

調適管理應用與 CSR、CDP、DJSI 結合介紹



MEMBER OF
**Dow Jones
Sustainability Indices**
In Collaboration with RobecoSAM



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GRI – 重大議題與管理方針

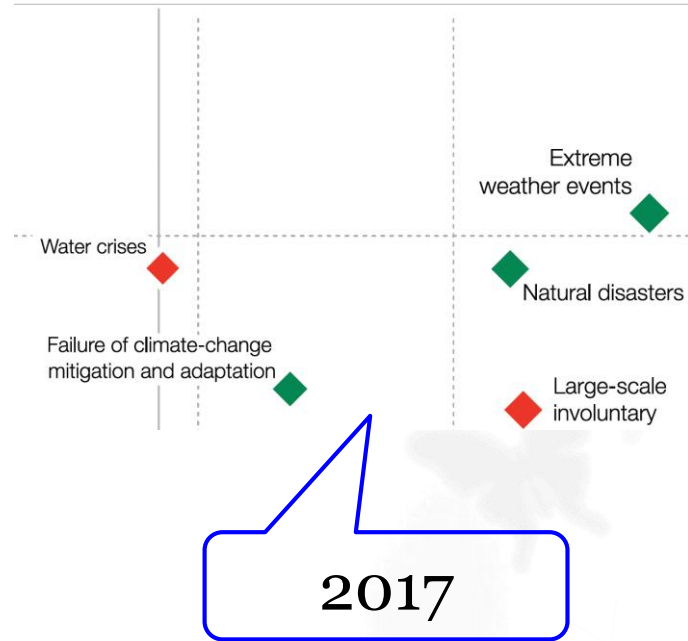
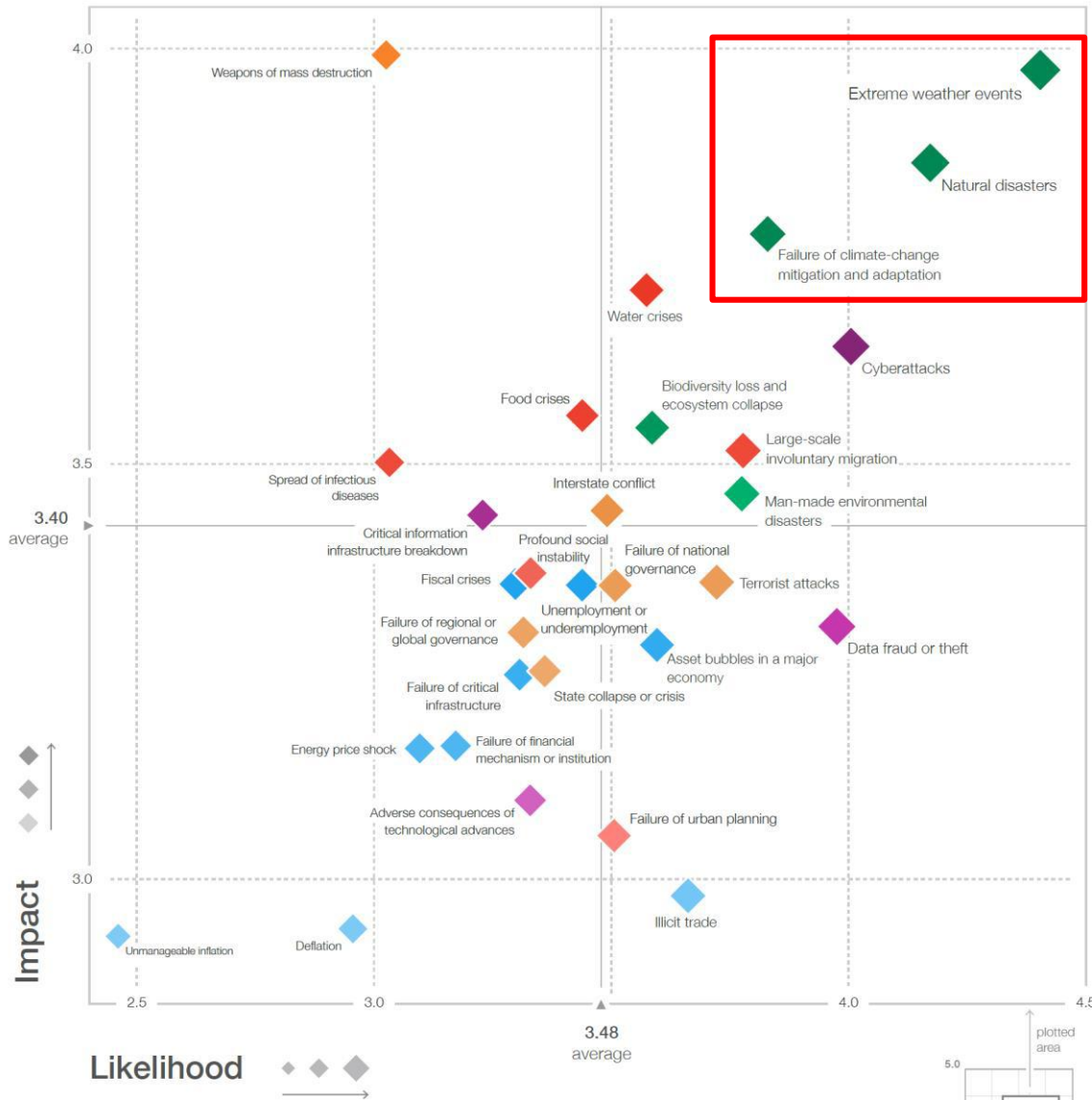
CDP – 氣候變遷該如何治理

DJSI – 國際投資者看的是什麼

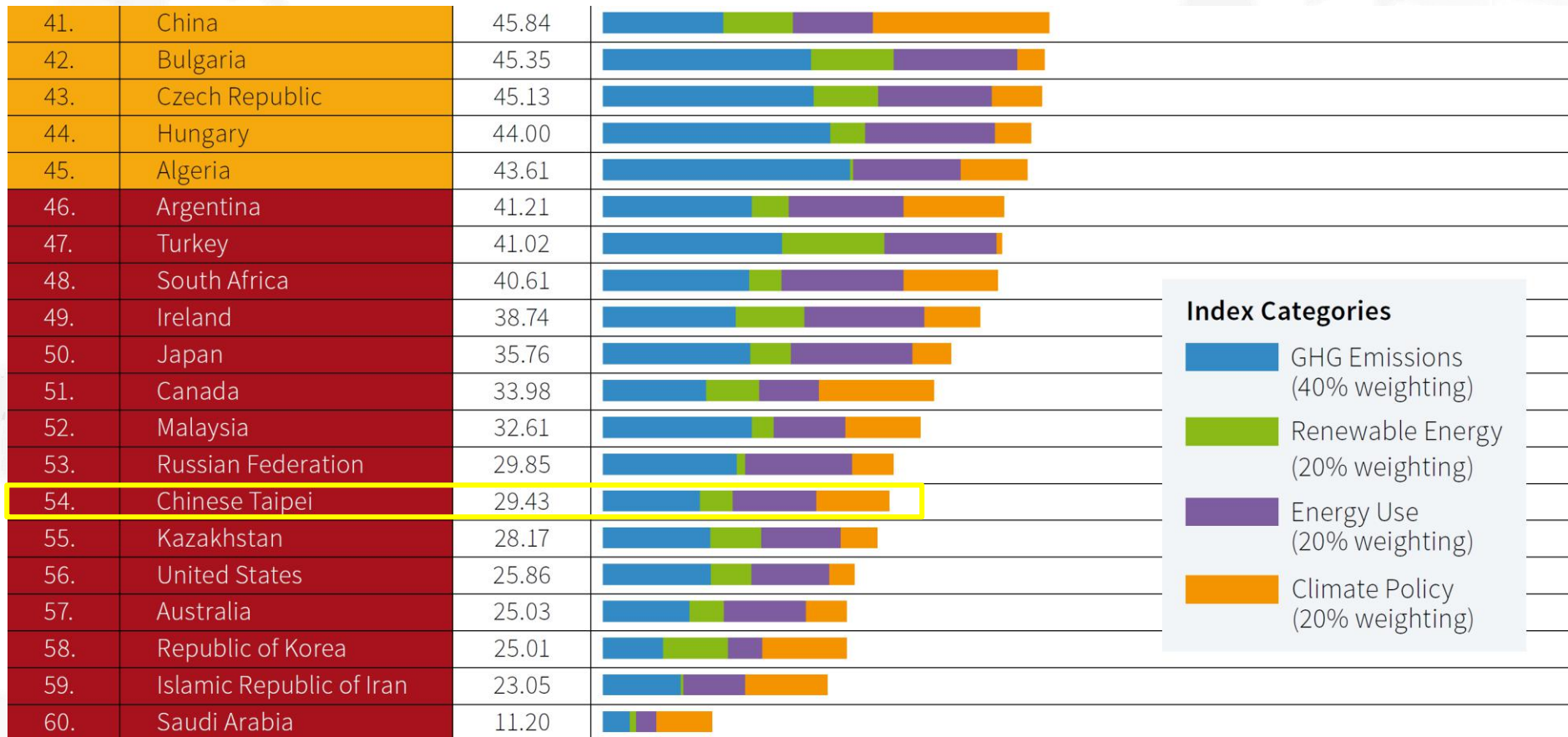
TCFD – 風險與機會的財務連結

前言

2018 全球三大風險



臺灣氣候變遷績效指數全球倒數第七



* None of the countries achieved positions one to three. No country is doing enough to prevent dangerous climate change. ** rounded

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臺灣氣候變遷風險指數全球第七

Ranking 2016 (2015)	Country	CRI score	Death toll	Deaths per 100 000 inhabitants	Absolute losses in million US\$ (PPP)	Losses per unit GDP in %	Human Development Index 2015 ¹²
1 (40)	Haiti	2.33	613	5.65	3 332.72	17.224	163
2 (14)	Zimbabwe	7.33	246	1.70	1 205.15	3.721	154
3 (41)	Fiji	10.17	47	5.38	1 076.31	13.144	91
4 (98)	Sri Lanka	11.50	99	0.47	1 623.16	0.621	73
5 (29)	Vietnam	15.33	161	1.17	4 037.70	0.678	115
6 (4)	India	18.33	2 119	0.16	21 482.79	0.247	131
7 (51)	Chinese Taipei	18.50	103	0.44	1 978.55	0.175	Not included
8 (18)	Former Yugoslav Republic of Macedonia	19.00	22	1.06	207.93	0.678	82
9 (37)	Bolivia	19.33	26	0.24	1 051.22	1.334	118
10 (21)	United States	23.17	267	0.08	47 395.51	0.255	10

氣候變遷風險評估的演進

世代	問題	風險評估	方法學	情境要求
1988 ~ 1992	氣候變遷是問題嗎？	確認範圍 風險鑑別	敏感度分析	主要氣候變數的 增量情境
1988 ~ 2001	未管理的氣候變遷 會有什麼衝擊？	風險分析	發展大量分析方法 衝擊分析	全球和區域範圍 內多個變數的氣 候模型情境
1995 ~ 2007	如何有效地 適應氣候變遷？	調適出現 風險評價	納入減量 風險與 脆弱度評估	多變數模型 整合情境
2001 ~ 今	哪種調適方式 最為有效？	風險處置	調適+減量 風險管理 進行調適	氣候與其他驅動 力的動態情境
2007 ~ 今	看到哪些效益？	考量利害關係人 實施與監測	實施、監測 與檢視	透過觀測與學習 的進階情境

企業執行調適的效益

- ▣ 提升營運與競爭優勢
 - ◆ 提升整體效率並降低營運成本
 - ◆ 協助企業做長期的風險管理
- ▣ 保護價值鏈
 - ◆ 確保價值鏈不被氣候變遷影響到企業的營運
- ▣ 建立企業品牌
 - ◆ 協助社會進行調適有利於企業品牌建立
- ▣ 新的商業機會
 - ◆ 企業驅動新的科技研發與創新服務解決氣候變遷，可望為企業帶來新的商業機會。

Avoid costs,
manage
liabilities,
build
resilience

Access new
financing
streams

Grow market
share, create
wealth in
communities

Build
corporate
reputation,
corporate
citizenship

調適可能遇到的阻礙

資訊落差與風險不確定性：

- 缺乏對風險的意識
- 難以獲得相關數據
- 自然環境的不確定性
- 缺乏指引或方法學

政策法規與社會文化：

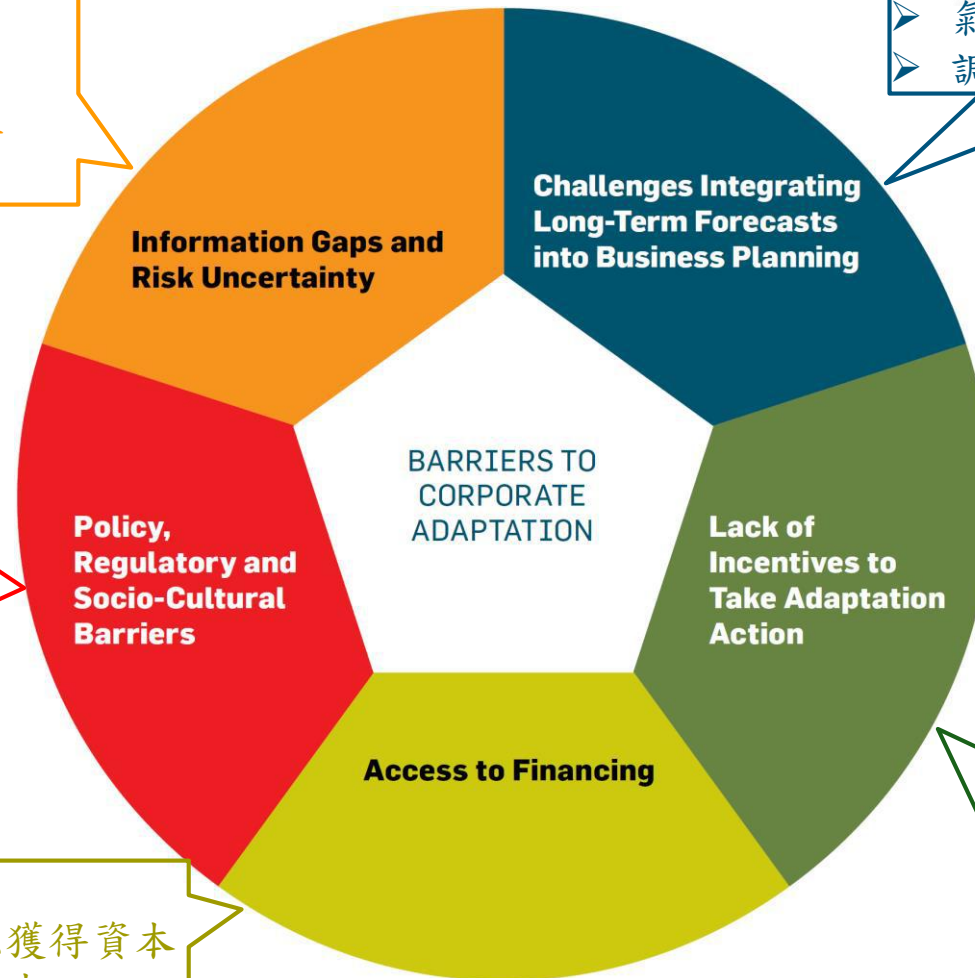
- 政策與法規的矛盾
- 社會文化不鼓勵調適

資金獲得具有難度：

- 長期的韌性計畫難以獲得資本
- 中小企業難以獲得資本
- 氣候融資的不確定性

企業長期規劃的整合挑戰：

- 氣候變遷是長期的風險
- 調適效益被認為太遙遠



缺乏調適行動的獎勵：

- 難以量測與量化企業調適的效益
- 缺乏獎勵措施
- 缺乏投資公共建設的獎勵

從 GRI、CDP 與 DJSI 看風險管理與調適



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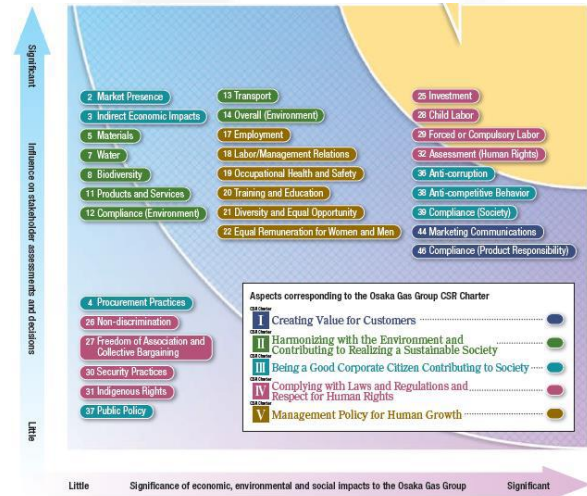
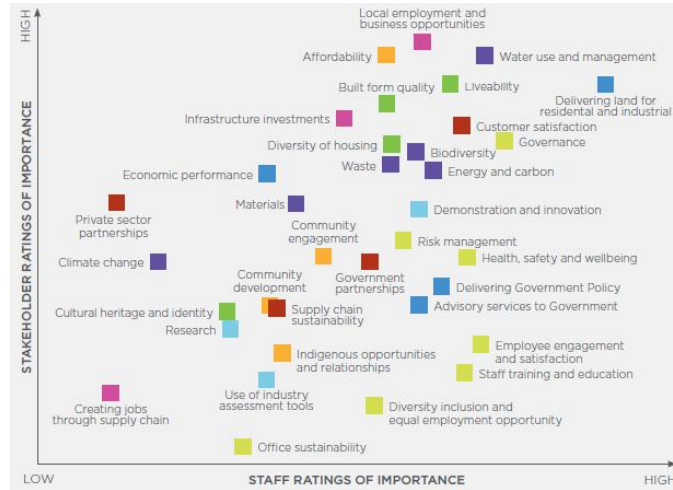
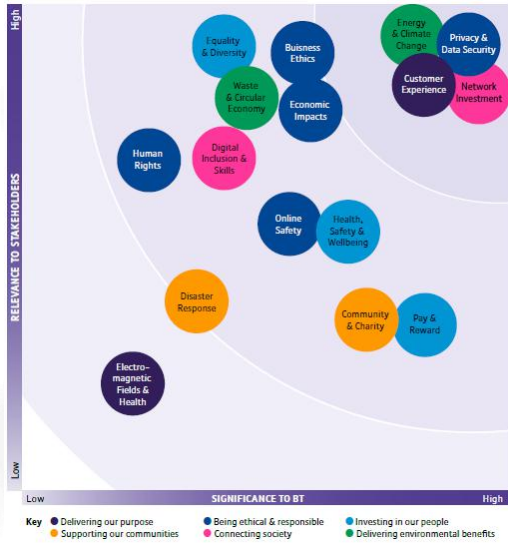
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RI - 重大議題與管理方針

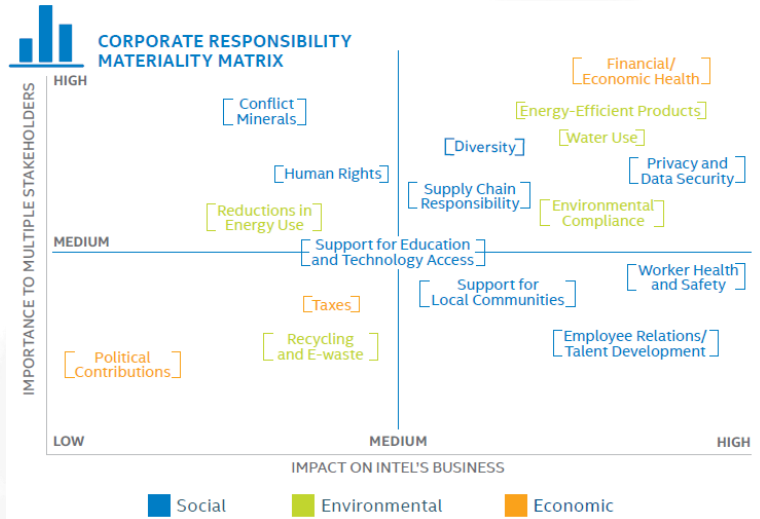
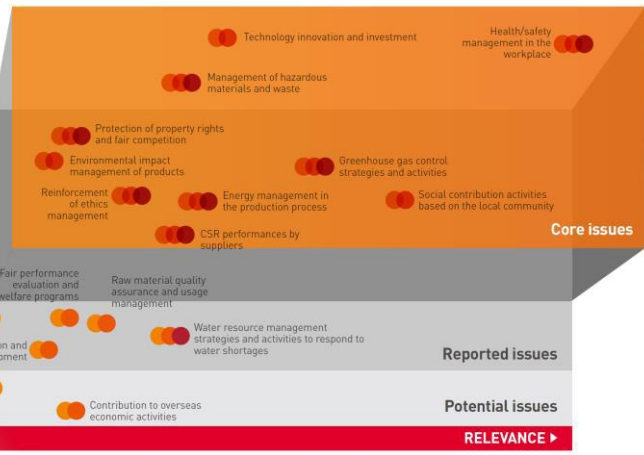
為何報告書需要作重大性分析



Potential Probability¹⁾

● High ● Medium ● Low

¹⁾ Considering the results of the 2015 CSR audit, EICC Code of Conduct, customer needs, and exposure to media, we are managing high-probability issues.



針對重大議題的管理方針要求

本準則包括管理方針揭露與特定主題揭露。這些準則如下所示：

- 報導管理方針的一般**要求**
- 揭露項目 103-1 **解釋重大主題及其邊界**
- 揭露項目 103-2 **管理方針及其要素**
- 揭露項目 103-3 **管理方針的評估**



鑑別重大議題可能
帶來之風險與機會

報導管理方針之一般要求

報導要求

- 1.1 如果管理方針揭露內容結合一群的重大主題，報導組織應說明每一個揭露項目所涵蓋之主題。
- 1.2 若對於重大主題沒有管理方針，報導組織應描述：
 - 1.2.1 **任何實施管理方針之計畫**；或
 - 1.2.2 **缺少管理方針的理由**。

釐清重大議題與邊界進行價值鏈風險管理

解釋重大主題及其邊界

報導要求

針對每一個重大主題，報導組織應報告下列資訊：

- a. 解釋該主題的重大原因。
- b. 描述該重大主題的邊界，包括：
 - i. 衝擊範圍；
 - ii. 組織與此衝擊的涉入程度。例如：組織是否直接造成此衝擊、或促成衝擊、或透過其商業關係與此衝擊有直接關聯。
- c. 任何與該主題邊界相關之特定限制。

同時管理組織與
上中下游之風險

重大議題的價值鏈邊界範例 (BMW)

Research and development



Supply chain



Production



Logistics and transport



Sales and utilisation



Disposal and recycling



Main activities

Development of innovative, fascinating cars, motorcycles and services

- Vehicle design
- Series development
- Production planning

Global cooperation with suppliers to create

- Modules/systems
- Components
- Parts
- Raw materials

Manufacturing of cars and motorcycles by a highly expert and diverse workforce

- Engine construction
- Bodywork
- Paintwork
- Assembly
- Quality control

Securing customer-oriented transport logistics in the network of

- Suppliers
 - Plants
 - Dealerships
- worldwide through the seamless combination of various modes of transport

Range of premium products and services for individual mobility through

- Coordination of a worldwide dealership/repair shop network
- Implementation of a coordinated and target-group-oriented marketing mix
- Provision of financial services

Recovery and dismantling of vehicles for

- Reuse
- Recycling and disposal of vehicle components and materials

Areas of action

- Environmentally friendly product design
- Design for recycling
- Development of more efficient and alternative drivetrains (Efficient Dynamics strategy)
- Planning and development of new mobility services
- Connected drive, digital networking
- Life cycle engineering

- Implementation of environmental and social standards in the supply chain
- Promotion of transparency and resource efficiency in the supply chain
- Purchase of raw materials from environmentally and socially friendly sources
- Purchase of renewable raw materials and materials with sustainable characteristics, e.g. secondary aluminium

- Reduction in resource consumption (energy, water, waste)
- Reduction in environmentally damaging waste water and emissions
- Use of recycling material
- Promotion of lifelong learning and the development of key skills among employees
- Promotion of diversity within the company
- Creation of a working environment that fosters long-term health and high performance

- Production in the sales markets
- Increase in the share of modes of transport with low emissions
- Optimisation of capacity utilisation of modes of transport

- Promotion of sustainable mobility behaviour patterns based on
- Information (e.g. vehicle fuel consumption data) and training in fuel-efficient driving
- Connected drive
- Mobility services in the area of electromobility, e.g. 360° ELECTRIC
- Car-sharing products (DriveNow)
- Mobility assistance services
- Mobility services to promote intermodal mobility

- Expansion and management of a network for vehicle recovery and recycling
- Research on recycling and second life use of components (e.g. carbon-fibre-reinforced plastic and batteries)

重大議題的管理方針要素

管理方針及其要素

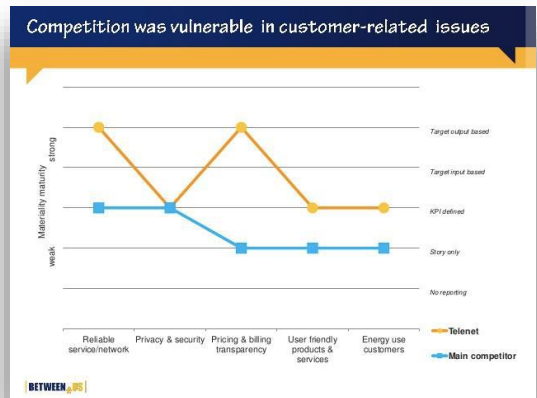
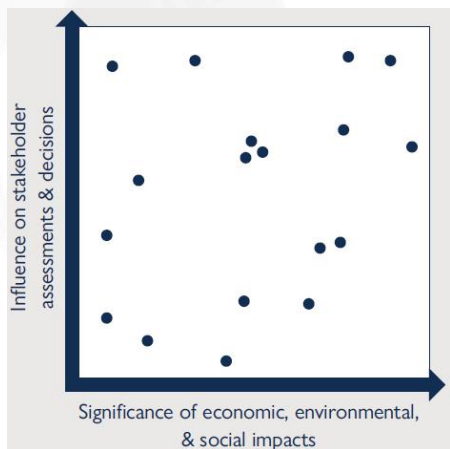
報導要求

針對每一個重大主題，報導組織應報告下列資訊：

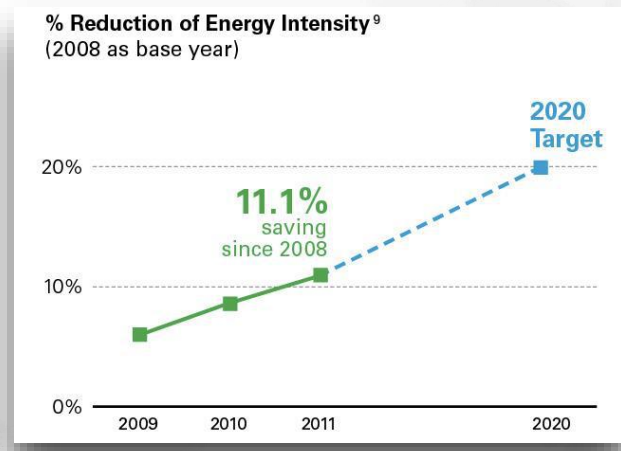
- a. 解釋組織如何管理此主題。
- b. 管理方針目的之陳述。
- c. 如果管理方針包含下列組成，請個別描述之：
 - i. 政策
 - ii. 承諾
 - iii. 目標與標的
 - iv. 責任
 - v. 資源
 - vi. 申訴機制
 - vii. 特定的行動，例如：流程、專案、方案及倡議

透過管理方針制訂
來有效管理風險

檢視重大議題目標來評估管理的有效性



CSR charter	Aspects determined as materiality	Key Performance Indicators (KPI)
CSR Charter I	Customer Health and Safety	Percentage of significant product and service categories for which health and safety impacts are assessed for improvement
	Product and Service Labeling	Results of surveys measuring customer satisfaction
CSR Charter II	Energy	Energy consumption within the organization Energy intensity (unit of GHG discharge, calculation method, intensity by energy type)
	Emissions	Direct GHG emission (scope 1) Energy indirect GHG emission (scope 2)
	Effluents and Waste	Total weight of waste by type and disposal method
	Supplier Environmental Assessment	Percentage of new suppliers that were screened using environmental criteria





DP - 氣候變遷該如何治理

CDP 簡介

於2002年由國際主流法人投資機構，如美林證券（Merill Lynch）、高盛（Goldman Sachs）與匯豐銀行（HSBC）等發起成立之獨立非營利組織，藉由與世界上主要投資機構合作，期望以市場力量推動永續經濟發展。

建立標準化資訊揭露流程，藉要求企業填寫問卷以收集所需資訊並進行分析及評比，再提供給相關投資者參考。

截至2018年，已集結全球658家法人投資機構（管理總資產高達87兆美元），回覆問卷之公司數量達6,300家。

提供數種不同類型專案及問卷類型，包含

- 氣候變遷專案（Climate Change Program）
- 水揭露專案（Water Program）
- 森林專案（Forests Program）
- 碳行動專案（Carbon Action Program）
- 供應鏈（Supply Chain）
- 城市（Cities）



投資者與客戶並行的運作架構

政府與
政策制定者

提供氣候變遷資料
分析及政策建言



自願提供
氣候變遷報告

城市

投資者專案

Climate Change
658簽署人
總資產87兆美金

Water Disclosure
639簽署人
總資產69兆美金

Forest Disclosure
380簽署人
總資產29兆美金

Carbon Action
329簽署人
總資產25兆美金

要求提供氣候變遷
風險及管理等資料

要求提供水風險
及管理等資料

要求提供伐林
相關風險等資料

要求公開減量目標及
達成情況，並投資於
具正投資報酬率的減
量計畫

供應鏈專案

要求供應鏈公司提供氣候變遷
和水資源風險及管理資訊

100家企業
 

合作

伙伴



來自國際資本市場的要求

6300+

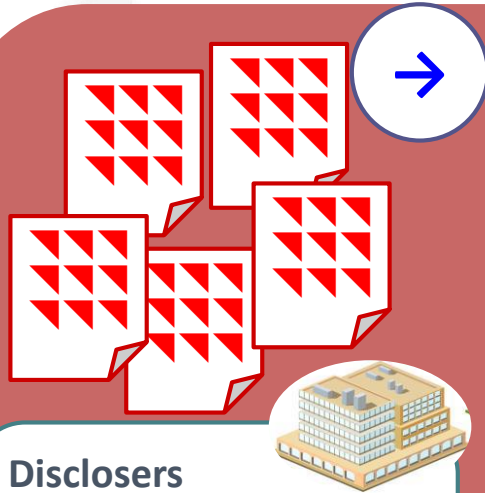
companies

Over 6,300 companies responded to CDP climate change, water, forests and supply chain questionnaire in 2017.

\$87tn

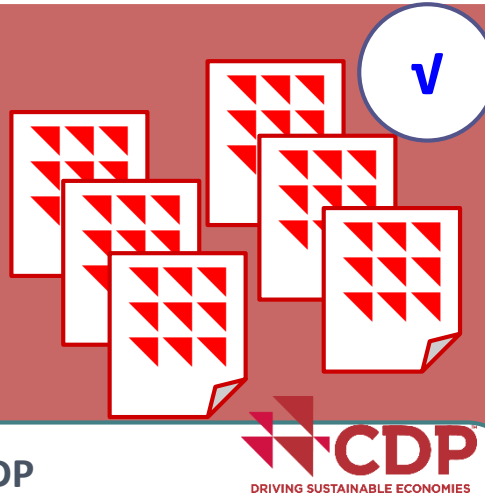
investors

658 investors with US\$87 trillion in assets request information on climate change, water or forests.



Disclosers

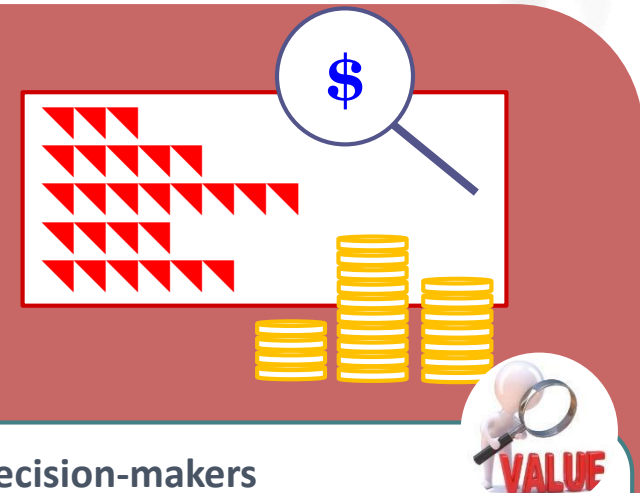
CDP asks companies for data on their environmental performance.



CDP

CDP
DRIVING SUSTAINABLE ECONOMIES

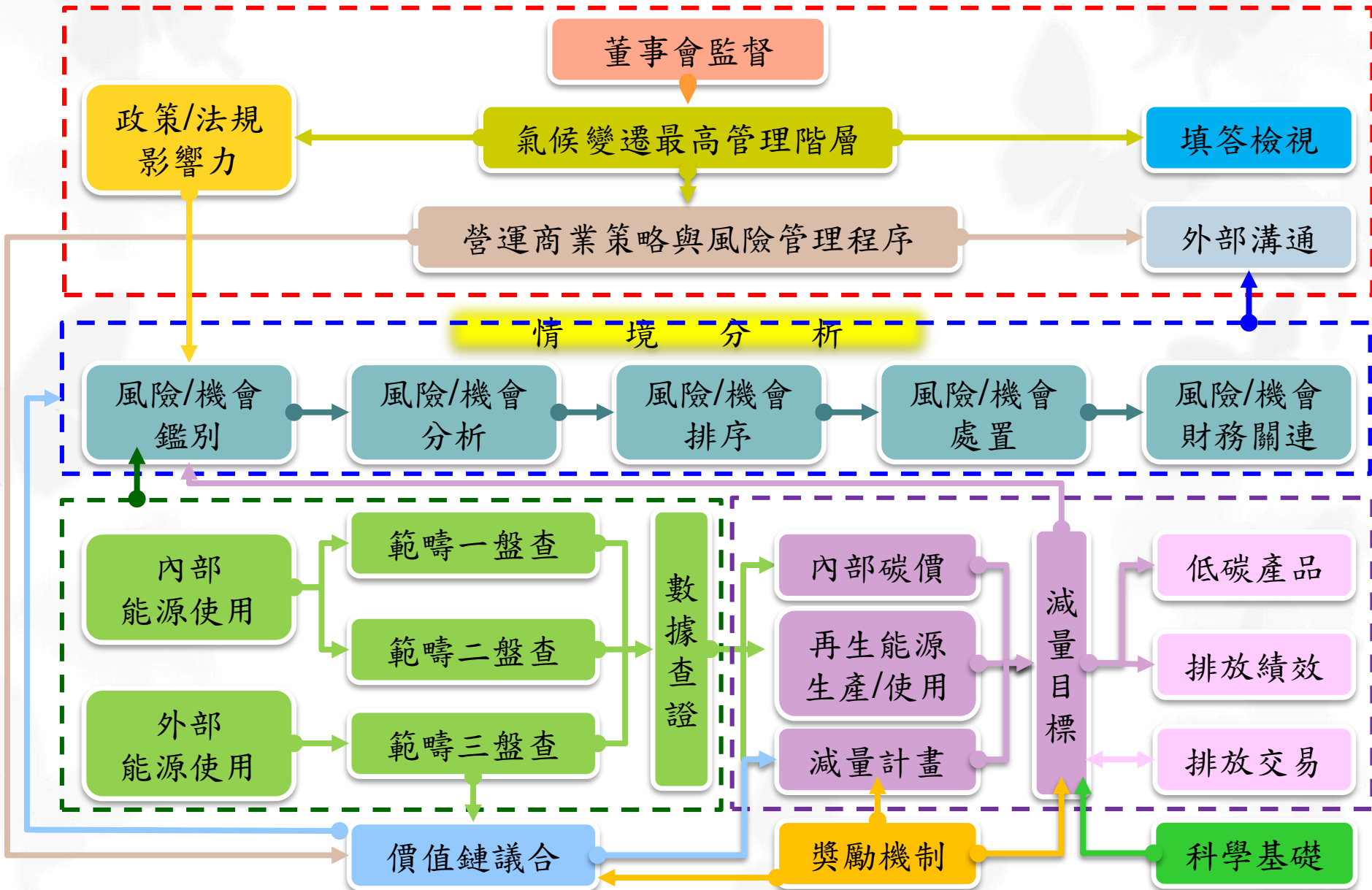
CDP transforms that data into detailed analysis on critical environmental risks, opportunities and impacts.



Decision-makers

Investors, businesses and policy makers use CDP data and insights to make better decisions, manage risk and capitalize on opportunities.

CDP 氣候變遷問卷設計脈絡



氣候變遷治理權責範例 (POSCO)

Governance to Respond to Climate Change



氣候變遷風險與機會鑑別範例 (POSCO)

清楚鑑別風險與機會點

Carbon Risk & Opportunity Management Process

Identifying risk and opportunity factors	<p>Determining Risk Factors</p> <ul style="list-style-type: none"> Physical and regulatory risk factors Risk level and financial impacts <hr/> <p>Discovering opportunity factors</p> <ul style="list-style-type: none"> Carbon market and new green businesses opportunities Outlook on trends and risk control
Establishing carbon management system	<ul style="list-style-type: none"> POSCO Carbon Management System (2006) GHG inventory and a third-party verification Integrated carbon & energy management system (2013) Carbon accounting and carbon emissions verification system (2015)
Implementing climate change response activities	<ul style="list-style-type: none"> Linkage with enterprise-wide risk management Deliberation of climate change risks when making decisions on investment Reflection of GHG reduction technology in mid- to long-term technology strategies
Inspecting climate change response activities	<ul style="list-style-type: none"> Regular monitoring of GHG reduction activities Check of response activities to climate change regulations and policies Examination of POSCO Family companies' new green businesses
Determining Risk Factors	<ul style="list-style-type: none"> Report to the POSCO Family Environmental Management Committee (Annual) Report to the Enterprise-wide Management Meeting on CO₂ and energy indices (if necessary)

Risk and Opportunity Factors in Carbon Management

RISK

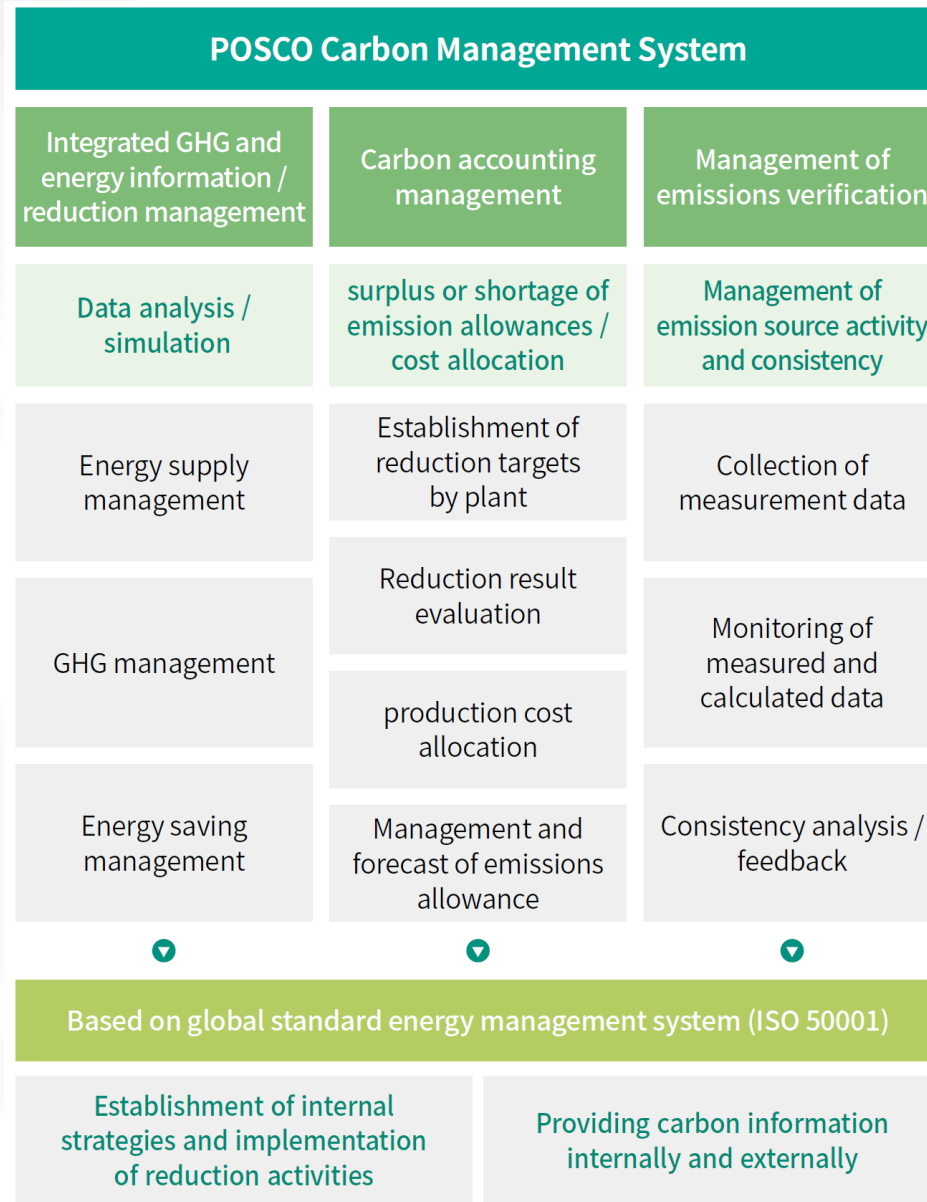
- S Damages to equipment and facilities, difficulties in securing raw materials and water, increased logistics costs caused by heavy snowfall, deluge or drought
- S Increased carbon costs with the implementation of domestic emissions trading system, and consequential decrease in price competitiveness
- S B P Weakening of competitiveness of carbon-intensive businesses due to tightened carbon regulations led by the Paris Agreement, and heightened regulatory barriers in overseas countries we entered
- S Requirements on social responsibility to large GHG emitting companies

OPPORTUNITY

- S B Increasing demand for high energy-efficiency steel products triggered by the Paris Agreement, and development of new markets such as green building and slag sea forest
- B Participation in new businesses such as renewable energy, energy storage, and carbon market
- S Enhancement of corporate competitiveness through developing innovative low-carbon technologies
- L P Improvement of stakeholder awareness through external evaluation and transparent information disclosure

S Green Steel B Green Business P Green Partnership L Green Life

碳管理架構範例 (POSCO)



盤查、減量、調適、管理
系統、查/驗證、監測，
缺一不可。

水風險評估範例 (Johnson & Johnson)

開發或善用工具

Johnson & Johnson Water Risk Assessment Tool

Inputs

Site-specific information

- EDGE database
- Site responses to questionnaire

Water risk models

- Leverage 6 water stress models and 21 model outputs per site to quantify risk

Media

- Identify extent of media coverage for water risks (regionally and site-specific)

Process

Inputs used to define water risk in 5 risk categories:

1. Current and projected future water stress
2. Occurrence of and resiliency to floods and droughts
3. Site wastewater management and watershed health
4. Total water use and cost
5. Reputation

Generate water risk profile and overall water risk score for each Johnson & Johnson site

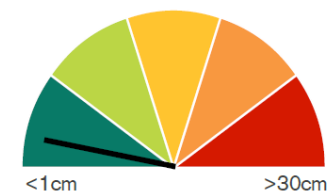
Outputs

Rank sites based on overall water risk scores, and prioritize for risk reduction

Water risk summary developed for each site, highlighting biggest risks



Water Scarcity



Upstream Storage

D JSI - 國際投資者看的是什麼

認識 DJSI

- DJSI是美國道瓊公司與瑞士的SAM永續集團於1999年9月8日所共同推出。該指數成分股之篩選主要係以道瓊全球指數中2500家公司作為篩選對象，包含60個產業之領先公司，目前所涵蓋的家族指數共有九大類。其以結合經濟、環境與社會三個面向的準則去評等企業在策略、管理及行業別特定要素等方面的永續商機與風險，而依指數不同篩選出永續績效為前10%~30%的績優公司。
- DJSI評等的考量準則區分為經濟、環境與社會面，其資料來源以問卷為主要基礎，再配合下列幾項：
 - ✓ 公司文件（整合性報告書、永續報告書、環境報告書、健康安全衛生到報告書、社會面報告書、年度財務報告、與公司管理有關的特定報告、或其他相關文件資料）
 - ✓ 媒體、利害相關者報告或其他公開資訊
 - ✓ 個人對公司的接觸

DJSI 的家族指數

指數名稱	邀請家數	入選門檻 (每個產業)	入選家數 (2017)
DJSI World	2,500 家	永續績效前 10%	320
DJSI Europe	600 家	永續績效前 20%	149
DJSI Asia Pacific	600 家	永續績效前 20%	152
DJSI North America	600 家	永續績效前 20%	152
DJSI MILA	150 家	永續績效前 30%	42
DJSI Korea	200 家	永續績效前 30%	45
DJSI Australia	200 家	永續績效前 30%	48
DJSI Chile	60 家	永續績效前 30%	26
DJSI Emerging Markets	800 家	永續績效前 10%	91

**S&P Dow Jones
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ROBECOSAM 
We are Sustainability Investing.

Dow Jones Sustainability Indices
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DJSI 評的是企業的風險與機會掌握

In line with RobecoSAM's conviction that material non-financial factors contribute to better informed investment decisions, the methodology focuses on long-term sustainability factors that are relevant to each industry, material to the company's financial performance and under-researched in conventional financial analysis.

Within each criterion, RobecoSAM looks for evidence of a company's awareness of sustainability issues and for indications that it has implemented strategies to address them. RobecoSAM also evaluates the company's progress in implementing such strategies as well as the quality of its reporting on these issues. Therefore, the questions within each criterion are structured to capture and evaluate the following elements:

1. **Awareness** of the importance of these factors to its financial success
2. Determination of the **potential financial impact** (i.e. materiality) of its exposure to sustainability factors
3. **Implementation of strategies** to manage these sustainability risks or to capitalize on related opportunities in a manner that is consistent with its business models
4. Measurement of results in relation to stated **Key Performance Indicators** (KPI) in order to evaluate the effectiveness of its sustainability strategy
5. **Validation or external audit** of stated results
6. **Transparent communication** of its corporate sustainability strategies and extent to which stated targets have been met

This framework for evaluating corporate sustainability performance enables RobecoSAM to develop a more robust understanding of a company's quality of management.⁶



投資機構可能遭遇的氣候變遷風險

轉型風險

顛覆性的新技術

政府的氣候政策

受轉型風險衝擊的公司



- 影響獲利
- 估值變動

投資機構：如銀行、保險、機構投資人



物理風險

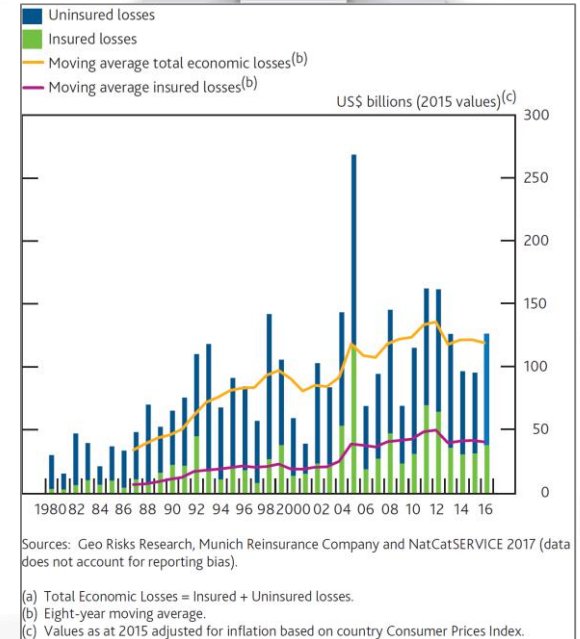
極端的氣象事件

變化的氣候條件

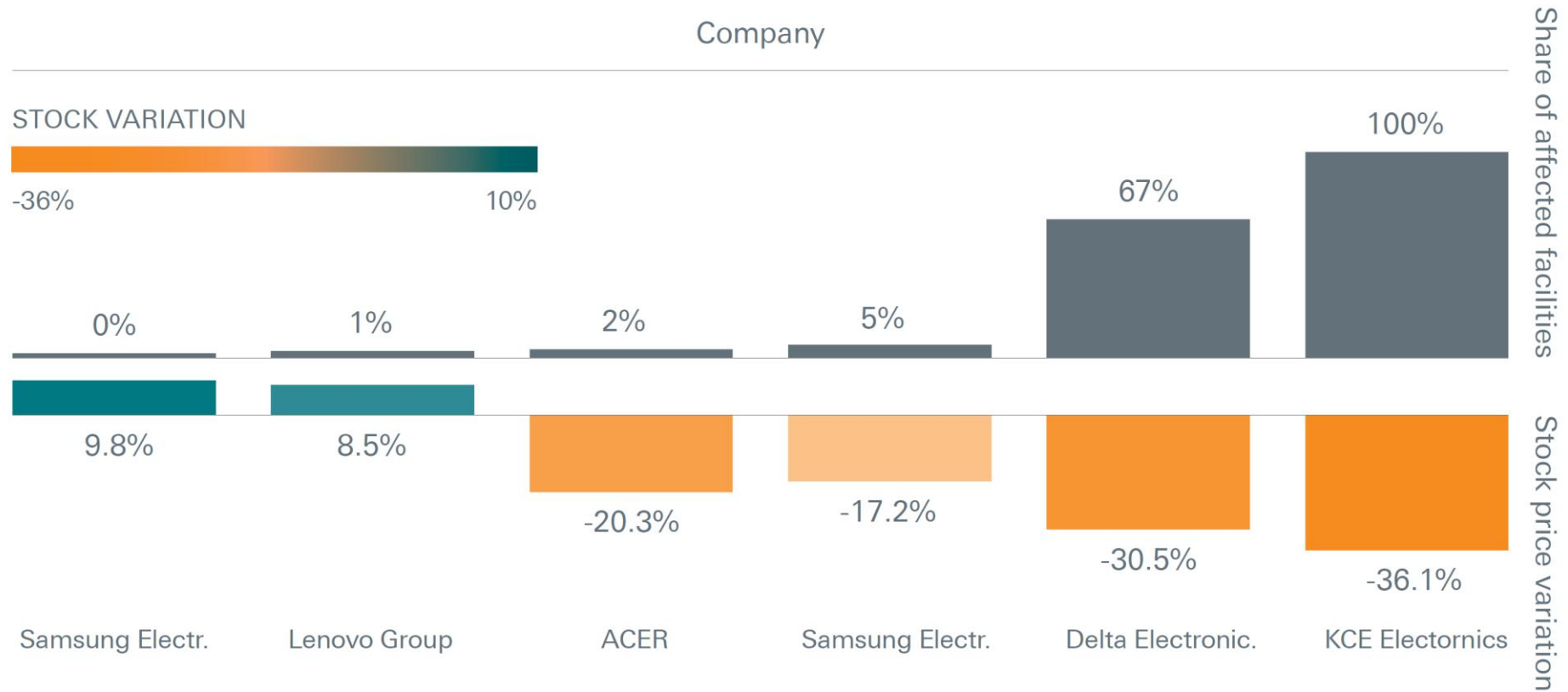
不動產、農產、員工等



- 資產價值降低
- 生產能力降低



2011泰國水災對廠區與股價的影響



Companies within the MSCI AC Far East ex-Jap Index, and the Technology hardware & Equipment Global Industry Classification Standard (GICS).
 Percentage of affected facilities computed per number of sites identified by Four Twenty Seven, Inc.
 Stock variation from 7/29/2011 to 11/30/2011.

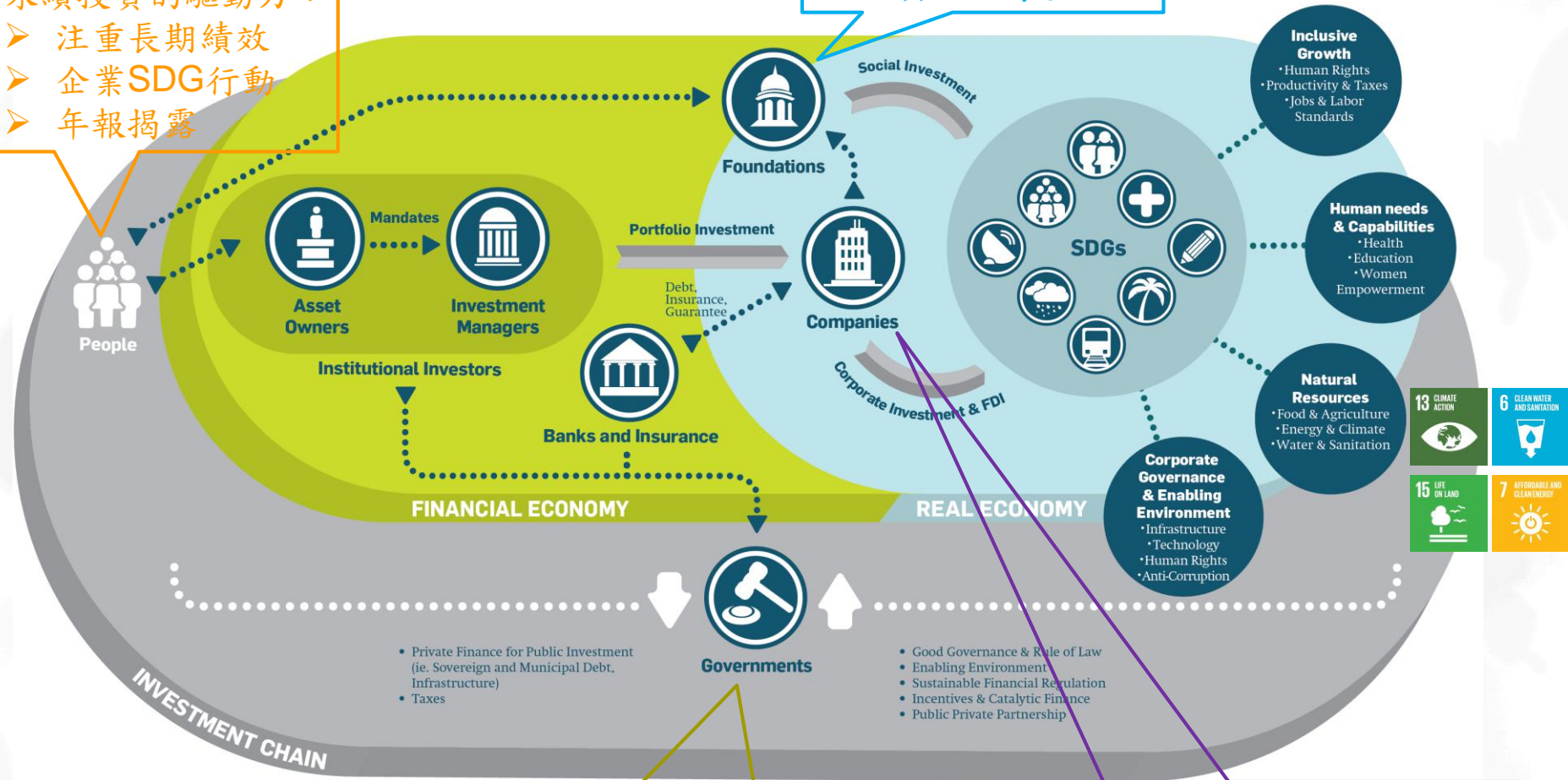
投資人逐漸重視企業的永續發展

永續投資的驅動力：

- 注重長期績效
- 企業SDG行動
- 年報揭露

基金：

- 發展評估工具
- 投資組合考量SDG







政府角色：

- 政策、領頭、溝通、影響力

企業：

- 標準化的高品質永續報告
- 利害關係人溝通與責任投資

從傳統與責任投資到影響力投資

			影響力投資		
			責任投資		
Traditional	Screening	ESG Integration	Themed	Impact First	Philanthropy
			具目標性的社會和/或環境影響		
競爭性報酬					
有限或完全沒有關注相關投資的ESG因子	依據各種方式（如產品、活動、部門、國際規範）之標準，進行負面或排他性篩查並進行正面或最佳的篩選。	在投資組合層面考量與ESG相關的趨勢，或在股票、發行人或被投資方層面使用定性和定量ESG資訊。	選擇有助於解決氣候變遷或水安全等永續性挑戰的資產	低於市場回報率的环境或社會議題投資機會	關注於一個或一類社會和環境的需求議題是零回報率和投入資本損失
			 		
			 		

DJSI 的風險治理題組（高階的參與）

1.2.1 Risk Governance

Please indicate which persons, departments and committees are responsible and accountable for enterprise risk management in terms of risk appetite & tolerance as well as risk monitoring & reporting. Please also indicate the expertise and training applicable to non-executive directors as well as the corporate structure of risk management functions.

	Please indicate name and position	Reporting line: please indicate who the person or committee reports to
Highest ranking person with dedicated risk management responsibility		
Highest ranking person with responsibility for monitoring and auditing risk management performance		

Number of non-executive members of board of directors/supervisory board with expertise in (enterprise) risk management. Please specify number of non-executive directors:

Regular risk management education for non-executive directors ensured. Please specify:

The risk management function is structurally independent of the business lines. Please specify:

DJSI 的氣候策略題組（整合的風險準則）

2.5.4 Climate Change Strategy

What best describes your risk management procedures with regard to climate change risks and opportunities? Please attach supporting documents.

- Integrated into multi-disciplinary company wide risk management processes, i.e. a documented process where climate change risks and opportunities are integrated into the company's centralized enterprise risk management program covering all types / sources of risks and opportunities
- A specific climate change risk management process, i.e. a documented process which considers climate change risks and opportunities separate from other business risks and opportunities
- There are no documented processes for assessing and managing risk and opportunities from climate change
- Not applicable. Please provide explanations in the comment box below.
- Not known



CFD - 風險與機會的財務連結

TCFD 概述



緣起

TCFD全名為 Task Force on Climate-related Financial Disclosures，由金融穩定委員會（Financial Stability Board, FSB）於2015年建立，主要是發展更有效益與效率的氣候相關揭露之建議。



目的

提供一個清晰、有效率以及自願性的揭露架構，用以促進氣候相關之財務揭露與使用者間的溝通，使投資者、貸款者、保險業者以及其他利害關係人能夠直接使用的資訊。



重要

組織可以更有效率地衡量與計算自身、供應商以及競爭者所面臨的風險。投資者也將更容易了解該如何分配其資本於投資決策。貸款者、保險者以及承銷商也將更容易評估短、中、長期暴露的風險。

建議與揭露指引架構

Recommendations

分為四部分：治理、策略、風險管理、指標與目標

Recommended Disclosures

建議組織在財務報告中具體揭露之項目，以提供有用的決策資訊

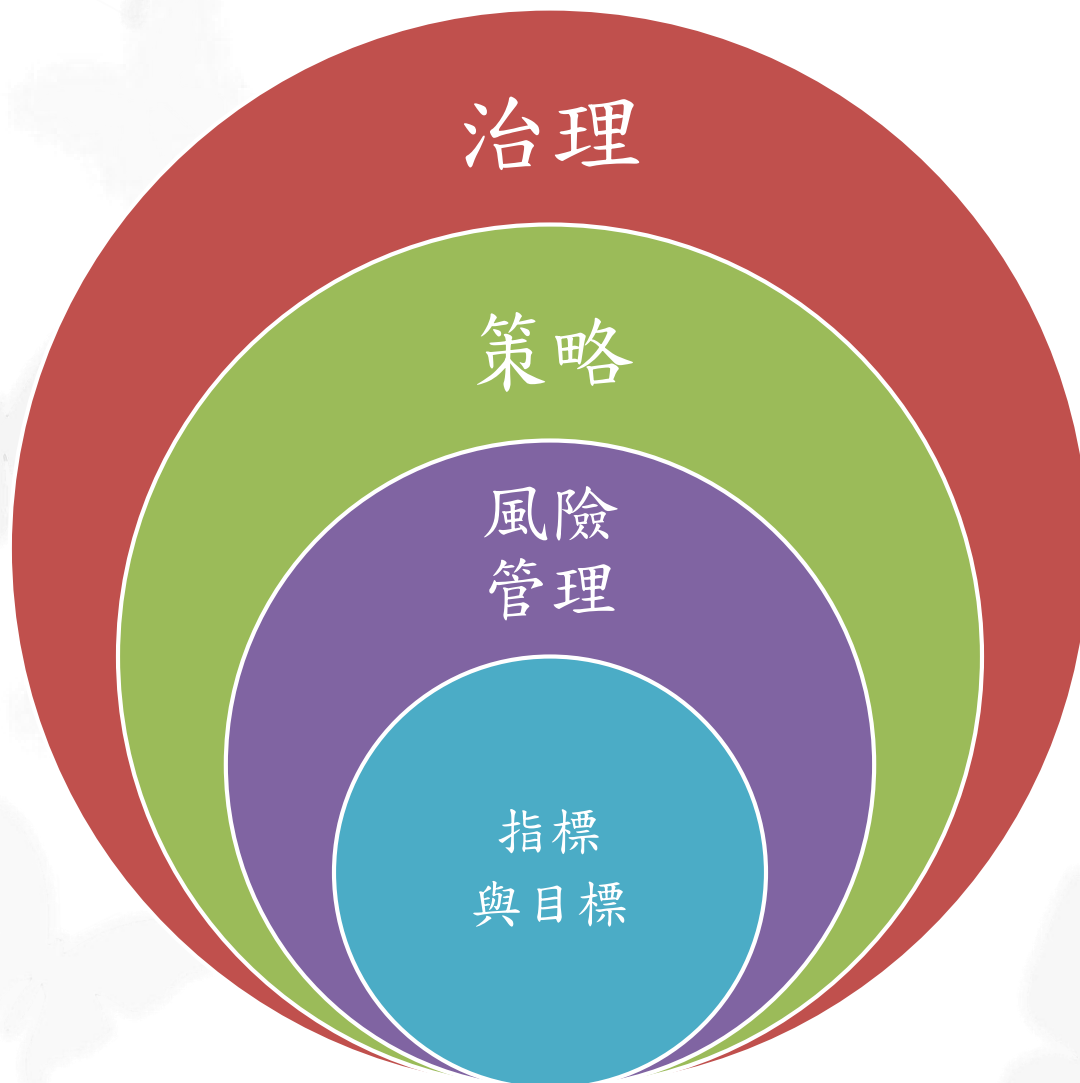
Guidance for All Sectors

建議具體揭露項目之指引，通用於所有組織

Supplemental Guidance For Certain Sectors

有些受到高度關注之部門，針對潛在性的氣候相關衝擊，建議揭露更完整或特有資訊的指引，分為金融與非金融部門

資訊揭露的四大核心要素



治理：

組織在氣候相關風險與機會下的治理

策略：

立即與潛在的氣候相關風險與機會，對組織業務、策略與財務規劃的衝擊

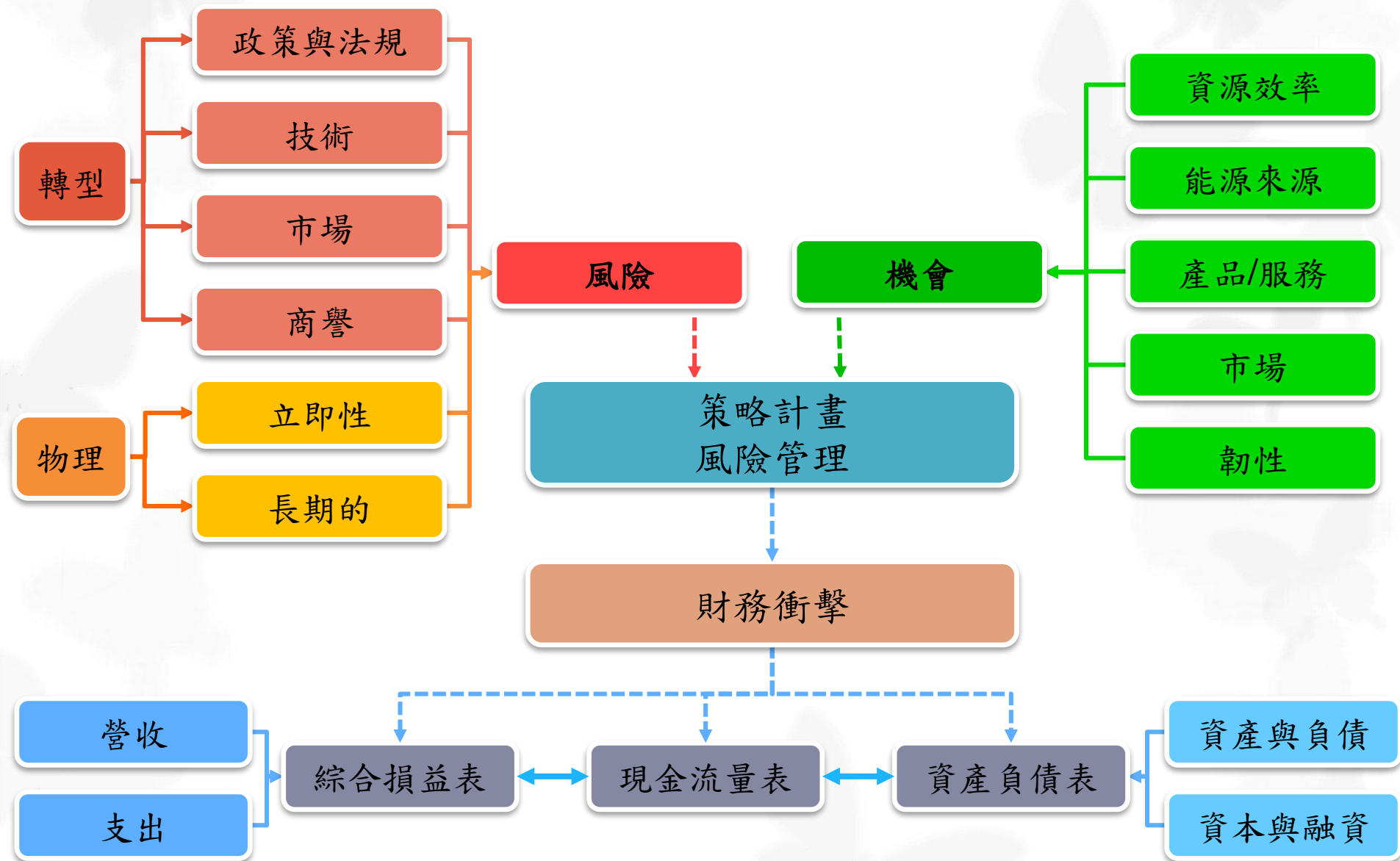
風險管理：

組織用以鑑別、評估、管理氣候相關風險的流程

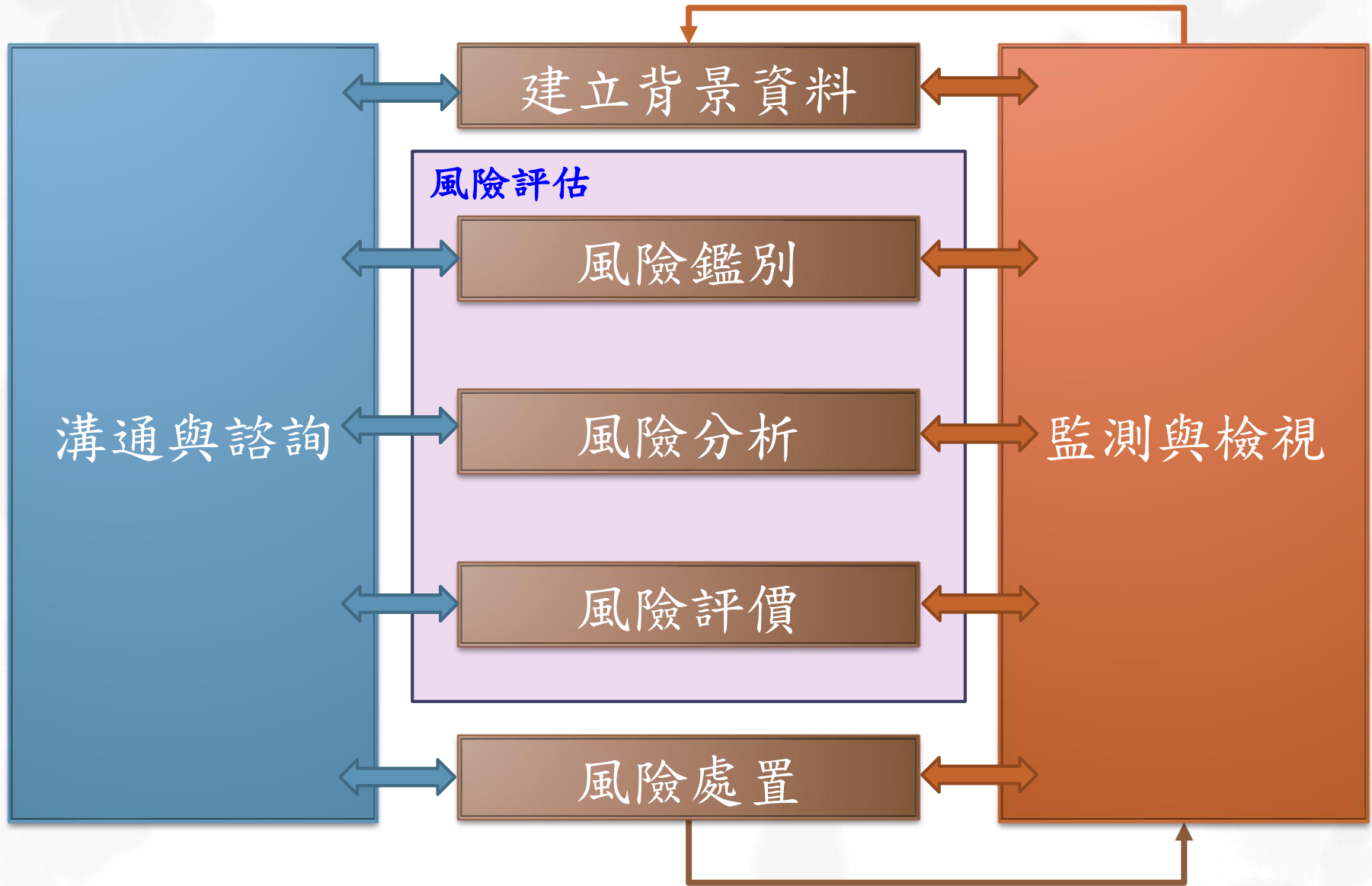
指標與目標：

組織用以評估和管理氣候相關風險與機會的指標與目標

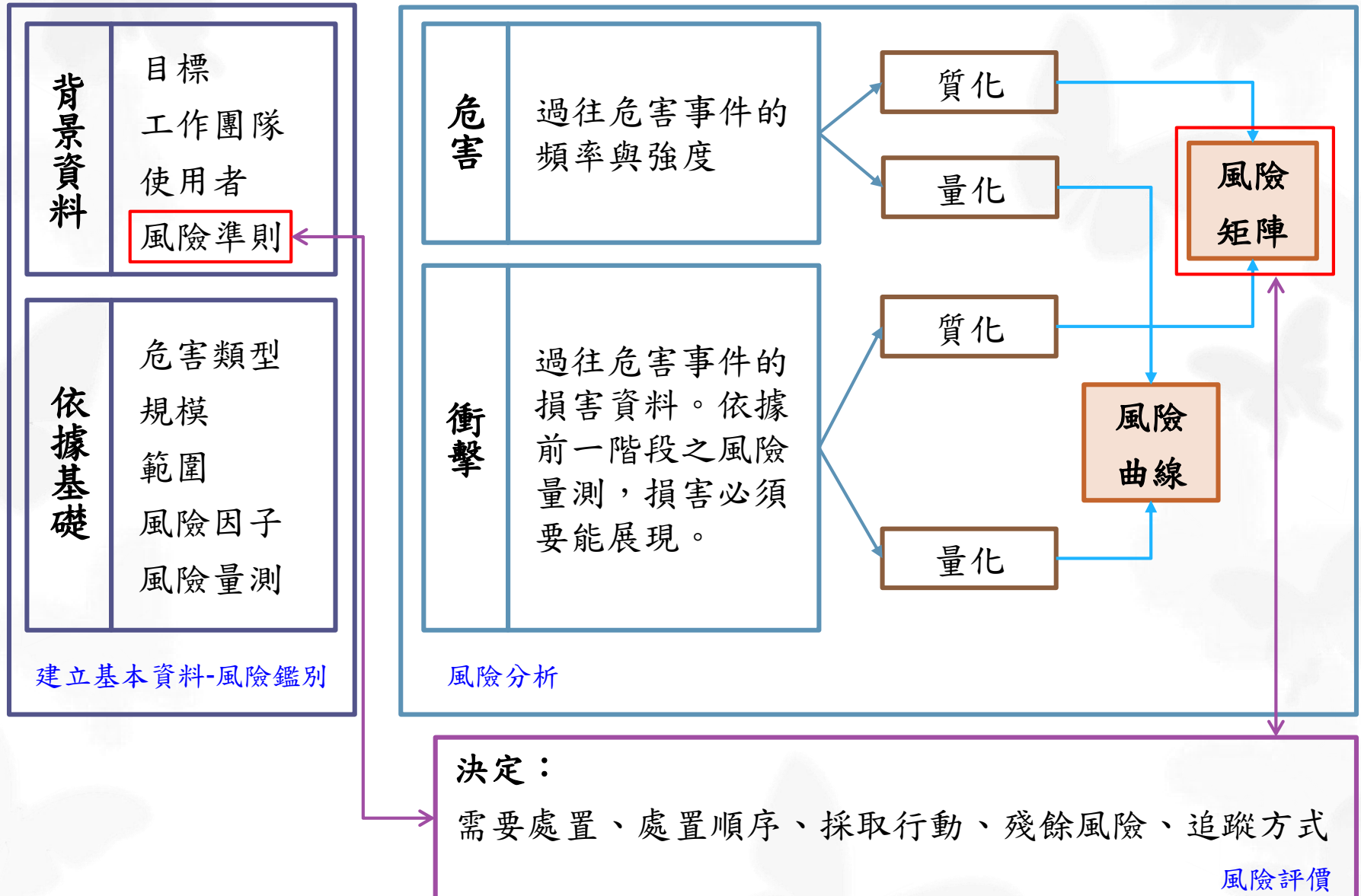
風險/機會與財務衝擊之評估架構



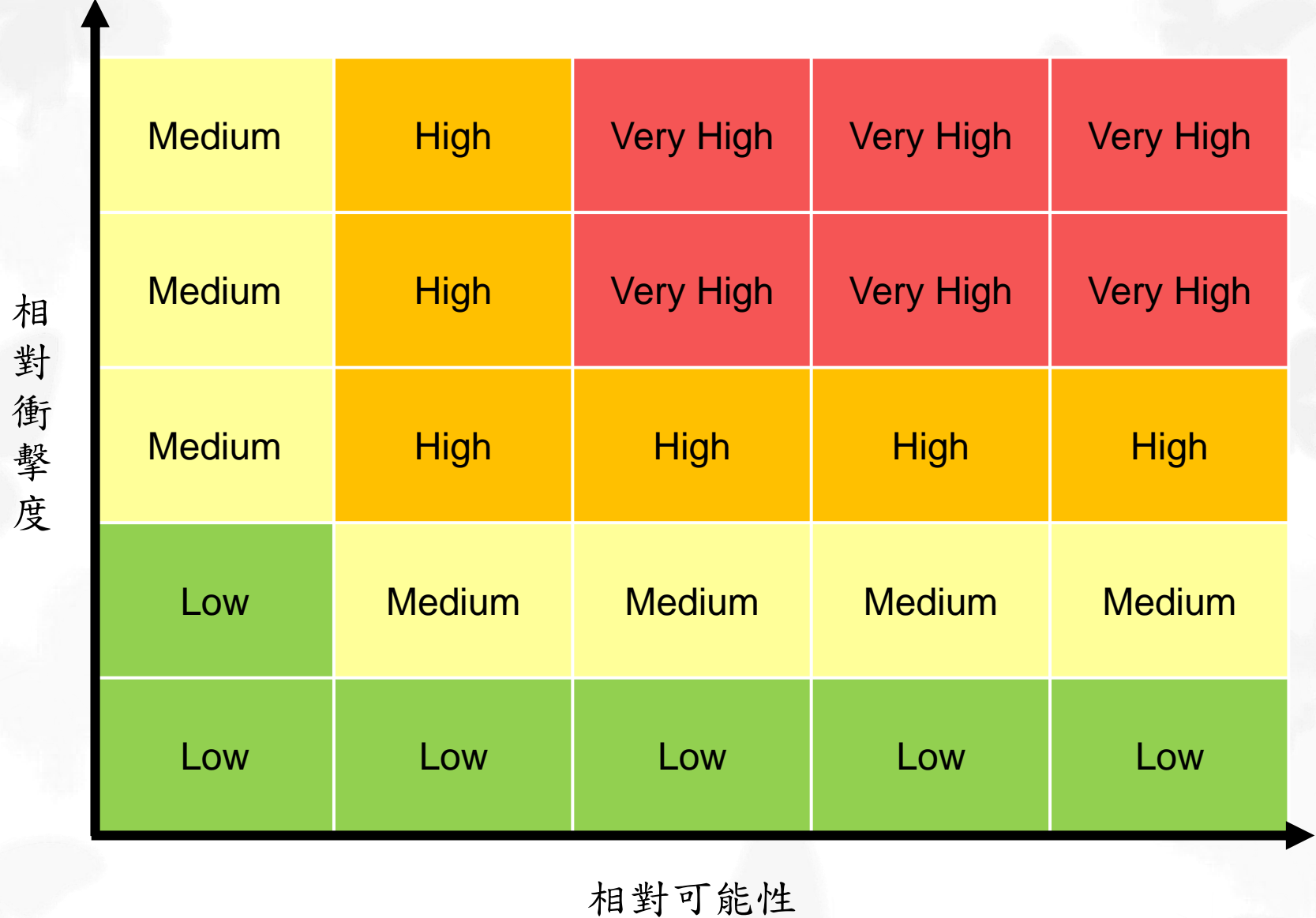
氣候變遷風險評估流程



氣候變遷風險評估程序

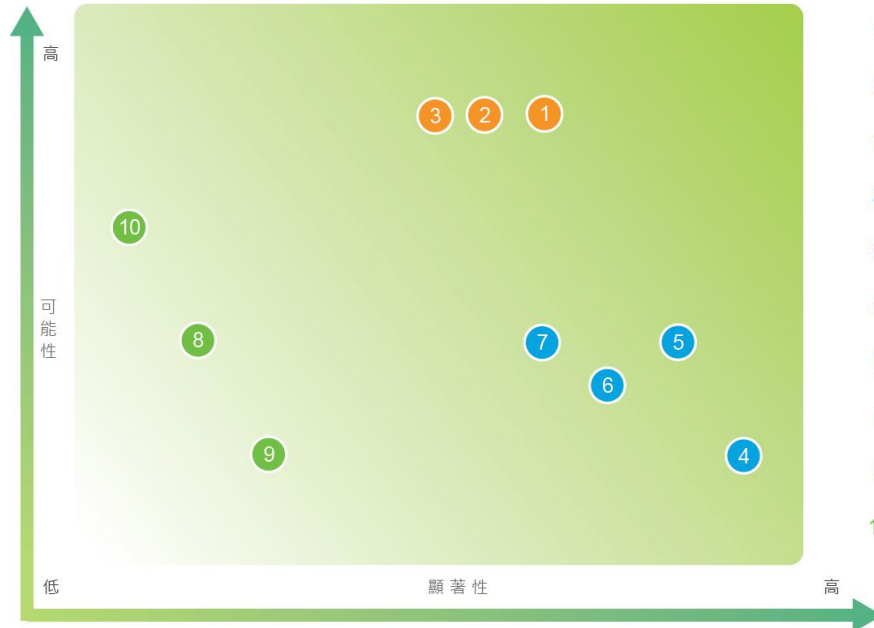


風險矩陣



風險矩陣範例

風險衝擊度與可能性

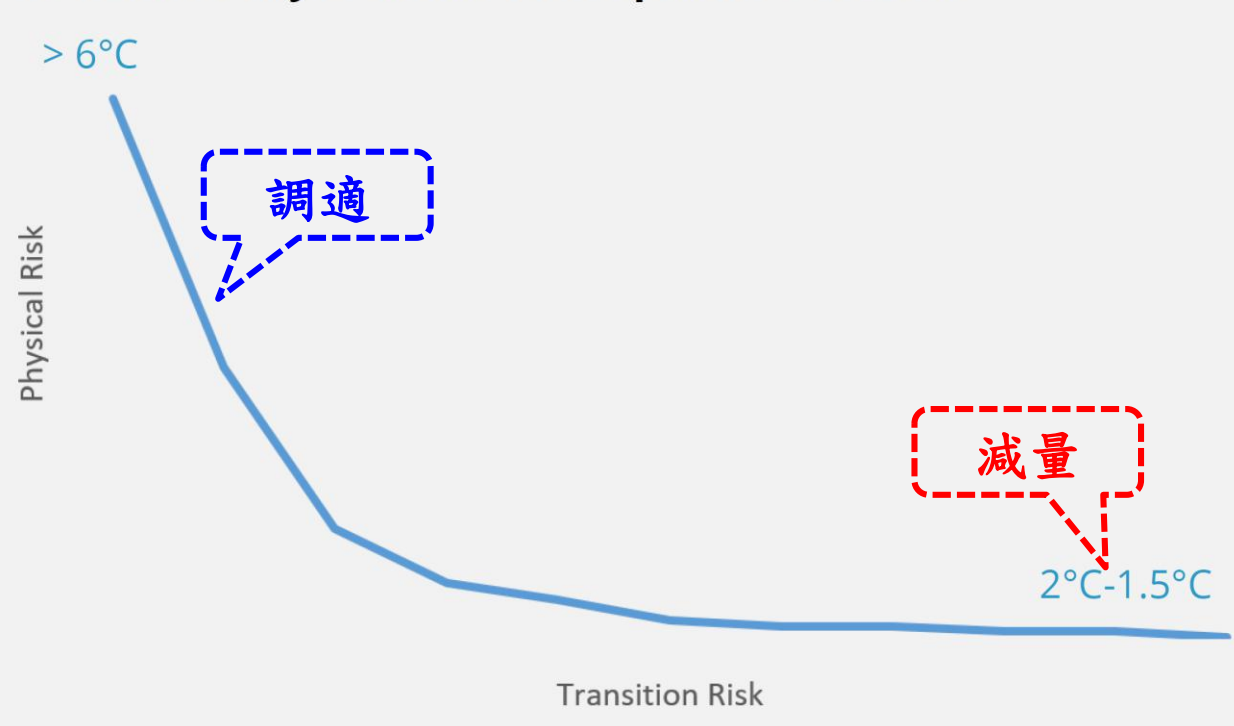


1. 溫室氣體排放增量
2. 能源成本調漲
3. 生態稅提高
4. 供應鏈中斷
5. 氣候變遷調適
6. 持續極端氣候
7. 對環境危害
8. 環境資訊揭露
9. 缺水危機
10. 第三方法律風險

物理風險與轉型風險的關聯

- 理論上氣溫升溫越高的情境，物理風險的可能性越大，其風險越高。但由於氣溫越高的情境代表企業可以依循BAU的作為，而不需要承擔任何轉型風險，因此轉型風險越低。
- 氣溫越接近 2°C 以下的情境中，氣候變遷帶來的物理風險便較低，但由於我們人類需要盡可能控制升溫因此需要進行更多的改變，這時候轉型風險便會提高。

Transition-Physical Risk Conceptual Trade-Offs



重大風險需進行情境分析

1. 確保治理階層的支持

2. 評估氣候相關風險之重大性

- ◆ 依據市場與科技的轉變、商譽、政策與法規，以及物理性風險等項目進行風險與機會之重大性分析。

3. 鑑別與定義情境範圍

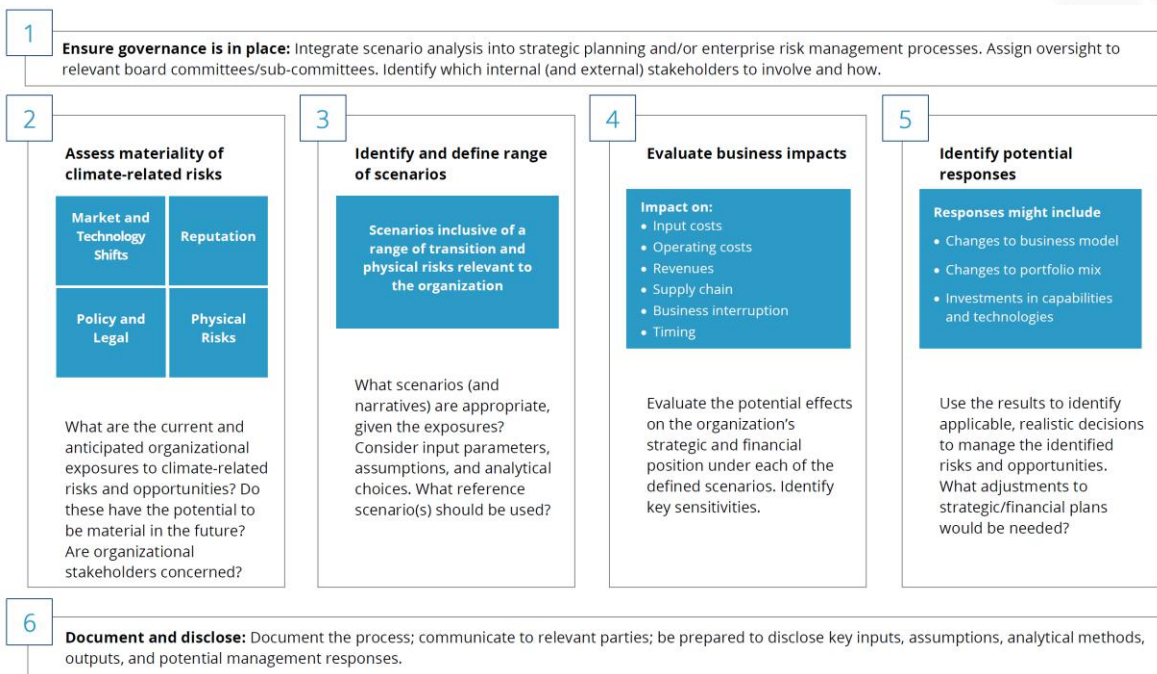
4. 評估營運衝擊與影響

- ◆ 原物料成本、營運成本
- ◆ 營收的影響
- ◆ 供應鏈可能的影響
- ◆ 對商業活動的干擾
- ◆ 時間性

5. 發掘潛在的因應之道

- ◆ 改變商業模式
- ◆ 產品組合的搭配
- ◆ 科技與能力的投資

6. 紀錄與揭露



主要情境與可能風險

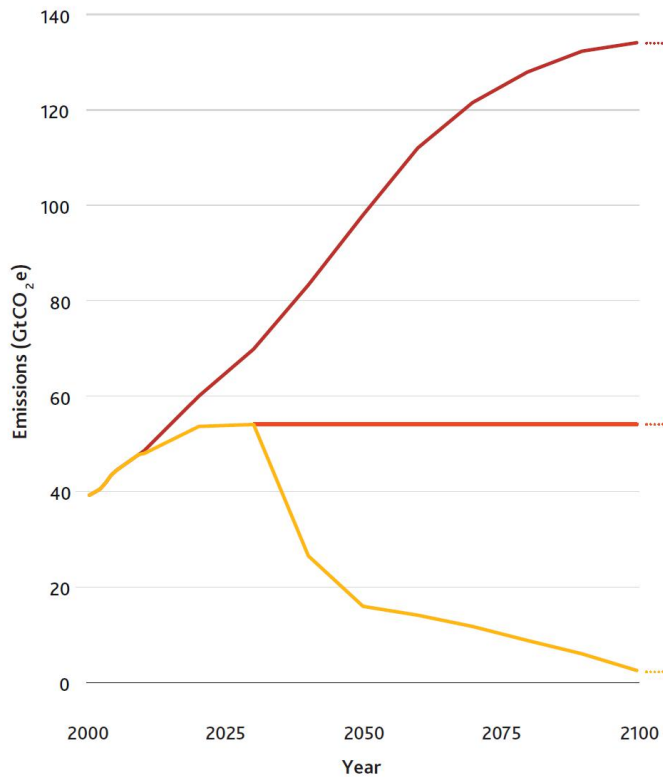
風險類別		2°C	NDC	BAU
轉型	法規	碳稅、燃料/能源稅與法規、總量管制與排放交易、強制申報、產品效率法規與標準、產品標示法規與標準、再生能源法規、空氣污染管制、一般環境法規、新法規的不確定性、缺少法規或適法性、國際公約或協定、自願性協議、訴訟		無顯著風險
	技術	SBT承諾、低碳產品與服務的需求、新技術投資、低碳技術轉型		
	市場	顧客行為轉變、市場訊息的不確定性、引發自然資源改變		
	商譽	顧客偏好改變、不良名聲、引起負面回饋		
物理	立即	熱帶氣旋、降雨形式、極端溫度、冰雪 (BAU > NDC > 2°C)		
	長期	海平面、平均氣溫、平均雨量 (BAU > NDC > 2°C)		

各種情境的可能參數

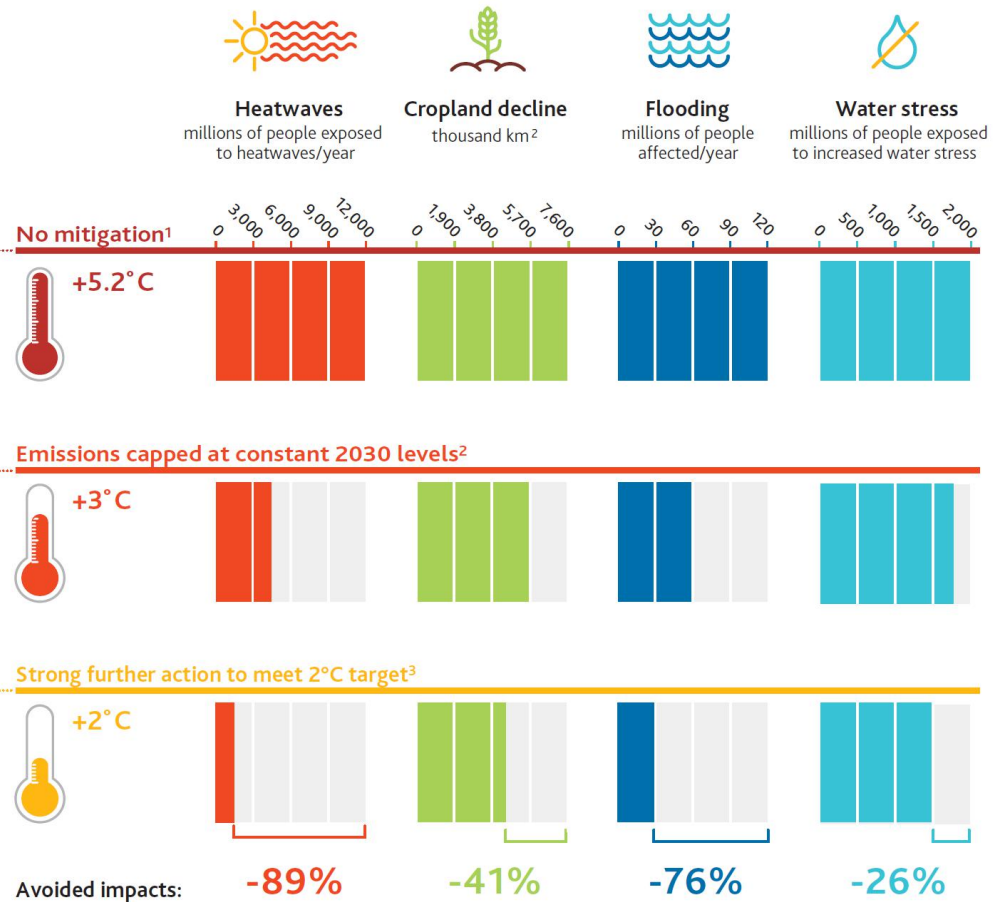
風險類別		2°C	NDC	BAU
轉型	法規	實施日期、適用範圍、罰款金額、訴訟		無
	技術	SBT達標方式、減量路徑、研發落後、設備淘汰		
	市場	GDP變化、產品組合、顧客群、消費能力		
	商譽	利害關係人溝通、負面報導、社會輿論		
物理	立即	極端事件的強度與頻度、能資源供給中斷的機率		
	長期	氣候現象每年的變化量		

不同RCP物理情境下的災害影響程度

Selected greenhouse gas emission pathways



Selected global climate impacts in 2100⁴



Sources: Met Office and Avoid2. For more information, please visit www.avoid.uk.net/indcs/moreinfo.

Footnotes: The scenarios used are:

1. No mitigation: RCP8.5.

2. Emissions capped at 54 GtCO₂e from 2030 with no backtracking.

3. Emissions capped at 54 GtCO₂e to 2030, with further large reductions in greenhouse gas emissions to meet 2°C by 2100.

4. Relative to a scenario with no climate change.

The temperatures displayed here represent median values for each scenario. Water stress and cropland availability will also be affected by land use decisions e.g. concerning biofuels.

CSR 納入 TCFD 範例 (Bloomberg)

Reporting framework			Potential materiality issues for Bloomberg				
GRI topics	SASB general topics	TCFD topics	GRI	Bloomberg-relevant SASB industries			TCFD
			Standard + Media	Professional Services	Internet Media & Services	Media Production & Distribution	All Sectors

High impact issues

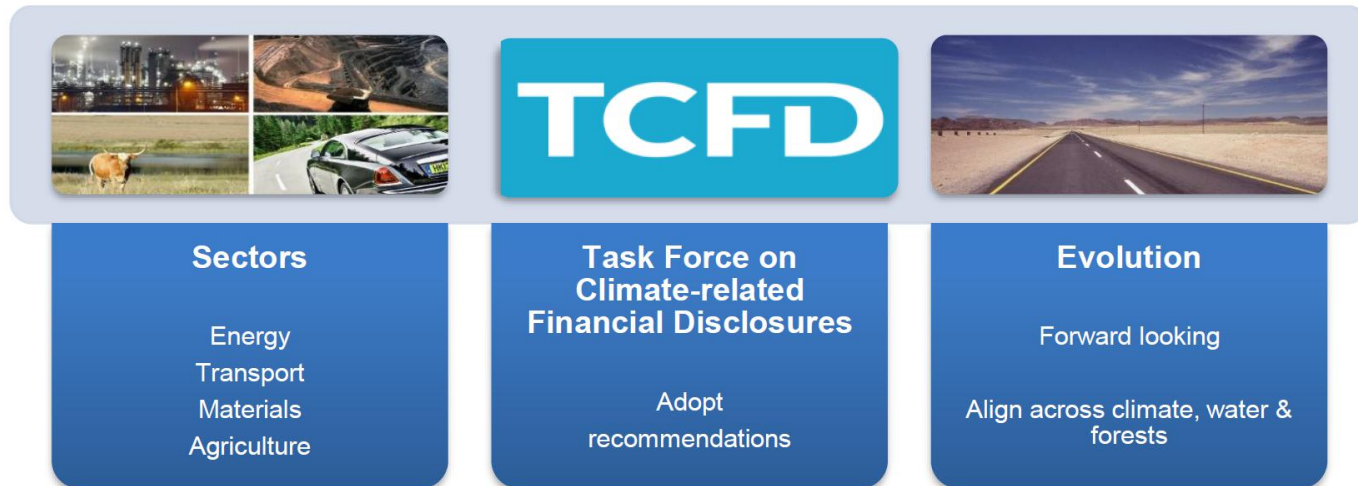
Issues that likely impact our company and our employees from a business, environmental and/or social perspective.

Energy	●	●	●	■				■
Professional/Ethics/ Competitive Behavior	●	●		■	■	■	■	
Employee Well-being/ Development	●	●		■		■		
Economic / Financial	●		●	■				■
Risk Management/ Compliance	●	●	●	■				■
Customer Welfare/ Data Privacy	●	●		■		■		

2018 CDP 導入 TCFD

CDP recognizes the important role of the TCFD in mainstreaming climate-related information and advancing the availability of **financially relevant information for global markets**. The recommendations will ensure **climate information is integrated into mainstream financial reports**, providing transparency and a roadmap to meet the commitments of the Paris Agreement.

In recognition of the TCFD's report CDP has committed to align its information requests with the TCFD's recommendations, alongside introducing a sectoral focus and adopting a forward-looking approach to climate-risk disclosure. This harmonization will help to drive the adoption of TCFD recommendations by reporting companies, **optimize the reporting burden and speed-up the generation of decision-useful information for data users.**



This means a **greater emphasis on elements such as board oversight, climate risk assessment and management** (including integration into a company's business planning processes), and the use of forward-looking **scenario analysis to determine the resilience of a company's strategy to climate risks.**

2018 DJSI 同步更新題組

Climate-related scenarios

Drop-down menu:

- 2DS
- IEA 450
- Greenpeace
- DDPP
- IRENA
- RCP 2.6
- IEA B2DS
- IEA Sustainable development scenario
- Nationally determined contributions (NDCs)
- Other, please specify: _____

	Absolute targets	Relative (intensity) targets
	<input type="radio"/> Targets set <input type="radio"/> No targets set <input type="radio"/> Not known	<input type="radio"/> Targets set <input type="radio"/> No targets set <input type="radio"/> Not known
Scope of the emissions for which the target is defined	<input type="checkbox"/> Scope 1 <input type="checkbox"/> Scope 2 <input type="checkbox"/> Scope 1 & Scope 2 combined <input type="checkbox"/> Scope 1 & Scope 2, but separately <input type="checkbox"/> Not known	<input type="checkbox"/> Scope 1 <input type="checkbox"/> Scope 2 <input type="checkbox"/> Scope 1 & Scope 2 combined <input type="checkbox"/> Scope 1 & Scope 2, but separately <input type="checkbox"/> Not known
Baseline year		
% emissions in Scope		
% reduction from base-line year		
Emissions of base line year in absolute tons of CO2e		
Metric Please describe below: ____		
Target was set in year		
Target year		
Is this a science-based target?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No
% achieved (emissions)		

Type	Description of product(s)	Level of aggregation	% of total revenues from "climate change" product(s) in FY 2017	Estimated total avoided emissions per year
Low carbon product(s)		Drop-down menu: - Product - Group of products - Company-wide		
Avoided emissions				

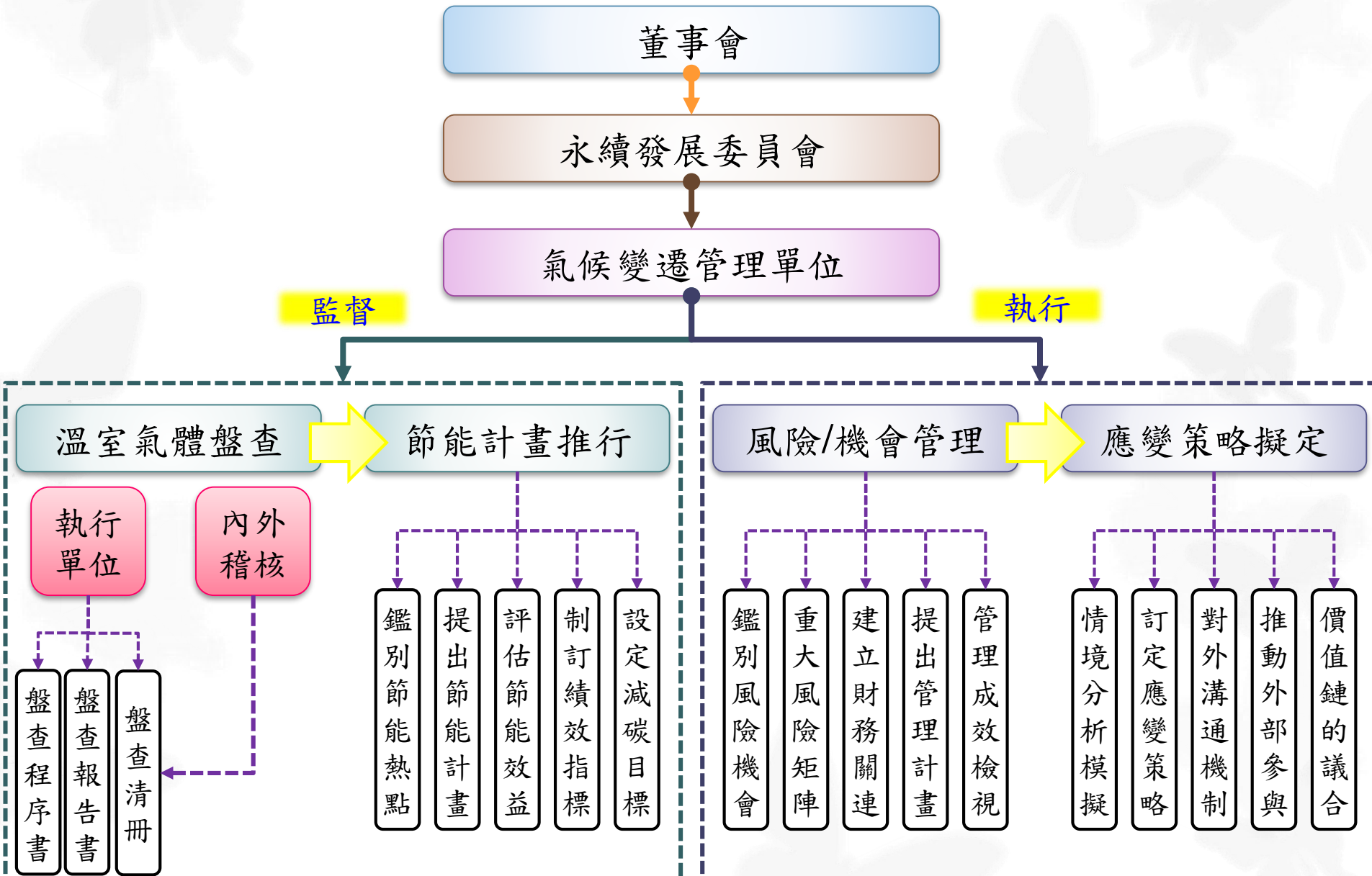
GHG Scope	Type of internal carbon price	Application	Price (please select currency) [currency]	Price setting approach
<input type="checkbox"/> Scope 1 <input type="checkbox"/> Scope 2 <input type="checkbox"/> Scope 3	<input type="checkbox"/> Shadow price <input type="checkbox"/> Internal fee <input type="checkbox"/> Internal trading <input type="checkbox"/> Implicit price <input type="checkbox"/> Offsets <input type="checkbox"/> Other, please specify: ____	Drop-down menu: - Company-wide (with local variations accepted) - Selected business units - Selected regions' - Ad-hoc		Drop-down menu: - External resources - Benchmarking against peers - Internal consultation: - Technical analyses



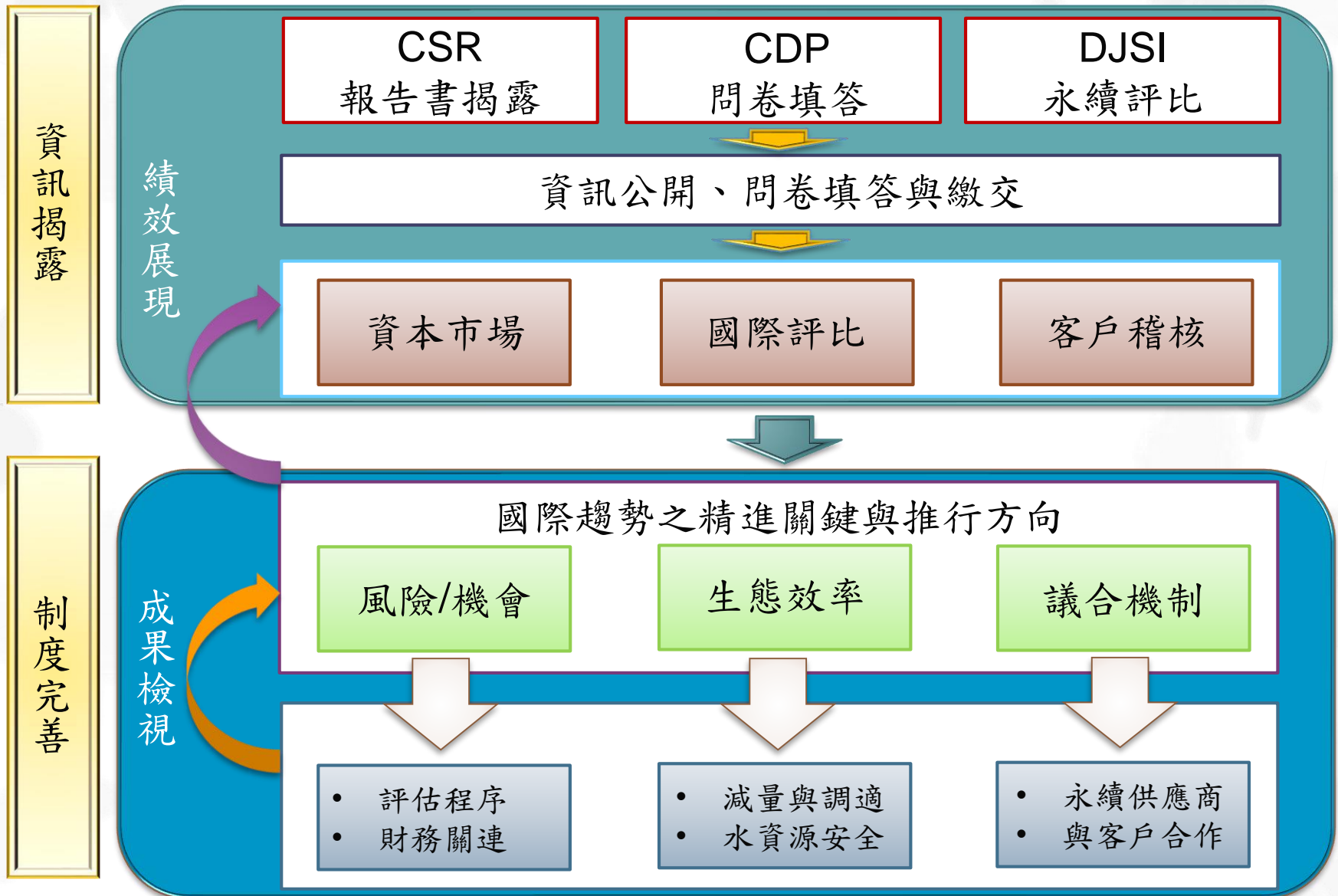
總

結與建議

確認組織架構與職權



建立完整的制度與內部文化



簡報結束
感謝聆聽

