Russell Picot
HSBC Bank (UK) Pension Scheme

OVERVIEW OF THE TCFD RECOMMENDATIONS
BACKGROUND

G20 Finance Ministers and Central Bank Governors asked the Financial Stability Board (FSB) to review how the financial sector can take account of climate-related issues.

The FSB established the Task Force on Climate-related Financial Disclosures (TCFD) to develop recommendations for more effective climate-related disclosures that:

- could “promote more informed investment, credit, and insurance underwriting decisions” and,
- in turn, “would enable stakeholders to understand better the concentrations of carbon-related assets in the financial sector and the financial system’s exposures to climate-related risks.”

The Task Force’s 31 international members, led by Michael Bloomberg, include providers of capital, insurers, large non-financial companies, accounting and consulting firms, and credit rating agencies.
The Task Force on Climate-related Financial Disclosures published its recommendations in June 2017.

The recommendations help address climate-related disclosure challenges faced by:

- **Issuers** who generally have an obligation under existing law to disclose material information, but lack a coherent framework to do so for climate-related information, and

- **Investors, lenders, and insurers** who need decision-useful, climate-related information to make informed capital allocation and financial decisions
FOCUS ON FINANCIAL IMPACT

The Task Force focused on financial impact of climate-related risks and opportunities on an organization, rather than the impact of an organization on the environment.
The Task Force developed **four widely-adoptable recommendations** on climate-related financial disclosures that are applicable to organizations across sectors and jurisdictions.

The recommendations are structured around four thematic areas that represent core elements of how organizations operate:

**Governance**
The organization’s governance around climate-related risks and opportunities

**Strategy**
The actual and potential impacts of climate-related risks and opportunities on the organization’s businesses, strategy, and financial planning

**Risk Management**
The processes used by the organization to identify, assess, and manage climate-related risks

**Metrics and Targets**
The metrics and targets used to assess and manage relevant climate-related risks and opportunities
DISCLOSURE RECOMMENDATIONS (CONTINUED)

The four recommendations are supported by specific disclosures organizations should include in financial filings or other reports to provide decision-useful information to investors and others.

<table>
<thead>
<tr>
<th>Governance</th>
<th>Strategy</th>
<th>Risk Management</th>
<th>Metrics and Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disclose the organization’s governance around climate-related risks and opportunities.</td>
<td>Disclose the actual and potential impacts of climate-related risks and opportunities on the organization’s businesses, strategy, and financial planning.</td>
<td>Disclose how the organization identifies, assesses, and manages climate-related risks.</td>
<td>Disclose the metrics used by the organization to assess and manage relevant climate-related risks and opportunities.</td>
</tr>
</tbody>
</table>

Recommended Disclosures

A. Describe the board’s oversight of climate-related risks and opportunities.

B. Describe management’s role in assessing and managing climate-related risks and opportunities.

C. Describe the potential impact of different scenarios, including a 2°C scenario, on the organization’s businesses, strategy, and financial planning.

Recommended Disclosures

A. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.

B. Describe the impact of climate-related risks and opportunities on the organization’s businesses, strategy, and financial planning.

C. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization’s overall risk management.

Recommended Disclosures

A. Describe the organization’s processes for identifying and assessing climate-related risks.

B. Describe the organization’s processes for managing climate-related risks.

C. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

B. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.

C. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.
SUPPLEMENTAL GUIDANCE

In addition to guidance for all sectors, the Task Force developed supplemental guidance for financial and non-financial organizations to assist those organizations in implementing the recommended disclosures.

**Financial Industries**
- Banks
- Insurance Companies
- Asset Managers
- Asset Owners

*The financial sector was organized into four major industries largely based on activities performed. The activities are lending (banks), underwriting (insurance companies), asset management (asset managers), and investing (asset owners).*

**Non-Financial Groups**
- Energy
- Transportation
- Materials and Buildings
- Agriculture, Food, and Forest Products

*The non-financial groups identified by the Task account for the largest proportion of GHG emissions, energy usage, and water usage.*
KEY ELEMENTS OF DISCLOSURE RECOMMENDATIONS

Location of Disclosure

- The Task Force recommends that organizations provide climate-related financial disclosures in their mainstream (i.e., public) annual financial filings.

- The recommendations were developed to apply broadly across sectors and jurisdictions and do not supersede national disclosure requirements for financial filings.

- If certain elements are incompatible with national disclosure requirements, the Task Force encourages organizations to disclose those elements in other official company reports.

- Organizations in the four non-financial groups that have more than one billion U.S. dollar equivalent (USDE) in annual revenue should consider disclosing strategy and metrics and targets information in other reports when the information is not deemed material and not included in financial filings.

Financial Filings
Required annual reporting packages in which organizations deliver their audited financial results under the laws of the jurisdictions in which they operate.

Other Official Company Reports
Should be issued at least annually, widely distributed and available to investors and others, and subject to internal governance processes that are the same or substantially similar to those used for financial reporting.
KEY ELEMENTS OF DISCLOSURE RECOMMENDATIONS (CONTINUED)

Principle of Materiality
• The disclosures related to the Strategy and Metrics and Targets recommendations are subject to an assessment of materiality.

• The disclosures related to the Governance and Risk Management recommendations should be provided because many investors want insight into the governance and risk management context in which organizations’ financial and operating results are achieved.

Scenario Analysis
• The Task Force encourages forward-looking information through scenario analysis—a useful tool for considering and enhancing resiliency and flexibility of strategic plans.

• Many investors want to understand how resilient organizations’ strategies are to climate-related risks.

• Recommended disclosure (c) under Strategy and the related guidance asks organizations to describe the resilience of their strategies, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.

2°C Scenario
Provides a common reference point that is generally aligned with the objectives of the Paris Agreement.

Scenario Analysis Threshold
The Task Force established a threshold for organizations that should consider conducting more robust scenario analysis to assess the resilience of their strategies (those in the four non-financial groups with more than 1B USDE in annual revenue).
ILLUSTRATIVE IMPLEMENTATION PATH

The TCFD expects that reporting of climate-related risks and opportunities will evolve over time as organizations, investors, and others contribute to the quality and consistency of the information disclosed.
BENEFITS OF IMPLEMENTING THE RECOMMENDATIONS

Some of the potential benefits associated with implementing the Task Force’s recommendations include:

• easier or better access to capital by increasing investors’ and lenders’ confidence that the company’s climate-related risks are appropriately assessed and managed

• more effectively meeting existing disclosure requirements to report material information in financial filings

• increased awareness and understanding of climate-related risks and opportunities within the company resulting in better risk management and more informed strategic planning

• proactively addressing investors’ demand for climate-related information in a framework that investors are increasingly asking for, which could ultimately reduce the number of climate-related information requests received
INITIAL STEPS FOR IMPLEMENTATION

Organizations can begin to implement the recommendations by:

• Considering to what extent existing disclosures already align with the TCFD recommendations

• Reviewing processes for identifying and assessing risks and opportunities and whether they account for the unique nature of climate-related issues

• Identifying areas of enhancement in disclosures to more closely align with TCFD recommendations

• Considering relevant scenarios and how those scenarios could affect the organization’s strategy

• Evaluating existing climate-related risk indicators to select key metrics and targets

• Assessing whether new or changed reporting systems and controls are necessary to identify and report metrics on climate-related risks
TIMELINE FOR THE TASK FORCE’S WORK

<table>
<thead>
<tr>
<th>Fourth Quarter 2016</th>
<th>First Quarter 2017</th>
<th>Second Quarter 2017</th>
<th>Third Quarter 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 14: Issuance of report for public consultation</td>
<td>Late Feb/Early Mar: Update and provide high level summary of public consultation comments to FSB</td>
<td>Mar 17-18: Meeting of G20 Ministers and Governors</td>
<td>Jul 7-8: FSB report presentation at G20 Summit</td>
</tr>
</tbody>
</table>
# APPENDIX: TASK FORCE MEMBERS

## Chair and Vice-Chairs

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Bloomberg</td>
<td>Chairman, Founder and President, Bloomberg L.P.</td>
</tr>
<tr>
<td>Yeo Lian Sim</td>
<td>Vice-Chair, Special Adviser, Singapore Exchange</td>
</tr>
<tr>
<td>Graeme Pitkethly</td>
<td>Vice-Chair, Chief Financial Officer, Unilever</td>
</tr>
</tbody>
</table>

## Members

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Koushik Chatterjee</td>
<td>Group Executive Director, Finance and Corporate Tata Group</td>
</tr>
<tr>
<td>Lillana Franco</td>
<td>Director, Accounting Organization and Methods Air Liquide Group</td>
</tr>
<tr>
<td>Neil Hawkins</td>
<td>Corporate Vice President and Chief Sustainability Officer, The Dow Chemical Company</td>
</tr>
<tr>
<td>Diane Larsen</td>
<td>Audit Partner, Global Professional Practice EY</td>
</tr>
<tr>
<td>Mark Lewis</td>
<td>Managing Director, Head of Sustainable Investing Canada Pension Plan Investment Board</td>
</tr>
<tr>
<td>Ruixia Liu</td>
<td>General Manager, Risk Department Industrial and Commercial Bank of China</td>
</tr>
<tr>
<td>Martin Skancke</td>
<td>Chair, Risk Committee Storebrand</td>
</tr>
<tr>
<td>Andreas Spiegel</td>
<td>Head Group Sustainability Risk Swiss Re</td>
</tr>
<tr>
<td>Steve Waygood</td>
<td>Chief Responsible Investment Officer Aviva Investors</td>
</tr>
<tr>
<td>Fiona Wild</td>
<td>Vice President, Sustainability and Climate Change BHP Billiton</td>
</tr>
<tr>
<td>Michael Wilkins</td>
<td>Managing Director, Environment &amp; Climate Risk Research S&amp;P Global Ratings</td>
</tr>
<tr>
<td>Jon Williams</td>
<td>Partner, Sustainability and Climate Change PwC</td>
</tr>
<tr>
<td>Deborah Winshel</td>
<td>Managing Director, Global Head of Impact Investing BlackRock</td>
</tr>
<tr>
<td>Jane Ambachtsheer</td>
<td>Partner, Chair – Responsible Investment Mercer</td>
</tr>
<tr>
<td>Matt Arnold</td>
<td>Managing Director and Global Head of Sustainable Finance JPMorgan Chase &amp; Co.</td>
</tr>
<tr>
<td>Wim Bartels</td>
<td>Partner Corporate Reporting KPMG</td>
</tr>
<tr>
<td>Bruno Bertocci</td>
<td>Managing Director, Head of Sustainable Investors UBS Asset Management</td>
</tr>
<tr>
<td>David Blood</td>
<td>Senior Partner Generation Investment Management</td>
</tr>
<tr>
<td>Richard Cantor</td>
<td>Chief Risk Officer Moody’s Chief Credit Officer Moody’s Investor Service</td>
</tr>
<tr>
<td>Eloy Lindeijer</td>
<td>Chief, Investment Management PGGM</td>
</tr>
<tr>
<td>Stephanie Leaist</td>
<td>Managing Director, Head of Sustainable Investing Canada Pension Plan Investment Board</td>
</tr>
</tbody>
</table>

## Special Adviser

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russell Picot</td>
<td>Chair, Audit and Risk Committee, LifeSight Board Chair, HSBC Bank (UK) Pension Scheme Trustee Former Group Chief Accounting Officer HSBC</td>
</tr>
</tbody>
</table>
## APPENDIX: CLIMATE-RELATED RISKS AND OPPORTUNITIES

### Type of Risks

<table>
<thead>
<tr>
<th>Type</th>
<th>Climate-Related Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy and Legal</strong></td>
<td>- Increased pricing of GHG emissions</td>
</tr>
<tr>
<td></td>
<td>- Enhanced emissions-reporting obligations</td>
</tr>
<tr>
<td></td>
<td>- Mandates on and regulation of existing products and services</td>
</tr>
<tr>
<td></td>
<td>- Exposure to litigation</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>- Substitution of existing products and services with lower emissions options</td>
</tr>
<tr>
<td></td>
<td>- Unsuccessful investment in new technologies</td>
</tr>
<tr>
<td></td>
<td>- Upfront costs to transition to lower emissions technology</td>
</tr>
<tr>
<td><strong>Markets</strong></td>
<td>- Changing customer behavior</td>
</tr>
<tr>
<td></td>
<td>- Uncertainty in market signals</td>
</tr>
<tr>
<td></td>
<td>- Increased cost of raw materials</td>
</tr>
<tr>
<td><strong>Reputation</strong></td>
<td>- Shift in consumer preferences</td>
</tr>
<tr>
<td></td>
<td>- Stigmatization of sector</td>
</tr>
<tr>
<td></td>
<td>- Increased stakeholder concern or negative stakeholder feedback</td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td>- Increased severity of extreme weather events such as cyclones and floods</td>
</tr>
<tr>
<td><strong>Chronic</strong></td>
<td>- Changes in precipitation patterns and extreme weather variability</td>
</tr>
<tr>
<td></td>
<td>- Rising mean temperatures</td>
</tr>
<tr>
<td></td>
<td>- Rising sea levels</td>
</tr>
</tbody>
</table>

### Type of Opportunities

<table>
<thead>
<tr>
<th>Type</th>
<th>Climate-Related Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resource Efficiency</strong></td>
<td>- Use of more efficient modes of transport</td>
</tr>
<tr>
<td></td>
<td>- More efficient production and distribution processes</td>
</tr>
<tr>
<td></td>
<td>- Use of recycling</td>
</tr>
<tr>
<td></td>
<td>- More efficient buildings</td>
</tr>
<tr>
<td></td>
<td>- Reduced water usage and consumption</td>
</tr>
<tr>
<td><strong>Energy Source</strong></td>
<td>- Lower-emission sources of energy</td>
</tr>
<tr>
<td></td>
<td>- Supportive policy incentives</td>
</tr>
<tr>
<td></td>
<td>- Emergence of new technologies</td>
</tr>
<tr>
<td></td>
<td>- Participating in carbon market</td>
</tr>
<tr>
<td></td>
<td>- Energy security and shift towards decentralization</td>
</tr>
<tr>
<td><strong>Products and Services</strong></td>
<td>- Develop and/or expand low emission goods and services</td>
</tr>
<tr>
<td></td>
<td>- Climate adaptation and insurance risk solutions</td>
</tr>
<tr>
<td></td>
<td>- R&amp;D and innovation</td>
</tr>
<tr>
<td></td>
<td>- Diversify business activities</td>
</tr>
<tr>
<td></td>
<td>- Shifting consumer preferences</td>
</tr>
<tr>
<td><strong>Markets</strong></td>
<td>- New markets</td>
</tr>
<tr>
<td></td>
<td>- Public-sector incentives</td>
</tr>
<tr>
<td></td>
<td>- Community needs and initiatives</td>
</tr>
<tr>
<td></td>
<td>- Development banks</td>
</tr>
<tr>
<td><strong>Resilience</strong></td>
<td>- Participate in renewable energy programs and adopt energy-efficiency measures</td>
</tr>
<tr>
<td></td>
<td>- Resource substitutes/diversification</td>
</tr>
<tr>
<td></td>
<td>- New assets and locations needing insurance coverage</td>
</tr>
</tbody>
</table>
APPENDIX: DEVELOPMENT OF RECOMMENDATIONS

In developing its recommendations, the Task Force:

- Considered the **challenges for preparers** of disclosures as well as the **benefits** of such disclosures to investors, lenders, and insurance underwriters
- Engaged in **significant outreach and consultation** with users and preparers of disclosures and other stakeholders, including two public consultations, individual discussions and focus groups with industry, webinars, and outreach events in multiple countries
- Drew from existing climate-related disclosure regimes and sought to develop a decision-useful framework to **align and supplement existing disclosure frameworks**
- Created **guidance** for all sectors and supplemental guidance for specific sectors

The Task Force expects that **reporting of climate-related information will evolve** over time as organizations, investors, and others contribute to the quality and consistency of the information disclosed.
Carlos Sanchez, Executive Director
Capital, Science & Policy Practice
Willis Towers Watson

PHYSICAL RISK REPORTING: UNLOCKING CLIMATE RESILIENCE FINANCE
EXECUTIVE SUMMARY

KEY MESSAGES

1. The risk analytics solutions needed already exist – uncertainty can be handled
2. It is all about incentives for disclosure
3. Climate risk language should be translated into financial risk language
4. The time for action is now
EXPOSURE TO CLIMATE RISKS
ASSESSING AND DEFINING CLIMATE RISK

Growing awareness and concern regarding climate risks is leading to initial attempts to measure exposure levels:

- LSE | Value-at-Risk of 1.8% of total financial assets, i.e. $2.5tn
- The Economist | $4.2tn of financial assets exposed to climate risks

CLIMATE RISKS

- Transition: Technological, policy and reputational risks
- Liability: Legal duty to manage transition and physical risks
- Physical: Exposure of real assets to climate risks

Opportunity
PHYSICAL CLIMATE RISKS AND THE FINANCIAL INDUSTRY
MEASURES OF EXPOSURE TO PHYSICAL CLIMATE RISKS

The Levels of Risk

1. REAL ASSETS IN SUPPLY CHAIN
2. SOURCES OF RAW MATERIALS
3. GLOBAL TRANSPORTATION SYSTEMS

- Manufacturing
- Distribution
- Raw materials
- Transportation
PHYSICAL CLIMATE RISKS AND THE FINANCIAL INDUSTRY
MEASURES OF EXPOSURE TO PHYSICAL CLIMATE RISKS

The Dimensions of Risk

- **Physical Risks**
  - Direct
    - Real Assets
    - Regulatory
    - Cost Volatility
    - Input
      - Quality
      - Availability
  - Indirect
    - Market
      - Labour Force
      - Energy/Water
      - Transport
    - Public Infrastructure

PHYSICAL CLIMATE RISKS AND THE FINANCIAL INDUSTRY
MEASURES OF EXPOSURE TO PHYSICAL CLIMATE RISKS

The Measure of the Market

Source: Swiss Re Economic Research & Consulting and Cat Perils
Capital and Mandate Flows

- Exposure to physical climate risks are transmitted throughout the investment chain
- Different players have different perceptions, drivers and incentives
- The lack of climate risk standards results in a market failure in the form of an inefficient allocation of capital for the protection of assets from physical climate risks
- Reporting on climate risks is mostly tactical, preventing innovation in subsequent capitalisation processes
Capital and mandate allocated using financial and non-financial criteria

Capital

Mandate

Primary focus on short term financial reporting

- Tactical Mandate Alignment
- No consideration of climate risks in asset allocation strategies

Capital

Mandate

Asset Owners are not satisfied with the quality of reporting on climate risks

Tactical reporting - climate risks within ESG

Strategic financial reporting

- Audited reports
- Standardised structure

- Limited verification
- Tailored reports

No innovation

Informing next cycle

Bonds  Equity  Alternatives
The difficulty to frame physical climate risks results in a fragmented understanding of such risks.

Awareness and concern regarding physical climate risks, if aggregated, becomes a critical risk.
The Resiliency of the Insurance Industry


- Tipping point in 1992: Hurricane Andrew represented the biggest single insured loss the industry has ever faced.
- As a result, regulation was passed mandating capital provisions equal to 1-in-200 year insured loss.
- A climate resilient industry coped with the events of 2011, the second-worst year on record for natural disasters, without any major systemic threats.
- Understanding the key industry metrics, i.e. Annual Average Loss and 1-in-100 exposure, is paramount to handle climate risk.

Example of Capital Requirements

<table>
<thead>
<tr>
<th>INSURANCE RISK STRESS TESTS: SINGLE EVENT LOSSES WITH A 200-YEAR RETURN PERIOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Catastrophes</td>
</tr>
<tr>
<td>Atlantic hurricane</td>
</tr>
<tr>
<td>Californian earthquake</td>
</tr>
<tr>
<td>European windstorm</td>
</tr>
<tr>
<td>Japanese earthquake</td>
</tr>
<tr>
<td>Life insurance</td>
</tr>
<tr>
<td>Lethal pandemic</td>
</tr>
</tbody>
</table>
THE OVERARCHING FRAMEWORK
FROM METHODOLOGY TO METRICS

- Methodologies
- Metrics
- Models
- Markets

Exceedance Probability (EP) Curve - Occurrence

- Hurricane Andrew, 1992
- Hurricane Harvey, 2017
FROM UNCERTAINTY TO RISK
THE RISK PRICING METHODOLOGY BY THE INSURANCE INDUSTRY

1. Data collection

- Rooftop
- Address
- Street
- Postcode
- Town / City
- Not geocoded

2. Risk Mapping

3. Results Generation

   - Over-insured
   - Sufficient New Limit USD 40m
   - Deductible

   Remodelled analysis using better quality data and taking into account risk mitigation measures

4. Benefit Visualization

   - Premium
   - Volatility
   - Retained

   Option A | Option B
THE FSB TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES
A FIRST STEP TOWARDS CLIMATE RESILIENT FINANCE

1. TCFD should be interpreted as a source of opportunity in connection with a better understanding of the impacts that climate change has on economic activity

2. Developing a benchmark for corporate climate resilience will trigger climate resilience risk adjusted investment strategies, i.e. passive resilience index investing, PE resilience turnarounds, resilience stewardship, etc.

3. Identifying climate resilience standards will foster the case for governments to invest in resilient infrastructure as the enabling environment for the attraction of foreign direct investment

4. Ultimately, higher demands for transparency, improved data analytics and societal pressure will lead to mandatory disclosure of climate risks
Patrice Impey
Chief Financial Officer and General Manager of Financial Services
City of Vancouver

Climate Change Risk Assessment
MITIGATION
Prevent climate change

ADAPTATION
Prepare for the impacts

Public Transit
Reduced Landfill Waste
District Energy
Building Energy Efficiency

Green Infrastructure
Tree Planting
Water Conservation

Flood Construction Levels
Stormwater Management
Sewer Separation
Heat Alerts

Waste
Stormwater Management
District Energy
Building Energy Efficiency

Reduced Landfill Waste
District Energy
Building Energy Efficiency

Tree Planting
Water Conservation

Flood Construction Levels
Stormwater Management
Sewer Separation
Heat Alerts

Waste
ADAPTATION PLANNING PROCESS

Current Climate Projections → Identify Potential Impacts → Vulnerability and Risk Assessment

Identify High Risk Impacts → Identify Adaptation Actions → Evaluate and Prioritize Actions

Feedback based on implementation experience and climate observations
PROJECTED CLIMATE CHANGE IN VANCOUVER

- Increased rainfall volume and intensity
- Increase in intensity and frequency of extreme events
- Sea Level Rise: 1.0m by 2100
- 2 degrees warmer annually by 2050, more summer heat waves
‘Coastal Cities at Risk’ project ranked Vancouver region as 11th most vulnerable in the world for exposed assets
Flood construction level raised by 1.1m in 2014

Based on 1m sea level rise and a 1:500 year storm surge
EVALUATION OF RESPONSE APPROACHES

<table>
<thead>
<tr>
<th>Response Approaches</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapt</td>
<td>PEOPLE</td>
</tr>
<tr>
<td>Protect</td>
<td>ENVIRONMENT</td>
</tr>
<tr>
<td>Retreat</td>
<td>ECONOMY</td>
</tr>
<tr>
<td></td>
<td>IMPLEMENTATION</td>
</tr>
</tbody>
</table>
## EXAMPLE OF DECISION MAKING MATRIX

<table>
<thead>
<tr>
<th>Measure</th>
<th>Scale</th>
<th>BASELINE</th>
<th>PROTECT Park Dike</th>
<th>PROTECT Road Dike</th>
<th>ADAPT Multiple Tools</th>
<th>RETREAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEOPLE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People displaced temporarily</td>
<td># of people displaced</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“At risk” people impacted</td>
<td>Social Vulnerability Index (SVI) weighted displacement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Park and recreational amenity value</td>
<td>Area affected per event (km²)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss of critical services</td>
<td># of pieces of infrastructure impacted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENVIRONMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk of contaminant release</td>
<td># of sites with potential contaminants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECONOMY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Damage to infrastructure</td>
<td>Value-weighted km of roads impacted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Damage to buildings</td>
<td>$M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss of inventory</td>
<td>$M</td>
<td></td>
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<tr>
<td>Business disruption</td>
<td># of employees working in impacted businesses</td>
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<tr>
<td>Emergency response costs</td>
<td>$M</td>
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THREE OBJECTIVES

1. A better risk adjusted neutral position
   Improve upon a market capitalisation index

2. Climate Change Risk Protection
   Trustee’s Climate Change Risk Policy

3. Improved Company Engagement
   Trustee preference for engagement

Legal & General Future World Fund
A BETTER RISK ADJUSTED NEUTRAL POSITION
THE BALANCED FACTOR INDEX

FTSE All World Index

Value

Low Volatility

Quality

Low Size

FTSE-Russell Value tilt factor

FTSE-Russell Low Volatility tilt factor

FTSE-Russell Quality tilt factor

FTSE-Russell Size tilt factor

Balanced Factor Index
A significant body of academic research has shown that tilting the traditional index with the following four core factors can add value over the long term, but it is difficult to ‘time factors’ over the short term:

- **Value**: Stocks that are “cheap”, i.e. that trade at a discount to fair value using their fundamental metrics.
- **Low Volatility**: Stocks with lower volatility that have outperformed the market on a risk-adjusted basis.
- **Quality**: Stocks with strong, sustainable returns characterised by high profitability and low leverage.
- **Low Size**: Small capitalisation stocks (small caps) that have outperformed large capitalisation stocks.
CLIMATE CHANGE RISK PROTECTION
THE CLIMATE BALANCED FACTOR INDEX

Carbon Reserves
Coal: Pure coal players excluded, others reduced in weight by 75%.
Oil & Gas: Reduce weight by 25% for Oil & Gas producers, Oil equipment, services & distribution. Further reduce exposure to oil and gas producers with higher carbon reserve intensity.

Carbon Emissions
Tilt towards companies with lower emissions on a sector neutral basis.

Green Revenues
Tilt towards companies with greener revenues.

‘Climate Balanced Factor’ Index

Each stock
‘Balanced Factor’ Index
IMPROVED COMPANY ENGAGEMENT
CLIMATE IMPACT PLEDGE

Key Climate Related Sectors
Oil & Gas, Mining, Electric Utilities, Auto, Banks, Insurance and Food Retail
Focus on approx. 90 largest companies

Letter to the Chair
Plans for migration to a 2 degree world

No plans after a year of Engagement
Vote against the re-election of the Chair
Exclusion from the Fund

Improved company engagement
"We expect trustee boards to take account of risks affecting the long-term financial sustainability of the investments."

"Where you think environmental, social and governance (ESG) factors are financially significant, you should take these into account."

"Environmental (including climate change risks), Social and Governance issues should be a material factor in investment decision making."

The Trustee will support ESG organisations or initiatives if it believes that providing such advocacy will be in the long term financial interest of the Scheme members. Where appropriate the Trustee will also engage with its appointed fund managers to do the same.
HSBC BANK (UK) PENSION SCHEME
INTEGRATED ESG

ESG is integrated into all fund management mandates
Annual on-site visits

Trustee adopted a Climate Change Policy
June 2015

Constantly trying to improve
Trustee ESG Steering Group

All Within a Fiduciary Framework
Within the context of its fiduciary responsibility, the Trustee is supportive of the United Nations Framework Convention on Climate Change (UNFCCC) agreement to limit temperature rises to 2 degrees centigrade above pre-industrial levels. In this context, the Trustee:

- Expects its appointed investment managers to be cognisant of climate change risks and opportunities within their investment processes as applied to the assets of the Trustee. Investment managers are further expected to annually report on how these risks and opportunities have been incorporated into the investment process.

- Has a preference for ‘Engagement’ rather than ‘Exclusion’ as a method of incorporating climate change risks into an effective fiduciary framework. However, the Trustees expect investment managers to independently consider whether exclusion or engagement is more appropriate within their investment process.

- Encourages the further development of asset classes that are supportive of obtaining the 2 degree target provided they are all based within the primary fiduciary framework.

- Supports the further development of effective climate change risk metrics to enhance the ability of all stakeholders in the investment chain to assess and minimise such risks.

- Recognises that ‘Climate Change’ will be subject to much further analysis and subsequent policy changes in the coming years. The Trustee is supportive of adopting an evolving policy in order to ensure all relevant developments are captured.

- Is supportive of policy initiatives that, in its opinion, contribute towards achieving the 2 degree target.
THE A4S ESSENTIAL GUIDE SERIES

Organizations today must navigate an increasingly complex, interconnected, and constantly evolving world. Sustainability factors affecting society, the environment, and the wider economy are generating bigger opportunities and risks. Our CFO Leadership Network has produced a set of essential guides to help organizations embed social and environmental considerations into their strategy, culture and processes. They are developed by finance teams for finance teams, but will also be of interest to others seeking to understand current approaches for integrating sustainability into financial practices and decision making.

**LEAD THE WAY**

Developing a strategic response to macro sustainability trends
- Finance Culture*
- Managing Future Uncertainty

**MEASURE WHAT MATTERS**

Developing measurement and valuation tools
- Natural and Social Capital Accounting
- Social and Human Capital Accounting

**TRANSFORM YOUR DECISIONS**

Integrating material sustainability factors into decision making
- Strategic Planning, Budgeting and Forecasting*
- Integrated Management Reporting*
- Capex

**ACCESS FINANCE**

Engaging with finance providers on the drivers of sustainable value
- Enhancing Investor Engagement
- Debt Finance*

* Available soon

Download from www.accountingforsustainability.org
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accountingforsustainability@royal.gsx.gov.uk
www.accountingforsustainability.org