CapitalDynamics®
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Transition & Physical Climate Risk Report

2022

CEI VIII and CEI IX

Executive summary

Capital Dynamics has been a supporter of the Task Force on Climate-Related Financial Disclosures ("TCFD") since 2020. The assessment and measurement of financially material climate-related risks represents a cornerstone of our robust Responsible Investment approach designed to enhance long-term risk-adjusted returns for our clients.

Climate change can manifest in financially material risks and opportunities we face as an asset manager. Our own greenhouse gas emissions are relatively low and the main climate-related transition and physical risks we face stem from the investments we make, i.e. the climate risks to which our Clean Energy assets are exposed. Therefore, we assess the transition and physical risks of our underlying exposures applicable to Clean Energy CEI VIII and CEI IX, and how climate-related risks impact our investment portfolio over the short-, medium- and longer term.

On the flipside, climate-related risks also represent attractive financially material opportunities for our Clean Energy business, as renewable energy has a critical role to play to achieve the transition towards a low-carbon economy. Climate legislation and the pressure on companies to reduce their carbon footprint is expected to increase the demand for renewable energy sources, thereby having a positive impact on profitability for renewable energy producers. In other words, the climate transition risks faced by high emitting sectors translate into a financially material climate opportunity for the renewable energy sector. In our Capital Dynamics Clean Energy investment strategy, these assumptions represent a substantial investment opportunity for our clients.

Overall, our analysis of the 2022 climate-related risks and opportunities of the portfolio yields three key results that impact our resilience in the transition towards a lower carbon economy for CEI VIII and CEI IX:

1 CEI VIII and CEI IX are exposed to *low* transition risks based on the sector exposure, with *positive impacts* onto revenues

2 Physical climate risks for CEI VIII and CEI IX assets on average are *moderate* for the climate hazards tropical water stress, flooding and extreme heat, while on average our wildfire risk is *high*

3 The CEI VIII and CEI IX investments represent a highly attractive *financial opportunity* in the transition towards a net zero economy

We are delighted to share with you over the next pages how we arrived at these conclusions. This report should be read in conjunction with our 2022 TCFD report that discloses the processes we have in place to oversee climate matters, our climate strategy and risk management, as well as the KPIs we measure in relation to climate risks and opportunities at Capital Dynamics.
We hope you enjoy reading our inaugural CEI VIII and CEI IX Transition and Physical Climate Risk Report.

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Approach to Climate Scenario Analysis

Approach to Climate Scenario Analysis

Capital Dynamics utilizes climate scenario analysis as a tool to identify financially material climate risks and opportunities and to analyze our firm's and investment strategies' resilience to climate matters under different climate scenarios over time. This process allows us to determine where our investment strategies and assets are exposed to financially material climate risks and opportunities and what response actions are appropriate in our strategies. Further, climate scenario analysis helps influence our firm's climate strategy and enables us to monitor climate-related risks and opportunities in our investment portfolio over time.

Climate modelling approach and tools

We are utilizing climate scenario analysis as a tool, which is firmly integrated into our transition risk and physical climate risk assessment processes. We run three selected climate scenarios based on the Network for Greening the Financial System ("NGFS") scenarios framework and run these scenarios with the Climate Impact Explorer tool. Further, we utilize ThinkHazard and the Aqueduct Water Risk Atlas to identify the severity of climate hazards in each region.

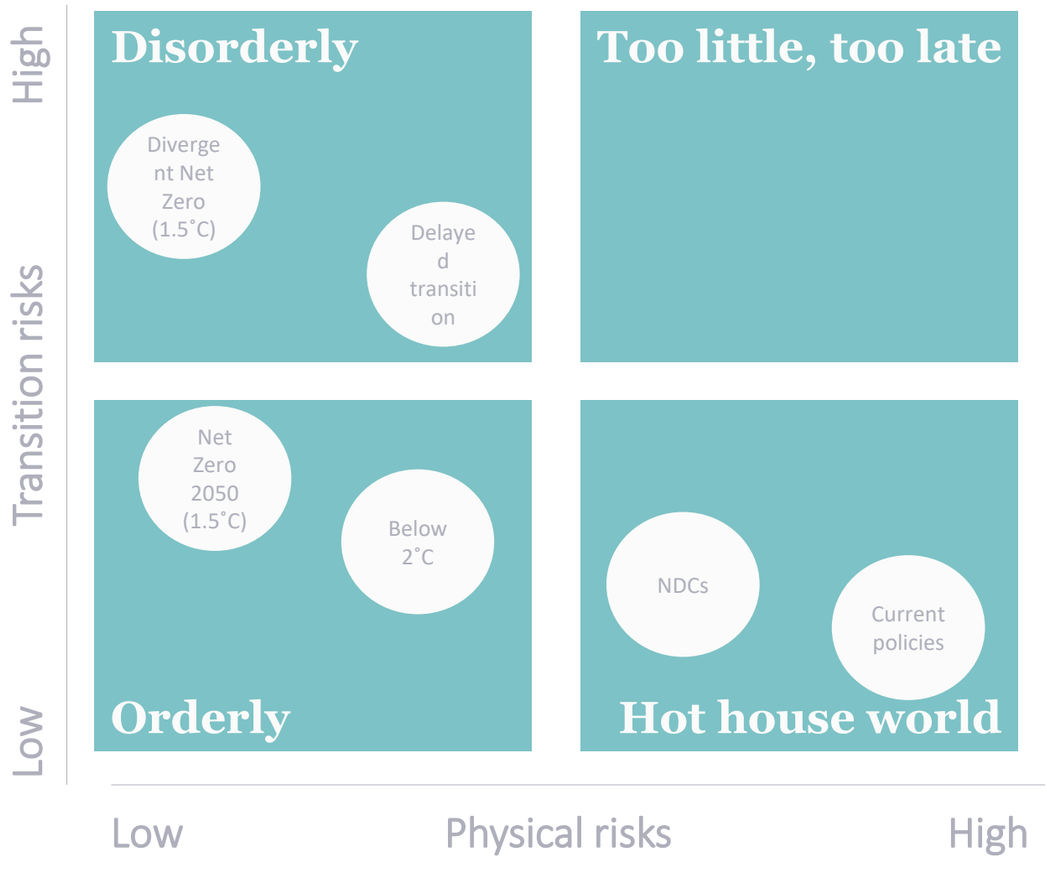
Climate scenario selection

To inform our analysis of financially material climate risks and opportunities, we select three scenarios from the NGFS in line with the FCA's ESG sourcebook requirements:

1. Orderly transition scenario (NGFS Net Zero 2050)
2. Disorderly transition scenario (NGFS Delayed transition)
3. Hot house world scenario (NGFS Current policies)

The choice of the different scenarios allows us to account for the effects of transition risks and physical climate risks.

NGFS scenarios Framework

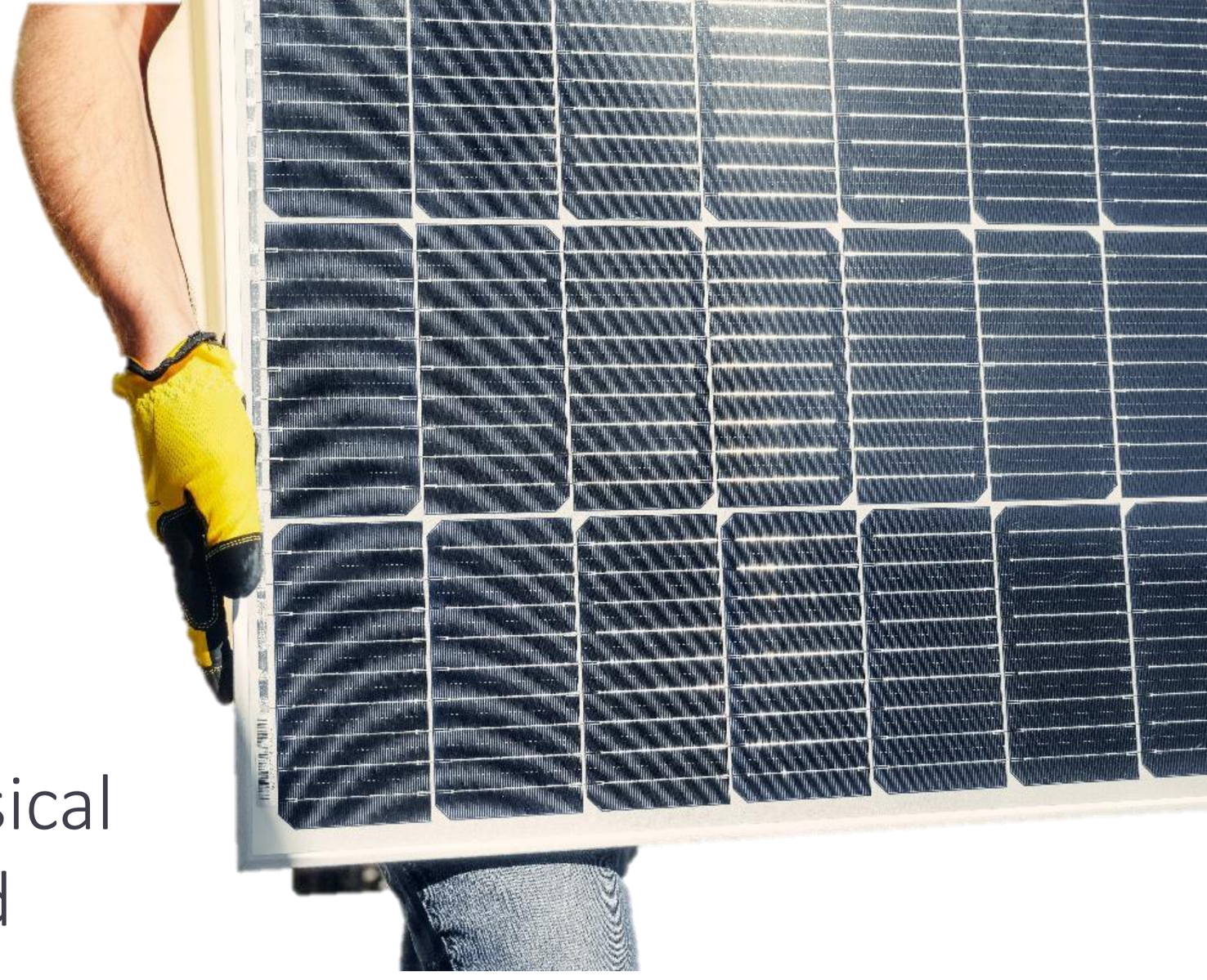


Positioning of scenarios is approximate, based on an assessment of physical and transition risks out to 2100.[1]

[1] Source: NGFS Scenarios for central banks and supervisors (2022). Available at: https://www.ngfs.net/sites/default/files/medias/documents/ngfs_climate_scenarios_for_central_banks_and_supervisors_.pdf.pdf

02.

Transition Risks and Physical Climate Risks CEI VIII and CEI IX



What are transition risks?

Transition risks refer to financially material risks that can arise due to the adjustment process towards a lower carbon economy. Such risks arise because a transition to net zero requires adjustments in behavior (for example consumer demand towards green products), technology (for instance substituting existing products for more sustainable options) and policy (for example carbon pricing schemes). Further, the transition can represent reputational challenges for firms operating in high emitting sectors, or companies that lack the ambition to work towards decarbonization. Many of the drivers of transition risks are global, however, some drivers vary in national contexts, such as the implementation of environmental legislation.

The realization of transition risks could result in financially material impacts, including stranded assets, financial penalties, increased costs, reduced return on investment and loss of market share. On the flipside, active management of transition risks can yield attractive opportunities for outperformance compared to peers lagging the required action to adjust in support of a lower carbon economy. Exposures to the transition risks are primarily driven by the underlying asset's sector and geography.
The below overview summarizes the transition risks categories (policy & litigation, technology, markets and reputation) and their respective risk drivers that are integrated in our transition risks assessment processes.

Policy & Litigation

Policy actions to lower adverse impacts of climate change and advance climate solutions

- Carbon pricing policies / increased pricing of GHG emissions (scope 1, 2 and 3 GHG emissions)
- Increased reporting obligations on GHG emissions
- Regulation of existing high emitting products and services
- Increased exposure to litigation / penalties

Technology

Innovation to support the transition towards a low carbon economy

- Increased operating costs from high emitting technologies
- Sunk costs to transition to low emitting technologies
- Stranding new investments and / or unsuccessful investment in new technologies
- Substitution of existing products and services with lower emitting options

Markets

Shifts in supply and demand as a result of the increased consideration of climate-related risks and opportunities

- Changing consumer behavior in favor of sustainable products
- Shift in consumer preferences for green products/ local produce/ low emitting options
- Increased costs of raw materials
- Shifts in financial and balance sheet asset valuations
- Failure to capture new market opportunities to invest in clean technologies

Reputation

Heightened reputational risks for businesses failing to address changing client demands

- Stigmatization of high emitting sectors
- Increased consumer concern about environmental practices

Climate risks and opportunities Clean Energy CEI VIII and CEI IX

Transition risks score (aggregated): Low

Direct emissions costs	Indirect emissions costs	Low-carbon CapEx	Revenue	Overall
Low	Moderately low	Moderately low	Positive Impact	Low

Current physical climate risk drivers (aggregated): Medium

Tropical cyclones
Limited data

Water stress
Medium

Wildfire
High

Flooding
Medium

Extreme heat
Medium

Financial impacts of physical climate risks include:

- Reduced revenue and higher costs from labor productivity loss
- Increased operating costs and insurance premiums or unavailability of insurance
- Reduced revenue from decreased production capacity and from lower sales and output
- Write-offs and early asset retirement

For more details around the transition risks score, the scenario analysis of transition risks, our integration of transition and physical risk assessment into our overall risk management processes and the impact on our strategy and financial planning, please refer to our 2022 TCFD report.

Impact of climate risks and opportunities on Clean Energy

The transition towards a low-carbon economy represents an attractive investment opportunity in solar and wind power assets and exhibits positive impacts on revenue potentials (i.e. strong financially material climate opportunity). Since the operation of renewable energy assets is associated with minimal carbon emissions and water consumption, the overall transition risks score is low.

Despite being exposed to some transition risks, for instance the risk of increasing GHG emissions reporting obligations (see next page for material transition risks applicable to Clean Energy), overall, the Clean Energy strategy is resilient in the transition towards a lower carbon economy. The transition represents a financially material climate opportunity for our business, as governments scale up the deployment of renewable energy sources and businesses in the real economy increasingly depend on sourcing clean energy to manage their own transition risks and fulfill climate-related pledges.

As investors in real assets, our Clean Energy business is exposed to physical climate risks, which could cause damage to solar PV modules or wind turbines, leading to higher repair costs and insurance premiums and lower output, thereby reducing revenues and increasing costs (in particular the costs associated with insurance). Extreme weather events and chronic physical climate risks (e.g. rising sea levels at coastal regions and chronic decreased wind speed) could also represent a risk of early asset retirement and write-offs. Overall, our European Clean Energy portfolio is well diversified in terms of geographic exposure to manage physical climate risks and generally does not operate in areas exposed to extreme levels of physical climate risks, although wildfire risks are classified as high in most geographies are assets are located in. We identify physical climate risks that are material, utilizing in-house technical expertise and a range of tools, including ThinkHazard, Acqueduct Water Risk Atlas and Climate Impact Explorer to run the scenario analysis for the evolution of physical climate hazards material for our assets over time in three selected NGFS scenarios.

Transition risk exposure*

	Exposure to transition risks drivers	Financial impacts of transition risks
Policy & Litigation	• Carbon pricing policies / increased pricing of GHG emissions • Increased reporting obligations on GHG emissions	• Increased operating costs / costs associated with the construction phase of our projects • Increased operating costs associated with GHG emissions data and reporting
Technology	• Stranding new investments and / or unsuccessful investment in new tech (for example investments into renewable energy technology other than wind and solar)	• Sunk costs associated with unsuccessful investment
Market	• Increased costs of raw materials (e.g. critical raw materials required for the production of renewable energy modules) • Failure to capture new market opportunities to invest in clean technologies (e.g. investments into renewable energy technology other than wind and solar, such as hydrogen)	• Increased production costs of module manufacturers resulting from change in input prices could be passed on to us as part of procurement • Change in revenue mix and sources, resulting in decreased revenue • Reduced demand for existing services due to change in consumer preferences
Reputation	• Increased consumer concern about environmental practices (e.g. impacts on biodiversity, GHG emissions associated with construction phase of renewable energy projects) • Shifts in consumer preferences (e.g. shifts towards renewable energy producers that reduce negative environmental and social impacts associated with the project lifecycle from materials sourcing and production, construction, operation and asset decommissioning)	• Reduced revenue from decreased demand for services • Reduced revenue from decreased production capacity • Reduced revenue from negative impacts on workforce management (for example labor conditions in supply chain) • Reduction in capital availability

* The transition risks disclosed here represent the most relevant risks for our Clean Energy business for the transition risks categories Policy & Legal, Technology, Market and Reputation. The risks are deemed material, as they could have a financial impact on our business. Material risks are prioritized based on probability of having a financial impact on the Clean Energy business, our strategy and financial planning and they inform decision-making. Our firm's Risk Management processes have established a systematic process for identifying and managing transition risks and have incorporated these into the firm's overall risk management processes. For more details, please refer to our 2022 TCFD report.

What are physical climate risks?

Physical climate risks refer to financially material physical impacts of climate change and the adverse effects of global warming. Physical risks can be acute (i.e. event-driven risks, such as increased severity and frequency of extreme weather events) or chronic (i.e. the longer-term shifts in climate patterns, such as rising global temperatures that cause chronic heat waves and rising sea levels). Once realized, physical climate risks can cause early asset impairment, damages to facilities and infrastructure, force migration, increase raw material prices and cause operational disruptions (for instance through the disruption in supply chains).

The effects of physical climate risks bear a number of severe economic, environmental and social impacts, for instance through the steep rise in annual damage caused by floods and cyclones, increased competition for water in water-stressed regions and a steep decline in labor productivity due to extreme heat. Below is a summary of acute and chronic climate hazards, along with the risk indicators used for measurement and secondary effects that can have a financially material impact. We use the Climate Impact Explorer tool to measure our exposure to key climate hazards over time under three climate scenarios.

ACUTE	**Cyclones**	**Floods**	**Wildfire**	
Indicator	Cumulative wind speed	Floods frequency & severity; rainfall intensity	Change in maximum wildfire potential	
Secondary effects	Storm surges and life-threatening waves in coastal regions	Disruption to services, health impacts (famine / disease), increased landslides	Impaired water quality, smoke damage, landslides	
CHRONIC	**Sea level rise**	**Precipitation stress**	**Drought**	**Heat stress**
Indicator	Coastal flood frequency/ exposure	Baseline water stress Future water demand and supply	Drought days	Extreme heat days
Secondary effects	Coastal erosion, storm floods, contamination of freshwater reserves	Severe damage to infrastructure and life-threatening impacts of flooding	Severe economic, environmental and social impacts due to increased droughts	Health impacts on human beings

Material physical climate risks

Physical climate risks are primarily driven by the location of our assets and the expected useful life of the asset, since physical climate hazards are projected to intensify over time. We assess the relevant physical climate risks exposure by identifying regional climate hazards in the location of our assets that could have a financial impact on our Clean Energy business, strategy and financial planning and prioritize the risks in terms of probability on having a financial impact. The following acute and chronic climate hazards represent a financially material risk for us and are integrated into our physical climate risk assessment:

- River floods
- Coastal floods
- Urban floods
- Water scarcity / drought
- Extreme heat
- Wildfire

Based on the hazards, we then run a scenario analysis utilizing the following three NGFS scenarios (1) NGFS Net Zero by 2050, (2) NGFS Delayed transition and (3) NGFS Current policies (hot house world).
Scenario analysis is a valuable tool for us to utilize forward-looking climate models that help us in our strategic decision-making and planning processes and enable us to assess our resilience and alignment with the long-term goal of keeping global temperature rises to 1.5 ˚C above pre-industrial levels.

We run the scenario analysis over the time horizons 2025, 2030, 2050 and 2100 and disclose the 2020 values as baseline for the following climate stressors:

- Mean air temperature rise
- Labor productivity loss due to heat stress
- Land fraction annually exposed to wildfires
- Precipitation
- Expected damage from river floods
- Expected damage from tropical cyclones
- Relative change in wind speed (for wind power assets only, as chronic changes in wind patterns have an impact on wind turbines' electricity generation and therefore could have a financially material impact)

Over the following pages we disclose the physical climate hazards relevant for CEI VIII and CEI IX, along with the risk classification (very low, low, medium, medium- high and high), as well as how the climate stressors evolve over time in the three selected climate scenarios.

Crockandun – onshore wind

Crockandun is an operational onshore wind farm located in Northern Ireland. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Londonderry, Northern Ireland
Latitude: 54.741008
Longitude: -6.782689

River flood

High

The river flood hazard in the region is classified as high, i.e. potentially damaging and life-threatening river floods are projected to occur at least once in the next 10 years. The climate change projections for the area indicate an increase in frequency and intensity of precipitation in the long-term under the NGFS current policies scenario (see scenario analysis), leading to an increase in river floods due to extreme rainfall events. In the short- and medium term and in the NGFS transition scenarios, however, the hazard could reduce due to the reduction in precipitation. Hazard information was obtained from ThinkHazard for the Londonderry region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The climate hazard could also cause insurance to get harder to obtain in the future, or an increase in the insurance premium.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Crockandun.

Climate change projections for Northern Ireland indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Low

The urban flood hazard in the region is categorized as low, i.e. there is a more than 1% chance that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate an increase in frequency and intensity of precipitation in the long-term under the NGFS current policies scenario (see scenario analysis), leading to an increase in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Londonderry region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Very low

The water scarcity hazard in the region is classified as very low, i.e. droughts will occur less than once every 1000 years. Hazard information was obtained from ThinkHazard for the Londonderry region.
Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption. Water consumption for the maintenance of the project is low and the climate hazard is very low, which means the hazard is not financially material for Crockandun.

Extreme heat

Very low

The extreme heat hazard is classified as very low, i.e. there is less than 5% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Londonderry region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

Low

The wildfire hazard is classified as low, i.e. there is between a 4% - 10% chance of experiencing weather that could support a problematic wildfire in the region. The hazard could cause disruptions and risk of life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Londonderry region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones
- Decreased wind speed

Note, wind speed is projected to decrease in the area under all three NGFS scenarios. A chronic decrease in wind speed can cause lower outputs and therefore lower revenues from wind projects over time.

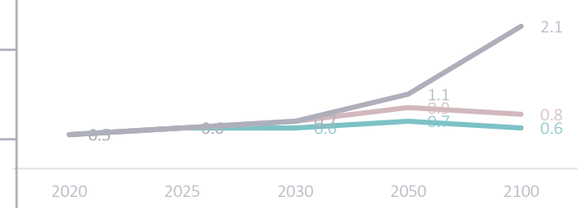
Physical climate risk scenario analysis – Asset: Crockandun (onshore wind)

Climate Hazards

Scenario analysis

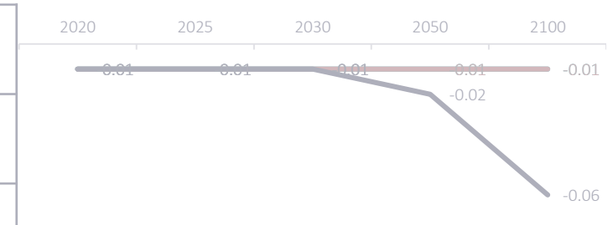
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.5	0.6	0.6	0.7	0.6	0.6	0.7	0.9	0.8	0.6	0.7	1.1	2.1



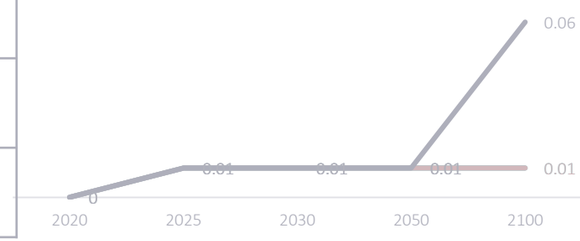
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.06



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

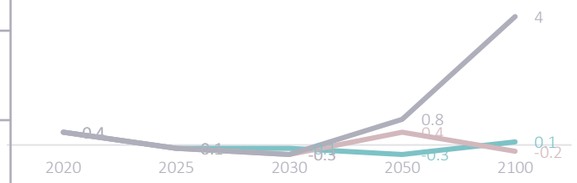
Physical climate risk scenario analysis – Asset: Crockandun (onshore wind) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

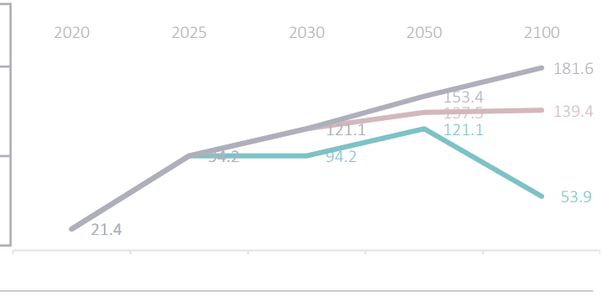
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.4	-0.1	-0.1	-0.3	0.1	-0.1	-0.3	0.4	-0.2	-0.1	-0.3	0.8	4



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

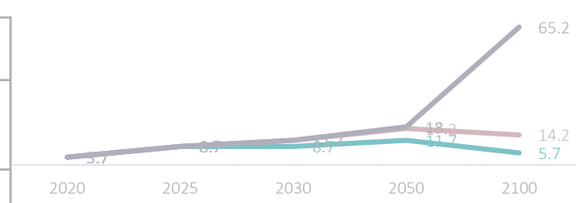
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
21.4	94.2	94.2	121.1	53.9	94.2	121.1	137.5	139.4	94.2	121.1	153.4	181.6



Expected damage from tropical cyclones (p.a. in%)

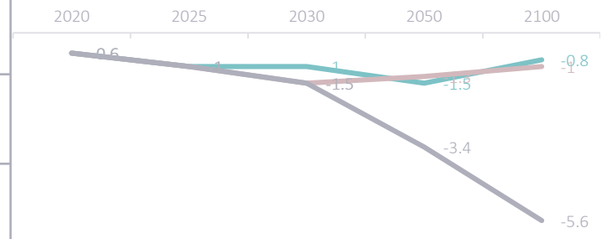
Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
3.7	8.7	8.7	11.7	5.7	8.7	11.7	17.2	14.2	8.7	11.7	28	65.2



Relative change in wind speed (in %)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.6	-1	-1	-1.5	-0.8	-1	-1.5	-1.7	-1.3	-1	-1.5	-3.4	-5.6



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Seegronan – onshore wind

Seegronan is an operational onshore wind farm located in Northern Ireland. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Killeter, Omagh, Northern Ireland
Latitude: 54.650661
Longitude: -7.7034

River flood

Very low

The river flood hazard in the region is classified as very low, i.e. there is a less than 1% chance that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years)
The climate change projections for the area indicate an increase in frequency and intensity of precipitation in the long-term under the NGFS current policies scenario (see scenario analysis), leading to an increase in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Omagh region.
The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low - Medium

The coastal flooding hazard is classified as low to medium, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 9 in 1,000,000 to 7 in 100,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Seegronan.

Climate change projections for Northern Ireland indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Low

The urban flood hazard in the region is categorized as low, i.e. there is a more than 1% chance that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate an increase in frequency and intensity of precipitation in the long-term under the NGFS current policies scenario (see scenario analysis), leading to an increase in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Omagh region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Very low

The water scarcity hazard in the region is classified as very low, i.e. droughts will occur less than once every 1000 years. Hazard information was obtained from ThinkHazard for the Omagh region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption. Water consumption for the maintenance of the project is low and the climate hazard is very low, which means the hazard is not financially material for Seegronan.

Extreme heat

Very low

The extreme heat hazard is classified as very low, i.e. there is less than 5% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Omagh region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

Medium

The wildfire hazard is classified as medium, i.e. there is between a 10% and 50% chance of experiencing weather that could support a hazardous wildfire in the region. The hazard could cause disruptions and risk of life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Omagh region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones
- Decreased wind speed

Note, wind speed is projected to decrease in the area under all three NGFS scenarios. A chronic decrease in wind speed can cause lower outputs and therefore lower revenues from wind projects over time.

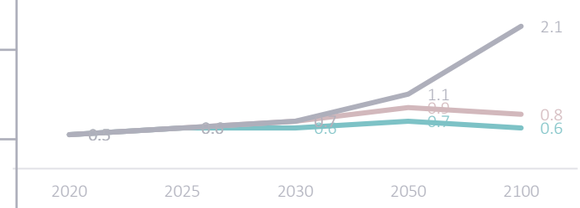
Physical climate risk scenario analysis – Asset: Seegronan (onshore wind)

Climate Hazards

Scenario analysis

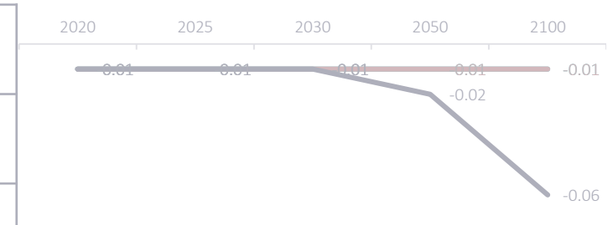
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.5	0.6	0.6	0.7	0.6	0.6	0.7	0.9	0.8	0.6	0.7	1.1	2.1



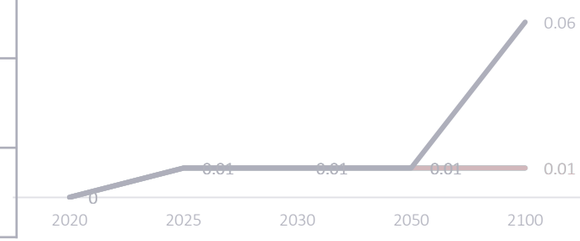
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.06



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

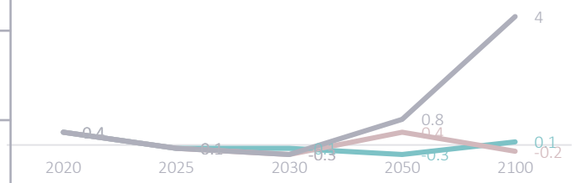
Physical climate risk scenario analysis – Asset: Seegronan (onshore wind) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

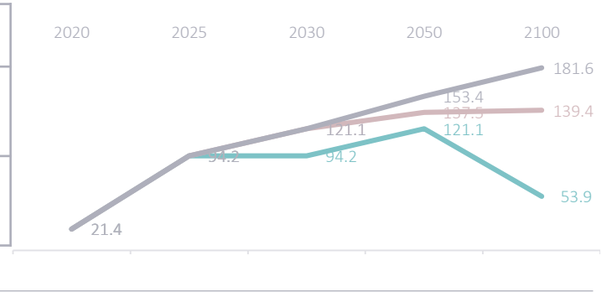
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.4	-0.1	-0.1	-0.3	0.1	-0.1	-0.3	0.4	-0.2	-0.1	-0.3	0.8	4



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

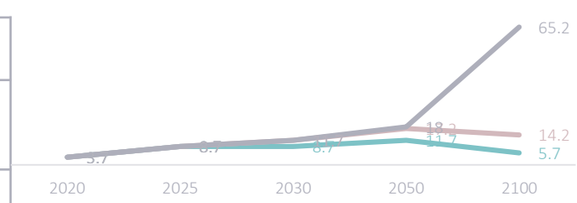
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
21.4	94.2	94.2	121.1	53.9	94.2	121.1	137.5	139.4	94.2	121.1	153.4	181.6



Expected damage from tropical cyclones (p.a. in%)

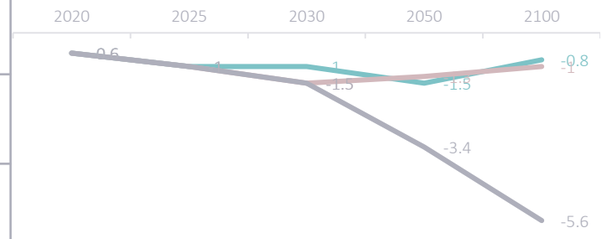
Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
3.7	8.7	8.7	11.7	5.7	8.7	11.7	17.2	14.2	8.7	11.7	28	65.2



Relative change in wind speed (in %)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.6	-1	-1	-1.5	-0.8	-1	-1.5	-1.7	-1.3	-1	-1.5	-3.4	-5.6



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Tyrone – onshore wind

Tyrone is an operational onshore wind farm located in Northern Ireland. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Tyrone, Omagh, Northern Ireland
Latitude: 54.495775
Longitude: -7.085747

River flood

Very low

The river flood hazard in the region is classified as very low, i.e. there is a less than 1% chance that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years)
The climate change projections for the area indicate an increase in frequency and intensity of precipitation in the long-term under the NGFS current policies scenario (see scenario analysis), leading to an increase in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Omagh region.
The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low - Medium

The coastal flooding hazard is classified as low to medium, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 9 in 1,000,000 to 7 in 100,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Tyrone.

Climate change projections for Northern Ireland indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Low

The urban flood hazard in the region is categorized as low, i.e. there is a more than 1% chance that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate an increase in frequency and intensity of precipitation in the long-term under the NGFS current policies scenario (see scenario analysis), leading to an increase in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Omagh region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Very low

The water scarcity hazard in the region is classified as very low, i.e. droughts will occur less than once every 1000 years. Hazard information was obtained from ThinkHazard for the Omagh region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption. Water consumption for the maintenance of the project is low and the climate hazard is very low, which means the hazard is not financially material for Tyrone.

Extreme heat

Very low

The extreme heat hazard is classified as very low, i.e. there is less than 5% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Omagh region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

Medium

The wildfire hazard is classified as medium, i.e. there is between a 10% and 50% chance of experiencing weather that could support a hazardous wildfire in the region. The hazard could cause disruptions and risk of life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Omagh region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones
- Decreased wind speed

Note, wind speed is projected to decrease in the area under all three NGFS scenarios. A chronic decrease in wind speed can cause lower outputs and therefore lower revenues from wind projects over time.

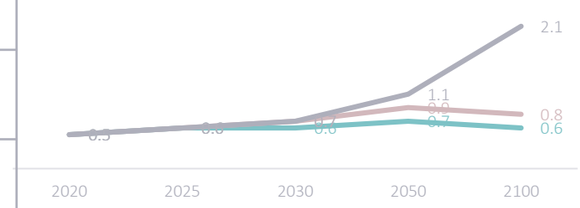
Physical climate risk scenario analysis – Asset: Tyrone (onshore wind)

Climate Hazards

Scenario analysis

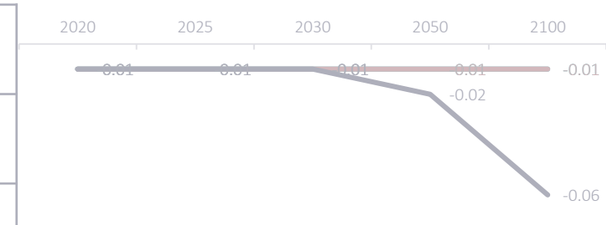
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.5	0.6	0.6	0.7	0.6	0.6	0.7	0.9	0.8	0.6	0.7	1.1	2.1



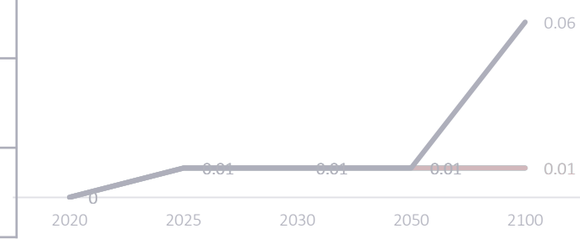
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.06



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

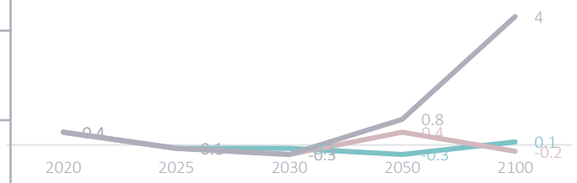
Physical climate risk scenario analysis – Asset: Tyrone (onshore wind) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

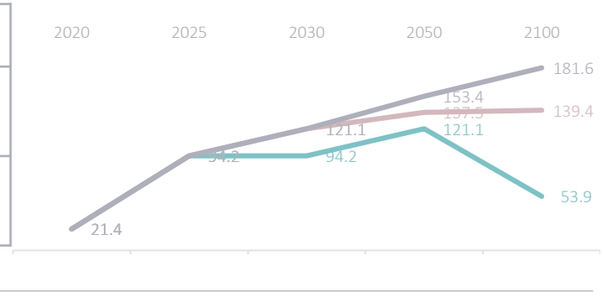
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.4	-0.1	-0.1	-0.3	0.1	-0.1	-0.3	0.4	-0.2	-0.1	-0.3	0.8	4



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

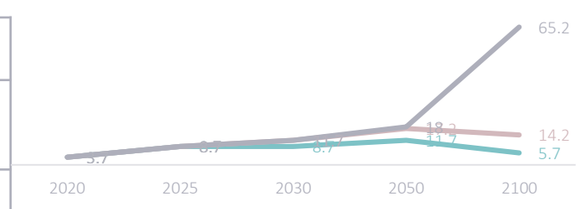
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
21.4	94.2	94.2	121.1	53.9	94.2	121.1	137.5	139.4	94.2	121.1	153.4	181.6



Expected damage from tropical cyclones (p.a. in%)

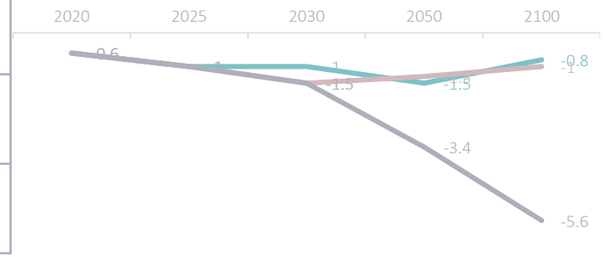
Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
3.7	8.7	8.7	11.7	5.7	8.7	11.7	17.2	14.2	8.7	11.7	28	65.2



Relative change in wind speed (in %)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.6	-1	-1	-1.5	-0.8	-1	-1.5	-1.7	-1.3	-1	-1.5	-3.4	-5.6



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Antrim – onshore wind

Antrim is an operational onshore wind farm located in Northern Ireland. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Antrim, Northern Ireland
Latitude: 54.936936
Longitude: -6.199114

River flood

Low

The river flood hazard in the region is classified as low, i.e. there is a more than 1% chance that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years)
The climate change projections for the area indicate an increase in frequency and intensity of precipitation in the long-term under the NGFS current policies scenario (see scenario analysis), leading to an increase in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Antrim region.
The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Antrim.

Climate change projections for Northern Ireland indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Low

The urban flood hazard in the region is categorized as low, i.e. there is a more than 1% chance that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate an increase in frequency and intensity of precipitation in the long-term under the NGFS current policies scenario (see scenario analysis), leading to an increase in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Antrim region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Very low

The water scarcity hazard in the region is classified as very low, i.e. droughts will occur less than once every 1000 years. Hazard information was obtained from ThinkHazard for the Antrim region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption. Water consumption for the maintenance of the project is low and the climate hazard is very low, which means the hazard is not financially material for Antrim.

Extreme heat

Very low

The extreme heat hazard is classified as very low, i.e. there is less than 5% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Antrim region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

Low

The wildfire hazard is classified as low, i.e. there is between a 4% and 10% chance of experiencing weather that could support a problematic wildfire in the region. The hazard could cause disruptions and risk of life and property loss in any given year. Hazard information was obtained from ThinkHazard based for the Antrim region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones
- Decreased wind speed

Note, wind speed is projected to decrease in the area under all three NGFS scenarios. A chronic decrease in wind speed can cause lower outputs and therefore lower revenues from wind projects over time.

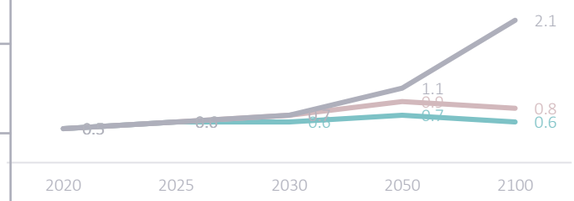
Physical climate risk scenario analysis – Asset: Antrim (onshore wind)

Climate Hazards

Scenario analysis

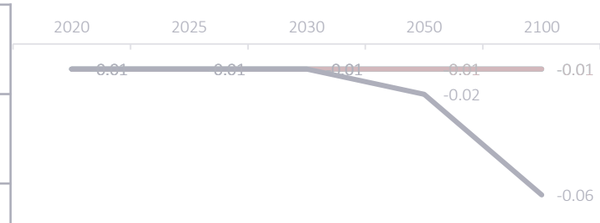
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.5	0.6	0.6	0.7	0.6	0.6	0.7	0.9	0.8	0.6	0.7	1.1	2.1



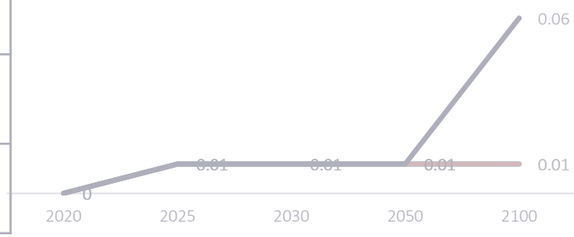
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.06



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

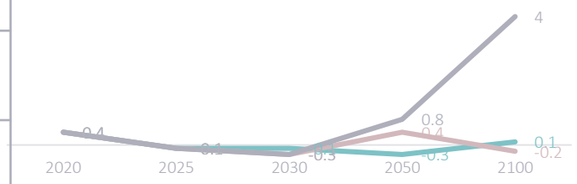
Physical climate risk scenario analysis – Asset: Antrim (onshore wind) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

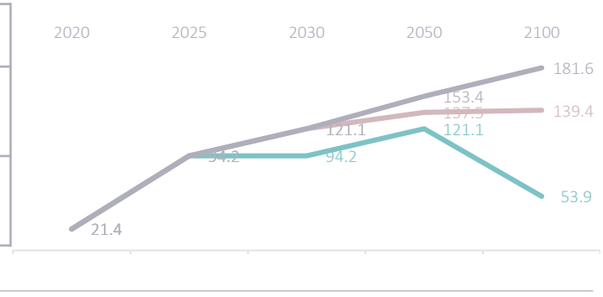
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.4	-0.1	-0.1	-0.3	0.1	-0.1	-0.3	0.4	-0.2	-0.1	-0.3	0.8	4



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

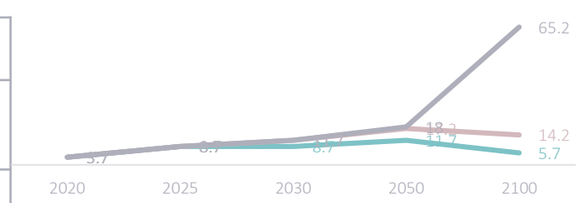
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
21.4	94.2	94.2	121.1	53.9	94.2	121.1	137.5	139.4	94.2	121.1	153.4	181.6



Expected damage from tropical cyclones (p.a. in%)

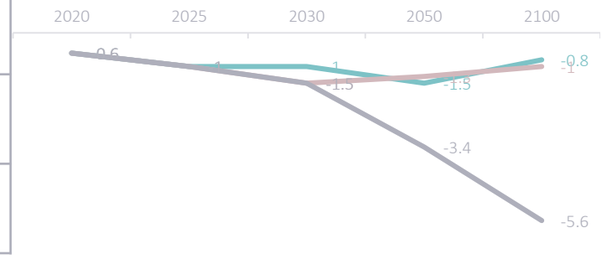
Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
3.7	8.7	8.7	11.7	5.7	8.7	11.7	17.2	14.2	8.7	11.7	28	65.2



Relative change in wind speed (in %)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.6	-1	-1	-1.5	-0.8	-1	-1.5	-1.7	-1.3	-1	-1.5	-3.4	-5.6



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Castlegore – onshore wind

Castlegore is an onshore wind farm located in Northern Ireland. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Antrim, Northern Ireland
Latitude: 54.8002
Longitude: -6.1182

River flood

Low

The river flood hazard in the region is classified as low, i.e. there is a more than 1% chance that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years)
The climate change projections for the area indicate an increase in frequency and intensity of precipitation in the long-term under the NGFS current policies scenario (see scenario analysis), leading to an increase in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Antrim region.
The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Castlegore.

Climate change projections for Northern Ireland indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Low

The urban flood hazard in the region is categorized as low, i.e. there is a more than 1% chance that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate an increase in frequency and intensity of precipitation in the long-term under the NGFS current policies scenario (see scenario analysis), leading to an increase in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Antrim region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Very low

The water scarcity hazard in the region is classified as very low, i.e. droughts will occur less than once every 1000 years. Hazard information was obtained from ThinkHazard for the Antrim region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption. Water consumption for the maintenance of the project is low and the climate hazard is very low, which means the hazard is not financially material for Castlegore.

Extreme heat

Very low

The extreme heat hazard is classified as very low, i.e. there is less than 5% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Antrim region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

Low

The wildfire hazard is classified as low, i.e. there is between a 4% and 10% chance of experiencing weather that could support a problematic wildfire in the region. The hazard could cause disruptions and risk of life and property loss in any given year. Hazard information was obtained from ThinkHazard based for the Antrim region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones
- Decreased wind speed

Note, wind speed is projected to decrease in the area under all three NGFS scenarios. A chronic decrease in wind speed can cause lower outputs and therefore lower revenues from wind projects over time.

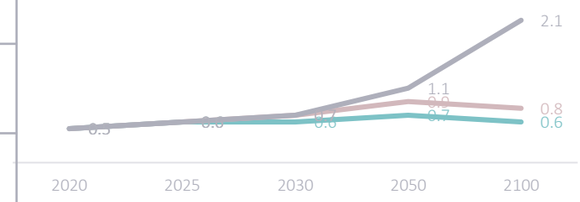
Physical climate risk scenario analysis – Asset: Castlegore (onshore wind)

Climate Hazards

Scenario analysis

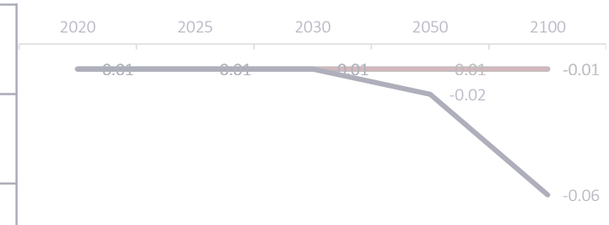
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.5	0.6	0.6	0.7	0.6	0.6	0.7	0.9	0.8	0.6	0.7	1.1	2.1



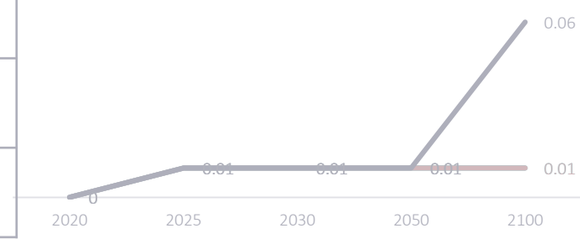
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.06



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

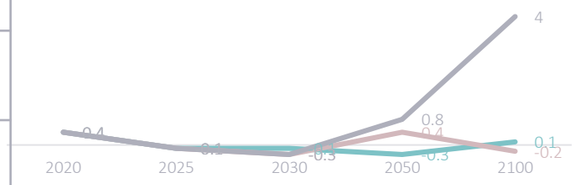
Physical climate risk scenario analysis – Asset: Castlegore (onshore wind) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

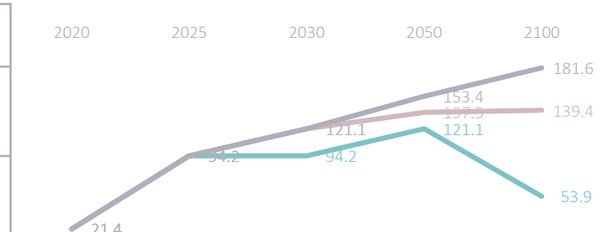
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.4	-0.1	-0.1	-0.3	0.1	-0.1	-0.3	0.4	-0.2	-0.1	-0.3	0.8	4



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

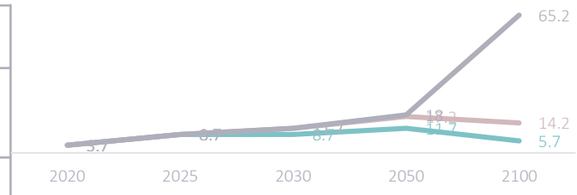
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
21.4	94.2	94.2	121.1	53.9	94.2	121.1	137.5	139.4	94.2	121.1	153.4	181.6



Expected damage from tropical cyclones (p.a. in%)

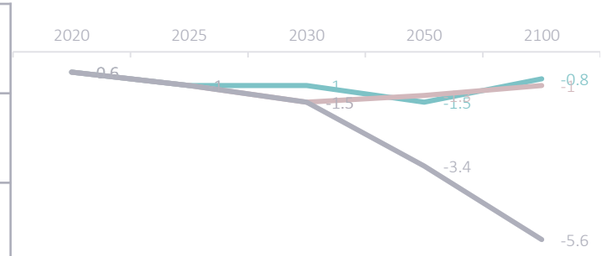
Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
3.7	8.7	8.7	11.7	5.7	8.7	11.7	17.2	14.2	8.7	11.7	28	65.2



Relative change in wind speed (in %)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.6	-1	-1	-1.5	-0.8	-1	-1.5	-1.7	-1.3	-1	-1.5	-3.4	-5.6



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Strathrory– onshore wind

Strathrory is an onshore wind farm located in Scotland. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Highland, Scotland
Latitude: 57.69709
Longitude: -4.25617

River flood

Very low

The river flood hazard in the region is classified as very low, i.e. there is a less than 1% chance that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years).
The climate change projections for the area indicate an increase in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to an increase in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Highland region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low - Medium

The coastal flooding hazard is classified as low to medium, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 9 in 1,000,000 to 7 in 100,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Strathrory.

Climate change projections for Scotland indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Low

The urban flood hazard in the region is categorized as low, i.e. there is a chance of more than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate an increase in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to an increase in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Highland region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Very low

The water scarcity hazard in the region is classified as very low, i.e. droughts will occur less than once every 1000 years. Hazard information was obtained from ThinkHazard for the Highland region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Very low

The extreme heat hazard is classified as very low, i.e. there is less than 5% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Highland region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

Medium

The wildfire hazard is classified as medium, i.e. there is between a 10% and 50% chance of experiencing weather that could support a hazardous wildfire in the region. The hazard could cause disruptions and risk of life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Highland region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones
- Decreased wind speed

Note, wind speed is projected to decrease in the area under all three NGFS scenarios. A chronic decrease in wind speed can cause lower outputs and therefore lower revenues from wind projects over time.

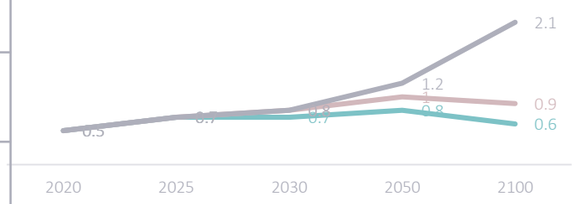
Physical climate risk scenario analysis – Asset: Strathrory (onshore wind)

Climate Hazards

Scenario analysis

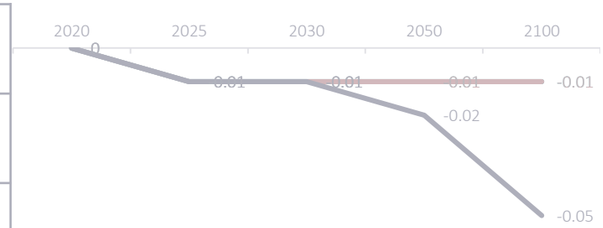
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.5	0.7	0.7	0.8	0.6	0.7	0.8	1	0.9	0.7	0.8	1.2	2.1



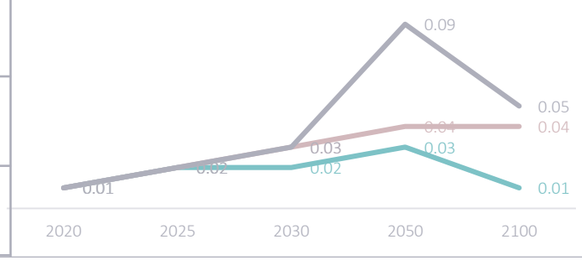
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.05



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.01	0.02	0.02	0.03	0.01	0.02	0.03	0.04	0.04	0.02	0.03	0.09	0.05



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

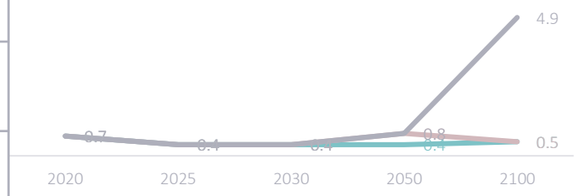
Physical climate risk scenario analysis – Asset: Strathrory (onshore wind) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

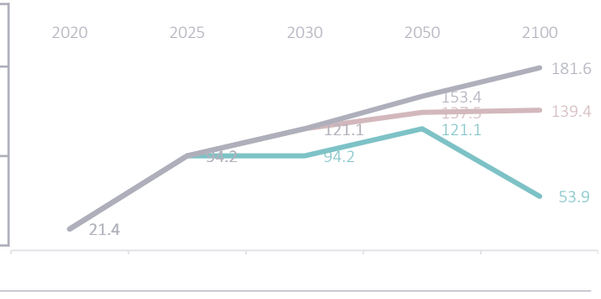
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.7	0.4	0.4	0.4	0.5	0.4	0.4	0.8	0.5	0.4	0.4	0.8	4.9



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

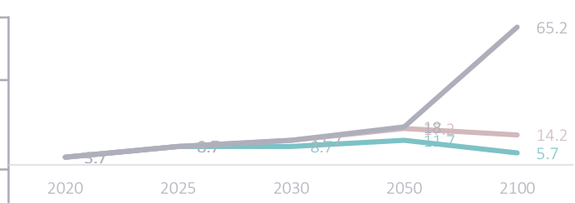
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
21.4	94.2	94.2	121.1	53.9	94.2	121.1	137.5	139.4	94.2	121.1	153.4	181.6



Expected damage from tropical cyclones (p.a. in%)

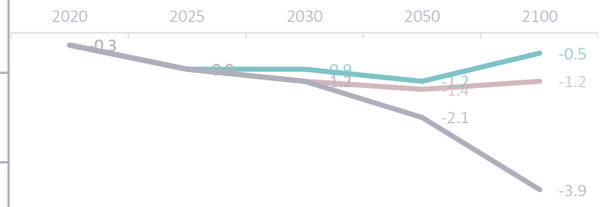
Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
3.7	8.7	8.7	11.7	5.7	8.7	11.7	17.2	14.2	8.7	11.7	28	65.2



Relative change in wind speed (in %)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.3	-0.9	-0.9	-1.2	-0.5	-0.9	-1.2	-1.4	-1.2	-0.9	-1.2	-2.1	-3.9



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Longhill– onshore wind

Longhill is an onshore wind farm (under construction) located in Scotland. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Lothian, Scotland
Latitude: 55.820167
Longitude: -3.639833

River flood

Very low

The river flood hazard in the region is classified as very low, i.e. there is a less than 1% chance that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years).
The climate change projections for the area indicate an increase in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to an increase in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Lothian region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Longhill.

Climate change projections for Scotland indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Low

The urban flood hazard in the region is categorized as low, i.e. there is a chance of more than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate an increase in frequency and intensity of precipitation all NGFS scenarios (see scenario analysis), leading to an increase in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Lothian region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Very low

The water scarcity hazard in the region is classified as very low, i.e. droughts will occur less than once every 1000 years. Hazard information was obtained from ThinkHazard for the Lothian region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Very low

The extreme heat hazard is classified as very low, i.e. there is less than 5% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Lothian region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

Medium

The wildfire hazard is classified as medium, i.e. there is between a 10% and 50% chance of experiencing weather that could support a hazardous wildfire in the region. The hazard could cause disruptions and risk of life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Lothian region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones
- Decreased wind speed

Note, wind speed is projected to decrease in the area under all three NGFS scenarios. A chronic decrease in wind speed can cause lower outputs and therefore lower revenues from wind projects over time.

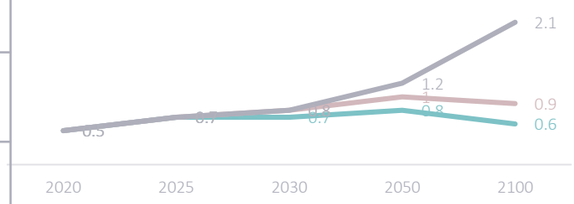
Physical climate risk scenario analysis – Asset: Longhill (onshore wind)

Climate Hazards

Scenario analysis

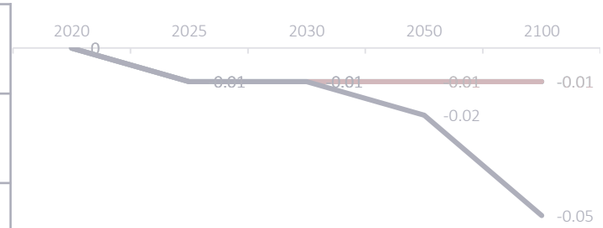
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.5	0.7	0.7	0.8	0.6	0.7	0.8	1	0.9	0.7	0.8	1.2	2.1



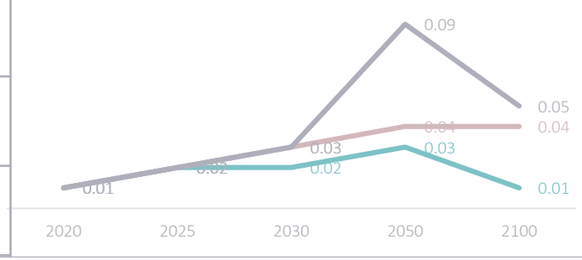
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.05



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.01	0.02	0.02	0.03	0.01	0.02	0.03	0.04	0.04	0.02	0.03	0.09	0.05



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

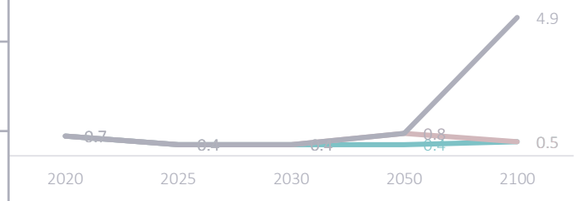
Physical climate risk scenario analysis – Asset: Longhill (onshore wind) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

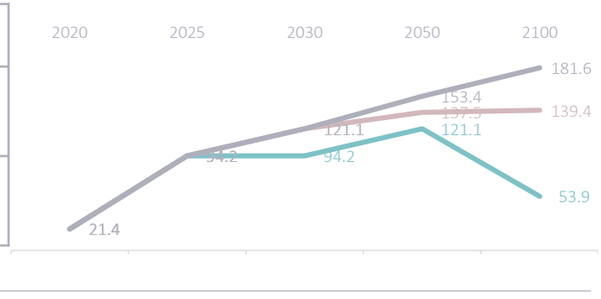
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.7	0.4	0.4	0.4	0.5	0.4	0.4	0.8	0.5	0.4	0.4	0.8	4.9



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

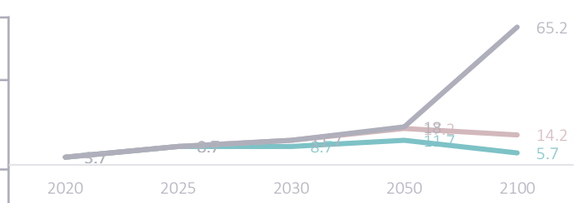
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
21.4	94.2	94.2	121.1	53.9	94.2	121.1	137.5	139.4	94.2	121.1	153.4	181.6



Expected damage from tropical cyclones (p.a. in%)

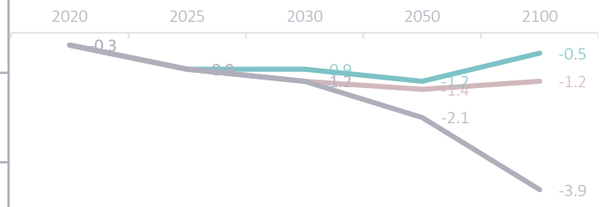
Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
3.7	8.7	8.7	11.7	5.7	8.7	11.7	17.2	14.2	8.7	11.7	28	65.2



Relative change in wind speed (in %)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.3	-0.9	-0.9	-1.2	-0.5	-0.9	-1.2	-1.4	-1.2	-0.9	-1.2	-2.1	-3.9



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Sorbie– onshore wind

Sorbie is an onshore wind farm (under construction) located in Scotland. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: North Ayrshire, Strathclyde, Scotland
Latitude: 55.658546
Longitude: -4.791289

River flood

Very low

The river flood hazard in the region is classified as very low, i.e. there is a less than 1% chance that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years).
The climate change projections for the area indicate an increase in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to an increase in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Strathclyde region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low - Medium

The coastal flooding hazard is classified as low to medium, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 9 in 1,000,000 to 7 in 100,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Sorbie.

Climate change projections for Scotland indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Low

The urban flood hazard in the region is categorized as low, i.e. there is a chance of more than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate an increase in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to an increase in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Strathclyde region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Very low

The water scarcity hazard in the region is classified as very low, i.e. droughts will occur less than once every 1000 years. Hazard information was obtained from ThinkHazard for the Strathclyde region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Very low

The extreme heat hazard is classified as very low, i.e. there is less than 5% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Strathclyde region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

Medium

The wildfire hazard is classified as medium, i.e. there is between a 10% and 50% chance of experiencing weather that could support a hazardous wildfire in the region. The hazard could cause disruptions and risk of life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Strathclyde region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones
- Decreased wind speed

Note, wind speed is projected to decrease in the area under all three NGFS scenarios. A chronic decrease in wind speed can cause lower outputs and therefore lower revenues from wind projects over time.

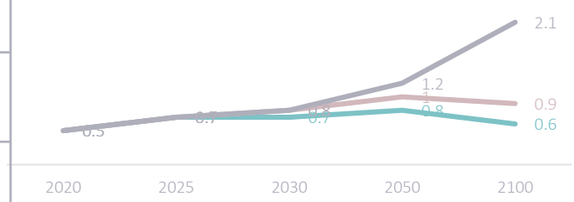
Physical climate risk scenario analysis – Asset: Sorbie (onshore wind)

Climate Hazards

Scenario analysis

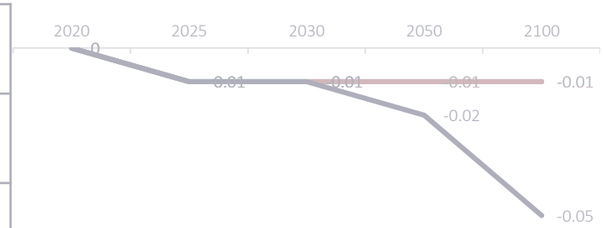
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.5	0.7	0.7	0.8	0.6	0.7	0.8	1	0.9	0.7	0.8	1.2	2.1



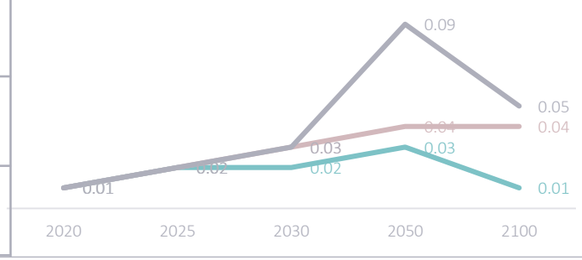
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.05



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.01	0.02	0.02	0.03	0.01	0.02	0.03	0.04	0.04	0.02	0.03	0.09	0.05



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

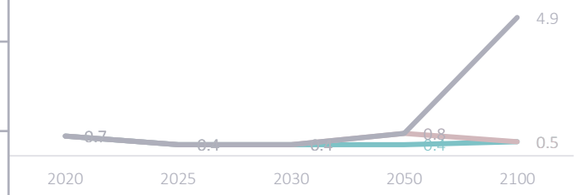
Physical climate risk scenario analysis – Asset: Sorbie (onshore wind) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

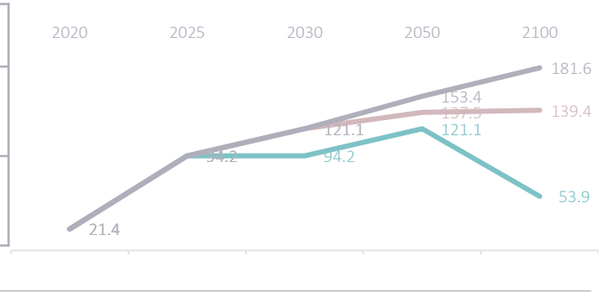
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.7	0.4	0.4	0.4	0.5	0.4	0.4	0.8	0.5	0.4	0.4	0.8	4.9



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

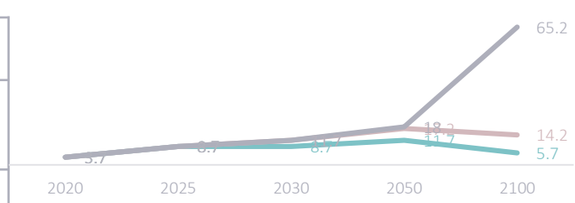
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
21.4	94.2	94.2	121.1	53.9	94.2	121.1	137.5	139.4	94.2	121.1	153.4	181.6



Expected damage from tropical cyclones (p.a. in%)

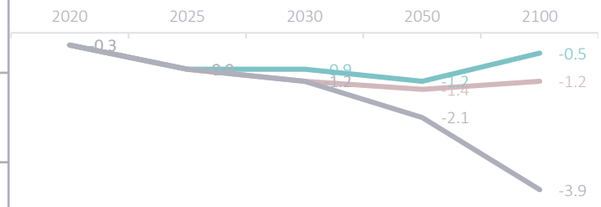
Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
3.7	8.7	8.7	11.7	5.7	8.7	11.7	17.2	14.2	8.7	11.7	28	65.2



Relative change in wind speed (in %)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.3	-0.9	-0.9	-1.2	-0.5	-0.9	-1.2	-1.4	-1.2	-0.9	-1.2	-2.1	-3.9



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Pines Burn– onshore wind

Pines Burn is an onshore wind farm located in Scotland. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Scottish Border, Scotland
Latitude: 55.346422
Longitude: -2.724864

River flood

Low

The river flood hazard in the region is classified as low, i.e. there is a more than 1% chance that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years).
The climate change projections for the area indicate an increase in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to an increase in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Scottish Border region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Pines Burn.

Climate change projections for Scotland indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Medium

The urban flood hazard in the region is categorized as medium, i.e. there is a chance of more than 20% that potentially damaging and life-threatening river floods occur in the coming 10 years. The climate change projections for the area indicate an increase in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to an increase in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Scottish Border region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Low

The water scarcity hazard in the region is classified as low, i.e. there is a 1% chance that droughts will occur in the next 10 years. Hazard information was obtained from ThinkHazard for the Scottish Border region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Very low

The extreme heat hazard is classified as very low, i.e. there is less than 5% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Scottish Border region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

Medium

The wildfire hazard is classified as medium, i.e. there is between a 10% and 50% chance of experiencing weather that could support a hazardous wildfire in the region. The hazard could cause disruptions and risk of life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Scottish Border region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones
- Decreased wind speed

Note, wind speed is projected to decrease in the area under all three NGFS scenarios. A chronic decrease in wind speed can cause lower outputs and therefore lower revenues from wind projects over time.

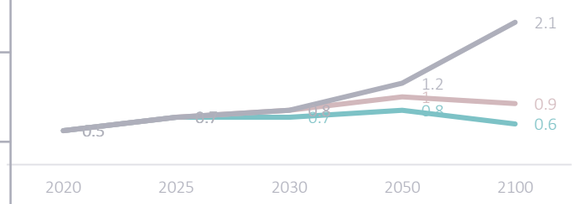
Physical climate risk scenario analysis – Asset: Pines Burn (onshore wind)

Climate Hazards

Scenario analysis

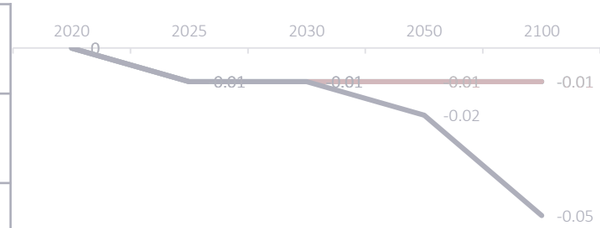
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.5	0.7	0.7	0.8	0.6	0.7	0.8	1	0.9	0.7	0.8	1.2	2.1



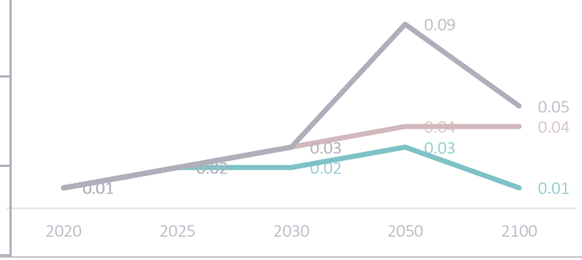
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.05



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.01	0.02	0.02	0.03	0.01	0.02	0.03	0.04	0.04	0.02	0.03	0.09	0.05



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

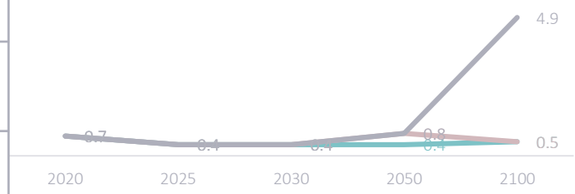
Physical climate risk scenario analysis – Asset: Pines Burn (onshore wind) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

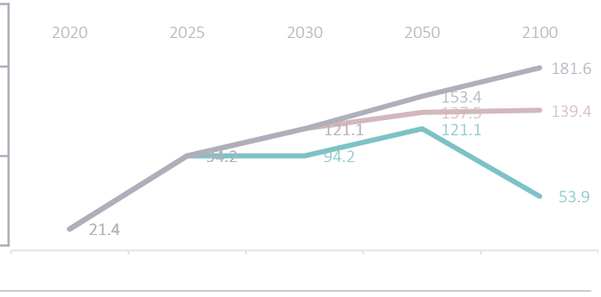
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.7	0.4	0.4	0.4	0.5	0.4	0.4	0.8	0.5	0.4	0.4	0.8	4.9



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

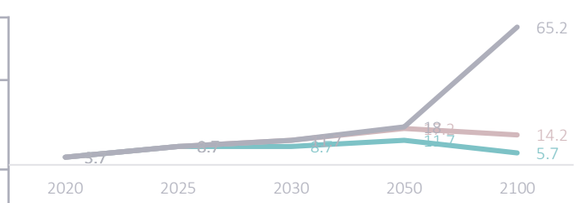
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
21.4	94.2	94.2	121.1	53.9	94.2	121.1	137.5	139.4	94.2	121.1	153.4	181.6



Expected damage from tropical cyclones (p.a. in%)

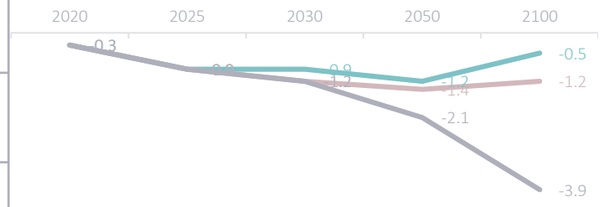
Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
3.7	8.7	8.7	11.7	5.7	8.7	11.7	17.2	14.2	8.7	11.7	28	65.2



Relative change in wind speed (in %)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.3	-0.9	-0.9	-1.2	-0.5	-0.9	-1.2	-1.4	-1.2	-0.9	-1.2	-2.1	-3.9



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Solar Italy XVI– Solar PV

Solar Italy XVI is a solar farm located in Italy. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Ragusa, Sicily, Italy
Latitude: 36.82627
Longitude: 14.539032

River flood

Low

The river flood hazard in the region is classified as low, i.e. there is a chance of more than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a further decrease in river floods due to extreme rainfall events. This means that the risk from flooding is projected to further decrease over time. Hazard information was obtained from ThinkHazard for the Sicily region.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Rymes Solar.

Climate change projections for Italy indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Very Low

The urban flood hazard in the region is categorized as very low, i.e. there is a chance of less than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a further decrease in river floods due to extreme rainfall events. This means that the risk from flooding is projected to further decrease over time. Hazard information was obtained from ThinkHazard for the Sicily region.

Water scarcity

Medium

The water scarcity hazard in the region is classified as medium, i.e. there is up to a 20% chance droughts will occur in the coming 10 years. Hazard information was obtained from ThinkHazard for the Sicily region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. As per all NGFS scenarios, precipitation is projected to decrease, which means that the risk to drought could increase over time in the region. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Medium

The extreme heat hazard is classified as medium, i.e. there is more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Sicily region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

High

The wildfire hazard is classified as high, i.e. there is greater than a 50% chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Sicily region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones

.

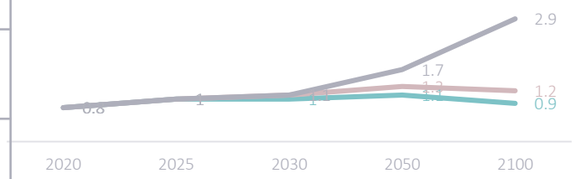
Physical climate risk scenario analysis – Asset: Solar Italy XVI (Solar PV)

Climate Hazards

Scenario analysis

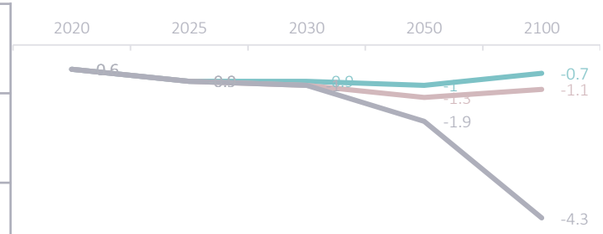
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.8	1	1	1.1	0.9	1	1.1	1.3	1.2	1	1.1	1.7	2.9



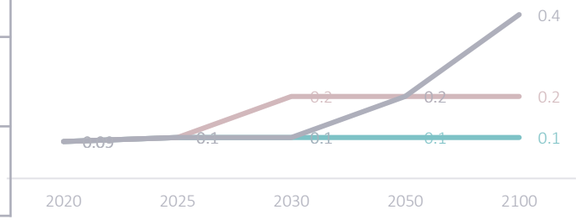
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.6	-0.9	-0.9	-1	-0.7	-0.9	-1	-1.3	-1.1	-0.9	-1	-1.9	-4.3



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.09	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.4



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

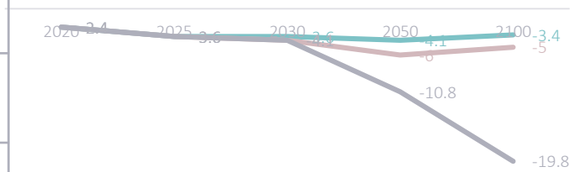
Physical climate risk scenario analysis – Asset: Solar Italy XVI (Solar PV) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

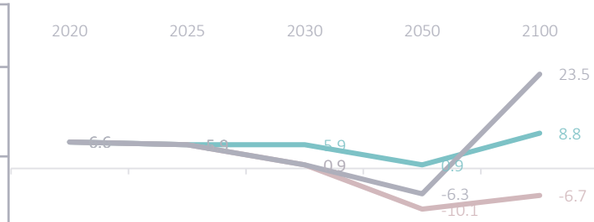
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-2.4	-3.6	-3.6	-4.1	-3.4	-3.6	-4.1	-6	-5	-3.6	-4.1	-10.8	-19.8



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
6.6	5.9	5.9	0.9	8.8	5.9	0.9	-10.1	-6.7	5.9	0.9	-6.3	23.5



Expected damage from tropical cyclones (p.a. in%)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
No data	No data											

No data currently available in the Climate Impact Explorer tool for the selected indicator in this region

Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Limes 12– Solar PV

Limes 12 is a solar farm located in Italy. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Noto, Sicily, Italy
Latitude: 36.75
Longitude:15.05

River flood

Low

The river flood hazard in the region is classified as low, i.e. there is a chance of more than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a further decrease in river floods due to extreme rainfall events. This means that the risk from flooding is projected to further decrease over time. Hazard information was obtained from ThinkHazard for the Sicily region.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Limes 12.

Climate change projections for Italy indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Very Low

The urban flood hazard in the region is categorized as very low, i.e. there is a chance of less than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a further decrease in river floods due to extreme rainfall events. This means that the risk from flooding is projected to further decrease over time. Hazard information was obtained from ThinkHazard for the Sicily region.

Water scarcity

Medium

The water scarcity hazard in the region is classified as medium, i.e. there is up to a 20% chance droughts will occur in the coming 10 years. Hazard information was obtained from ThinkHazard for the Sicily region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. As per all NGFS scenarios, precipitation is projected to decrease, which means that the risk to drought could increase over time in the region. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Medium

The extreme heat hazard is classified as medium, i.e. there is more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Sicily region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

High

The wildfire hazard is classified as high, i.e. there is greater than a 50% chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Sicily region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones

.

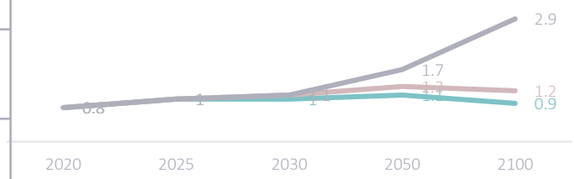
Physical climate risk scenario analysis – Asset: Limes 12 (Solar PV)

Climate Hazards

Scenario analysis

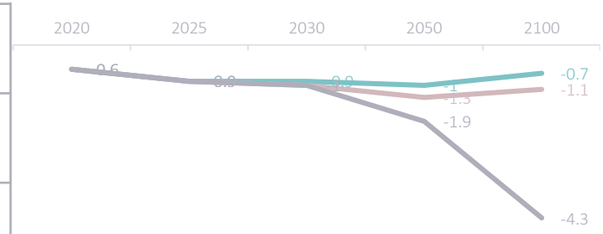
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.8	1	1	1.1	0.9	1	1.1	1.3	1.2	1	1.1	1.7	2.9



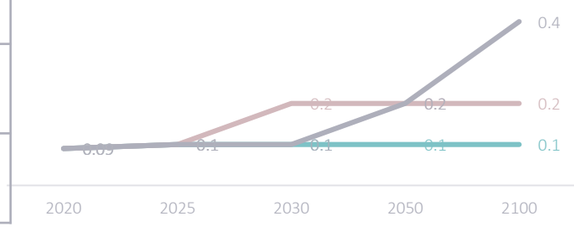
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.6	-0.9	-0.9	-1	-0.7	-0.9	-1	-1.3	-1.1	-0.9	-1	-1.9	-4.3



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.09	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.4



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

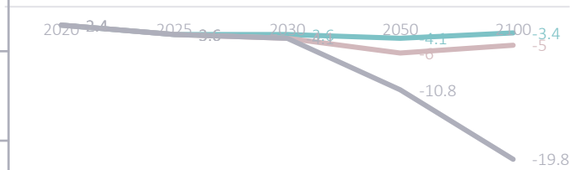
Physical climate risk scenario analysis – Asset: Limes 12 (Solar PV) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

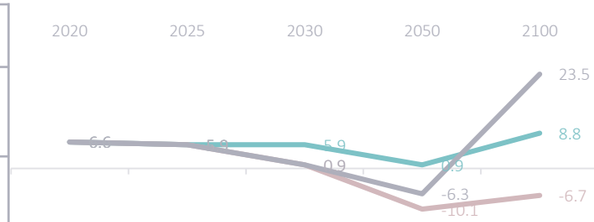
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-2.4	-3.6	-3.6	-4.1	-3.4	-3.6	-4.1	-6	-5	-3.6	-4.1	-10.8	-19.8



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
6.6	5.9	5.9	0.9	8.8	5.9	0.9	-10.1	-6.7	5.9	0.9	-6.3	23.5



Expected damage from tropical cyclones (p.a. in%)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
No data	No data											

No data currently available in the Climate Impact Explorer tool for the selected indicator in this region

Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Limes 17– Solar PV

Limes 17 is a solar farm located in Italy. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Palermo, Sicily, Italy
Latitude: 37.85
Longitude: 13.01

River flood

Low

The river flood hazard in the region is classified as low, i.e. there is a chance of more than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a further decrease in river floods due to extreme rainfall events. This means that the risk from flooding is projected to further decrease over time. Hazard information was obtained from ThinkHazard for the Sicily region.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Limes 17.

Climate change projections for Italy indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Very Low

The urban flood hazard in the region is categorized as very low, i.e. there is a chance of less than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a further decrease in river floods due to extreme rainfall events. This means that the risk from flooding is projected to further decrease over time. Hazard information was obtained from ThinkHazard for the Sicily region.

Water scarcity

Medium

The water scarcity hazard in the region is classified as medium, i.e. there is up to a 20% chance droughts will occur in the coming 10 years. Hazard information was obtained from ThinkHazard for the Sicily region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. As per all NGFS scenarios, precipitation is projected to decrease, which means that the risk to drought could increase over time in the region. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Medium

The extreme heat hazard is classified as medium, i.e. there is more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Sicily region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

High

The wildfire hazard is classified as high, i.e. there is greater than a 50% chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Sicily region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones

.

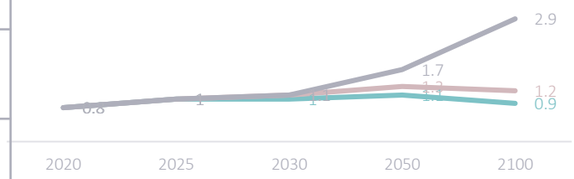
Physical climate risk scenario analysis – Asset: Limes 17 (Solar PV)

Climate Hazards

Scenario analysis

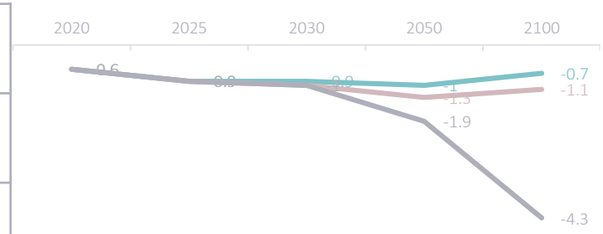
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.8	1	1	1.1	0.9	1	1.1	1.3	1.2	1	1.1	1.7	2.9



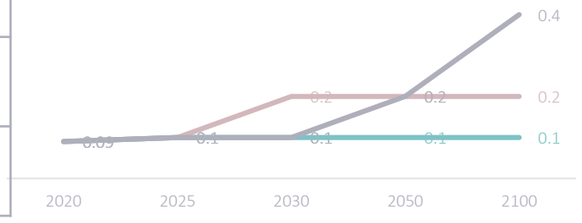
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-0.6	-0.9	-0.9	-1	-0.7	-0.9	-1	-1.3	-1.1	-0.9	-1	-1.9	-4.3



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.09	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.4



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

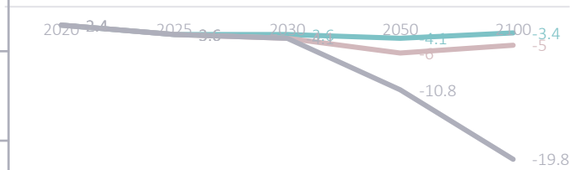
Physical climate risk scenario analysis – Asset: Limes 17 (Solar PV) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

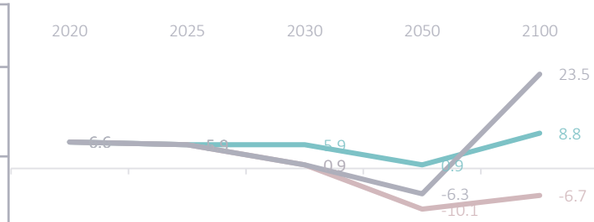
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-2.4	-3.6	-3.6	-4.1	-3.4	-3.6	-4.1	-6	-5	-3.6	-4.1	-10.8	-19.8



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
6.6	5.9	5.9	0.9	8.8	5.9	0.9	-10.1	-6.7	5.9	0.9	-6.3	23.5



Expected damage from tropical cyclones (p.a. in%)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
No data	No data											

No data currently available in the Climate Impact Explorer tool for the selected indicator in this region

Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Alzo– Solar PV

Alzo is a solar farm located in Italy. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Viterbo VT, Lazio, Italy
Latitude: 42.43
Longitude: 11.944

River flood

High

The river flood hazard in the region is classified as high, i.e. potentially damaging and life-threatening river floods are expected to occur at least once in the next 10 years. The climate change projections for the area indicate a decrease in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a decrease in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Lazio region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Alzo.

Climate change projections for Italy indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Medium

The urban flood hazard in the region is categorized as medium, i.e. there is a chance of more than 20% that potentially damaging and life-threatening urban floods occur in the coming 10 years. The climate change projections for the area indicate a decrease in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a decrease in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Lazio region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Medium

The water scarcity hazard in the region is classified as medium, i.e. there is up to a 20% chance droughts will occur in the coming 10 years. Hazard information was obtained from ThinkHazard for the Lazio region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Precipitation is projected to decline in all NGFS scenarios, leading to higher drought risk over time in the region. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Medium

The extreme heat hazard is classified as medium, i.e. there is more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Lazio region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

High

The wildfire hazard is classified as high, i.e. there is greater than a 50% chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Lazio region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones

.

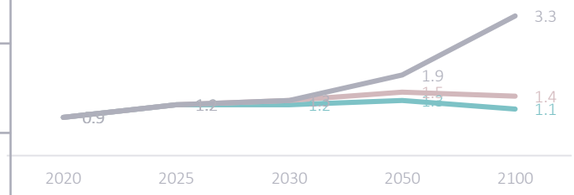
Physical climate risk scenario analysis – Asset: Alzo (Solar PV)

Climate Hazards

Scenario analysis

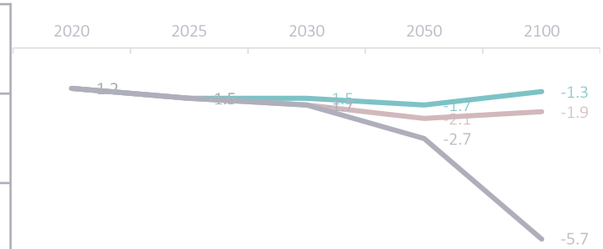
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.9	1.2	1.2	1.3	1.1	1.2	1.3	1.5	1.4	1.2	1.3	1.9	3.3



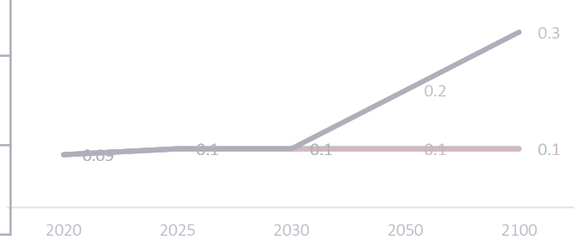
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-1.2	-1.5	-1.5	-1.7	-1.3	-1.5	-1.7	-2.1	-1.9	-1.5	-1.7	-2.7	-5.7



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.09	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

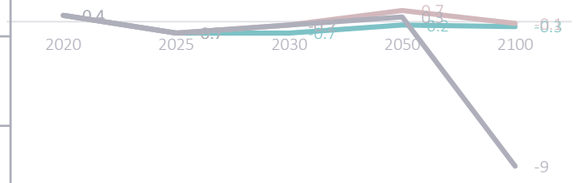
Physical climate risk scenario analysis – Asset: Alzo (Solar PV) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

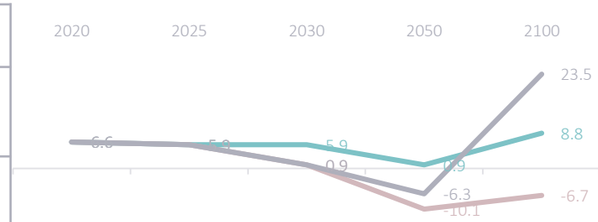
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.4	-0.7	-0.7	-0.2	-0.3	-0.7	-0.2	0.7	-0.1	-0.7	-0.2	0.3	-9



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
6.6	5.9	5.9	0.9	8.8	5.9	0.9	-10.1	-6.7	5.9	0.9	-6.3	23.5



Expected damage from tropical cyclones (p.a. in%)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
No data	No data											

No data currently available in the Climate Impact Explorer tool for the selected indicator in this region

Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Econtaminazioni – Latina – Solar PV

Econtaminazioni - Latina is a solar farm located in Italy. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Latina LT, Lazio, Italy
Latitude: 41.46
Longitude: 12.86

River flood

High

The river flood hazard in the region is classified as high, i.e. potentially damaging and life-threatening river floods are expected to occur at least once in the next 10 years. The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a decline in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Lazio region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Econtaminazioni - Latina .

Climate change projections for Italy indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Medium

The urban flood hazard in the region is categorized as medium, i.e. there is a chance of more than 20% that potentially damaging and life-threatening urban floods occur in the coming 10 years. The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a decrease in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Lazio region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Medium

The water scarcity hazard in the region is classified as medium, i.e. there is up to a 20% chance droughts will occur in the coming 10 years. Hazard information was obtained from ThinkHazard for the Lazio region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Precipitation is projected to decline in all NGFS scenarios, leading to higher drought risk over time in the region. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Medium

The extreme heat hazard is classified as medium, i.e. there is more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Lazio region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

High

The wildfire hazard is classified as high, i.e. there is greater than a 50% chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Lazio region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones

.

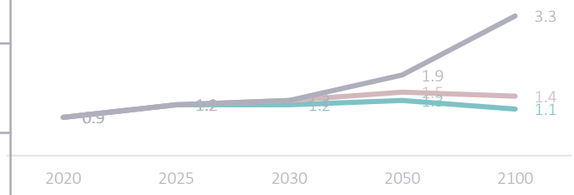
Physical climate risk scenario analysis – Asset: Econtaminazioni - Latina (Solar PV)

Climate Hazards

Scenario analysis

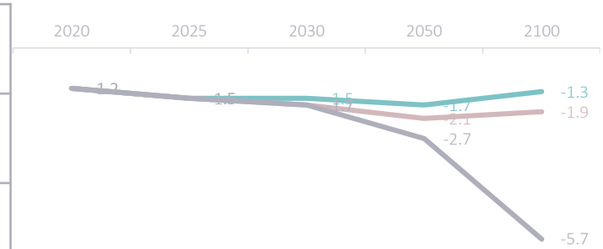
Mean air temperature (°C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.9	1.2	1.2	1.3	1.1	1.2	1.3	1.5	1.4	1.2	1.3	1.9	3.3



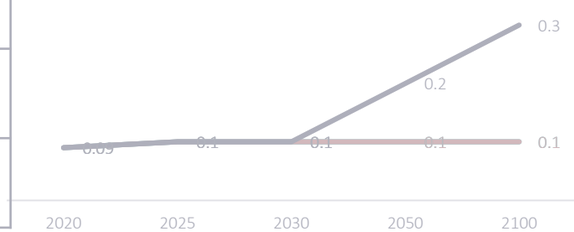
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-1.2	-1.5	-1.5	-1.7	-1.3	-1.5	-1.7	-2.1	-1.9	-1.5	-1.7	-2.7	-5.7



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.09	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

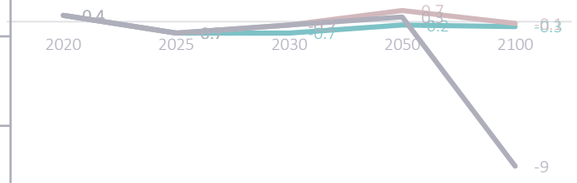
Physical climate risk scenario analysis – Asset: Econtaminazioni - Latina (Solar PV) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

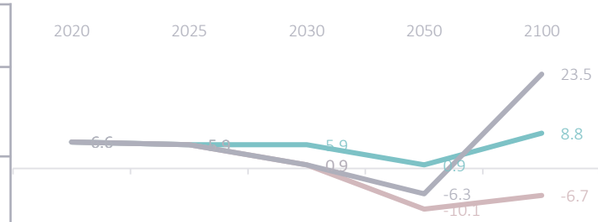
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.4	-0.7	-0.7	-0.2	-0.3	-0.7	-0.2	0.7	-0.1	-0.7	-0.2	0.3	-9



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
6.6	5.9	5.9	0.9	8.8	5.9	0.9	-10.1	-6.7	5.9	0.9	-6.3	23.5



Expected damage from tropical cyclones (p.a. in%)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
No data	No data											

No data currently available in the Climate Impact Explorer tool for the selected indicator in this region

Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Econtaminazioni - Pontinia– Solar PV

Econtaminazioni – Pontinia is a solar farm located in Italy. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Pontinia LT, Lazio, Italy
Latitude: 41.42
Longitude: 13.15

River flood

High

The river flood hazard in the region is classified as high, i.e. potentially damaging and life-threatening river floods are expected to occur at least once in the next 10 years. The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a decline in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Lazio region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Econtaminazioni - Pontinia.

Climate change projections for Italy indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Medium

The urban flood hazard in the region is categorized as medium, i.e. there is a chance of more than 20% that potentially damaging and life-threatening urban floods occur in the coming 10 years. The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a decrease in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Lazio region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Medium

The water scarcity hazard in the region is classified as medium, i.e. there is up to a 20% chance droughts will occur in the coming 10 years. Hazard information was obtained from ThinkHazard for the Lazio region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Precipitation is projected to decline in all NGFS scenarios, leading to higher drought risk over time in the region. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Medium

The extreme heat hazard is classified as medium, i.e. there is more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Lazio region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

High

The wildfire hazard is classified as high, i.e. there is greater than a 50% chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Lazio region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones

.

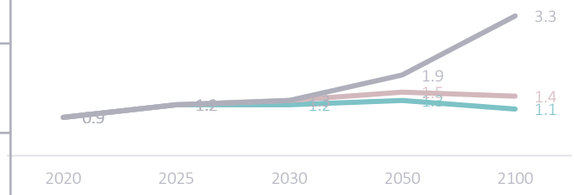
Physical climate risk scenario analysis – Asset: Econtaminazioni - Pontinia (Solar PV)

Climate Hazards

Scenario analysis

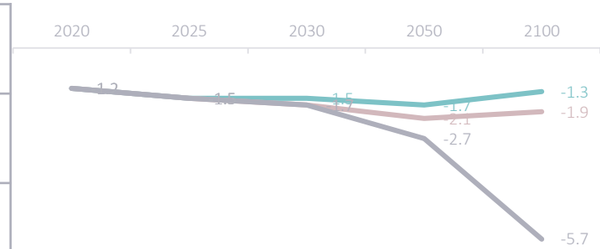
Mean air temperature (°C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.9	1.2	1.2	1.3	1.1	1.2	1.3	1.5	1.4	1.2	1.3	1.9	3.3



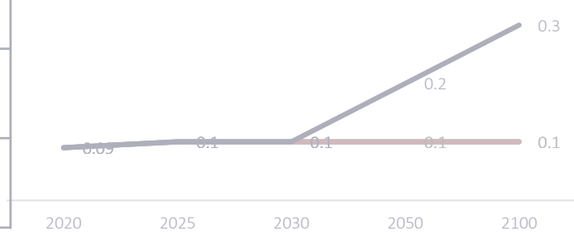
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-1.2	-1.5	-1.5	-1.7	-1.3	-1.5	-1.7	-2.1	-1.9	-1.5	-1.7	-2.7	-5.7



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.09	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

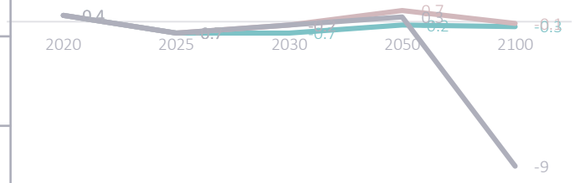
Physical climate risk scenario analysis – Asset: Econtaminazioni - Pontinia (Solar PV) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

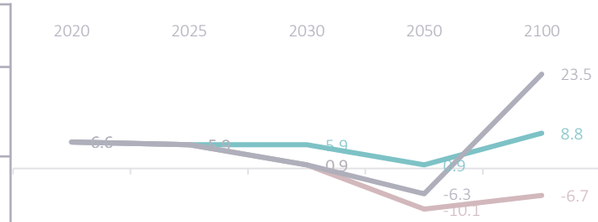
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.4	-0.7	-0.7	-0.2	-0.3	-0.7	-0.2	0.7	-0.1	-0.7	-0.2	0.3	-9



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
6.6	5.9	5.9	0.9	8.8	5.9	0.9	-10.1	-6.7	5.9	0.9	-6.3	23.5



Expected damage from tropical cyclones (p.a. in%)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
No data	No data											

No data currently available in the Climate Impact Explorer tool for the selected indicator in this region

Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

ACME – Solar PV

ACME is a solar farm located in Italy. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Viterbo, Lazio, Italy
Latitude: 42.36
Longitude: 11.68

River flood

High

The river flood hazard in the region is classified as high, i.e. potentially damaging and life-threatening river floods are expected to occur at least once in the next 10 years. The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a decline in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Lazio region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low - Medium

The coastal flooding hazard is classified as low to medium, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 9 in 1,000,000 to 7 in 100,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of ACME.

Climate change projections for Italy indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Medium

The urban flood hazard in the region is categorized as medium, i.e. there is a chance of more than 20% that potentially damaging and life-threatening urban floods occur in the coming 10 years. The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a decrease in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Lazio region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Medium

The water scarcity hazard in the region is classified as medium, i.e. there is up to a 20% chance droughts will occur in the coming 10 years. Hazard information was obtained from ThinkHazard for the Lazio region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Precipitation is projected to decline in all NGFS scenarios, leading to higher drought risk over time in the region. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Medium

The extreme heat hazard is classified as medium, i.e. there is more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Lazio region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

High

The wildfire hazard is classified as high, i.e. there is greater than a 50% chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Lazio region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones

.

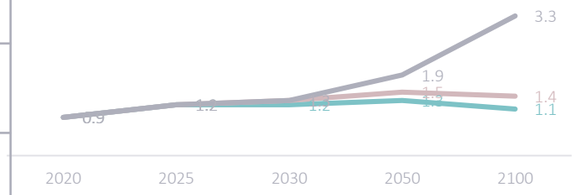
Physical climate risk scenario analysis – Asset: ACME (Solar PV)

Climate Hazards

Scenario analysis

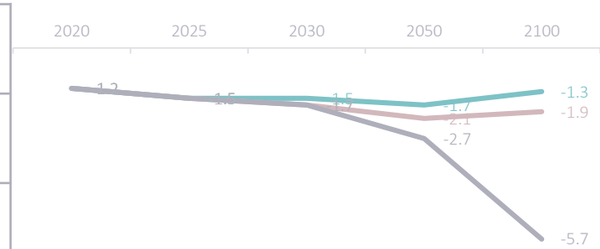
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.9	1.2	1.2	1.3	1.1	1.2	1.3	1.5	1.4	1.2	1.3	1.9	3.3



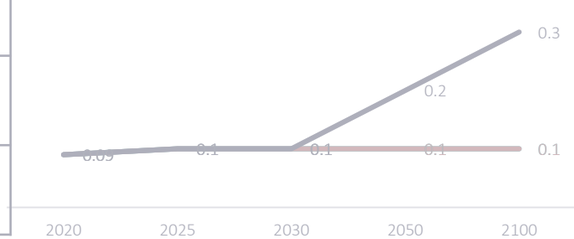
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-1.2	-1.5	-1.5	-1.7	-1.3	-1.5	-1.7	-2.1	-1.9	-1.5	-1.7	-2.7	-5.7



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.09	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

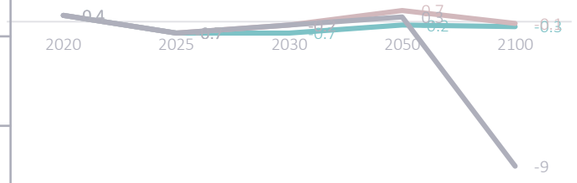
Physical climate risk scenario analysis – Asset: ACME (Solar PV) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

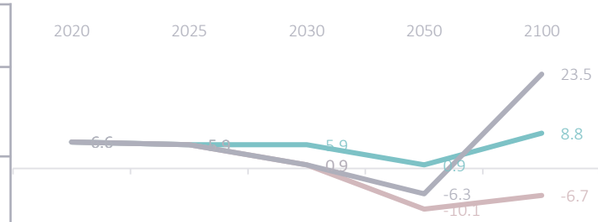
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.4	-0.7	-0.7	-0.2	-0.3	-0.7	-0.2	0.7	-0.1	-0.7	-0.2	0.3	-9



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
6.6	5.9	5.9	0.9	8.8	5.9	0.9	-10.1	-6.7	5.9	0.9	-6.3	23.5



Expected damage from tropical cyclones (p.a. in%)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
No data	No data											

No data currently available in the Climate Impact Explorer tool for the selected indicator in this region

Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Basic – Solar PV

Basic is a solar farm located in Italy. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Viterbo, Lazio, Italy
Latitude: 42.48
Longitude: 12.0342

River flood

High

The river flood hazard in the region is classified as high, i.e. potentially damaging and life-threatening river floods are expected to occur at least once in the next 10 years. The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a decline in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Lazio region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low - Medium

The coastal flooding hazard is classified as low to medium, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 9 in 1,000,000 to 7 in 100,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Basic.

Climate change projections for Italy indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Medium

The urban flood hazard in the region is categorized as medium, i.e. there is a chance of more than 20% that potentially damaging and life-threatening urban floods occur in the coming 10 years. The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a decrease in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Lazio region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Medium

The water scarcity hazard in the region is classified as medium, i.e. there is up to a 20% chance droughts will occur in the coming 10 years. Hazard information was obtained from ThinkHazard for the Lazio region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Precipitation is projected to decline in all NGFS scenarios, leading to higher drought risk over time in the region. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Medium

The extreme heat hazard is classified as medium, i.e. there is more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Lazio region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

High

The wildfire hazard is classified as high, i.e. there is greater than a 50% chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Lazio region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones

.

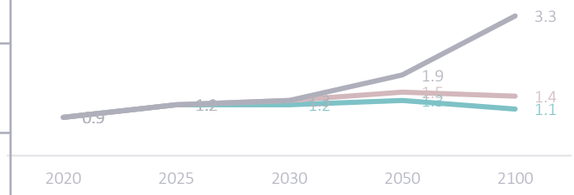
Physical climate risk scenario analysis – Asset: Basic (Solar PV)

Climate Hazards

Scenario analysis

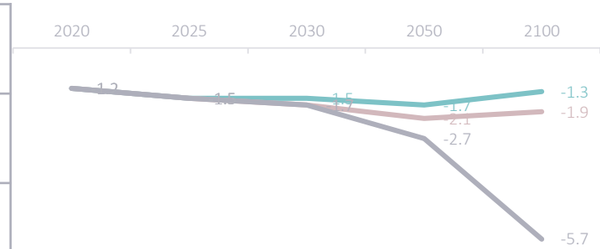
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.9	1.2	1.2	1.3	1.1	1.2	1.3	1.5	1.4	1.2	1.3	1.9	3.3



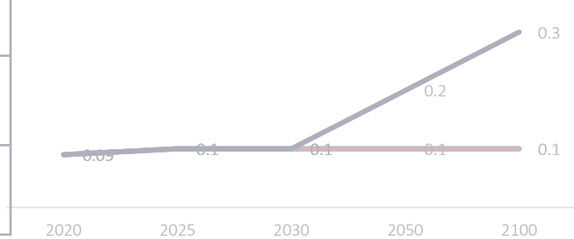
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-1.2	-1.5	-1.5	-1.7	-1.3	-1.5	-1.7	-2.1	-1.9	-1.5	-1.7	-2.7	-5.7



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.09	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

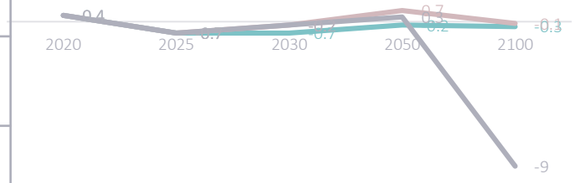
Physical climate risk scenario analysis – Asset: Basic (Solar PV) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

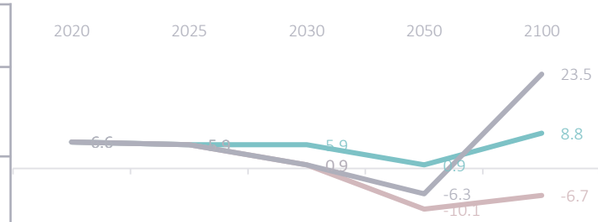
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.4	-0.7	-0.7	-0.2	-0.3	-0.7	-0.2	0.7	-0.1	-0.7	-0.2	0.3	-9



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
6.6	5.9	5.9	0.9	8.8	5.9	0.9	-10.1	-6.7	5.9	0.9	-6.3	23.5



Expected damage from tropical cyclones (p.a. in%)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
No data	No data											

No data currently available in the Climate Impact Explorer tool for the selected indicator in this region

Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

ECG Latina – Solar PV

ECG Latina is a solar farm located in Italy. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Latina, Lazio, Italy
Latitude: 41.412
Longitude: 13.145

River flood

High

The river flood hazard in the region is classified as high, i.e. potentially damaging and life-threatening river floods are expected to occur at least once in the next 10 years. The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a decline in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Lazio region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of ECG Latina.

Climate change projections for Italy indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Medium

The urban flood hazard in the region is categorized as medium, i.e. there is a chance of more than 20% that potentially damaging and life-threatening urban floods occur in the coming 10 years. The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a decrease in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Lazio region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Medium

The water scarcity hazard in the region is classified as medium, i.e. there is up to a 20% chance droughts will occur in the coming 10 years. Hazard information was obtained from ThinkHazard for the Lazio region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Precipitation is projected to decline in all NGFS scenarios, leading to higher drought risk over time in the region. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Medium

The extreme heat hazard is classified as medium, i.e. there is more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Lazio region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

High

The wildfire hazard is classified as high, i.e. there is greater than a 50% chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Lazio region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones

.

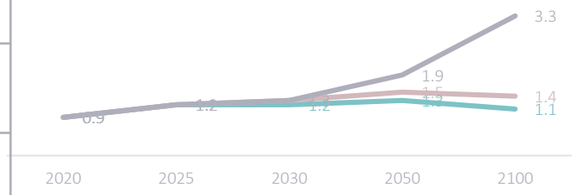
Physical climate risk scenario analysis – Asset: ECG Latina (Solar PV)

Climate Hazards

Scenario analysis

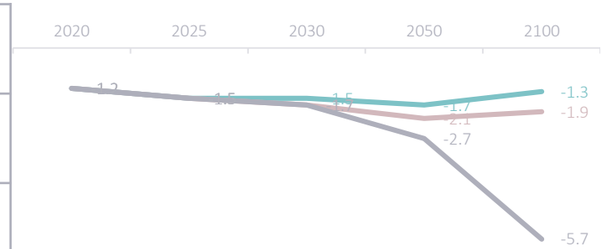
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.9	1.2	1.2	1.3	1.1	1.2	1.3	1.5	1.4	1.2	1.3	1.9	3.3



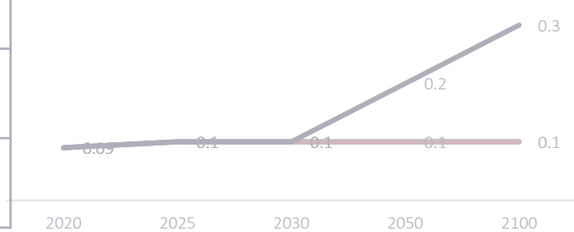
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-1.2	-1.5	-1.5	-1.7	-1.3	-1.5	-1.7	-2.1	-1.9	-1.5	-1.7	-2.7	-5.7



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.09	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

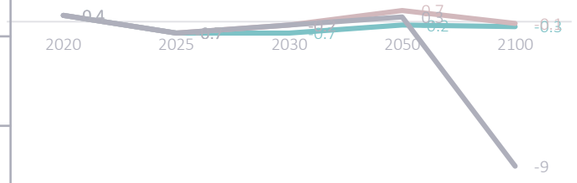
Physical climate risk scenario analysis – Asset: ECG Latina (Solar PV) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

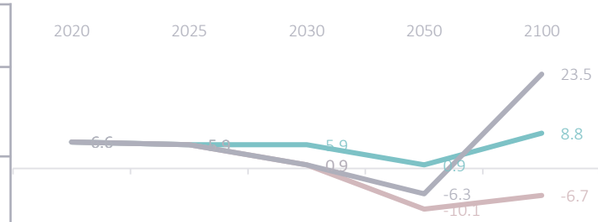
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.4	-0.7	-0.7	-0.2	-0.3	-0.7	-0.2	0.7	-0.1	-0.7	-0.2	0.3	-9



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
6.6	5.9	5.9	0.9	8.8	5.9	0.9	-10.1	-6.7	5.9	0.9	-6.3	23.5



Expected damage from tropical cyclones (p.a. in%)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
No data	No data											

No data currently available in the Climate Impact Explorer tool for the selected indicator in this region

Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Limes 6– Solar PV

Limes 6 is a solar farm located in Italy. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Latina, Lazio, Italy
Latitude: 41.261
Longitude: 13.786

River flood

High

The river flood hazard in the region is classified as high, i.e. potentially damaging and life-threatening river floods are expected to occur at least once in the next 10 years. The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a decline in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Lazio region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Limes 6.

Climate change projections for Italy indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Medium

The urban flood hazard in the region is categorized as medium, i.e. there is a chance of more than 20% that potentially damaging and life-threatening urban floods occur in the coming 10 years. The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a decrease in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Lazio region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Medium

The water scarcity hazard in the region is classified as medium, i.e. there is up to a 20% chance droughts will occur in the coming 10 years. Hazard information was obtained from ThinkHazard for the Lazio region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Precipitation is projected to decline in all NGFS scenarios, leading to higher drought risk over time in the region. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Medium

The extreme heat hazard is classified as medium, i.e. there is more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Lazio region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

High

The wildfire hazard is classified as high, i.e. there is greater than a 50% chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Lazio region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones

.

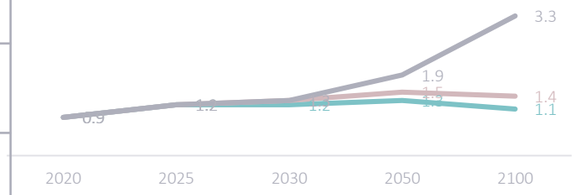
Physical climate risk scenario analysis – Asset: Limes 6 (Solar PV)

Climate Hazards

Scenario analysis

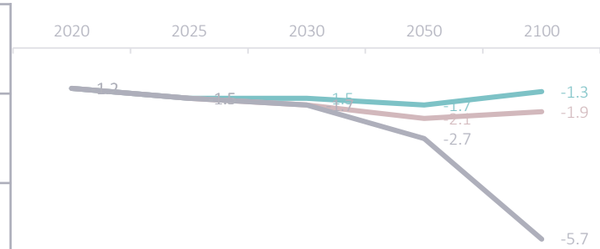
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.9	1.2	1.2	1.3	1.1	1.2	1.3	1.5	1.4	1.2	1.3	1.9	3.3



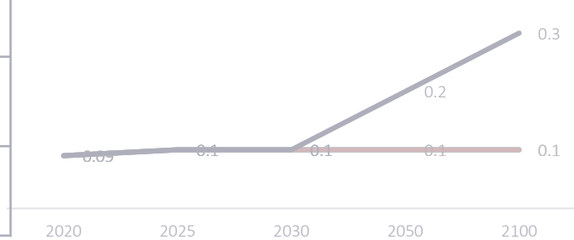
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-1.2	-1.5	-1.5	-1.7	-1.3	-1.5	-1.7	-2.1	-1.9	-1.5	-1.7	-2.7	-5.7



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.09	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

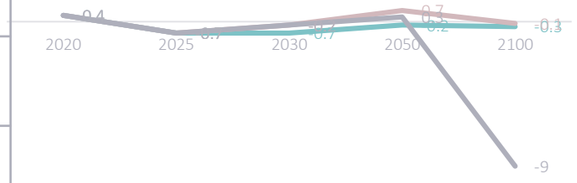
Physical climate risk scenario analysis – Asset: Limes 6 (Solar PV) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

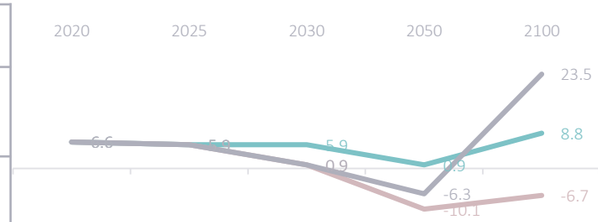
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.4	-0.7	-0.7	-0.2	-0.3	-0.7	-0.2	0.7	-0.1	-0.7	-0.2	0.3	-9



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
6.6	5.9	5.9	0.9	8.8	5.9	0.9	-10.1	-6.7	5.9	0.9	-6.3	23.5



Expected damage from tropical cyclones (p.a. in%)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
No data	No data											

No data currently available in the Climate Impact Explorer tool for the selected indicator in this region

Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Fenix Renovable (Puerto Real 1) – Solar PV

Fenix Renovable (Puerto Real 1) is a solar farm located in Spain. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Puerto Real, Andalusia, Spain
Latitude: 36.5394
Longitude: -6.1003

River flood

Medium

The river flood hazard in the region is classified as medium, i.e. there is a chance of more than 20% that potentially damaging and life-threatening river floods occur in the coming 10 years. The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to an decline in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Andalusia region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Fenix Renovable (Puerto Real 1).

Climate change projections for Spain indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Low

The urban flood hazard in the region is categorized as low, i.e. there is a chance of more than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate a decrease in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a further decline in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Andalusia region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Medium

The water scarcity hazard in the region is classified as medium, i.e. there is up to a 20% chance droughts will occur in the coming 10 years. Hazard information was obtained from ThinkHazard for the Andalusia region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Precipitation is projected to decline in all NGFS scenarios, leading to higher drought risk over time in the region. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Medium

The extreme heat hazard is classified as medium, i.e. there is more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Andalusia region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

High

The wildfire hazard is classified as high, i.e. there is greater than a 50% chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Andalusia region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones

.

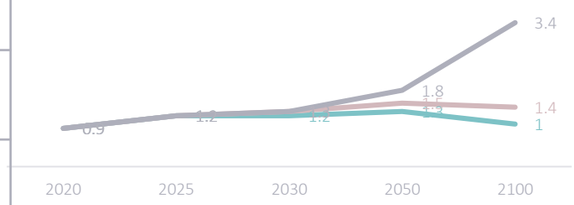
Physical climate risk scenario analysis – Asset: Fenix Renovable (Puerto Real 1) (Solar PV)

Climate Hazards

Scenario analysis

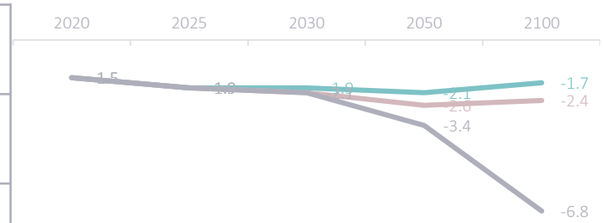
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.9	1.2	1.2	1.3	1	1.2	1.3	1.5	1.4	1.2	1.3	1.8	3.4



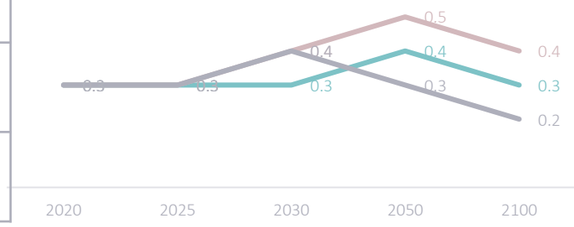
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-1.5	-1.9	-1.9	-2.1	-1.7	-1.9	-2.1	-2.6	-2.4	-1.9	-2.1	-3.4	-6.8



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.3	0.3	0.3	0.4	0.3	0.3	0.4	0.5	0.4	0.3	0.4	0.3	0.2



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Physical climate risk scenario analysis – Asset: Fenix Renovable (Puerto Real 1) (Solar PV) (continued)

Climate Hazards

Scenario analysis

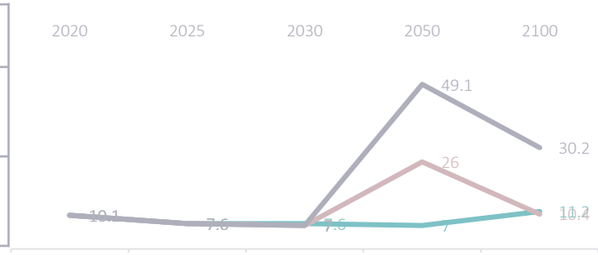
Precipitation (%)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-1.5	-1.9	-1.9	-2.1	-1.4	-1.9	-2.1	-1.7	-2	-1.9	-2.1	-4.5	-18.6

Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

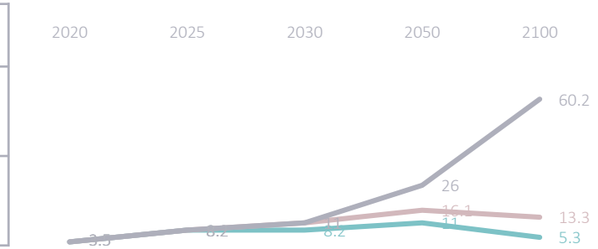
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
10.1	7.6	7.6	7	11.2	7.6	7	26	10.4	7.6	7	49.1	30.2



Expected damage from tropical cyclones (p.a. in%)

Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
3.5	8.2	8.2	11	5.3	8.2	11	16.1	13.3	8.2	11	26	60.2



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Nemesis Solar (Puerto Real 2)– Solar PV

Nemesis Solar (Puerto Real 2) is a solar farm located in Spain. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Puerto Real, Andalusia, Spain
Latitude: 36.5203
Longitude: -6.1019

River flood

Medium

The river flood hazard in the region is classified as medium, i.e. there is a chance of more than 20% that potentially damaging and life-threatening river floods occur in the coming 10 years. The climate change projections for the area indicate a decline in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to an decline in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Andalusia region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Fenix Renovable Nemesis Solar (Puerto Real 2).

Climate change projections for Spain indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Low

The urban flood hazard in the region is categorized as low, i.e. there is a chance of more than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate a decrease in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to a further decline in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Andalusia region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Medium

The water scarcity hazard in the region is classified as medium, i.e. there is up to a 20% chance droughts will occur in the coming 10 years. Hazard information was obtained from ThinkHazard for the Andalusia region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Precipitation is projected to decline in all NGFS scenarios, leading to higher drought risk over time in the region. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Medium

The extreme heat hazard is classified as medium, i.e. there is more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Andalusia region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

High

The wildfire hazard is classified as high, i.e. there is greater than a 50% chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Andalusia region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones

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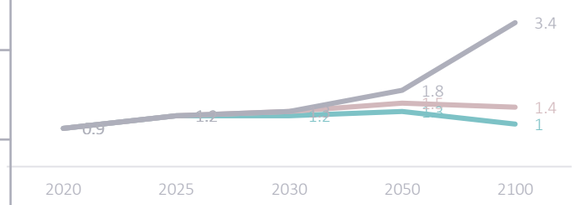
Physical climate risk scenario analysis – Asset: Nemesis Solar (Puerto Real 2) (Solar PV)

Climate Hazards

Scenario analysis

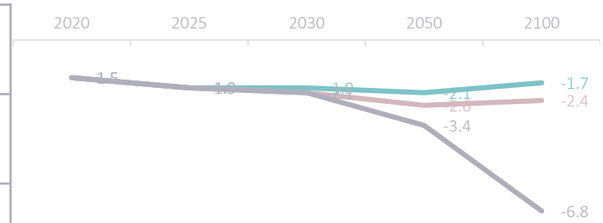
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.9	1.2	1.2	1.3	1	1.2	1.3	1.5	1.4	1.2	1.3	1.8	3.4



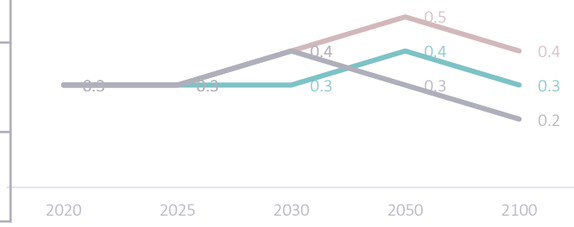
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-1.5	-1.9	-1.9	-2.1	-1.7	-1.9	-2.1	-2.6	-2.4	-1.9	-2.1	-3.4	-6.8



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.3	0.3	0.3	0.4	0.3	0.3	0.4	0.5	0.4	0.3	0.4	0.3	0.2



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Physical climate risk scenario analysis – Asset: Nemesis Solar (Puerto Real 2) (Solar PV) (continued)

Climate Hazards

Scenario analysis

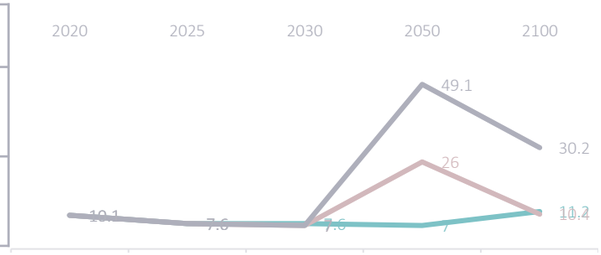
Precipitation (%)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-1.5	-1.9	-1.9	-2.1	-1.4	-1.9	-2.1	-1.7	-2	-1.9	-2.1	-4.5	-18.6

Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

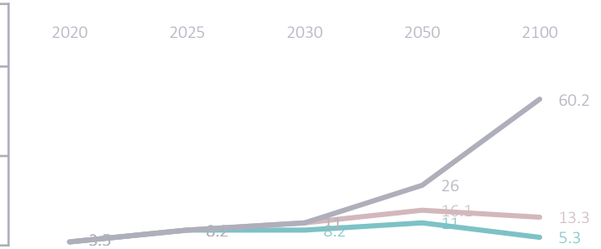
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
10.1	7.6	7.6	7	11.2	7.6	7	26	10.4	7.6	7	49.1	30.2



Expected damage from tropical cyclones (p.a. in%)

Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
3.5	8.2	8.2	11	5.3	8.2	11	16.1	13.3	8.2	11	26	60.2



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Modelos Energéticos Sostenibles, S.L.U. (Project Escucha) – Solar PV

Modelos Energéticos Sostenibles, S.L.U. (Project Escucha) is a solar farm located in Spain. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Teruel, Aragon, Spain
Latitude: 40.713307
Longitude: -0.829291

River flood

Very low

The river flood hazard in the region is classified as very low, i.e. there is a chance of less than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate an increase in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to an increase in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Teruel region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Modelos Energéticos Sostenibles, S.L.U. (Project Escucha).

Climate change projections for Spain indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Low

The urban flood hazard in the region is categorized as low, i.e. there is a chance of more than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate an increase in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to an increase in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Teruel region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Medium

The water scarcity hazard in the region is classified as medium, i.e. there is up to a 20% chance droughts will occur in the coming 10 years. Hazard information was obtained from ThinkHazard for the Teruel region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Medium

The extreme heat hazard is classified as medium, i.e. there is more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Teruel region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

High

The wildfire hazard is classified as high, i.e. there is greater than a 50% chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Teruel region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones

.

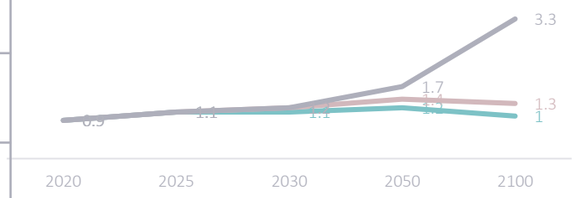
Physical climate risk scenario analysis – Asset: Modelos Energéticos Sostenibles, S.L.U. (Project Escucha) (Solar PV)

Climate Hazards

Scenario analysis

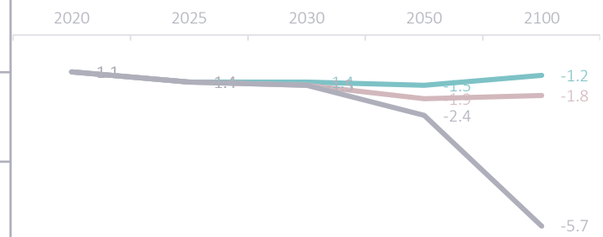
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.9	1.1	1.1	1.2	1	1.1	1.2	1.4	1.3	1.1	1.2	1.7	3.3



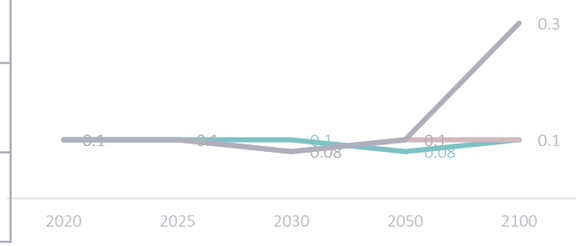
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-1.1	-1.4	-1.4	-1.5	-1.2	-1.4	-1.5	-1.9	-1.8	-1.4	-1.5	-2.4	-5.7



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.1	0.1	0.1	0.08	0.1	0.1	0.08	0.1	0.1	0.1	0.08	0.1	0.3



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

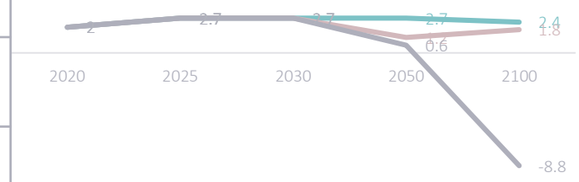
Physical climate risk scenario analysis – Asset: Modelos Energéticos Sostenibles, S.L.U. (Project Escucha) (Solar PV) (continued)

Climate Hazards

Scenario analysis

Precipitation (%)

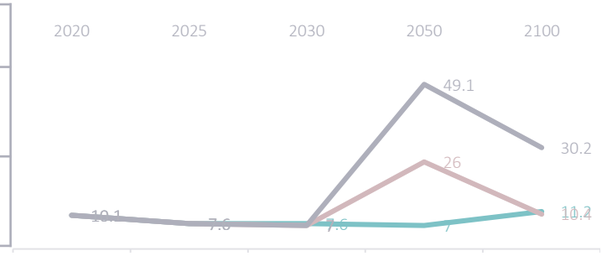
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
2	2.7	2.7	2.7	2.4	2.7	2.7	1.2	1.8	2.7	2.7	0.6	-8.8



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

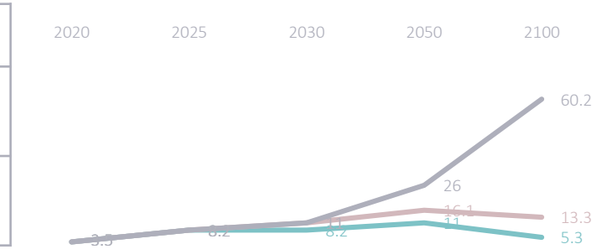
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
10.1	7.6	7.6	7	11.2	7.6	7	26	10.4	7.6	7	49.1	30.2



Expected damage from tropical cyclones (p.a. in%)

Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
3.5	8.2	8.2	11	5.3	8.2	11	16.1	13.3	8.2	11	26	60.2



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Fuerzas Energéticas del Sur de Europa, S.L.U. (Project Calamocha) – Solar PV

Fuerzas Energéticas del Sur de Europa, S.L.U. (Project Calamocha) is a solar farm located in Spain. The following physical climate risks are present in the region that could have a financial impact in terms of higher costs, reduced revenue, higher insurance premiums and early asset retirements:

Location: Teruel, Aragon, Spain
Latitude: 40.917007
Longitude: -1.299611

River flood

Very low

The river flood hazard in the region is classified as very low, i.e. there is a chance of less than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate an increase in frequency and intensity of precipitation in all NGFS scenarios (see scenario analysis), leading to an increase in river floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard for the Teruel region. The climate hazard can cause physical damage to the assets, which would increase repair and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement. The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Coastal flood

Low

The coastal flooding hazard is classified as low, i.e. the percentage of the population expected to be affected by coastal flooding in an average year accounts for 0 to 9 in 1,000,000. Hazard information was obtained from Aqueduct Water Risk Atlas, based on the latitude and longitude of Fuerzas Energéticas del Sur de Europa, S.L.U.

Climate change projections for Spain indicate a rise in sea levels over time. Coastal flooding could therefore increase in frequency and severity in the long-run, causing potential physical damage to assets located in regions with a high risk coastal flood classification, leading to higher insurance premiums, higher costs and lower revenues resulting from decreased output.

Urban flood

Low

The urban flood hazard in the region is categorized as low, i.e. there is a chance of more than 1% that potentially damaging and life-threatening river floods occur in the coming 10 years (return period of c. 1 in 1000 years). The climate change projections for the area indicate an increase in frequency and intensity of precipitation in all NGFS current policies scenarios (see scenario analysis), leading to an increase in urban floods due to extreme rainfall events. Hazard information was obtained from ThinkHazard based for the Teruel region.
The climate hazard can cause physical damage to the assets, which would increase repair

and maintenance costs, potentially reduce revenue from lower outputs and in extreme cases cause asset write offs and early asset retirement.
The projected increasing level of the climate hazard could also mean that insurance is harder to obtain in the future, or would be available at a higher cost.

Water scarcity

Medium

The water scarcity hazard in the region is classified as medium, i.e. there is up to a 20% chance droughts will occur in the coming 10 years. Hazard information was obtained from ThinkHazard for the Teruel region.

Climate change has impacts onto dryness, for example through the increase in mean air temperature and extreme heatwaves, as well as precipitation changes. Further, changes in water consumption behaviors can affect water scarcity and drought. Water scarcity could impact competition for water usage in regions classified as prone to high water scarcity and drought, which could lead to higher costs for water consumption.

Extreme heat

Medium

The extreme heat hazard is classified as medium, i.e. there is more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years. Hazard information was obtained from ThinkHazard for the Teruel region.
Climate change projections indicate a rise in mean air temperatures, which causes the hazard to increase in frequency and severity over time (see scenario analysis). Extreme heat can have adverse impacts on water availability and on the labor productivity, which is projected to decline due to global warming (see scenario analysis). This in turn can increase labor costs and could cause prolonged construction and repair phases for projects in the area, thereby lowering revenues compared to a baseline without the adverse effects of extreme heat.

Wildfire

High

The wildfire hazard is classified as high, i.e. there is greater than a 50% chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. Hazard information was obtained from ThinkHazard for the Teruel region.
Climate change projections indicate that the wildfire hazard may increase in severity and frequency over time, driven by rising air temperatures and heatwave events, as well as changes in precipitation and wind patterns (see scenario analysis).
Wildfire can cause physical damage to assets, thereby leading to write offs and early asset retirement. The hazard can also impact the availability of insurance or the level of insurance premiums for projects located in high risk regions. Further, due to the disruption caused by wildfire, costs can increase and output can be lowered, thereby impacting revenues in the long run if wildfires occur more frequently.

The following pages detail the physical climate risk assessment across the time horizons 2020, 2025, 2030, 2050 and 2100 for the NGFS scenarios (Net zero 2050, Delayed transition, Current Policies) for the following climate hazards:

- Mean air temperature
- Labor productivity loss due to heat stress
- Land fraction exposed to wildfires
- Precipitation
- Expected damage from River floods
- Expected damage from tropical cyclones

.

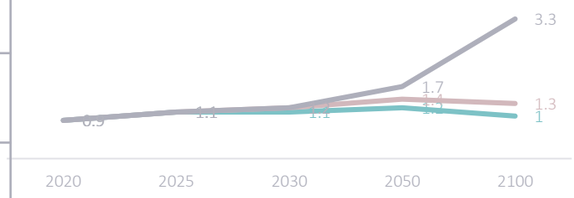
Physical climate risk scenario analysis – Asset: Fuerzas Energéticas del Sur de Europa, S.L.U. (Project Calamocha) (Solar PV)

Climate Hazards

Scenario analysis

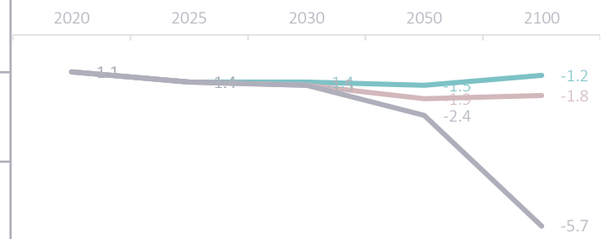
Mean air temperature (˚C)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.9	1.1	1.1	1.2	1	1.1	1.2	1.4	1.3	1.1	1.2	1.7	3.3



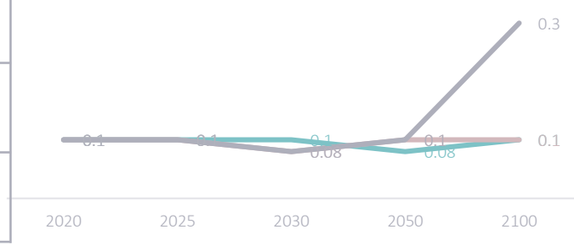
Labor productivity due to heat stress (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
-1.1	-1.4	-1.4	-1.5	-1.2	-1.4	-1.5	-1.9	-1.8	-1.4	-1.5	-2.4	-5.7



Land fraction annually exposed to wildfires (pp)

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
0.1	0.1	0.1	0.08	0.1	0.1	0.08	0.1	0.1	0.1	0.08	0.1	0.3



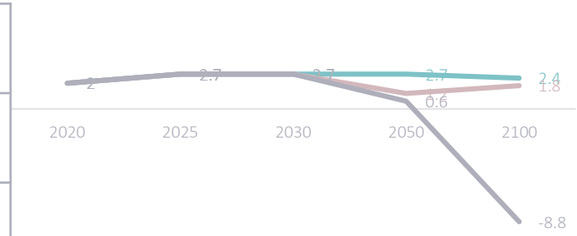
Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

Climate Hazards

Scenario analysis

Precipitation (%)

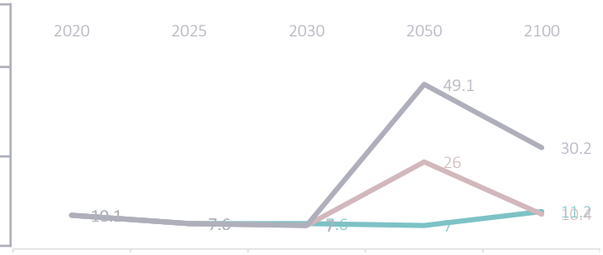
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
2	2.7	2.7	2.7	2.4	2.7	2.7	1.2	1.8	2.7	2.7	0.6	-8.8



Expected damage from river floods (p.a. in%)

Data based on national levels due to unavailability in the selected region

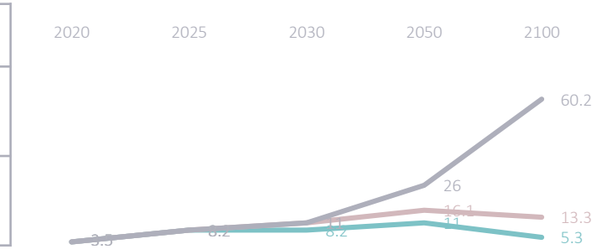
2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
10.1	7.6	7.6	7	11.2	7.6	7	26	10.4	7.6	7	49.1	30.2



Expected damage from tropical cyclones (p.a. in%)

Data based on national levels due to unavailability in the selected region

2020 Value	NGFS Net Zero 2050				NGFS Delayed transition				NGFS Current Policies			
	2025	2030	2050	2100	2025	2030	2050	2100	2025	2030	2050	2100
3.5	8.2	8.2	11	5.3	8.2	11	16.1	13.3	8.2	11	26	60.2



Legend: Scenarios — NGFS Net Zero 2050 — NGFS Delayed transition — NGFS Current Policies (hot house world)

3

Methodologies

Methodologies used to assess climate-related risks and opportunities

Physical climate risk exposure

We assess the physical climate risk exposure for our funds and own operations utilizing a variety of specialized tools. The score of the current physical climate risk exposure is defined as follows for the selected indicators:

Tropical cycles

- High: indicates that the cyclone hazard in the selected region is high, i.e. there is >20% chance of potentially damaging wind speeds in the region in the next 10 years. Such damages occur due to wind, induced heavy rainfall and subsequent flooding (including coastal flooding at seaside locations)
- Medium: indicates that the cyclone hazard in the selected region is medium, i.e. there is a 10% chance of potentially damaging wind speeds in the region in the next 10 years. Such damages occur due to wind, induced heavy rainfall and subsequent flooding (including coastal flooding at seaside locations)
- Low: indicates that the cyclone hazard in the selection region is low, i.e. there is a 1% chance of potentially damaging wind speeds in the region in the next 10 years. Such damages occur due to wind, induced heavy rainfall and subsequent flooding (including coastal flooding at seaside locations)
- Very low: indicates that the cyclone hazard in the selection region is very low, i.e. there is less than a 1% chance of potentially damaging wind speeds in the region in the next 10 years
- No data: indicates that for the hazard in the selected region, data is currently unavailable in the tool used for assessing physical climate risk exposure. Capital Dynamics will monitor the data availability and will update its physical risk exposure assessment when data availability improves

Data for this hazard are obtained from ThinkHazard. However, for the CEI VIII and CEI IX assets locations there were limited data available, which is why this report does not include the current tropical cyclones data, but includes cyclones in the scenario analysis.

Water stress

- High: indicates that the water scarcity in the region is high, i.e. droughts are expected to occur on average every 5 years, which can have an effect on human beings, agriculture and the corresponding food security, and infrastructure
- Medium: indicates that the water scarcity in the region is medium, i.e. there is up to a 20% chance droughts will occur in the next 10 years, which can have an effect on human beings, agriculture and the corresponding food security, and infrastructure
- Low: indicates that the water scarcity in the region is low, i.e. there is a 1% chance drought will occur in the next 10 years, which can have an effect on human beings, agriculture and the corresponding food security, and infrastructure
- Very low: indicates that the water scarcity in the region is very low, or virtually non-existent, i.e. in the selected regions droughts are projected to occur less than once every 1000 years
- No data: indicates that for the hazard in the selected region, data is currently unavailable in the tool used for assessing physical climate risk exposure. Capital Dynamics will monitor the data availability and will update its physical risk exposure assessment when data availability improves

Data for this hazard are obtained from ThinkHazard.

Wildfire

- High: indicates that the wildfire hazard in the selected region is high, i.e. there is >50% chance of encountering weather that could support a significant wildfire, which is likely to result in life and property loss in any given year. Damage from wildfire can occur due to the direct flame and radiation exposure and include ember storm and low level surface fire. In extreme fire weather events, strong winds and wind born debris can cause further damage to the infrastructure in the region. Climate projections identify a likely increase in the frequency and severity of fire weather in regions with increased mean air temperature and greater variance in rainfall
- Medium: indicates that the wildfire hazard in the selected region is medium, i.e. there is between a 10% - 50% chance of encountering weather that could support a significant wildfire, which is likely to result in life and property loss in any given year. Damage from wildfire can occur due to the direct flame and radiation exposure and include ember storm and low level surface fire. In extreme fire weather events, strong winds and wind born debris can cause further damage to the infrastructure in the region. Climate projections identify a likely increase in the frequency and severity of fire weather in regions with increased mean air temperature and greater variance in rainfall
- Low: indicates that the wildfire hazard in the selected region is low, i.e. there is between a 4% - 10% chance of experiencing weather that could support a significant wildfire, which is likely to result in life and property loss in any given year. Damage from wildfire can occur due to the direct flame and radiation exposure and include ember storm and low level surface fire.
- Very low: indicates that the wildfire hazard in the selected region is very low, i.e. there is a less than 4% chance of experiencing weather that could support a significant wildfire, which is likely to result in life and property loss in any given year.
- No data: indicates that for the hazard in the selected region, data is currently unavailable in the tool used for assessing physical climate risk exposure. Capital Dynamics will monitor the data availability and will update its physical risk exposure assessment when data availability improves

Data for this hazard are obtained from ThinkHazard.

River floods and urban floods

- High: indicates that the flood hazard is high. For coastal regions, this means that potentially damaging waves are expected to flood the coast at least once in the next 10 years. For regions located by rivers, this means that potentially damaging and life-threatening river floods are projected to occur at least once in the next 10 years. High flood hazard in an urban setting indicates high levels of surface flood in urban and rural areas, which means that potentially damaging and life-threatening urban floods are expected to occur at least once in the next 10 years. The projected increase in frequency and severity of precipitation due to climate change increase the present hazard levels further, as the risk of flooding intensifies.
- Medium: indicates the flood hazard is medium, i.e. there is a chance of more than 20% that potentially damaging and life-threatening floods occur in the next 10 years
- Low: indicates the flood hazard is low, i.e. there is a chance of more than 1% that potentially damaging and life-threatening floods occur in the next 10 years
- Very low: indicates the flood hazard is very low, i.e. there is a less than 1% chance that potentially damaging and life-threatening floods occur in the next 10 years
- No data: indicates that for the hazard in the selected region, data is currently unavailable in the tool used for assessing physical climate risk exposure. Capital Dynamics will monitor the data availability and will update its physical risk exposure assessment when data availability improves

Data for this hazard are obtained from ThinkHazard.

Coastal flood

Coastal flood risk measures the percentage of the population expected to be affected by coastal flooding in an average year, accounting for existing flood protection standards. Flood risk is assessed using hazard (inundation caused by storm surge), exposure (population in flood zone), and vulnerability.17 The existing level of flood protection is also incorporated into the risk calculation. It is important to note that this indicator represents flood risk not in terms of maximum possible impact but rather as average annual impact. The impacts from infrequent, extreme flood years are averaged with more common, less newsworthy flood years to produce the "expected annual affected population." Higher values indicate that a greater proportion of the population is expected to be impacted by coastal floods on average as per following classification:

- Extremely high: more than 2 in 1,000
- High: 3 in 10,000 to 2 in 1,000
- Medium – high: 7 in 100,000 to 3 in 10,000
- Low – medium: 9 in 1,000,000 to 7 in 100,000
- Low: 0 to 9 in 1,000,000

Data for this hazard are obtained from Acqueduct Water Risk Atlas.

Extreme heat

- High: indicates that extreme heat hazard is high, i.e. prolonged exposure to extreme heat is expected to occur at least once in the next five years. Climate change projections indicate that the continued greenhouse gas emissions will intensify warming, which result in more frequent heatwaves, impacting human beings, agriculture and the corresponding food security, and infrastructure
- Medium: indicates that the extreme heat hazard is medium, i.e. there is >25% chance that at least one period of prolonged exposure to extreme heatwaves will occur in the next five years
- Low: indicates that the extreme heat hazard is low, i.e. there is between a 5% - 25% chance that at least one period of prolonged exposure to extreme heatwaves will occur in the next five years
- Very low: indicates that the extreme heat hazard is very low, i.e. there is less than a 5% chance that at least one period of prolonged exposure to extreme heatwaves will occur in the next five years
- No data: indicates that for the hazard in the selected region, data is currently unavailable in the tool used for assessing physical climate risk exposure. Capital Dynamics will monitor the data availability and will update its physical risk exposure assessment when data availability improves

Data for this hazard are obtained from ThinkHazard.

Climate projections of physical climate risk hazards under NGFS Net Zero by 2050, NGFS Delayed Transition and NGFS Current Policies (hot house world) scenarios

We assess the physical climate risk projections for a range of acute and chronic climate hazards and analyze how the hazards are modelled to evolve over the following time horizons:

- 2025: climate projections for the short-term (i.e. within the hold period)
- 2030: climate projections for the medium-term (i.e. post hold period)
- 2050: climate projections for the long-term (2050)
- 2100: climate projections for the very long term, since the effects of climate change often manifest themselves in the long-run

Further, we provide the 2020 value for each climate hazard to approximate the current risk levels. We utilize the Climate Impact Explorer[1] to assess the climate projections for each hazard under the NGFS scenarios. All projections are computed assuming socio-economic conditions, such as population and land use, will maintain constant levels as of 2005. This allows the analysis to isolate the sole effect of climate change on the climate hazards. The projections provided include uncertainty ranges to incorporate global climate sensitivity to emissions, and the response of localized effects to global warming. The aggregation is performed at the continental, national and subnational levels and use weighted averages (by area, GDP or population).

The Climate Impact Explorer builds on the data sources by ISIMIP (changes in biophysical systems and extreme events, built on the Emissions Scenarios (IAMs), and the Global Mean Temperature Trajectories (MAGICC) and CLMIADA (Direct Damages from Extreme Events). Additionally, trajectories for the NFGS scenarios are obtained from academic institutions in collaboration with the Network for Greening the Financial System.

The climate hazard indicators used in our analysis provide information about the projected changes of these hazards according to different levels of global warming and greenhouse gas emissions. Such information is derived from numerous climate impact models. Global mean temperature projections show the various greenhouse gas emission pathways used by the NGFS, which are derived by the three Integrated Assessment Models (IAMs): MESSAGEix-GLOBIOM, GCAM and REMIND-MAgPIE.

The NGFS scenarios were last updated in September 2022 and are based on MAGICC7 (in correspondence to the IPCC Sixth Assessment Report (AR6), and therefore represent the latest climate science projections. The Climate Impact Explorer provides data on climate impacts on biophysical systems, extreme events and resulting economic damages for the NGFS scenarios (1) Net Zero 2050, (2) Delayed transition and (3) Current Policies.

[1] Climate Analytics, 2022. Climate Impact Explorer. Available at: https://climate-impact-explorer.climateanalytics.org/.

The climate hazards subject to the scenario analysis presented in this report are defined as follows:

Mean air temperature

Absolute change in mean air temperature in selected region, expressed in degrees Celsius). The changes in mean air temperature projections are shown over time at different global warming levels compared to the reference period 1986-2006, based on the selected NGFS scenario (Net zero 2050, Delayed transition, Current Policies). Data after 2060 are indicative model results.

Labor productivity due to heat stress

Relative change in labor productivity due to heat stress in the selected region, expressed in percentage points. The changes in relative labor productivity are shown over time at different global warming levels compared to the reference period 1986-2006, based on the selected NGFS scenario (Net zero 2050, Delayed transition, Current Policies). Data after 2060 are indicative model results.

Land fraction annually exposed to wildfires

Changes in land fraction annually exposed to wildfires in the selected region, expressed in percentage points. The changes in land fraction exposed to wildfires are shown over time at different global warming levels compared to the reference period 1986-2006, based on the selected NGFS scenario (Net zero 2050, Delayed transition, Current Policies). Data after 2060 are indicative model results.

Precipitation

Relative change in precipitation in the selected region, expressed in percent. The changes in precipitation are shown over time at different global warming levels compared to the reference period 1986-2006, based on the selected NGFS scenario (Net zero 2050, Delayed transition, Current Policies). Data after 2060 are indicative model results.

Annual expected damage from River floods

Relative change in annual expected damage from river floods in selected region, expressed in percent. The changes in annual expected damage from river floods are shown over time at different global warming levels compared to the reference year 2015, based on the selected NGFS scenario (Net zero 2050, Delayed transition, Current Policies). Data after 2060 are indicative model results.

Annual expected damage from tropical cyclones

Relative change in annual expected damage from tropical cyclones in the selected region, expressed in percent. The changes in annual expected damage from tropical cyclones are shown over time at different global warming levels compared to the reference year 2015, based on the selected NGFS scenario (Net zero 2050, Delayed transition, Current Policies). Data after 2060 are indicative model results.

Relative change in wind speed

Relative changes in wind speed in the selected region, expressed in percent. The relative changes in wind speed are shown over time at different global warming levels compared to the reference period 1986-2006, based on the selected NGFS scenario (Net zero 2050, Delayed transition, Current Policies). Data after 2060 are indicative model results.

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