# Climate-related Scenario Analysis & Risk Assessment

In accordance with TCFD recommendations



akersolutions.com



# **Executive summary**

In 2022, Aker Solutions conducted a climate-related scenario analysis using the Task Force on Climate-related Financial Disclosures (TCFD) guidelines. The purpose of the analysis is to improve company strategy resilience based on a thorough assessment of energy transition and physical climate risks and opportunities.

To complete this analysis, we engaged an external consultancy and developed three customized climate scenarios. These scenarios were based on publicly available scenarios published by the International Energy Agency, the Network for Greening the Financial System, and the IPCC Sixth Assessment Report. The customized scenarios, titled Net Zero 2050 (1.5°C), Delayed Transition (2°C), and Hot House World (+3°C), were tailored to consider Aker Solutions' full value chain and operations in oil and gas and renewable energy markets, such as offshore wind, hydropower, hydrogen and carbon capture and storage (CCS).

To further assess the potential risks and opportunities identified in these scenarios, a workshop was held with Aker Solutions' CEO, EVP of Sustainability, HSSE, and Communications, and senior representatives from strategy, finance, sustainability, and technical departments. During this workshop, the three scenarios were examined to identify climate-related risks and opportunities, which were then assessed for financial materiality and their potential impact on Aker Solutions' business model and strategy.

As a result of this scenario analysis, three financially material climate-related risks were identified:

- Risk 1: Declining investment in upstream oil and gas in core markets
- Risk 2: Attraction and retention of talent
- Risk 3: Impact on supply chain and facilities due to extreme weather

Additionally, two financially material climate-related opportunities were identified:

- Opportunity 1: Increase competitiveness in oil and gas through decarbonization solutions and services
- Opportunity 2: Revenue diversification into markets supported by the energy transition

Details on the financial impact, risk mitigations, and strategies to capture these opportunities can be found in this disclosure, along with information on Aker Solutions' governance of climate-related risks and opportunities and the metrics and targets used to assess and manage them.

The findings from this scenario analysis have been considered as an input to Aker Solutions' corporate strategy process to improve its resilience. The climate-related risks will be incorporated into Aker Solutions' Enterprise Risk Management system and process.



Governance	Disclose the organization's governance around climate-related risks and opportunities
a) Describe the board's oversight of climate- related risks and opportunities.	Climate-related issues are discussed each quarter during Board meetings. The topics are mainly related to climate-related risks and opportunities and progress against the KPIs, including sustainable business performance and internal emissions targets.
	The Board approves the company strategy and supporting business plans, with scheduled agenda items such as the identified risks and progress against KPIs, including sustainable business performance and emission reduction targets.
	The Audit Committee performs a qualitative review of the quarterly and annual reports of the company, including the annual disclosure in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).
	The Audit Committee also supports the Board in overseeing that the company's Enterprise Risk Management framework is implemented and accurately reflects the company's major risk areas, including climate-related risks.
b) Describe management's role in assessing and managing climate- related risks and opportunities.	Aker Solutions' CEO and EVP for Sustainability assess and manage sustainability and climate-related issues, including those related to the energy transition. The CEO presents climate-related issues at Board meetings. The presentations generally include the overall enterprise risk information, including climate-related risks, how climate-related matters are managed and the results that have been achieved. The CEO also interacts with internal and external stakeholders. Climate-related issues are also a priority when presenting tenders to the Board for approval.
	EVP Legal and Safeguarding is responsible for overseeing enterprise risk management, including climate-related risk. The Enterprise Risk Committee reports risks as per established procedure by the enterprise risk management function on a quarterly basis, which is consolidated into the enterprise risk portfolio.
	The portfolio is evaluated by the enterprise risk management function, and approved by the EVP, Legal and Safeguarding, before being aligned with the Executive Management Team and reported to the Audit Committee.



Strategy	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.
a) Describe the climate- related risks and opportunities the organization has identified over the short, medium, and long term.	In 2022, Aker Solutions conducted an assessment of the transition and physical climate-related risks and opportunities that it may encounter between now and 2050. To do this, the company used three customized climate scenarios and defined short term, medium term, and long term as 2025, 2030, and 2050, respectively. Through this assessment, the following climate-related risks and opportunities were identified:
	Risk 1: Declining investment in upstream oil and gas in core markets
	<b>Type of risk</b> Market
	<b>Description of the risk</b> In the Net Zero 2050 scenario, demand for oil and gas falls to levels that do not necessitate new oil and gas field developments beyond those already approved. However, investment in existing fields remains. On average, annual upstream oil and gas spending in this scenario is two-thirds lower than in the Hot House World scenario and is primarily directed towards maintaining existing fields. A similar trend is observed in the Delayed Transition scenario from 2030 onwards. In all three scenarios, the consolidation of oil and gas production towards low-cost providers in the Middle East reduces the demand for North Sea oil and gas supply.
	As Aker Solutions has a low market share in OPEC countries, the decline in investment would significantly decrease the size of the addressable future market and result in a loss of revenue for the company in the medium to long term.
	<b>Potential financial impact</b> We estimate that this risk could result in NOK 10-15 bn less revenue per annum in the medium term (2030) due to reduced demand for products and services and NOK 20-25 bn per annum in the long term (2050).
	The medium-term impact is based on current greenfield oil and gas revenues of approximately NOK 25 bn per annum and an assumption that 50% will not materialize in the Net Zero 2050 and Delayed Transition scenarios in 2030.
	The long-term impact is based on current greenfield and brownfield oil and gas revenues of approximately NOK 35 bn per annum and an assumption that 75% of this is at risk in 2050.
	<ul> <li>Risk mitigation</li> <li>Aker Solutions is responding to this risk through the following levers: <ul> <li>Diversification of revenue streams into growing renewables markets, including offshore wind, carbon capture and storage (CCS), hydropower and hydrogen (H2)</li> <li>Increased emphasis on decarbonizing existing and new oil and gas projects to reduce carbon emissions and minimize long-term climate impact</li> <li>Development of innovative technologies to enhance competitive differentiation in the renewables and low carbon oil and gas sectors</li> </ul> </li> </ul>



 Implementation of digitalization initiatives to lower capital and operational expenses in oil and gas projects

The cost of responding to this risk is estimated at:

- NOK 100 m per annum to establish an enterprise-level competence development program to drive transformation and ensure upskilling and reskilling of our people
- NOK 150 m per annum in new technologies to enhance competitiveness in renewables and low carbon oil and gas markets

## **Risk 2: Attraction and retention of talent**

Type of risk Reputation

### Description of the risk

Unfavorable public perception of the oil and gas sector can make it challenging for Aker Solutions to recruit and retain employees, and this trend may intensify in all scenarios.

Human capital is a critical component of Aker Solutions' business model and its ability to compete and retain top talent is necessary to maintain competitiveness.

The difficulty in attracting and retaining employees may have a negative impact in the short to medium term on both direct operating costs and productivity loss.

#### Potential financial impact

We estimate that the higher cost of human capital and loss of productivity resulting from this risk could lead to an increase in costs of NOK 250 m per year in the medium term and NOK 500 m per year in the long term.

This estimate assumes that Aker Solutions has 15,000 full-time employees and that there will be a 10% increase in salary costs and loss of productivity in the medium term, and a 20% increase in salary costs and loss of productivity in the long term.

#### **Risk mitigation:**

Aker Solutions is responding to this risk through the following levers:

- Diversification of revenue streams into growing renewables markets (as per mitigation for Risk 1)
- Clear and measured communication on ambitions and targets both externally and internally
- Recruiting program tailored to future needs
- Investing in the development of our people by providing upskilling and reskilling opportunities
- Cultural transformation programs to drive awareness and behavior across the company

The estimated cost for addressing this risk is NOK 50-100 m. However, with our increased focus on diversification into growing renewables markets and our established programs for recruiting, retention, and competence development, we are confident that Aker Solutions will remain a desirable employer in the future. Therefore, we believe that the measures we have put in place will effectively mitigate this risk.



Risk 3: Impact on supply chain and facilities due to extreme weather
Type of risk Acute physical
<b>Description of the risk</b> Under all three climate scenarios, we expect an increase in the frequency and intensity of extreme weather events, such as tropical cyclones and storm surges. This may result in more frequent disruptions to our operations, interruptions in our supply chain, and damage to infrastructure due to climate change.
<b>Potential financial impact</b> This risk has the potential to impact our operations with an estimated cost of NOK 100 m annually in the medium to long term, due to higher insurance premiums and delays to cash flow from disruption to our operations.
This estimate assumes a 25% increase in the cost of insurance premiums.
<ul> <li>Risk mitigation</li> <li>Aker Solutions is responding to this risk through the following levers:         <ul> <li>Establishing a process to assess physical environmental risks and material scarcities across operations, at both local and aggregate levels</li> <li>Continuous dialogue with insurance providers and local stakeholders to ensure that we have effective measures in place to mitigate these risks</li> </ul> </li> </ul>
There are no additional costs involved in addressing this risk, as they are already accounted for in Aker Solutions' risk assessment process. We anticipate that this risk will only have a minimal impact on our business.
Opportunity 1: Increase competitiveness in oil and gas through decarbonization solutions and services
<b>Type of opportunity</b> Resilience through increased competitiveness of existing solutions
Primary potential financial impact Increased revenue and margins
<b>Description of the opportunity</b> In the Net Zero 2050 and Delayed Transition scenarios, transitional energy solutions and execution models will improve Aker Solutions' competitiveness in oil and gas markets. This also applies in a 'Hot House World' scenario, as customers continue to focus on decarbonization of their operations.
Aker Solutions has an opportunity to differentiate itself in the market and help customers lower their Scope 3 emissions by taking a market-leading position on decarbonizing their infrastructure. This will also enable Aker Solutions to attract and retain talent and customers.
<b>Potential financial impact</b> We estimate that this opportunity has the potential to increase our annual revenue by NOK 5-10 bn medium term, from about NOK 5 bn in 2022





estimate the cost of capturing this opportunity at NOK 100-300 m annually uding M&A activities). ate-related risks and opportunities are fully embedded within Aker Solutions' egy via our transition plan (Climate Action Plan) and financial planning ess. five-year Climate Action Plan was approved by the Board in 2021 and ched in January 2022. The plan follows the Science Based Targets initiative's ance and includes input and engagement from all parts of our value chain. plan provides a roadmap to transform our business to be even less carbon isive and help solve global energy challenges for future generations. chieve our ambitions, the Climate Action Plan focuses on the following: 1. Reduce emissions: Eliminate Scope 1 hotspots and lower Scope 2 through renewable energy consumption
egy via our transition plan (Climate Action Plan) and financial planning ess. five-year Climate Action Plan was approved by the Board in 2021 and ched in January 2022. The plan follows the Science Based Targets initiative's ance and includes input and engagement from all parts of our value chain. plan provides a roadmap to transform our business to be even less carbon sive and help solve global energy challenges for future generations. chieve our ambitions, the Climate Action Plan focuses on the following: 1. Reduce emissions: Eliminate Scope 1 hotspots and lower Scope 2 through renewable energy consumption
<ul> <li>ched in January 2022. The plan follows the Science Based Targets initiative's ance and includes input and engagement from all parts of our value chain.</li> <li>plan provides a roadmap to transform our business to be even less carbon isive and help solve global energy challenges for future generations.</li> <li>chieve our ambitions, the Climate Action Plan focuses on the following:</li> <li>1. Reduce emissions: Eliminate Scope 1 hotspots and lower Scope 2 through renewable energy consumption</li> </ul>
<ul> <li>sive and help solve global energy challenges for future generations.</li> <li>chieve our ambitions, the Climate Action Plan focuses on the following:</li> <li>Reduce emissions: Eliminate Scope 1 hotspots and lower Scope 2 through renewable energy consumption</li> </ul>
through renewable energy consumption
<ol><li>Unite the supply chain: Establish a resilient supply chain to bring down Scope 3 emissions</li></ol>
<ol> <li>Accelerate decarbonization: Build trusted, industry-leading solutions to decarbonize oil and gas</li> </ol>
<ol> <li>Integrate our data systems: Climate action powered by data-driven insights such as lifecycle assessment tool</li> </ol>
achievement of the Climate Action Plan milestones is part of the enterprise need score card and is one of the criteria in the company bonus scheme for 2.
result of declining demand for oil and gas under the Net Zero 2050 and yed Transition Scenarios, and the growth of renewable energy under all arios, Aker Solutions is making a strategic shift to grow in renewables and carbon markets including offshore wind, carbon capture and storage (CCS), hydrogen by working closely with our customers and partners and leveraging core capabilities.
target is that one-third of our revenue will come from transitional energy ions and/or from renewable energy business by 2025 and to increase the ortion to two-thirds of our revenue by 2030.
nave initiated a sustainable financial planning framework as part of the ities in the energy transition to ensure company growth is in line with these ets. Each business delivery center is required to establish a target based on percentage of revenue that is sourced from transitional energy solutions or



c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	In 2022, Aker Solutions conducted a climate-related scenario analysis using the Task Force on Climate-related Financial Disclosures (TCFD) guidelines to assess the risks and opportunities associated with different climate scenarios and their potential impact on the resilience of our company strategy.
	Three custom scenarios were developed for the analysis: Net Zero 2050 (1.5°C), Delayed Transition (2°C), and Hot House World (+3°C):
	<ul> <li>The Net Zero 2050 scenario is an orderly scenario that limits global warming to 1.5°C and includes stringent climate policies and rapid technological change to reach net-zero CO<sub>2</sub> emissions by 2050. Carbon prices rise to \$185 t/CO2 in 2030, \$350 in 2040, and \$675 in 2050. This scenario tests for immediate transition risk and low physical risk.</li> </ul>
	<ul> <li>The Delayed Transition scenario assumes a delay in reducing emissions, resulting in increased global emissions until 2030. Strong policies are then needed to limit warming to 2°C. Carbon prices rise rapidly from \$70 t/CO2 in 2030 to \$325 in 2040 and \$625 in 2050. This disorderly scenario tests for delayed and high transition risk.</li> </ul>
	<ul> <li>The Hot House World scenario assumes that only currently implemented policies are preserved, leading to high physical risks. Emissions continue to grow until 2080, resulting in 3°C of warming and severe physical risks, including irreversible changes such as higher sea levels. This scenario is paired with data from the Intergovernmental Panel on Climate Change's (IPCC) Shared Socioeconomic Pathway 5-8.5 (SSP5-8.5) scenario.</li> </ul>
	Our scenarios were based on publicly available scenarios published by the International Energy Agency (IEA), the Network for Greening the Financial System (NGFS), and the IPCC Sixth Assessment Report.
	The scenarios considered our full value chain, including upstream oil and gas production and downstream customer demand, as well as the production and demand for renewable energy fuels and technologies such as offshore wind, hydrogen, and carbon capture and storage (CCS).
	We conducted a workshop with the CEO, EVP of Sustainability, HSSE, and Communications, and senior representatives from strategy, finance, sustainability, and technical departments to consider the three scenarios and identify climate-related risks and opportunities.
	We also included existing climate-related risks from within our Enterprise Risk Management system and analyzed risks and opportunities identified by companies across the oil and gas and renewable energy value chains. The findings were then assessed for financial materiality and potential impact on our business model and strategy by senior representatives from strategy and finance.
	The results of the scenario analysis were used to inform the development of our corporate strategy and improve our resilience. Key findings from the climate scenario process included:
	<ul> <li>The policy actions taken by governments are the key variable and the main reason for the differences in outcomes across the scenarios. Carbon prices are the main driver.</li> </ul>
	<ul> <li>The electrification of transport reduces oil demand to a varying extent in all three scenarios (in the Hot House World scenario, the lower demand is offset by an increase in aviation and shipping).</li> </ul>



<ul> <li>Oil and gas production becomes increasingly concentrated in OPEC in all scenarios. Import dependency on fossil fuels in Asia remains high in all scenarios, leading to further concentration of trade flows between the Middle East and Asia.</li> </ul>
<ul> <li>Plummeting investment in upstream oil and gas in Net Zero 2050 and Delayed Transition create challenges for the supply chain, with competition intensifying in a declining market.</li> </ul>
<ul> <li>Renewable energy grows in all scenarios but also creates challenges given lower returns than oil and gas and competition from existing players chasing the same growth.</li> </ul>
<ul> <li>Aker Solutions' manufacturing sites may be exposed to an increase in extreme heat, precipitation, rising sea levels and drought.</li> </ul>

Risk Management	Disclose how the organization identifies, assesses, and manages climate-related risks.
a) Describe the organization's processes for identifying and assessing climate- related risks	The climate-related risks that were identified through the scenario analysis exercise will be incorporated into Aker Solutions' Enterprise Risk Management (ERM) system. All risks, including climate-related risks, are gathered in a quarterly risk report that is presented to the Audit Committee.
b) Describe the organization's processes for managing climate- related risks.	All risks are given a risk score according to their probability and the potential impact. A substantive financial or strategic impact or risk is defined as causing losses in revenue by more than NOK 500 m, and / or reduction in EBITDA of more than NOK 50 m. In addition to the risk score, all risks are measured with quantifiable indicators stating how they impact financial value, customer value, internal processes and people and organization.
c) Describe how processes for identifying, assessing, and managing climate-	Any substantive financial or strategic impact will be reported to the Audit Committee, the Executive Management Team and to the Board. Appropriate actions to eliminate or mitigate these risks will be implemented.
related risks are integrated into the	The information is also used in a dashboard, where the impacts to our direct operations and risks related to customers and suppliers are included.
organization's overall risk management.	In addition to the ERM process that covers risks and their impacts, Aker Solutions has implemented an EPM (Enterprise Performance Management) process to seize opportunities.
	Each business segment reports their risks and opportunities as part of the ERM and EPM processes in relation to our suppliers and customers, with potential costs (in terms of financial impact - cost / income or investment needs), their impacts on the business, and on future strategies.



Metrics and Targets	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.
a) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	The following targets are used by Aker Solutions to manage climate-related risks and opportunities:
	<ul><li>2050</li><li>Long term net-zero target by 2050</li></ul>
	<ul> <li>2030</li> <li>Two-thirds revenue from renewables and transitional energy solutions</li> <li>Targeting to reduce absolute Scope 1 and 2 emissions 50% reduction by 2030 from 2019 baseline</li> </ul>
	<ul><li>2025</li><li>One-third revenue from renewable and transitional energy solutions</li></ul>
b) Disclose the metrics used by the	The following metrics are used by Aker Solutions to assess climate-related risks and opportunities:
organization to assess climate- related risks and opportunities in line with its strategy and risk management process.	<ul> <li>GHG emissions:</li> <li>Absolute Scope 1, 2 and 3 GHG emissions</li> <li>Intensity-based Scope 1, 2 and 3 GHG emissions (Metric tons per million worked hours)</li> <li>Gross Scope 1 covered under EU ETS or other trading schemes</li> </ul>
	Metrics used to track mitigation of transition risks and progress on climate-related opportunities:
	<ul> <li>Key indicators for Scope 1+2 emissions reductions:</li> <li>Absolute and intensity-based energy consumption</li> <li>Share of our energy use from renewable sources</li> <li>Split of non-renewable fuel consumption</li> </ul>
	<ul><li>Key indicators of exposure to declining oil and gas market:</li><li>Share of revenue from work related to oil and gas sector</li></ul>
	<ul> <li>Key indicators for attraction and retention of talent:</li> <li>Employee turnover split per age group, region, and gender</li> <li>Age groups split for employees</li> <li>Employee engagement</li> </ul>
	<ul> <li>Key indicators for market growth and ability to transform into profitable renewable player:</li> <li>Profit margin of revenue from work related to renewables markets and transitional energy solutions</li> <li>Profit margin of revenue from work related to existing oil and gas market</li> <li>Total addressable market revenue for Aker Solutions within renewables markets and transitional solutions</li> </ul>
	Capital Deployment: Amount of investment deployed toward climate related risks and opportunities: CAPEX investment into decarbonization activities

	<ul> <li>Share of total CAPEX relating to decarbonization</li> <li>Percentage of annual revenue invested in R&amp;D of transitional energy solutions and technology including digitalization</li> <li>Remuneration:         <ul> <li>Proportion of executive management remuneration linked to climate considerations</li> <li>Management remuneration based on several KPIs linked to climate considerations</li> </ul> </li> </ul>
c) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Aker Solutions discloses its Scope 1, 2 and 3 greenhouse gas (GHG) emissions in its 2022 Sustainability Report which is available at: https://www.akersolutions.com/sustainability/sustainability-reports/



akersolutions.com