1	0
Solar	Solar, Bhadla Solar Park, Jodhpur (Bhadla), Rajasthan-	Long term (2020-2039)	3	3	1	0

	27.5176° N, 71.9304° E					
Solar	Solar, Yelburga, Koppal, Karnataka-15.6142° N, 76.0131° E	Long term (2020-2039)	2	2	1	0
Solar	Solar, Jalgaon (Chalisgaon), Maharashtra-21.0077° N, 75.5626° E	Long term (2020-2039)	2	2	3	0
Solar	Solar, Chatgaon, Beed, Maharashtra-18.9749° N, 76.2334° E	Long term (2020-2039)	2	3	3	0
Transmission	Transmission, Kurukshetra, Haryana-29.9695° N, 76.8783° E	Long term (2020-2039)	1	4	0	0
Transmission	Transmission, Malerkotla, Punjab-30.5246° N, 75.8783° E	Long term (2020-2039)	1	4	0	0

Reference:	Projects	Temperature)	Drought	Flood	Cyclone
Total Solar projects (IDF & IFC)	24	45	41	21	0
Total Wind projects (IDF & IFC)	8	20	22	15	4
Total Transmission projects (IDF & IFC)	4	6	12	2	0
Total Road projects (IDF & IFC)	19	29	52	29	0

Max ^m Score	Impact Score (temperature)	Impact Score (Drought)	Impact Score (Flood)	Impact Score (Cyclones)
96	0.4688	0.4271	0.2188	0.0000
32	0.6250	0.6875	0.4688	0.1250
16	0.3750	0.7500	0.1250	0.0000
76	0.3816	0.6842	0.3816	0.0000

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