Climate Scenario Analysis

Introduction

Amphenol Corporation (Amphenol) contracted with an outside firm to complete a Climate Scenario Analysis (CSA) as part of its International Financial Reporting Standards (IFRS) S2 Disclosure preparation. The CSA is a tool that Amphenol will use in its climate-related strategy and to support its regulatory obligations.

Process And Results

The process used to complete the CSA was based on the framework originally created by the Task Force on Climate-Related Financial Disclosures (TCFD)[1,2], now encompassed by the IFRS[3]. The process included reference to Haigh's *Scenario Planning for Climate Change: A Guide for Strategists*[4] as supporting guidance.

This CSA was used to evaluate physical climate-related risks. Physical risks result from the physical impacts of climate change (i.e., sea level rise, floods, etc.).

Define Foundational Parameters

Amphenol first defined the foundational parameters of the CSA. These parameters include the focal question, the time horizon(s), the region(s) of interest and the scenario pathway(s) used.

Formulate a Focal Question

A focal question is the fundamental question that a company aims to address, providing direction throughout the CSA process. The purpose of defining a focal question is to determine the scope, guide data collection and interpretation and ensure that the analysis addresses a relevant and important issue. Amphenol defined the following focal question:

How could climate-related physical risks plausibly impact Amphenol's operations in specified regions with key clusters of manufacturing facilities?

Define Time Horizons

A time horizon is a period of time in which the focal question is considered. Defining time horizons ensures that the analysis aligns with a company's strategic planning cycles. For this analysis, Amphenol considered three separate time horizons that align with its current risk management and financial strategies:

- Short-term (1-3 years)
- Medium-term (3-7 years)
- Long-term (7-15 years)

Identify Regions of Interest

Amphenol selected the following regions to focus on because they include established or growing clusters of operations:

- Southeastern China
- Northern Mexico
- North Macedonia
- Southern India
- Vietnam

Select Scenario Pathways

Climate scenarios project potential future changes in climate variables under various greenhouse gas (GHG) emission and socioeconomic conditions. Two types of climate scenarios — representative concentration pathways (RCPs) and shared socioeconomic pathways (SSPs) — were developed by the Intergovernmental Panel on Climate Change (IPCC) to complement each other and aid researchers and policymakers in planning for possible futures. SSP-RCP scenario combinations allow companies to complete a climate scenario analysis with a more balanced and complete narrative assumption.[5,6]

This CSA considered two scenario pathways described in the IPCC Sixth Assessment, a lower emission scenario and a higher emission scenario:

- ***Lower emission scenario: SSP2-4.5 – Middle of the Road –*** Annual global emissions of CO_2 remain around current levels until 2050 (40 $GtCO_2$/year). The increase of average surface temperature across the globe is estimated to be 1.5°C in the near term (today to 2040), 2.0°C in the mid-term (2041-2060), and 2.7°C by 2100
- ***Higher emission scenario: SSP5-8.5 – Fossil-fueled Development, Taking the Highway –*** Annual global emissions of CO2 double by 2050 (40 $GtCO_2$/year increases to 80 $GtCO_2$/year). The increase of average surface temperature across the globe is estimated to be 1.6°C in the near term (today to 2040), 2.4°C in the mid-term (2041-2060), and 4.4°C by 2100.[5]

Conduct Driver Research

Amphenol identified drivers to guide the analysis of the focal question. Drivers are external factors that influence the events, trends and patterns that determine outcomes in the business environment. Drivers are continuous over time and consistently influence the focal question; drivers are not transient or random[3,4].

Identify Drivers

When identifying drivers, Amphenol considered both acute and chronic physical climate-related risks relevant to its regions of interest. The list of physical climate drivers identified for consideration in this CSA is shown in Table 1.

Table 1. Physical Climate Drivers

Driver Type	Driver
Acute	Wildfire Hazards
	Flooding
	Tropical Cyclones
Chronic	Extreme Heat
	Water Quality
	Water Scarcity

Complete Driver Research

Desktop research was completed to identify current and projected trends of each driver for each region within the two selected scenario pathways, SSP2-4.5 and SSP5-8.5, and within the three selected time horizons, short-term (1 to 3 years), medium-term (3 to 7 years) and long-term (7 to 15 years).[10]

Identify Priority Drivers

Priority drivers are the drivers that pose the greatest potential risk to a company within relevant time horizons. They are identified through a rating and ranking exercise, where a company considers both the driver's potential impact and uncertainty. Based on these impact and uncertainty ratings, an overall rating is calculated, and a risk classification is assigned to each driver in both scenarios across all time horizons.

Rate Drivers' Impacts and Uncertainties

Amphenol, based on the research, assigned impact and uncertainty ratings to each driver for each scenario pathway and time horizon.

- Impact refers to the strength of the driver's influence on future outcomes relevant to the focal question. Table 2 shows the impact rating scale used for this CSA.
- Uncertainty refers to the level of predictability of future outcomes. Uncertainty is not related to the uncertainty of the driving forces happening but rather the uncertainty within the impacts associated with the chosen driving forces.[3,4] Table 3 shows the uncertainty rating scale used for this CSA.

Table 2. Impact Rating Scale

Rating	Impact
1	Insignificant
2	Minor
3	Moderate
4	Major
5	Critical

Table 3. Uncertainty Rating Scale

Rating	Definition
1	Almost certain of impacts. Able to select only 1 impact rating.
2	Confident of impacts. Considering a range of 2 impact ratings.
3	Semi-confident in impacts. Considering a range of 3 impact ratings.
4	Unsure of impacts. Considering a range of 4 impact ratings.
5	Extremely unsure of impacts. Considering all 5 impact ratings.

Subsequent to assigning an impact and uncertainty rating for each driver, these two ratings were multiplied to create the overall rating, as shown in the following equation:

Impact Rating x Uncertainty Rating = Overall Rating[4]

Tables 4-8 show the impact, uncertainty and overall ratings assigned to each driver for each scenario pathway and time horizon.

Table 4. Rated Physical Drivers for Southeastern China

Driver Type	Drivers	Location	Southeastern China																	
		Time Horizon	Short-Term (1-3 years)						Medium-Term (3-7 years)						Long-Term (7-15 years)					
		Scenario	SSP2-4.5			SSP5-8.5			SSP2-4.5			SSP5-8.5			SSP2-4.5			SSP5-8.5		
		Rating Type	I	U	O	I	U	O	I	U	O	I	U	O	I	U	O	I	U	O
Acute	Wildfire Hazards		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Flooding		2	2	4	2	2	4	2	3	6	2	3	6	3	3	9	3	3	9
	Tropical Cyclones		2	2	4	2	2	4	2	3	6	2	3	6	3	3	9	3	3	9
Chronic	Extreme Heat		1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2
	Water Quality		1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2
	Water Scarcity		1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2

Notes: I - Impact U - Uncertainty O - Overall = I x U

Table 5. Rated Physical Drivers for Northern Mexico

Driver Type	Drivers	Location	Northern Mexico																	
		Time Horizon	Short-Term (1-3 years)						Medium-Term (3-7 years)						Long-Term (7-15 years)					
		Scenario	SSP2-4.5			SSP5-8.5			SSP2-4.5			SSP5-8.5			SSP2-4.5			SSP5-8.5		
		Rating Type	I	U	O	I	U	O	I	U	O	I	U	O	I	U	O	I	U	O
Acute	Wildfire Hazards		4	1	4	4	1	4	4	1	4	4	1	4	4	1	4	4	1	4
	Flooding		1.5	3	4.5	1.5	3	4.5	1.5	4	6	1.5	4	6	1.5	4	6	1.5	4	6
	Tropical Cyclones		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chronic	Extreme Heat		1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2
	Water Quality		2	1	2	2	1	2	2	1	2	2	1	2	3	1	3	3	1	3
	Water Scarcity		2	2	4	2	2	4	2	2	4	2	2	4	3	3	9	3	3	9

Notes: I - Impact U - Uncertainty O - Overall = I x U

Table 6. Rated Physical Drivers for North Macedonia

Driver Type	Drivers	Location	North Macedonia																	
		Time Horizon	Short-Term (1-3 years)						Medium-Term (3-7 years)						Long-Term (7-15 years)					
		Scenario	SSP2-4.5			SSP5-8.5			SSP2-4.5			SSP5-8.5			SSP2-4.5			SSP5-8.5		
		Rating Type	I	U	O	I	U	O	I	U	O	I	U	O	I	U	O	I	U	O
Acute	Wildfire Hazards		2.5	1	2.5	2.5	1	2.5	2.5	1	2.5	2.5	1	2.5	2.5	1	2.5	2.5	1	2.5
	Flooding		2.5	1.5	3.75	2.5	1.5	3.75	2.5	1.5	3.75	2.5	1.5	3.75	2.5	1.5	3.75	2.5	1.5	3.75
	Tropical Cyclones		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chronic	Extreme Heat		1.5	1	1.5	1.5	1	1.5	1.5	1	1.5	1.5	1	1.5	1.5	1	1.5	1.5	1	1.5
	Water Quality		2	1	2	2	1	2	2	1	2	2	1	2	2	1.5	3	2	1.5	3
	Water Scarcity		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Notes: I - Impact U - Uncertainty O - Overall = I x U

Table 7. Rated Physical Drivers for Southern India

Driver Type	Drivers	Location	Southern India																	
		Time Horizon	Short-Term (1-3 years)						Medium-Term (3-7 years)						Long-Term (7-15 years)					
		Scenario	SSP2-4.5			SSP5-8.5			SSP2-4.5			SSP5-8.5			SSP2-4.5			SSP5-8.5		
		Rating Type	I	U	O	I	U	O	I	U	O	I	U	O	I	U	O	I	U	O
Acute	Wildfire Hazards		2.5	2.5	6.25	2.5	2.5	6.25	2.5	2.5	6.25	2.5	2.5	6.25	2.5	2.5	6.25	2.5	2.5	6.25
	Flooding		3	2.5	7.5	3	2.5	7.5	3	2.5	7.5	3	2.5	7.5	4	3	12	4	3	12
	Tropical Cyclones		3.5	1.5	5.25	3.5	1.5	5.25	3.5	1.5	5.25	3.5	1.5	5.25	4	1.5	6	4	1.5	6
Chronic	Extreme Heat		2	1	2	2	1	2	2	1	2	2	1	2	2	1	2	2	1	2
	Water Quality		2.5	2	5	2.5	2	5	2.5	2	5	2.5	2	5	2	1.5	3	2	1.5	3
	Water Scarcity		2	1	2	2	1	2	2	1	2	2	1	2	1	1	1	1	1	1

Notes: I - Impact U - Uncertainty O - Overall = I x U

Identify Priority Drivers (continued)

Table 8. Rated Physical Drivers for Vietnam

Driver Type	Drivers	Location	Vietnam																	
		Time Horizon	Short-Term (1-3 years)						Medium-Term (3-7 years)						Long-Term (7-15 years)					
		Scenario	SSP2-4.5			SSP5-8.5			SSP2-4.5			SSP5-8.5			SSP2-4.5			SSP5-8.5		
		Rating Type	I	U	O	I	U	O	I	U	O	I	U	O	I	U	O	I	U	O
Acute	Wildfire Hazards		1.5	1	**1.5**	1.5	1	**1.5**	1.5	1	**1.5**	1.5	1	**1.5**	1.5	1	**1.5**	1.5	1	**1.5**
	Flooding		3	2.5	**7.5**	3	2.5	**7.5**	3	2.5	**7.5**	3	2.5	**7.5**	3	2.5	**7.5**	3	2.5	**7.5**
	Tropical Cyclones		3	1.5	**4.5**	3	1.5	**4.5**	3	1.5	**4.5**	3	1.5	**4.5**	3	1.5	**4.5**	3	1.5	**4.5**
Chronic	Extreme Heat		2	1	**2**	2	1	**2**	2	1	**2**	2	1	**2**	2	1	**2**	2	1	**2**
	Water Quality		1	1	**1**	1	1	**1**	1	1	**1**	1	1	**1**	1	1	**1**	1	1	**1**
	Water Scarcity		1	1	**1**	1	1	**1**	1	1	**1**	1	1	**1**	1	1	**1**	1	1	**1**

Notes: I - Impact U - Uncertainty O - Overall = I x U

Rank Drivers

The overall ratings were converted to a risk classification level to identify priority drivers. Table 9 shows the scale used to associate a risk classification with the overall rating for each driver.

Table 9. Driver Ranking Scale

Risk Classification	Overall Rating
Insignificant	1.0-5.9
Minor	6.0-10.9
Moderate	11.0-15.9
Major	16.0-20.9
Critical	>21.0

Any driver that had a risk ranked higher than insignificant was considered a priority driver. This exercise identified wildfire hazards, flooding, tropical cyclones and water scarcity as priority drivers. Table 10 summarizes which regions of interest could face risks from each priority driver by time horizon. Since no significant variations in risk classifications on the selected time horizons between the SSP2-4.5 and SSP5-8.5 scenarios were identified, results were combined in the table below.

Table 10. Priority Driver Considerations

Priority Driver	Regions of Interest with Risk	Risk Classification		
		SSP2-4.5 and SSP5-8.5 Scenarios		
		Short-Term (1-3) Years	Medium-Term (3-7 Years)	Long-Term (7-15 Years)
Wildfire Hazards	Southern India	Minor	Minor	Minor
Flooding	Southeastern China	Insignificant	Minor	Minor
	Northern Mexico	Insignificant	Minor	Minor
	Southern India	Minor	Minor	Moderate
	Vietnam	Minor	Minor	Minor
Tropical Cyclones	Southeastern China	Insignificant	Minor	Minor
	Southern India	Insignificant	Insignificant	Minor
Water Scarcity	Northern Mexico	Insignificant	Insignificant	Minor

Financial Considerations

Amphenol considered the cost of each priority driver — wildfire hazards, flooding, tropical cyclones and water scarcity — in each of the regions of interest identified to have potential risks. Amphenol considered business interruption, property damage, inventory levels and total facility loss figures.

Amphenol determined that financial losses would be insignificant in comparison to the Company's overall financial condition. Most importantly, Amphenol's decentralized business strategy enables it to manufacture the same products in different global locations, thus assuring resilience and financial stability.

Conclusions

Amphenol completed this CSA to investigate potential physical climate-related risks in selected regions of importance to Amphenol due to established or growing clusters of operations. Amphenol considered both a lower GHG emission scenario (SSP2-4.5) and a higher GHG emission scenario (SSP5-8.5) and identified potential impacts from priority physical climate drivers — wildfire hazards, flooding, tropical cyclones and water scarcity — in the short-term (1-3 years), medium-term (3-7 years), and long-term (7-15 years).

Amphenol determined that the priority drivers described above could only pose a minor to moderate risk to Amphenol, as Amphenol's overall business strategy and decentralized business model enable it to mitigate physical climate risks that may impact a specific geographic location. While current climate models predict significant and varied impacts from climate change on a global scale, given the geographically dispersed nature of the Company's manufacturing footprint, Amphenol concluded that it is unlikely that its overall operations would be materially impacted over the assessed time horizons.

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