



# TCFD reporting for the oil & gas sector in Russia

Carbon Trust and EthnoExpert

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24/02/2021

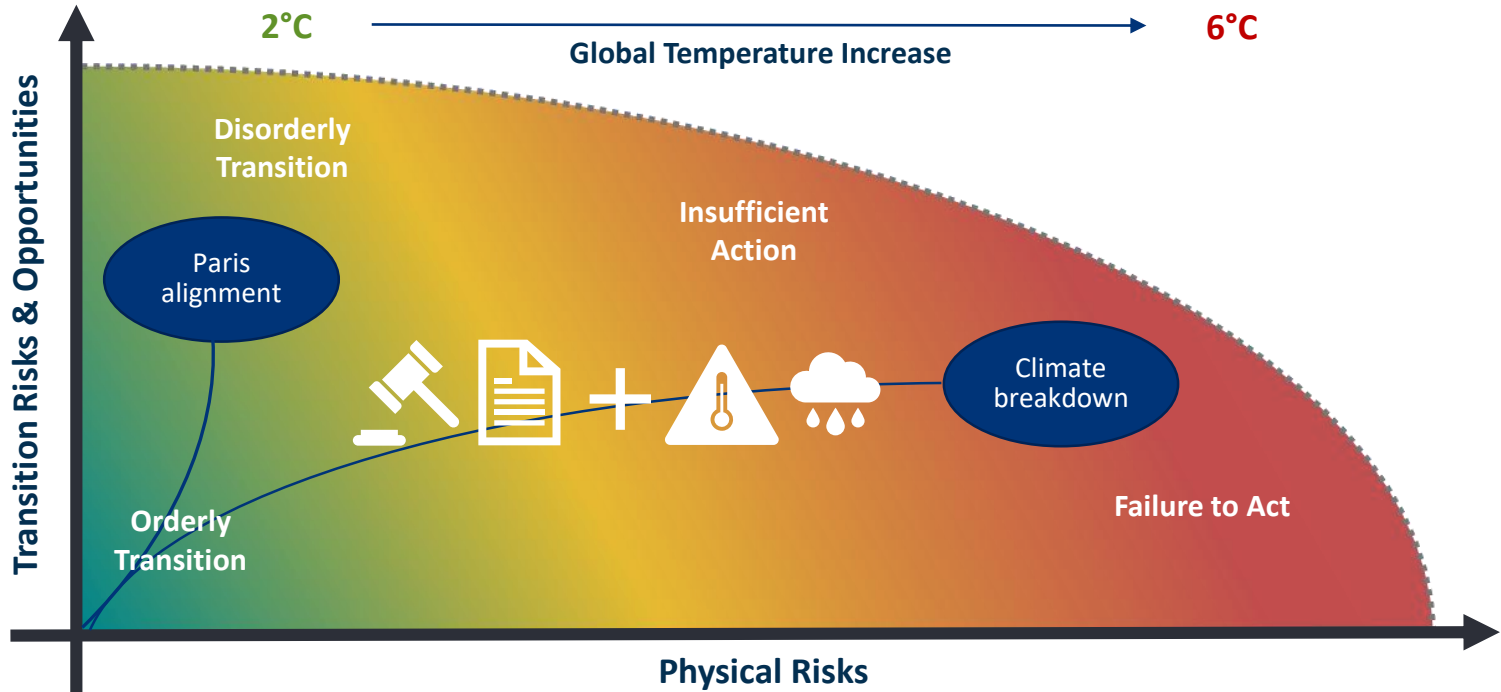
# Agenda

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- 1. Introduction to TCFD**
- 2. Climate change risks and opportunities in the oil and gas sector**
- 3. TCFD practical how-tos for implementation**

# How will climate change affect your business?

*TCFD encourages organisations to explore the likelihood and magnitude of financial impacts from potential climate-related risks & opportunities now and in the future*



# How will climate change affect your business?

*TCFD is a disclosure framework of 11 questions across 4 categories*



## Governance

- a) **Board oversight** of climate-related risks and opportunities
- b) **Management role** in risk assessment and management

## Strategy

- a) **Risks and opportunities** identified
- b) **Impact** on business, strategy, and planning
- c) **Resilience of strategy** to different scenarios

## Risk Management

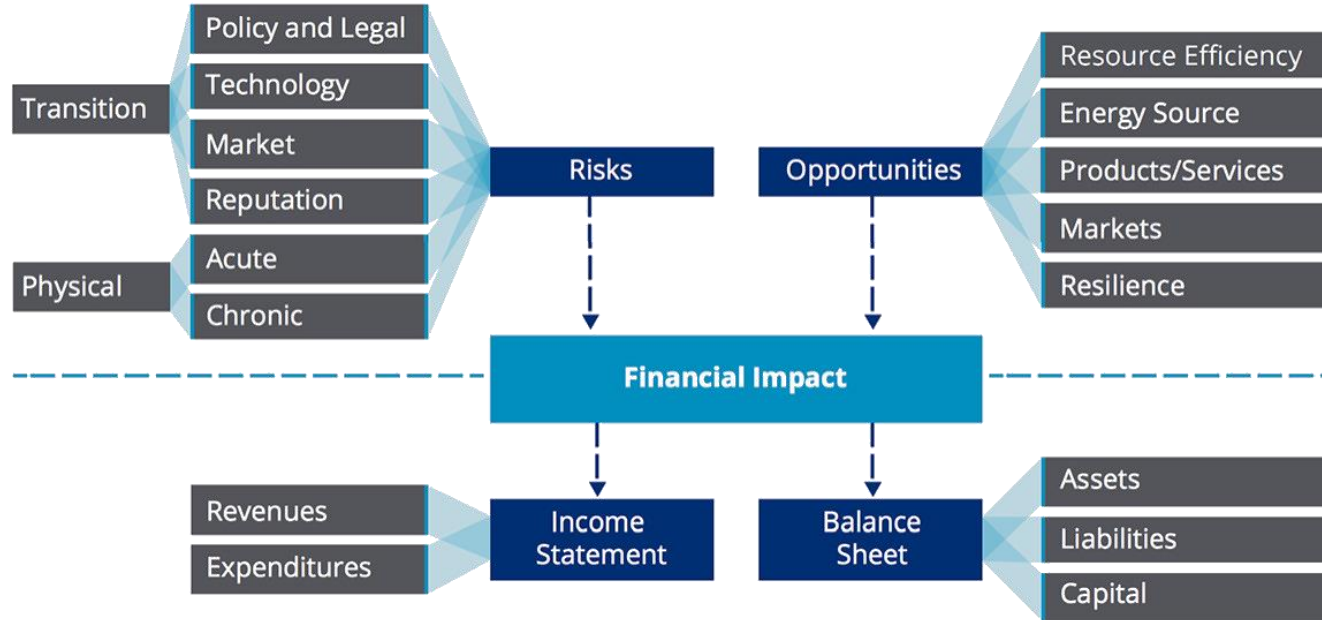
- a) Process for **identifying and assessing** climate-related risks
- b) Process for **managing** climate-related risks
- c) **Integration** with overall risk management

## Metrics and Targets

- a) **Metrics** for climate-related risk assessment
- b) **Scope 1, 2, and (if needed) 3** emissions and related risks
- c) **Targets** for risks and opportunities and related performance

# Types of climate-related risks and opportunities

TCFD identifies 11 categories of risks and opportunities



# Agenda

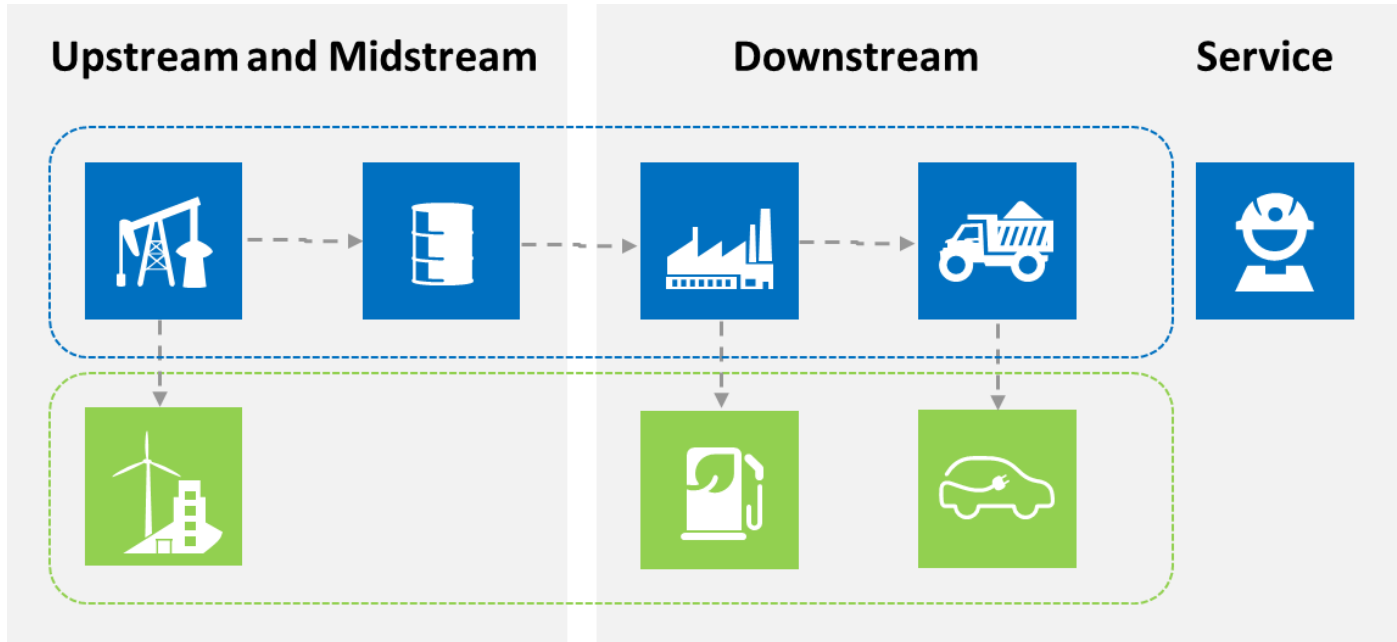
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# Reorganization of value chain in the oil & gas sector

Oil and gas companies are adding new businesses:

Renewables, CCUS, storage and EVs, biorefineries; new chemicals etc.



# Main transition risks for the oil & gas sector

	Upstream and Midstream	Downstream
<b>Policy and legal risks</b>	<ul style="list-style-type: none"> <li>Increased pricing of carbon through national &amp; international schemes</li> <li>Reduced access and inflated cost of capital (e.g. EU Taxonomy)</li> </ul>	<ul style="list-style-type: none"> <li>Ban for virgin/single-use plastics products results in lower demand for refined products</li> </ul>
<b>Market risks</b>	<ul style="list-style-type: none"> <li>Shift in basket of primary energy to less carbon-intense sources</li> <li>Increasing risk of divestment (e.g. exclusion lists)</li> <li>Uncertainty and shifts in energy market dynamics</li> <li>Fall in oil prices create “unburnable” reserves</li> </ul>	<ul style="list-style-type: none"> <li>Fall in oil prices lead to stranded assets (e.g. refineries, terminals and retail facilities)</li> </ul>
<b>Technological risks</b>	<ul style="list-style-type: none"> <li>Increased penetration of low-carbon energy sources (e.g. wind, solar) in the energy mix undermine competitiveness of fossil fuels</li> <li>Lack of innovation in equipment of conventional fossil fuel-based extraction and refining technology</li> </ul>	<ul style="list-style-type: none"> <li>Innovation in EV technology shifts market dynamics leading to reduced demand for fossil fuel-based products (e.g. petrol, diesel)</li> </ul>
<b>Reputational risks</b>	<ul style="list-style-type: none"> <li>Changing expectations about oil &amp; gas by consumers</li> <li>Increased cases of litigation due to low-quality climate-related disclosures</li> <li>Increased shareholders’ pressure due to low-quality climate-related disclosures</li> </ul>	<ul style="list-style-type: none"> <li>Shift in consumer preferences results in lower demand for fossil fuel-based products/services (e.g. diesel cars)</li> </ul>



# Main physical risks for the oil & gas sector

## All supply chain stages (Upstream, Midstream, and Downstream)

- |                      |  |
|----------------------|--|
| <b>Acute risks</b>   | <ul style="list-style-type: none"> <li>■ Prolonged periods of extreme heat may lead to production cuts if an adequate supply of cooling water is not available</li> <li>■ Extreme changes in precipitation patterns that may result in flooding, changes in road or well-site conditions, or damage to facilities</li> <li>■ Suspension of equipment operation and damage to bases due to abnormal rainfall and others</li> <li>■ Increasing storm strength or frequency might cause reduced oil production, then storms impact coastal or off-shore oil platforms</li> <li>■ Drought or decrease in precipitation can lead to reduced shale oil or gas availability, since more water will be needed for drilling and to remove drilling mud</li> </ul> |
| <b>Chronic risks</b> | <ul style="list-style-type: none"> <li>■ Impact of sea-level rise on manufacturing and distribution sites</li> <li>■ Temperature increase might lead to thawing of permafrost, which in turn threatens structural integrity of infrastructure</li> </ul>   |

# Main opportunities for the oil & gas sector

Upstream and Midstream		Downstream
<b>Market opportunities</b>		<ul style="list-style-type: none"> <li>Support new transport system for EVs and charging infrastructure (e.g. through M&amp;As or VCs)</li> <li>Shift from petroleum products to LNG in transportation (esp., shipping)</li> </ul>
<b>Products and services</b>	<ul style="list-style-type: none"> <li>Investment in renewables as a way to diversify revenue streams (e.g. hydrogen, wind, solar)</li> </ul>	<ul style="list-style-type: none"> <li>Investment in low-carbon products (e.g. biofuels, lubricants and petrochemicals)</li> <li>Provide carbon offsetting consultancy service for customers</li> </ul>
<b>New energy sources</b>	<ul style="list-style-type: none"> <li>Increased use of renewable-based energy generation for own operations</li> </ul>	
<b>Resilience</b>	<ul style="list-style-type: none"> <li>Investment in new technology to measure and monitor GHG emissions and other leakages from facilities</li> </ul>	

## Polling

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- *What do you consider as the main risks for the oil and gas sector in Russia?*
- *What do you consider as the main opportunities for the oil and gas sector in Russia?*

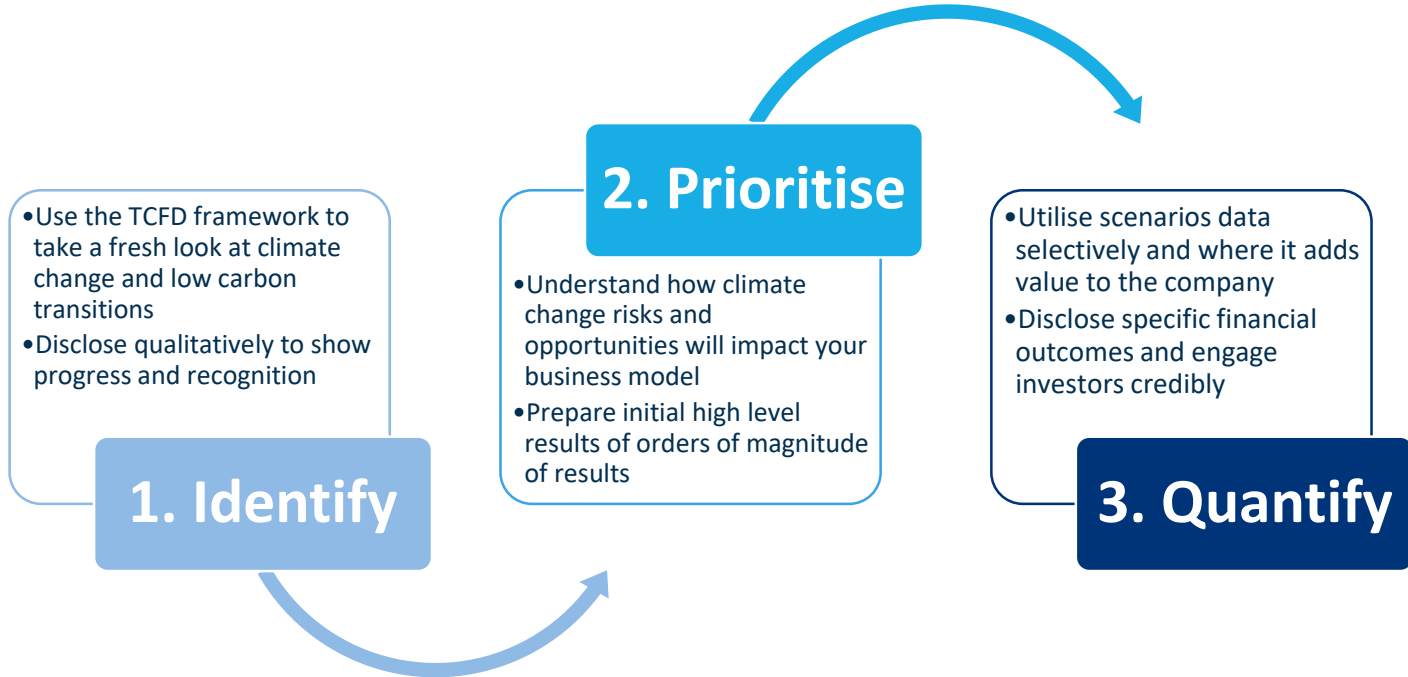
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# The process for TCFD implementation

*Disclosing aligned to TCFD is an iterative process with three fundamental steps*

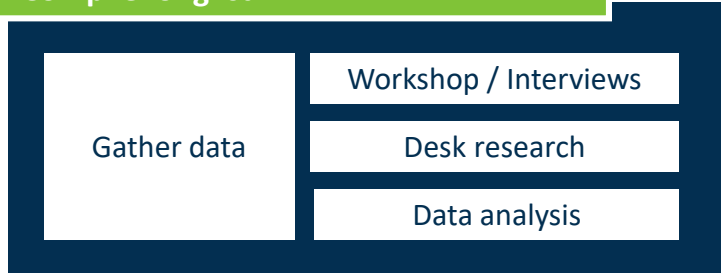


# 1. Identification and categorisation

*Identify and categorise relevant risks and opportunities*



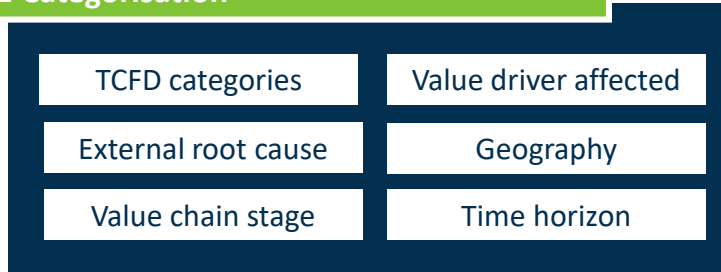
## 1.1 Compile longlist



### Aim:

- Identify risks and opportunities based on the organisation's specific characteristics and value creation model, as well as the industry context in which it operates
- Identify both internal and external drivers of risks

## 1.2 Categorisation



### Aim:

- Group risks and opportunities by pre-defined categories to start identifying trends and hotspots

# 1. Example identification output

*Risks and opportunities are categorised and presented in a longlist*



Risk or opportunity	TCFD category	External root cause	Value chain stage	Value driver affected	Geography	Time horizon
Carbon pricing	Policy & legal risk	Introduction of direct carbon tax	Scope 1 sources (e.g. drilling and processing)	Cost	Global	Short
Unburnable reserves	Market risk	Falling oil and gas prices	Exploration and extraction	Revenue and margins	Global	Short
Lower demand for plastic	Market risk	Increased plastic recyclability	Sales of oil	Revenue	China	Medium
Investor demand for environmental disclosures	Reputational risk	Changing investor expectations	Admin / overheads	Cost	Europe	Medium

## 2. Prioritisation

*Assign quantitative metrics and score against set criteria*



### 2.1 Assign parameters and metrics

Scenario data for external factors	3°C scenario
	2°C scenario
Company information for value drivers	Public
	Internal

#### Aim:

- Assign a parameter to the risks and source relevant scenario data
- Assign financial metrics to the risks based on the elements of the business model that may be affected

### 2.2 Score risks against detailed criteria

Confidence level	Scenario sensitivity
Probability	Time horizon
Financial indicators (qual)	Financial indicators (quant)

#### Aim:

- Translate evidence base into comparable outputs
- Score risks and opportunities following a systematic, data-driven and coherent approach based on set criteria

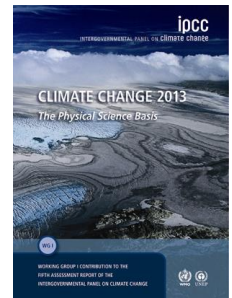
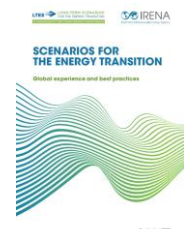
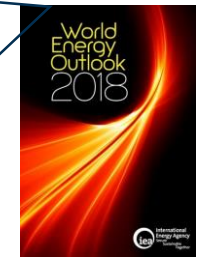


# 2. Resources for scenario analysis

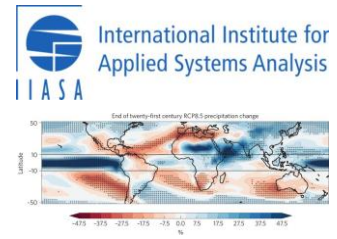
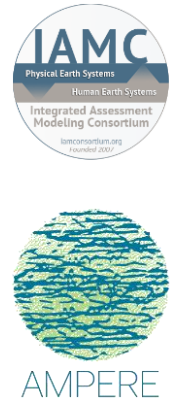
*Different types of scenarios exist, each providing appropriate underlying data for relevant risks and opportunities*



Data on energy consumption by industry and by source can show oil and gas demand projections across sectors



Data on the composition of the energy mix can show projected regulation on fossil fuels



Data on water availability in nearby basins can show availability of water for cooling

## 2. Typical metrics for financial quantification

*Financial impact is spread across different business areas, depending on each risk or opportunity, and TCFD recommends considering four financial categories*



	Revenues	Expenditures	Assets and liabilities	Capital and financing
Value driver exposed to climate change	<ul style="list-style-type: none"> <li>▪ Demand</li> <li>▪ Product mix and production capacity</li> <li>▪ Market positioning and competition</li> <li>▪ Operational continuity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Production costs</li> <li>▪ Energy and other operating costs</li> <li>▪ Fines and regulatory compliance</li> <li>▪ R&amp;D</li> <li>▪ Resilience to supply chain disruption</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fixed asset values and re-pricing</li> <li>▪ Asset valuation and lifetimes</li> <li>▪ R&amp;D and innovation costs</li> <li>▪ CAPEX requirements</li> <li>▪ Return on investments</li> </ul>	<ul style="list-style-type: none"> <li>▪ Access to finance</li> <li>▪ Trustworthiness and creditability</li> <li>▪ Relations with workforce, investors and other stakeholders</li> <li>▪ Legal environment</li> </ul>
Example financial metrics	<ul style="list-style-type: none"> <li>▪ Revenue</li> <li>▪ EBITDA</li> </ul>	<ul style="list-style-type: none"> <li>▪ COGS</li> <li>▪ Fixed costs</li> <li>▪ Operating and other margins</li> </ul>	<ul style="list-style-type: none"> <li>▪ Asset valuations and write-offs</li> <li>▪ Reserves valuation</li> <li>▪ Inventory loss</li> <li>▪ RoE and RoI</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cost of capital</li> <li>▪ Interest rates</li> <li>▪ Long term debt</li> <li>▪ Minority interest and retained equity</li> </ul>

## 2. Example prioritisation analysis

Each risk and opportunity is scored on the 6 criteria, using scenario analysis



Risk or opportunity	Parameter	Confidence	Scenario sensitivity	Probability	Time horizon	Financial impact
Carbon pricing	Russian carbon price (\$/tCO <sub>2</sub> ) <i>IIASA, SSP database Baseline: SSP2-45, R5.2REF Transition: SSP1-26, R5.2REF</i>	5 <i>High, trusted source and relevant parameter</i>	5 <i>High, &gt;50% parameter divergence across scenarios</i>	5 <i>High, &gt;50% rate of change of parameter</i>	3 <i>Short term, &lt;5 years</i>	\$5-10m <i>Based on current carbon price * scope 1 emissions</i>
Unburnable reserves	Oil price (\$/tCO <sub>2</sub> ) <i>IEA, WEO scenarios Baseline: Current policies Transition: Sustainable development</i>	5 <i>High, trusted source and relevant parameter</i>	5 <i>High, &gt;50% parameter divergence across scenarios</i>	5 <i>High, &gt;50% rate of change of parameter</i>	2 <i>Medium term, 5-20 years</i>	\$50-100m <i>Current reserves of \$50m</i>
Lower demand for plastic	Recycled plastic displacement rate (%) <i>IEA, ETP scenarios Baseline: RTS Transition: 2DS</i>	4 <i>High, trusted source and relatively relevant parameter</i>	5 <i>High, &gt;50% parameter divergence across scenarios</i>	5 <i>High, &gt;50% rate of change of parameter</i>	2 <i>Medium term, 5-20 years</i>	\$1-2m <i>Revenue from plastics industry is \$1m</i>
Investor demand for environmental disclosures	None / qualitative assessment  <i>No parameter available</i>	1 <i>Low, only qualitative assessment possible</i>	3 <i>Medium, qualitative assessment</i>	5 <i>High, qualitative assessment</i>	2 <i>Medium term, 5-20 years</i>	Low <i>Qualitative assessment</i>

## 2. Example prioritisation analysis

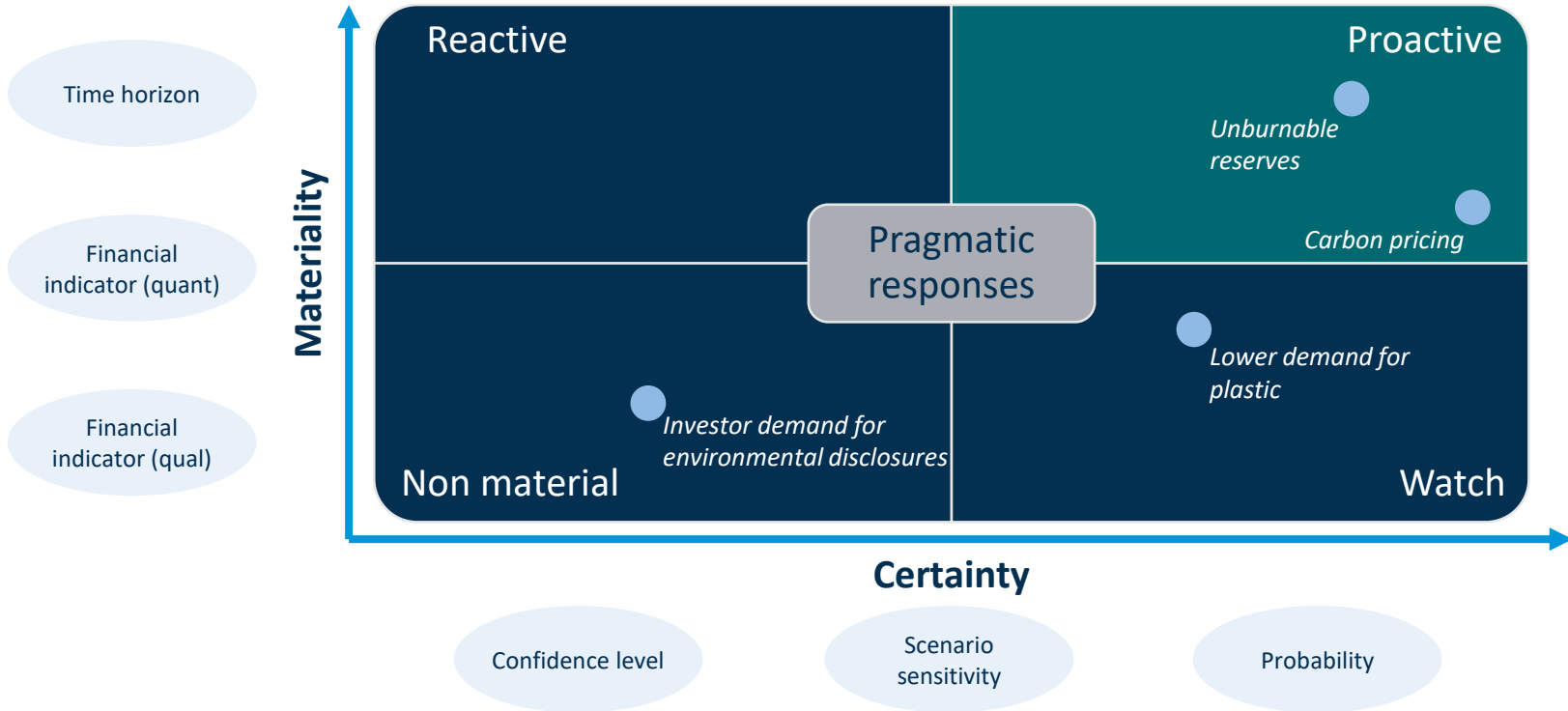
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Investor demand for environmental disclosures	None / qualitative assessment  <i>No parameter available</i>	1  <i>Low, only qualitative assessment possible</i>	3  <i>Medium, qualitative assessment</i>	5  <i>High, qualitative assessment</i>	2  <i>Medium term, 5-20 years</i>	Low  <i>Qualitative assessment</i>

## 2. Example prioritisation decision

The six criteria are grouped into “certainty” and “materiality”, and risks/opportunities in the “proactive” quadrant are prioritised

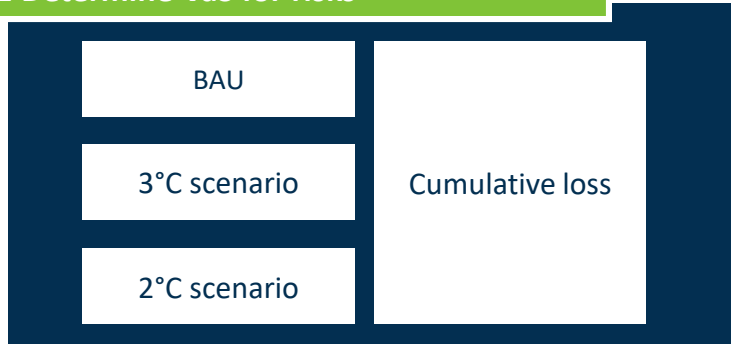


# 3. Quantification

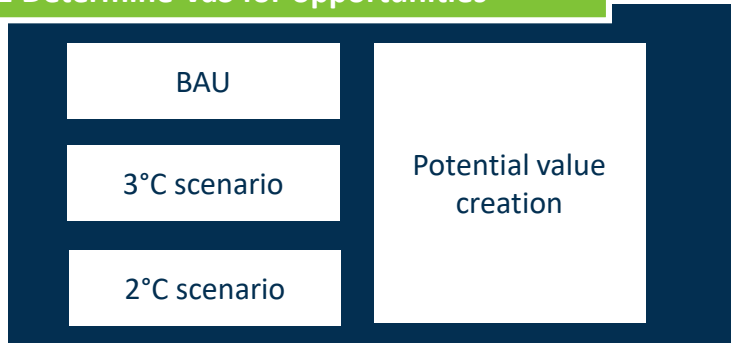
*Determine the value-at-stake (VaS)*



## 3.1 Determine VaS for risks



## 3.2 Determine VaS for opportunities

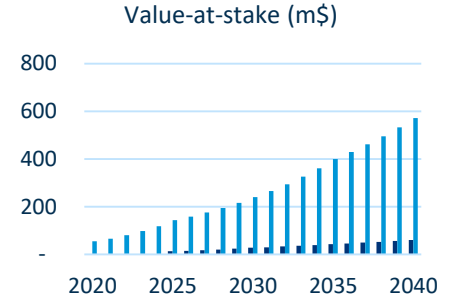
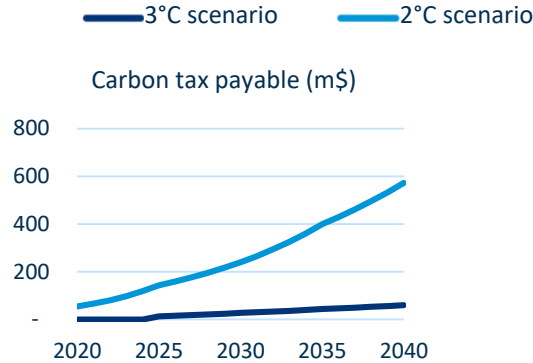
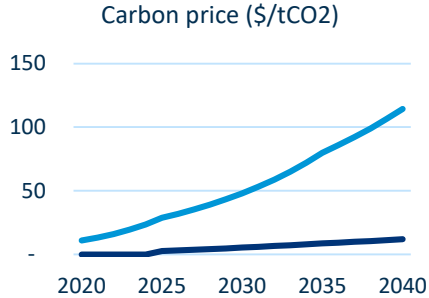


**Aim:**

- Quantify long term financial impact of prioritised risks and opportunities
- Determine the cumulative loss (for risk) or potential value creation (for opportunities) between the “Business-as-Usual” baseline and two pathways developed aligned to climate scenarios

### 3. Example quantification

Assessed risk: higher tax payable due to increased carbon tax rate



#### Projected carbon price

1. Extract Russian carbon price projections from climate scenario database

Source: IIASA, SSP database

- Baseline: SSP2-45, R5.2REF
- Transition: SSP1-26, R5.2REF

#### Resulting impact on value driver (tax payable)

2. Develop calculation for carbon tax impact:  
**Scope 1 emissions \* carbon price**

Source:

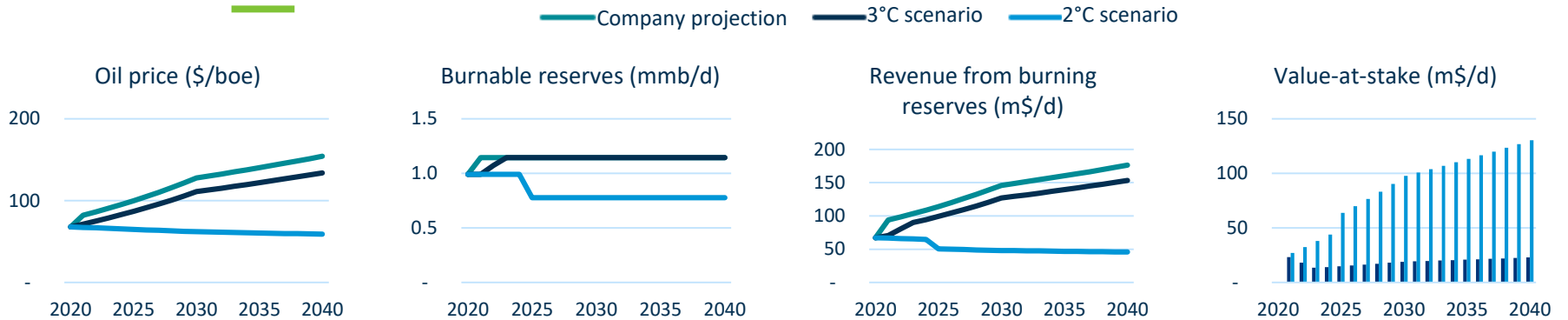
- Calculation: UK Government 2020 consultation on carbon tax report
- Scope 1 emissions: Company reports (assumed 500 tCO<sub>2</sub>)

#### Value-at-stake

3. Calculate difference in impact on tax payable between BAU scenario (no carbon tax) and the two climate scenarios

# 3. Example quantification

Assessed risk: unburnable oil reserves due to low oil price



## Projected oil price

1. Extract oil prices from internal projections and climate scenario database

Source: IEA, WEO scenarios

- Baseline: Current policies
- Transition: Sustainable development

## Burnable reserves

2. Project burnable reserves at different price points

Sources:

- Normally based on companies' internal information on asset breakeven prices
- Displayed illustrative figures based on McKinsey research and Carbon Trust estimates

## Revenue from burning reserves

3. Develop calculation for revenue from reserves:  
**mmb/d reserves \* \$/bbl oil price**

## Value-at-stake

4. Calculate difference in revenue between scenarios and company projection



## Polling

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- *What part of a TCFD disclosure project do you think is the easiest?*
- *What part of a TCFD disclosure project do you think is the most difficult?*
- *What team(s) within your organisation is responsible for TCFD?*
- *Have you already disclosed aligned to TCFD?*
- *If YES, is there an area you plan to expand on in your next iteration of TCFD disclosure?*
- *If NO, what do you see as the main barriers for starting a TCFD project?*
- *If NO, when do you think TCFD will be important for your business?*



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