- 政治大學法律系碩士在職專班課程演講
- 課程名稱：永續、社會與治理-ESG 的法制挑戰

# IFRS永續揭露準則及分類標準探討
## (由ISSB制定之S1及S2草案版)

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2022.11.21

Transforming Business Reporting

# 第一部份：

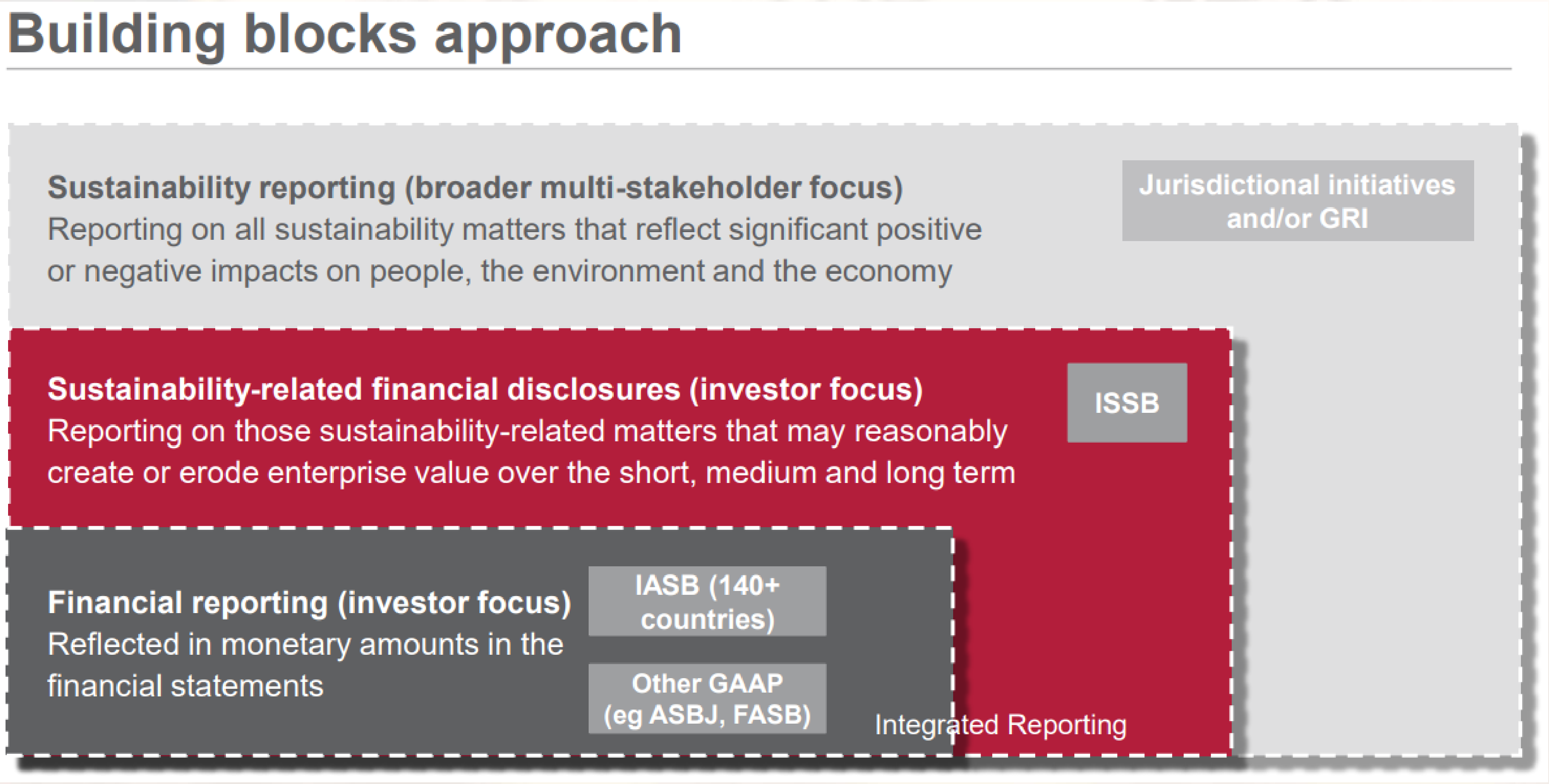
# IFRS 永續揭露準則 [摘要探討]

# IFRS基金會在COP 26宣布設立ISSB

- 國際財務報導準則基金會(IFRS Foundation)於2021/11在英國Glasgow舉行的第26屆聯合國氣候峰會(COP 26)中，宣布設立國際永續準則理事會(International Sustainability Standards Board, 簡稱ISSB)。[註：COP是Conference of the Parties的簡稱。]
- IFRS基金會也同時宣布以下重大事項：
  - 將於2022/6完成與氣候揭露準則理事會(Climate Disclosure Standards Board, 簡稱CDSB)及價值報導基金會(Value Reporting Foundation, 簡稱VRF)的合併事宜。VRF下設的永續會計準則理事會(SASB)將併入ISSB，SASB制定的永續會計準則(SASB standards)由ISSB負責維護更新，直到被ISSB制定的新準則取代為止。
  - 發布「氣候及一般揭露要求原型文件(prototype climate and general disclosure requirements)」，做為ISSB制定新揭露準則的參考。上述文件係由IFRS基金會的技術準備工作小組(Technical Readies Working Group)召集CDSB, IASB, TCFD, VRF..等多個國際組織共同研議完成。

# ISSB以堆疊法制訂準則

- ISSB以堆疊法(Building blocks approach)制定永續揭露準則：
  - **最內層**為企業編製的一般目的財務報導，**中間層**為ISSB制定的永續相關財務揭露準則，此兩層均以**投資人**為焦點(investor focus)；
  - **最外層**為更廣泛的**利害關係人**(stakeholder)所關注的永續報導內容。




(本圖取材自IFRS基金會專家2022/8演講內容)

# IFRS發布的永續揭露準則草案

- IFRS基金會於2021/11設立ISSB後，很快就在2022/3發布以下兩號永續揭露準則(Sustainability Disclosure Standards, 簡稱SDS 或 sds)草案：
  - IFRS S1：永續相關財務資訊揭露之一般規定(General Requirements for Disclosure of Sustainability-related Financial Information)。
  - IFRS S2：氣候相關揭露(Climate-related Disclosures)。S2的附錄B是關於行業基礎揭露規定，IFRS另發布一個獨立的別冊詳載針對68種行業分別制定的揭露規範(Volume B1-B68)。
- IFRS在發布S1及S2兩號準則草案後，向全球徵求針對上述草案的意見函(comments)到2022/7/29。IFRS共收到超過1,300封意見函，顯示全球企業對永續議題的高度關注。

# IFRS S1的重點摘要：範圍

- 個體應適用S1準則以符合依**國際財務報導準則永續揭露準則**(IFRS SDS)編製及揭露永續相關財務資訊。當個體之相關財務報表係依國際財務報導準則會計準則或其他一般公認會計原則編製時，就可以適用國際財務報導準則永續揭露準則。
- 永續相關之風險與機會，若無法合理預期會影響一般用途財務報導之主要使用者對個體企業價值所做之評估，就不屬於S1準則之範圍。
- S1準則使用適用於營利導向個體之用語，包括公部門之商業個體。若於私部門或公部門具有非營利活動之個體適用S1準則，可能需修正用於某些揭露項目之描述。

# IFRS S1的重點摘要：核心內容

- 除非另一IFRS永續揭露準則允許或另有規定，否則個體應揭露下列項目：
  a. 治理(governance)—個體用以監控及管理永續相關風險與機會之治理流程、控制及程序；
  b. 策略(strategy)—因應可能影響個體短期、中期及長期之經營模式及策略之永續相關風險與機會之方法；
  c. 風險管理(risk management)—個體用以辨認、評估及管理永續相關風險之流程；
  d. 指標及目標(metrics and targets)—用以評估、管理及監控隨時間經過與永續相關風險與機會有關之個體績效之資訊。

# IFRS S1的重點摘要：報導個體

- 永續相關財務揭露之個體應與相關一般用途財務報表之報導個體相同。例如，若報導個體係一集團，合併財務報表將係對母公司及其子公司；因此，該個體之永續相關財務揭露應使一般用途財務報導之使用者能評估該母公司及其子公司之企業價值。
- 個體應揭露與永續相關財務揭露有關之財務報表。
- 當貨幣被明定為衡量單位，個體應使用其財務報表之表達貨幣。

# IFRS S1的重點摘要：報導頻率

- 個體應與其相關財務報表同時報導其永續相關財務揭露，且永續相關財務揭露之報導期間應與財務報表相同。
- 通常個體就12個月之期間編製永續相關財務揭露。惟基於實務之理由，某些個體偏好就（例如）52週之期間報導。S1準則並不排除這種實務。
- S1準則並未要求揭露期中報告，但尊重各國監理機關之規定。基於時效性與成本之考量，並避免先前報導資訊之重複，個體可能被監理機關要求或選擇於期中報表日提供較年度揭露少之資訊。期中揭露旨在提供對最近期整份年度永續相關財務資訊揭露之更新，但S1並不禁止個體在期中報告發布整份永續相關財務揭露。

# IFRS S1的重點摘要：資訊位置

- 個體應將IFRS永續揭露準則所規定之資訊，作為其一般目的財務報導之一部分。
- 依適用於個體之任何法規或其他規定，於個體之一般目的財務報導中，可能於不同位置揭露永續相關財務資訊。
- 個體依規定揭露永續相關財務資訊之位置，可能與為符合其他規定所揭露之資訊之位置相同。個體應確保永續相關財務揭露係明確可辨認，且不致因該新增資訊而模糊。
- IFRS永續揭露準則所規定之資訊可藉由交互索引納入，但藉由交互索引納入資訊而非直接提供資訊，不應使整份永續相關財務揭露較不具可了解性。

# IFRS S2的重點摘要：目的

- S2係規定個體揭露其暴露於重大氣候相關風險與機會之資訊，使個體之一般用途財務報導之使用者能：
  a. 評估重大氣候相關風險與機會對個體企業價值之影響；
  b. 了解個體對資源之使用，以及相應之投入、活動、產出及結果，如何支持個體對其重大氣候相關風險與機會之因應措施及管理策略；
  c. 評估個體就重大氣候相關風險與機會調適其規劃、經營模式及營運之能力。
- 個體依S1準則編製及揭露氣候相關揭露時，應適用本S2準則。

# IFRS S2的重點摘要：範圍

- S2準則適用於：
  - a. 個體暴露於氣候相關之風險，包括但不限於：
    1) 來自氣候變遷之實體風險(physical risks)；
    2) 與轉型至低碳經濟有關之風險(transition risks)；
  - b. 個體可取得之氣候相關機會。

# IFRS S2的重點摘要：指標與目標

- 個體應揭露與下列跨行業指標類別攸關之資訊：
  a. 溫室氣體排放，以公噸二氧化碳當量表達：
     1) 範疇一排放(由個體擁有或控制之來源產生之直接**溫室氣體**排放)；
     2) 範疇二排放(因生產由個體所購入消耗之電力、熱能或蒸汽而發生之間接**溫室氣體**排放)；
     3) 範疇三排放(非屬報導個體**範疇2排放**之間接排放，該排放由報導個體**價值鏈**產生，包括上游及下游二者之排放)；
  b. 轉型風險；
  c. 實體風險；
  d. 氣候相關機會；
  e. 資本配置；
  f. 內部碳價格；
  g. 薪酬。

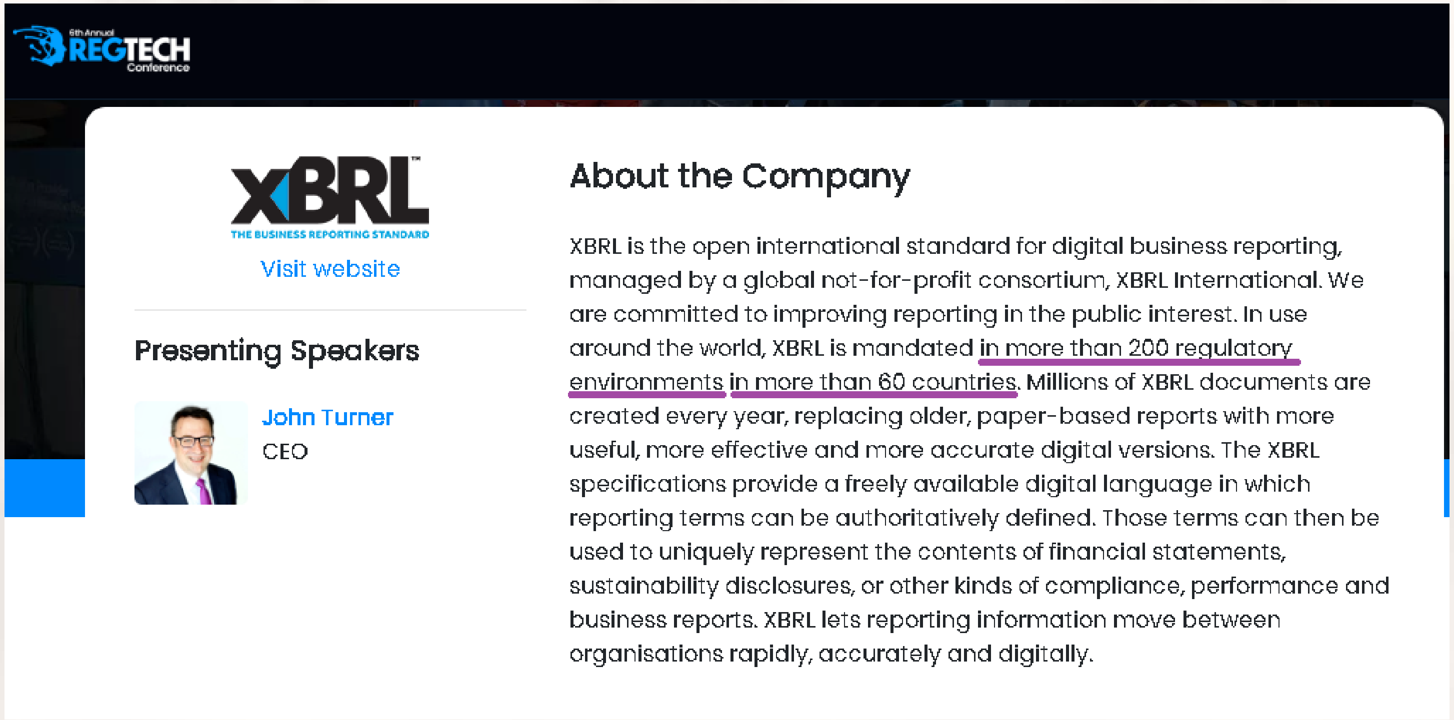
# IFRS S2的重點摘要：行業別

- ISSB採用和SASB類似的行業別(SASB有77個，ISSB有68個)。
- ISSB在S2準則的附錄B中揭示以下11個大類別及68個行業別：
  - 消費品： 包含6個行業別(比SASB少1個)。
  - 開採與礦產加工：包含8個行業別。
  - 金融：包含5個行業別(比SASB少2個)。
  - 食品與飲料：包含7個行業別(比SASB少1個)。
  - 健康與保健：包含5個行業別(比SASB少1個)。
  - 公共建設：包含8個行業別。
  - 可再生資源與替代能源：包含6個行業別。
  - 資源轉化：包含5個行業別。
  - 服務：包含3個行業別(比SASB少4個)。
  - 科技與通訊：包含6個行業別。
  - 運輸：包含9個行業別。

# 第二部份：
# XBRL技術簡介

# XBRL是什麼？

- XBRL 是可延伸企業報告語言(eXtensible Business Reporting Language)的簡稱。
- XBRL 自2000年問世以來，因其可將財務數據以高度結構化的方式表達，利於軟體直接擷取及分析，已迅速成為RegTech (監理科技)領域最重要的應用技術之一。
- 目前全球有超過60個國家、在二百多種監理環境中採用XBRL技術作為文件申報標準(見次頁)。除了原本著重的財務數據外，XBRL近年並已大幅擴展至非財務領域之應用(例如：永續報告)。



# XBRL在金融監理上的應用：歐盟、美國、中國

# XBRL在台灣的應用

- 台灣上市櫃公司自2010年第三季開始，需同時申報PDF格式及XBRL格式財務報告。並自2019年第一季開始，進一步升級為inline XBRL格式。
- 台灣證券交易所公開資訊觀測站提供的「財務比較E點通」服務，其數據來源就是上市櫃公司申報的XBRL格式財務報告。
- 台灣經濟新報社(TEJ)財報資料庫、Good Info!、Yahoo! Finance、Google Finance...等關於台灣上市櫃公司的財報數據，也都來自XBRL格式財報。

# Inline XBRL財報範例(台積電2022Q1部分內容)

2330 台灣積體電路製造股份有限公司
2022年第1季合併財務報告

單位：新臺幣仟元

資產負債表

| 代號 | 會計項目 | 2022年3月31日 | 2021年12月31日 | 2021年3月31日 |
|---|---|---|---|---|
| | 資產 | | | |
| | 流動資產 | | | |
| 1100 | 現金及約當現金 | 1,151,589,646 | 1,064,990,192 | 664,727,857 |
| 1110 | 透過損益按公允價值衡量之金融資產－流動 | 758,452 | 159,048 | 26,897 |
| 1120 | 透過其他綜合損益按公允價值衡量之金融資產－流動 | 120,995,765 | 119,519,251 | 125,208,307 |
| 1136 | 按攤銷後成本衡量之金融資產－流動 | | | |
| 1139 | 避險之金融資產－流動 | | | |
| 1170 | 應收帳款淨額 | | | |
| 1180 | 應收帳款－關係人淨額 | | | |
| 1210 | 其他應收款－關係人 | | | |
| 130X | 存貨 | | | |
| 1470 | 其他流動資產 | | | |
| 1476 | 其他金融資產－流動 | | | |
| 1479 | 其他流動資產－其他 | | | |
| 11XX | 流動資產合計 | | | |
| | 非流動資產 | | | |

```
<tr>
  <td>1100</td>
  <td>現金及約當現金</td>
  <td><ix:nonFraction name="ifrs-full:CashAndCashEquivalents"
    contextRef="AsOf20220331" format="ixt:numdotdecimal" scale="3"
    decimals="-3" unitRef="TWD">1,151,589,646</ix:nonFraction></td>
  <td><ix:nonFraction name="ifrs-full:CashAndCashEquivalents"
    contextRef="AsOf20211231" format="ixt:numdotdecimal" scale="3"
    decimals="-3" unitRef="TWD">1,064,990,192</ix:nonFraction></td>
  <td><ix:nonFraction name="ifrs-full:CashAndCashEquivalents"
    contextRef="AsOf20210331" format="ixt:numdotdecimal" scale="3"
    decimals="-3" unitRef="TWD">664,727,857</ix:nonFraction></td>
</tr>
```

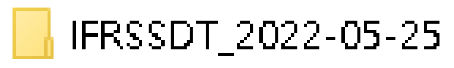
# XBRL在企業永續報告上的應用

- SASB：國際永續會計準則委員會(SASB)在2021年8月公布對應SASB準則的XBRL分類標準；SASB並在2022年7月公布更新版分類標準。
  - 準則本身涵蓋11個大產業別，及77個次產業別。XBRL分類標準針對77個產業別制定符合SASB準則規範的80個表達結構及706個維度表格結構，其中也包含TCFD氣候相關財務揭露內容
- ISSB：由IFRS基金會在2021年11月成立的國際永續準則委員會(ISSB)，也在2022年5月公布對應IFRS永續揭露準則S1及S2草案的XBRL分類標準。
  - ISSB準則涵蓋的產業別從SASB的77個減少為68個，對應的表達結構從80個減少為78個，維度表格結構從706個減少為358個
- EFRAG：歐盟的財務報導諮詢小組(EFRAG)在2022年2月公布對應歐盟ESRS準則的概念驗證版XBRL分類標準。

# 第三部份：
# IFRS永續分類標準整體結構分析

# IFRS永續分類標準的物理結構

- 由ISSB制定的IFRS永續揭露分類標準2022/5草案版，資料夾名稱為**IFRSSDT_2022-05-25**，其中的SDT是sustainability disclosure taxonomy (永續揭露分類標準)的簡稱。



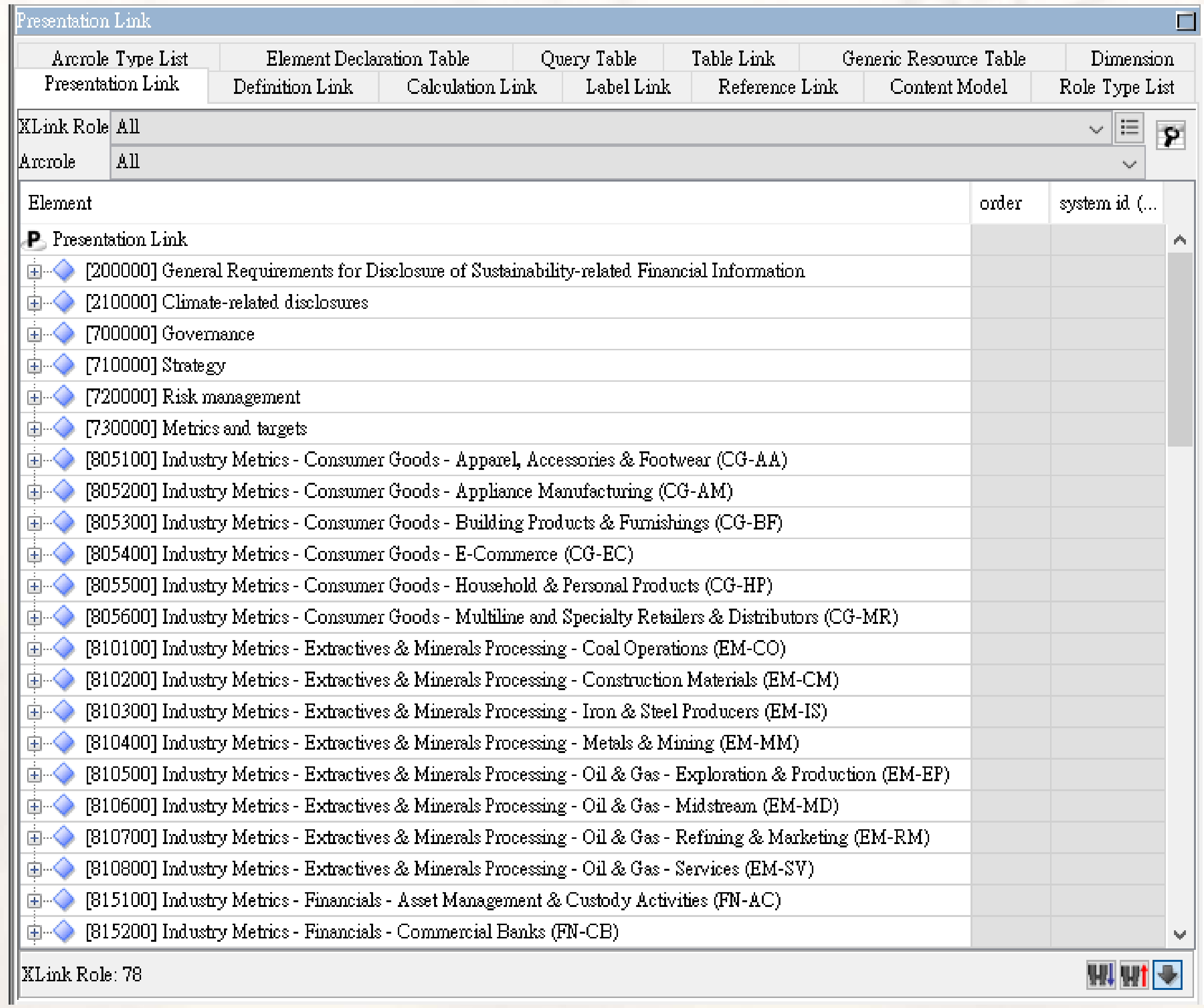

- 點選進入上述資料夾後，內含以下兩個資料夾及一個進入點schema文件：
  - **ifrs_sds資料夾**：內含SDT的核心內容。sds是sustainability disclosure standards (永續揭露準則)的簡稱。
  - **META-INF資料夾**：內含本套分類標準的制定機構資訊。
  - **ifrs_sds_entry_point_2022-05-25.xsd文件**：進入點文件，永續報告案例文件的編製者以此文件做為DTS的起點。

# ifrs_sds 資料夾

- ifrs_sds 資料夾內包含以下三個子資料夾及一個schema文件，是整套SDT的核心內容所在：
  - **dimensions資料夾**：內含4份定義連結庫(dim)、1份標籤連結庫(gla)、1份參考連結庫(gre)、4份表達連結庫(pre)及1份role schema文件。
  - **labels資料夾**：內含一份英文版標籤連結庫(lab_ifrs_sds-en_2022-05-25.xml)及一份元素概念解說連結庫(doc_ifrs_sds-en_2022-05-25.xml)。
  - **linkbases資料夾**：內含ifrs_s1、ifrs_s2及im_1三個子資料夾。
    - **ifrs_s1資料夾**：內含5份定義連結庫(dim)、1份標籤連結庫(gla)、2份參考連結庫(gre及ref)、5份表達連結庫(pre)及1份role schema文件。
    - **ifrs_s2資料夾**：內含1份定義連結庫(dim)、1份標籤連結庫(gla)、2份參考連結庫(gre及ref)、1份表達連結庫(pre)及1份role schema文件。
    - **im_1資料夾**：內含1份定義連結庫(dim)、1份標籤連結庫(gla)、2份參考連結庫(gre及ref)、1份表達連結庫(pre)及1份role schema文件。
  - **ifrs_sds-cor_2022-05-25.xsd文件**：負責元素定義的核心模式文件。

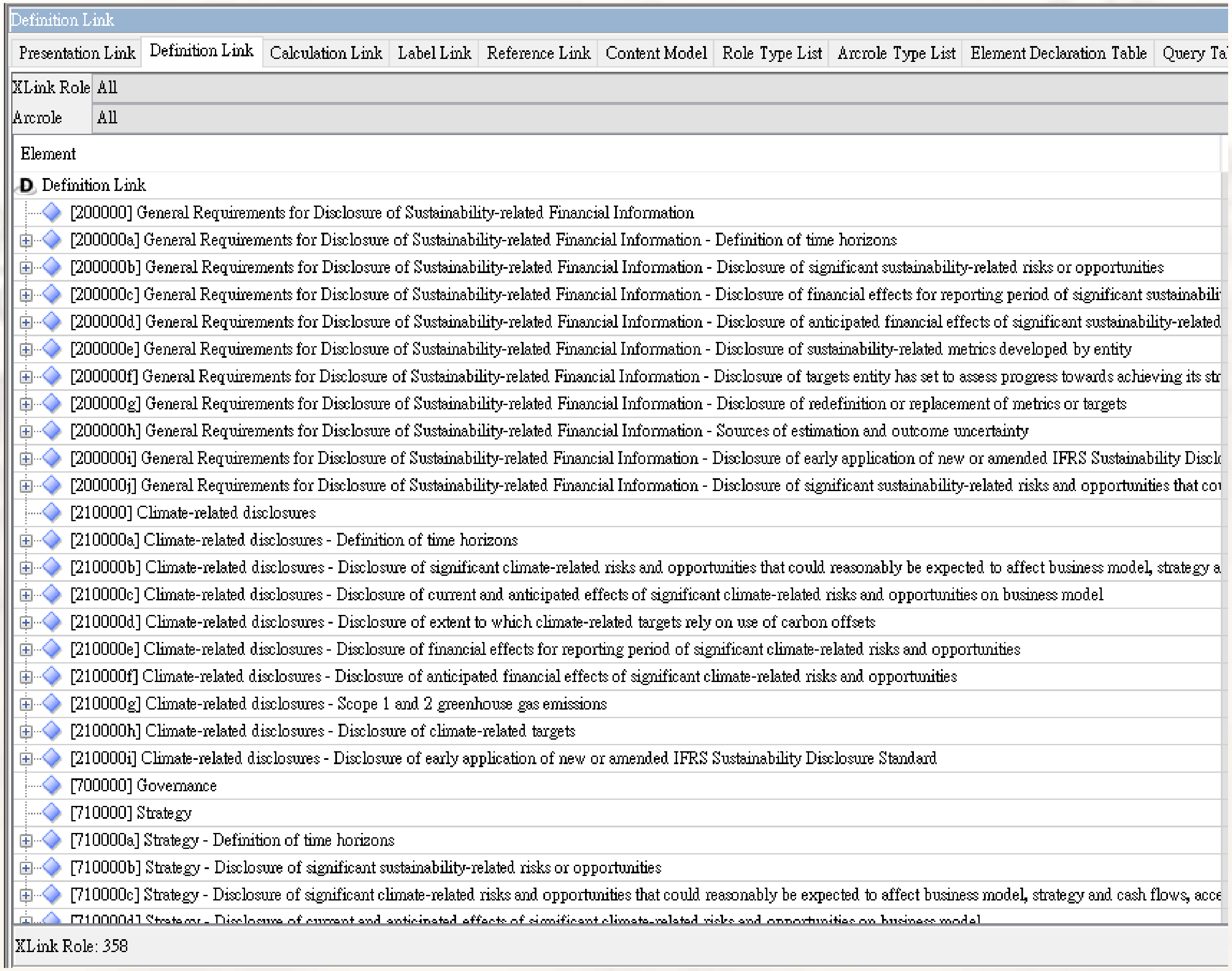
# IFRS SDT的表達連結

- IFRS SDT共有78個表達連結(presentationLink)角色，其中包含68個產業別指標(Industry Metrics)角色。
  - IFRS SDT的表達連結，包含**以parent-child arc建構的維度表格結構**。
  - 但維度表格應透過定義連結的Dimension畫面來填值。
  - 因此SDT表達連結的維度結構主要功能是協助使用者了解SDT的整體結構，而非做為填製案例文件內維度表格的介面。



# IFRS SDT的定義連結

- IFRS SDT共有358個定義連結(definitionLink)角色，其中10個為空角色或不完整維度，其餘348個有完整維度關係，故共有348個維度表格。
- IFRS SDT的主要填值介面就是由定義連結建構的維度表格畫面。但亦有許多文字敘述資訊需透過前述表達連結畫面來填值。



# IFRS SDT的元素內容值型態：以xbrli開頭

- 以ifrs_sds資料夾內的ifrs_sds-cor_2022-05-25.xsd核心模式文件為例，SDT使用到的XBRL 2.1原始元素型態(以xbrli:開頭)如下：
  - xbrli:booleanItemType [布林值項目型態]
  - xbrli:dateItemType [日期項目型態]
  - xbrli:decimalItemType [數值項目型態]
  - xbrli:durationItemType [期間項目型態]
  - xbrli:gYearItemType [西元年項目型態 gYear: Gregorian calendar year]
  - xbrli:monetaryItemType [貨幣項目型態]
  - xbrli:nonNegativeIntegerItemType [非負整數項目型態]
  - xbrli:pureItemType [比率、平均數、因子項目型態]
  - xbrli:stringItemType [字串項目型態，此型態為SDT中最常見的元素型態]

# IFRS SDT的元素內容值型態：以dtr-types開頭(1/2)

- 以ifrs_sds資料夾內的ifrs_sds-cor_2022-05-25.xsd核心模式文件為例，SDT使用到的XII型態登錄器型態(以dtr-types:開頭)如下：
  - dtr-types:areaItemType [面積項目型態]
  - dtr-types:domainItemType [領域項目型態，ED維度表格欄標題元素使用的型態]
  - dtr-types:energyItemType [能源項目型態，例如：以焦耳衡量的項目]
  - dtr-types:flowItemType [流量項目型態]
  - dtr-types:ghgEmissionsItemType [溫室氣體排放項目型態 ghg: greenhouse gas]
  - dtr-types:lengthItemType [長度項目型態]
  - dtr-types:massItemType [質量項目型態]
  - dtr-types:memoryItemType [記憶體項目型態]

(接次頁)

# IFRS SDT的元素內容值型態：以dtr-types開頭(2/2)

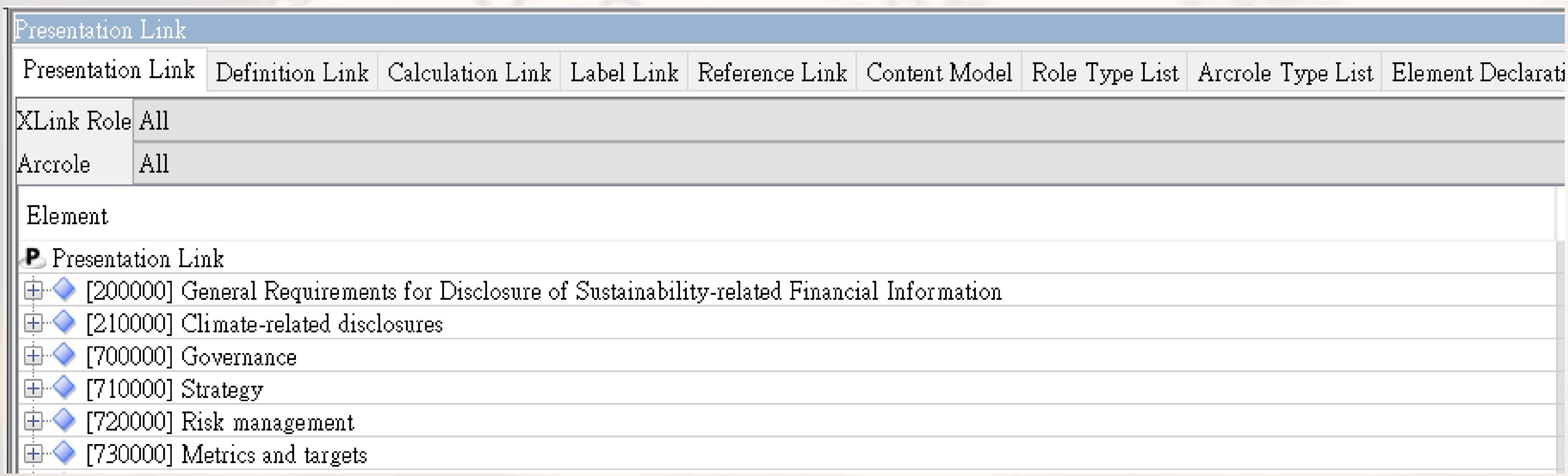
(續前頁)

- dtr-types:percentItemType [百分比項目型態，SDT中大量使用的型態]
- dtr-types:powerItemType [能量項目型態，例如：以瓦特衡量的項目]
- dtr-types:textBlockItemType [文字區塊項目型態，SDT中大量使用的型態]
- dtr-types:volumeItemType [體積(or容量)項目型態]

- 從上述內容值型態的多元性可知，案例文件填值時須設定非常多的unit單位元素，這就需要參考XII在Unit Registry內的http://www.xbrl.org/utr/utr.xml文件來做設定。以Emissions為例，就有噸(tCO2e)、千噸、百萬噸..等不同當量單位。

# IFRS SDT S1部分之表達連結角色

- IFRS SDT關於S1準則的部分，在表達連結中有6個角色：
  - [200000] 永續相關財務資訊揭露之一般規定
  - [210000] 氣候相關揭露
  - [700000] 治理
  - [710000] 策略
  - [720000] 風險管理
  - [730000] 指標及目標



# IFRS SDT [200000]表達連結角色之一般特性內容

- [200000]的一般特性內容中，包含可填值項目及維度表格結構：

| | |
|---|---|
| General features [Abstract] | 50 |
| Financial statements to which sustainability-related financial disclosures relate | 10 |
| Industry(ies) used when identifying disclosures about sustainability-related risks or opportunities | 20 |
| Description of type of material information omitted due to prohibition of disclosure [Text Block] | 30 |
| Description of reasons comparative information that differs from information reported in previous period has been reported [Text Block] | 40 |
| Description of fact that it is impracticable to adjust comparative information for one or more prior periods [Text Block] | 50 |
| Date of start of reporting period | 60 |
| Date of end of reporting period | 70 |
| Description of reason for using reporting period longer or shorter than 12 months [Text Block] | 80 |
| Amounts disclosed in sustainability-related financial disclosures are not entirely comparable due to change in length of reporting period [t | 90 |
| Disclosure of information about transactions, other events and conditions that occur after end of reporting period, and before date on whic | 100 |
| Sources of estimation and outcome uncertainty [Text Block] | 110 |
| Sources of estimation and outcome uncertainty [Abstract] | 10 |
| Sources of estimation and outcome uncertainty [Table] | 10 |
| Sustainability-related metrics [Axis] | 10 |
| Sustainability-related metrics [Domain] | 10 |
| Sources of estimation and outcome uncertainty [Line Items] | 20 |
| Explanation of sources and nature of estimation uncertainties and factors affecting uncertainties [Text Block] | 10 |
| Disclosure of assumptions about future, and other sources of significant outcome uncertainty [Text Block] | 120 |
| Prior period errors [Abstract] | 130 |
| Description of nature of errors in prior periods [Text Block] | 10 |
| Explanation of reason why it is impracticable to determine amounts for correction related to prior period errors [Text Block] | 20 |
| Entity provided explicit and unqualified statement of compliance of sustainability-related financial disclosures with all relevant requireme | 140 |
| Disclosure of early application of new or amended IFRS Sustainability Disclosure Standard [Text Block] | 150 |
| Disclosure of early application of new or amended IFRS Sustainability Disclosure Standard [Abstract] | 10 |
| Disclosure of early application of new or amended IFRS Sustainability Disclosure Standard [Table] | 10 |
| IFRS Sustainability Disclosure Standards [Axis] | 10 |
| IFRS Sustainability Disclosure Standards [Domain] | 10 |
| General Requirements for Disclosure of Sustainability-related Financial Information [Member] | 10 |
| Climate-related Disclosures [Member] | 20 |
| Disclosure of early application of new or amended IFRS Sustainability Disclosure Standard [Line Items] | 20 |
| New or amended IFRS Sustainability Disclosure Standard is applied early [true false] | 10 |

# IFRS SDT [210000]表達連結角色內容

- 氣候相關揭露(Climate-related disclosures)這個角色，也涵蓋治理、策略、風險管理、指標及目標等構面，以及附錄。
- [210000]的標題雖然是氣候相關揭露，但在此角色下揭露的內容反而不多。後續[700000]至[730000]角色中都有氣候相關揭露主題，可填值的內容反而比較豐富。

| | |
|---|---|
| [210000] Climate-related disclosures | |
| Climate-related disclosures [Abstract] | |
| Governance [Abstract] | 10 |
| Strategy [Abstract] | 20 |
| Risk management [Abstract] | 30 |
| Metrics and targets [Abstract] | 40 |
| Appendices [Abstract] | 50 |
| Disclosure of early application of new or amended IFRS Sustainability Disclosure Standard [Text Block] | 10 |
| Disclosure of early application of new or amended IFRS Sustainability Disclosure Standard [Abstract] | 10 |
| Disclosure of early application of new or amended IFRS Sustainability Disclosure Standard [Table] | 10 |
| IFRS Sustainability Disclosure Standards [Axis] | 10 |
| IFRS Sustainability Disclosure Standards [Domain] | 10 |
| General Requirements for Disclosure of Sustainability-related Financial Information [Member] | 10 |
| Climate-related Disclosures [Member] | 20 |
| Disclosure of early application of new or amended IFRS Sustainability Disclosure Standard [Line Items] | 20 |
| New or amended IFRS Sustainability Disclosure Standard is applied early [true false] | 10 |

# IFRS SDT [700000]表達連結角色內容

- 治理(Governance)這個角色包含一般性揭露規定及氣候相關揭露，且均為表達連結的可填值項目(而非維度表格結構)：

- [700000] Governance
  - Governance [Abstract]
    - General requirements for disclosure of sustainability-related financial Information [Abstract] — 10
      - Disclosure of governance processes, controls and procedures used to monitor and manage sustainability-related risks and opportunities [Te — 10
        - Identity of body or individual within body responsible for oversight of sustainability-related risks and opportunities [Text Block] — 10
        - Disclosure of how responsible body's responsibilities for sustainability-related risks and opportunities are reflected in entity's terms o — 20
        - Disclosure of how responsible body ensures that appropriate skills and competencies are available to oversee strategies designed to resp — 30
        - Disclosure of how and how often responsible body and its committees are informed about sustainability-related risks and opportunities — 40
        - Disclosure of how responsible body and its committees consider sustainability-related risks and opportunities when overseeing entity' — 50
        - Disclosure of how responsible body and its committees oversee setting of sustainability-related targets and monitor progress [Text Bloc — 60
          - Sustainability-related performance metrics are included in remuneration policies [true false] — 10
          - Description of how sustainability-related performance metrics are included in remuneration policies [Text Block] — 20
        - Description of management's role in assessing and managing sustainability-related risks and opportunities [Text Block] — 70
    - Climate-related disclosures [Abstract] — 20
      - Disclosure about governance processes, controls and procedures used to monitor and manage climate-related risks and opportunities [Text — 10
        - Identity of body or individual within body responsible for oversight of climate-related risks and opportunities [Text Block] — 10
        - Disclosure of how responsible body's responsibilities for climate-related risks and opportunities are reflected in entity's terms of refe — 20
        - Disclosure of how responsible body ensures that appropriate skills and competencies are available to oversee strategies designed to resp — 30
        - Disclosure of how and how often responsible body and its committees are informed about climate-related risks and opportunities [Text — 40
        - Disclosure of how responsible body and its committees consider climate-related risks and opportunities when overseeing entity's strat — 50
        - Disclosure of how responsible body and its committees oversee setting of climate-related targets and monitor progress [Text Block] — 60
          - Climate-related performance metrics are included in remuneration policies [true false] — 10
          - Description of how climate-related performance metrics are included in remuneration policies [Text Block] — 20
        - Description of management's role in assessing and managing climate-related risks and opportunities [Text Block] — 70

# IFRS SDT [710000]表達連結角色內容

- 策略(Strategy)這個角色的內容相對複雜，包含多項表達連結可填值項目，及維度表格結構：

| | |
|---|---|
| [710000] Strategy | |
| Strategy [Abstract] | |
| Disclosure of strategy for addressing significant sustainability-related risks and opportunities [Text Block] | 10 |
| Disclosure of strategy for addressing significant climate-related risks and opportunities [Text Block] | 20 |
| Risks and opportunities [Abstract] | 30 |
| General requirements (risks and opportunities) [Abstract] | 10 |
| Disclosure of current and anticipated effects of significant sustainability-related risks and opportunities on business model [Text Block | 10 |
| Disclosure of current and anticipated effects of significant sustainability-related risks and opportunities on business model [Abstrac | 10 |
| Disclosure of current and anticipated effects of significant sustainability-related risks and opportunities on business model [Tabl | 10 |
| Sustainability-related risk or opportunity [Axis] | 10 |
| Sustainability-related risk or opportunity [Domain] | 10 |
| Disclosure of current and anticipated effects of significant sustainability-related risks and opportunities on business model [Line | 20 |
| Description of current and anticipated effects of significant sustainability-related risks and opportunities on entity's value cha | 10 |
| Description of concentration of significant sustainability-related risks or opportunities in entity's value chain [Text Block] | 20 |
| Disclosure of significant sustainability-related risks and opportunities that could reasonably be expected to affect entity’s business m | 20 |
| Climate-related disclosures (risks and opportunities) [Abstract] | 20 |
| Strategy and decision-making [Abstract] | 40 |
| Financial position, financial performance and cash flows [Abstract] | 50 |
| Resilience [Abstract] | 60 |
| General requirements (resilience) [Abstract] | 10 |
| Disclosure of analysis of resilience of strategy and cash flows in relation to significant sustainability-related risks [Text Block] | 10 |
| Climate-related disclosures (resilience) [Abstract] | 20 |
| Disclosure of analysis of resilience of strategy to climate-related changes, developments or uncertainties [Text Block] | 10 |
| Disclosure of results of analysis of resilience of strategy to climate-related changes, developments or uncertainties [Text Block] | 10 |
| Disclosure of how analysis of resilience of strategy to climate-related changes, developments or uncertainties has been conducted w | 20 |
| Disclosure of climate-related scenarios which were used for assessment and sources of climate-related scenarios used [Text Bloc | 10 |
| Analysis of reslience of strategy to climate-related changes, developments or uncertainties has been conducted by comparing di | 20 |
| Type of risk associated with climate-related scenarios used | 30 |
| Entity used climate-related scenario aligned with latest international agreement on climate change [true false] | 40 |
| Disclosure of how analysis of resilience of strategy to climate-related changes, developments or uncertainties has been conducted w | 30 |
| Explanation of methods or techniques used to assess entity’s climate resilience [Text Block] | 10 |
| Disclosure of climate-related assumptions used in analysis of climate resilience [Text Block] | 20 |
| Entity used climate-related scenario analysis to assess climate resilience of its strategy [true false] | 30 |
| Explanation of why entity was unable to use climate-related scenario analysis to assess climate resilience of its strategy [Tex | 10 |

# IFRS SDT [720000]表達連結角色內容

- 風險管理(Risk management)這個角色包含一般性揭露規定及氣候相關揭露，且均為表達連結的可填值項目(而非維度表格結構)：

| | |
|---|---|
| [720000] Risk management | |
| Risk management [Abstract] | |
| General requirements for disclosure of sustainability-related financial Information [Abstract] | 10 |
| Disclosure of process(es) by which sustainability-related risks and opportunities are identified, assessed and managed [Text Block] | 10 |
| Disclosure of process(es) entity uses to identify, assess and prioritise sustainability-related risks for risk-management purposes [Text B | 10 |
| Entity changed process(es) used to identify, assess and prioritise sustainability-related risks compared to prior reporting period [tru | 10 |
| Disclosure of process(es) entity uses to identify, assess and prioritise sustainability-related opportunities [Text Block] | 20 |
| Disclosure of process(es) entity uses to monitor and manage sustainability-related risks and opportunities [Text Block] | 30 |
| Disclosure of extent to which, and how, sustainability-related risk identification, assessment and management process(es) are integrate | 40 |
| Disclosure of extent to which, and how, sustainability-related opportunity identification, assessment and management process(es) are i | 50 |
| Climate-related disclosures [Abstract] | 20 |
| Disclosure of process(es) by which climate-related risks and opportunities are identified, assessed and managed [Text Block] | 10 |
| Disclosure of process(es) entity uses to identify, assess and prioritise climate-related risks for risk management purposes [Text Block] | 10 |
| Entity changed process(es) used to identify, assess and prioritise climate-related risks compared to prior reporting period [true false | 10 |
| Disclosure of process(es) entity uses to identify, assess and prioritise climate-related opportunities [Text Block] | 20 |
| Disclosure of process(es) entity uses to monitor and manage climate-related risks and opportunities [Text Block] | 30 |
| Disclosure of extent to which, and how, climate-related risk identification, assessment and management process(es) are integrated into | 40 |
| Disclosure of extent to which, and how, climate-related opportunity identification, assessment and management process(es) are integra | 50 |

# IFRS SDT [730000]表達連結角色內容

- 指標及目標(Metrics and targets)這個角色的內容也相對複雜，包含多項表達連結可填值項目，及維度表格結構：

| | |
|---|---|
| [730000] Metrics and targets | |
| Metrics and targets [Abstract] | |
| General requirements for disclosure of sustainability-related financial Information [Abstract] | 10 |
| Disclosure about how entity measures, monitors and manages its significant sustainability-related risks and opportunities [Text Block] | 10 |
| Disclosure of sustainability-related metrics developed by entity [Text Block] | 10 |
| Disclosure of sustainability-related metrics developed by entity [Abstract] | 10 |
| Disclosure of sustainability-related metrics developed by entity [Table] | 10 |
| Sustainability-related metrics [Axis] | 10 |
| Sustainability-related metrics [Domain] | 10 |
| Disclosure of sustainability-related metrics developed by entity [Line Items] | 20 |
| Description of sustainability-related metric [Text Block] | 10 |
| Sustainability related metric developed by entity [Abstract] | 20 |
| Description of how sustainability-related metric is defined [Text Block] | 30 |
| Sustainability-related metric is absolute measure or expressed in relation to another metric | 10 |
| Measurement of sustainability-related metric is validated by external body [true false] | 40 |
| Description of external body which validated sustainability-related metric [Text Block] | 10 |
| Explanations of methods used to calculate targets and inputs to calculation [Text Block] | 50 |
| Disclosure of targets entity has set to assess progress towards achieving its strategic goals [Text Block] | 20 |
| Disclosure of redefinition or replacement of metrics or targets [Text Block] | 30 |
| Climate-related disclosures [Abstract] | 20 |
| Disclosure of performance in managing significant sustainanability-related risks and opportunities [Text Block] | 10 |
| Cross industry climate metrics [Abstract] | 10 |
| Disclosure of climate-related targets [Text Block] | 20 |

# IFRS SDT S1部分之定義連結角色

- IFRS SDT的S1部分共有40個定義連結角色，其中6個僅有角色名稱，並無維度表格結構。故S1共有34張維度表格：

Definition Link
- [200000] General Requirements for Disclosure of Sustainability-related Financial Information
- [200000a] General Requirements for Disclosure of Sustainability-related Financial Information - Definition of time horizons
- [200000b] General Requirements for Disclosure of Sustainability-related Financial Information - Disclosure of significant sustainability-related risks or opportunities
- [200000c] General Requirements for Disclosure of Sustainability-related Financial Information - Disclosure of financial effects for reporting period of significant sustainability-related risks and opportunities
- [200000d] General Requirements for Disclosure of Sustainability-related Financial Information - Disclosure of anticipated financial effects of significant sustainability-related risks and opportunities
- [200000e] General Requirements for Disclosure of Sustainability-related Financial Information - Disclosure of sustainability-related metrics developed by entity
- [200000f] General Requirements for Disclosure of Sustainability-related Financial Information - Disclosure of targets entity has set to assess progress towards achieving its strategic goals
- [200000g] General Requirements for Disclosure of Sustainability-related Financial Information - Disclosure of redefinition or replacement of metrics or targets
- [200000h] General Requirements for Disclosure of Sustainability-related Financial Information - Sources of estimation and outcome uncertainty
- [200000i] General Requirements for Disclosure of Sustainability-related Financial Information - Disclosure of early application of new or amended IFRS Sustainability Disclosure Standard
- [200000j] General Requirements for Disclosure of Sustainability-related Financial Information - Disclosure of significant sustainability-related risks and opportunities that could reasonably be expected to affect business model, strateg
- [210000] Climate-related disclosures
- [210000a] Climate-related disclosures - Definition of time horizons
- [210000b] Climate-related disclosures - Disclosure of significant climate-related risks and opportunities that could reasonably be expected to affect business model, strategy and cash flows, access to finance and cost of capital
- [210000c] Climate-related disclosures - Disclosure of current and anticipated effects of significant climate-related risks and opportunities on business model
- [210000d] Climate-related disclosures - Disclosure of extent to which climate-related targets rely on use of carbon offsets
- [210000e] Climate-related disclosures - Disclosure of financial effects for reporting period of significant climate-related risks and opportunities
- [210000f] Climate-related disclosures - Disclosure of anticipated financial effects of significant climate-related risks and opportunities
- [210000g] Climate-related disclosures - Scope 1 and 2 greenhouse gas emissions
- [210000h] Climate-related disclosures - Disclosure of climate-related targets
- [210000i] Climate-related disclosures - Disclosure of early application of new or amended IFRS Sustainability Disclosure Standard
- [700000] Governance
- [710000] Strategy
- [710000a] Strategy - Definition of time horizons
- [710000b] Strategy - Disclosure of significant sustainability-related risks or opportunities
- [710000c] Strategy - Disclosure of significant climate-related risks and opportunities that could reasonably be expected to affect business model, strategy and cash flows, access to finance and cost of capital
- [710000d] Strategy - Disclosure of current and anticipated effects of significant climate-related risks and opportunities on business model
- [710000e] Strategy - Disclosure of extent to which climate-related targets rely on use of carbon offsets
- [710000f] Strategy - Disclosure of financial effects for reporting period of significant sustainability-related risks and opportunities
- [710000g] Strategy - Disclosure of anticipated financial effects of significant sustainability-related risks and opportunities
- [710000h] Strategy - Disclosure of financial effects for reporting period of significant climate-related risks and opportunities
- [710000i] Strategy - Disclosure of anticipated financial effects of significant climate-related risks and opportunities
- [710000j] Strategy - Disclosure of significant sustainability-related risks and opportunities that could reasonably be expected to affect business model, strategy and cash flows, access to finance and cost of capital
- [720000] Risk management

(因螢幕限制部分內容未列入)

# 第四部份：

# [850400]半導體行業

# 指標結構及案例分析

**(國內：台積電、聯發科、日月光)**

**(跨國：Intel、三星電子、台積電)**

# IFRS SDT [850400]半導體行業表達連結角色內容

- IFRS SDT的行業別內容，包含永續揭露指標(sustainability disclosure metrics)及活動指標(activity metrics)兩大類。前者提供總量衡量(例如溫室氣體排放量)，後者提供相對規模衡量(例如總生產量)，以便不同規模大小的企業進行相對比較。
- [850400]半導體行業的永續揭露指標，包含溫室氣體排放、製造之能源管理、水管理及產品生命週期管理等四大項；活動指標則包含總生產數量及自有場所產量之百分比兩項。

| [850400] Industry Metrics - Technology & Communications - Semiconductors (TC-SC) | |
|---|---|
| Semiconductors Industry [Abstract] | |
| Semiconductors Industry, Sustainability Disclosure Metrics [Abstract] | 10 |
| Greenhouse Gas Emissions Disclosure [Abstract] | 10 |
| Energy Management in Manufacturing Disclosure [Abstract] | 20 |
| Water Management Disclosure [Abstract] | 30 |
| Product Lifecycle Management Disclosure [Abstract] | 40 |
| Semiconductors Industry, Activity Metrics [Abstract] | 20 |
| TC-SC-000.A [Abstract] | 10 |
| Production, Units | 10 |
| TC-SC-000.B [Abstract] | 20 |
| Production, Percentage From Owned Facilities | 10 |

# [850400]半導體行業永續揭露指標之設計結構

- [850400]半導體行業的永續揭露指標，包含溫室氣體排放、製造之能源管理、水管理及產品生命週期管理等四大項。每項均以抽象標題做為父元素，下層接一個[Text Block]型態的同名元素讓申報者填寫詳細文字內容，另接1或2個以TC-SC開頭的標題元素。
- TC-SC開頭的標題元素之下，有的是以parent-child arc表達的維度表格結構；也有另接一個[Text Block]型態的元素；水管理則無維度表格結構。

| | |
|---|---|
| Semiconductors Industry, Sustainability Disclosure Metrics [Abstract] | 10 |
| Greenhouse Gas Emissions Disclosure [Abstract] | 10 |
| Greenhouse Gas Emissions Disclosure [Text Block] | 10 |
| TC-SC-110a.1 [Abstract] | 20 |
| TC-SC-110a.2 [Abstract] | 30 |
| Energy Management in Manufacturing Disclosure [Abstract] | 20 |
| Energy Management in Manufacturing Disclosure [Text Block] | 10 |
| TC-SC-130a.1 [Abstract] | 20 |
| Water Management Disclosure [Abstract] | 30 |
| Water Management Disclosure [Text Block] | 10 |
| TC-SC-140a.1 [Abstract] | 20 |
| Product Lifecycle Management Disclosure [Abstract] | 40 |
| Product Lifecycle Management Disclosure [Text Block] | 10 |
| TC-SC-410a.1 [Abstract] | 20 |
| TC-SC-410a.2 [Abstract] | 30 |

# [850400]半導體行業活動指標之設計結構

- [850400]半導體行業的活動指標，包含總生產數量及自有場所產量之百分比兩項。在表達連結中，以下列方式呈現：
  - 以表格編號(抽象標題)做為父元素。
  - TC-SC-000.A表格編號下為總生產數量(Production, Units)元素，該元素為xbrli:decimalItemType，實際填值時為總生產數量數字。
  - TC-SC-000.B表格編號下為自有場所產量之百分比(Production, Percentage From Owned Facilities)元素，該元素為dtr-types:percentItemType，實際填值時為“未乘上100”的原始比例數字(例如百分之35要寫成0.35，而非35)。

| | |
|---|---|
| Semiconductors Industry, Activity Metrics [Abstract] | 20 |
| TC-SC-000.A [Abstract] | 10 |
| Production, Units | 10 |
| TC-SC-000.B [Abstract] | 20 |
| Production, Percentage From Owned Facilities | 10 |

# IFRS SDT [850400]半導體行業定義連結角色內容

- [850400]半導體行業的定義連結角色共有4個，也就是四張維度表格，全部都是單維度結構，且列標題的可填值元素都只有1個，相對單純。

- [850400b] Industry Metrics - Technology & Communications - Semiconductors (TC-SC) - Energy Consumed, Percentage [Table]
  - Energy Consumed, Percentage [Abstract]
    - Energy Consumed, Percentage [Table]
      - Energy Source [Axis]
    - Energy Consumed, Percentage [Line Items]
      - Energy Consumed, Percentage
- [850400c] Industry Metrics - Technology & Communications - Semiconductors (TC-SC) - Global Scope 1 Emissions [Table]
  - Gross Scope 1 Greenhouse Gas Emissions [Abstract]
    - Gross Scope 1 Greenhouse Gas Emissions [Table]
      - Pollutant [Axis]
    - Gross Scope 1 Greenhouse Gas Emissions [Line Items]
      - Gross Scope 1 Greenhouse Gas Emissions
- [850400f] Industry Metrics - Technology & Communications - Semiconductors (TC-SC) - Processor Energy Efficiency At System-level [Table]
  - Processor Energy Efficiency At System-level [Abstract]
    - Processor Energy Efficiency At System-level [Table]
      - Product Type [Axis]
    - Processor Energy Efficiency At System-level [Line Items]
      - Processor Energy Efficiency At System-level
- [850400g] Industry Metrics - Technology & Communications - Semiconductors (TC-SC) - Product Revenue, Percentage [Table]
  - Product Revenue, Percentage [Abstract]
    - Product Revenue, Percentage [Table]
      - Product Type [Axis]
    - Product Revenue, Percentage [Line Items]
      - Product Revenue, Percentage

# 半導體行業[850400b]維度表格內容

- [850400b]的列標題是能源消耗百分比(Energy Consumed, Percentage)，型態是dtr-types:percentItemType。
- 欄標題是能源的使用來源，其一為電網電力(Grid Electricity)，其二為再生能源(Renewable Energy)。
- 表格中填寫的數字就是消耗的能源中來自電網電力的百分比及來自可再生能源的百分比。
- 本表的[Domain]為標題，不用填值。

| | Energy Source [Axis] | | |
|---|---|---|---|
| | Energy Source [Domain] | | |
| Energy Consumed, Percentage [Abs... | Grid Electricity [Member] | Renewable Energy [Member] | |
| Energy Consumed, Percentage [Abstract] | | | |
| Energy Consumed, Percentage [Line I | | | |
| Energy Consumed, Percentage | | | |

# 半導體行業[850400c]維度表格內容

- [850400c]的列標題是範疇一溫室氣體總排放(Gross Scope 1 Greenhouse Gas Emissions)，型態是dtr-types:ghgEmissionsItemType，表達數據是公噸(t)二氧化碳當量。
- 欄標題是碳排項目，以[Domain]表達總排放量，以[Member]表達全氟化合物(Perflourinated Carbons)排放量。
- 表格中填寫的數字就是以公噸(t)二氧化碳當量表達的全氟化合物之總排放量及範疇1之全球總排放量。
- 本表的[Domain]有實際意涵， 應該填值。

| | Pollutant [Axis] | |
|---|---|---|
| Gross Scope 1 Greenhouse Gas Emissions [Ab... | Perflourinated Carbons [Member] | Pollutant [Domain] |
| Gross Scope 1 Greenhouse Gas Emissions [Abstract] | | |
| Gross Scope 1 Greenhouse Gas Emissions [Line | | |
| Gross Scope 1 Greenhouse Gas Emissions | | |

# 半導體行業[850400f]維度表格內容

- [850400f]的列標題是系統層級處理器之能源效率(Processor Energy Efficiency At System-level)，型態是xbrli:decimalItemType，表達數據是單純的數值。
- 欄標題是產品類型，依序為桌上型電腦(Desktops)、筆記型電腦(Laptops)及伺服器(Servers)。
- 表格中填寫的數字就是上述三類型產品在系統層級之處理器能源效率。
- 本表的[Domain]為標題，不用填值。

| | Product Type [Axis] | | | |
|---|---|---|---|---|
| | Product Type [Domain] | | | |
| Processor Energy Efficiency At System-level [Abstract] | Desktops [Member] | Laptops [Member] | Servers [Member] | |
| Processor Energy Efficiency At System-level [Abstract] | | | | |
| Processor Energy Efficiency At System-level [Line Items] | | | | |
| Processor Energy Efficiency At System-level | | | | |

# 半導體行業[850400g]維度表格內容

- [850400g]的列標題是產品收入百分比(Product Revenue, Percentage)，型態是dtr-types:percentItemType。
- 欄標題是產品類型：含有IEC 62474應申報物質之產品。
- 表格中填寫的數字就是含有IEC 62474應申報物質之產品占收入之百分比。
- 本表的[Domain]為標題，不用填值。

| Product Revenue, Percentage [Abstract] | Product Type [Axis]: Products Containing IEC 62474 Declarable Substances [Member] | Product Type [Domain] |
|---|---|---|
| Product Revenue, Percentage [Abstract] | | |
| Product Revenue, Percentage [Line Items] | | |
| Product Revenue, Percentage | | |

# 聯發科、台積電、日月光ISSB報告(XBRL格式)

ISSB_TC-SC_MEDIATEK.xml


```
</xbrli:unit>
<xbrli:unit id="CubicMetre">
  <xbrli:measure>utr:m3</xbrli:mea
</xbrli:unit>
<xbrli:unit id="Pure">
  <xbrli:measure>xbrli:pure</xbrli
</xbrli:unit>
<ifrs-sds:GrossScope1GreenhouseGas
decimals="0" contextRef="From20210
 unitRef="MetricTonnesOfCO2Equival
</ifrs-sds:GrossScope1GreenhouseGa

<ifrs-sds:Scope1EmissionsLongTermA
ategyTargetsAndPerformanceAnalysis
contextRef="From20210101To20211231
2020年設定目標:
範疇一 &amp; 二減量 10% ( 節電量 /
11%) 。
策略:
聯發科技主要排放源為外購電力，在公
成長的表現下，我們致力提高能源使用
能源使用，以降低公司營運所產生的溫
聯發科技2021
年度主要減量作為包含持續提升資料中
成企業總部照明更新為 LED 等，以提高
績效分析:
節電量 / 用電量為 14.8%。
</ifrs-sds:Scope1EmissionsLongTermAn
tegyTargetsAndPerformanceAnalysisTex

<ifrs-sds:GreenhouseGasEmissionsDi
ock contextRef="From20210101To2021
聯發科為無廠晶片設計商，並無生產
主要負責晶片研發設計與銷售，無後
測試環節，不適用該指標。
</ifrs-sds:GreenhouseGasEmissionsD
lock>
<ifrs-sds:EnergyConsumed decimals=
="From20210101To20211231" unitRef=
444568</ifrs-sds:EnergyConsumed>
<ifrs-sds:WaterWithdrawn decimals=
contextRef="From20210101To20211231
"CubicMetre">382000</ifrs-sds:Wate
<ifrs-sds:WaterConsumed decimals="
="From20210101To20211231" unitRef=
201000</ifrs-sds:WaterConsumed>
```


ISSB_TC-SC_TSMC.xml


```
decimals="0" contextRef="From20210101To20
 unitRef="MetricTonnesOfCO2Equivalent">2
</ifrs-sds:GrossScope1GreenhouseGasEmiss

<ifrs-sds:Scope1EmissionsLongTermAndShort
ategyTargetsAndPerformanceAnalysisTextBl
contextRef="From20210101To20211231">目標
台積公司將再生能源視為邁向淨零排放的重要
量台灣再生能源市場現況及發展趨勢、未來半
需求、自身產能成長並持續執行最佳溫室氣體
作為後，規畫於民國 114
年起碳排放零成長，並逐步下降；民國 119
年碳排放回到民國 109 年排放水準；並於民國
年含價值鏈一同達到淨零碳排放。
策略:
透過優化製程氣體用量、全面導入製程尾氣破
備與零碳排能源、提升能源使用效率、擴大資
選用低碳足跡原物料與開發高效節能設備等種
動，逐步實踐淨零排放目標。
績效分析:
a.  推動低碳製造
 -
 單位產品溫室氣體排放量（公噸一二氧化碳當
二吋晶圓當量一光罩數）減少 27%；
 - 單位產品環境外部性註 2 減少
18%（新台幣元／十二吋晶圓當量-光罩數）
</ifrs-sds:Scope1EmissionsLongTermAndShort
ategyTargetsAndPerformanceAnalysisTextBlo
<ifrs-sds:EnergyConsumedPercentage decima
contextRef=
"Context_Duration_GridElectricityMember"
="Pure">0.94</ifrs-sds:EnergyConsumedPerc
<ifrs-sds:EnergyConsumedPercentage decima
contextRef=
"Context_Duration_RenewableEnergyMember"
="Pure">0.087
</ifrs-sds:EnergyConsumedPercentage>
<ifrs-sds:EnergyConsumed decimals="0" co
="From20210101To20211231" unitRef="Gigajo
69091200</ifrs-sds:EnergyConsumed>
<ifrs-sds:WaterWithdrawn decimals="-3"
contextRef="From20210101To20211231" unit
"CubicMetre">82824000</ifrs-sds:WaterWit
<ifrs-sds:WaterConsumed decimals="-3" co
="From20210101To20211231" unitRef="Cubic
77074000</ifrs-sds:WaterConsumed>
```


ISSB_TC-SC_ASEH.xml


```
</xbrli:unit>
<ifrs-sds:GrossScope1GreenhouseGasEmissions
decimals="0" contextRef="From20210101To20211231"
 unitRef="MetricTonnesOfCO2Equivalent">90591
</ifrs-sds:GrossScope1GreenhouseGasEmissions>
<ifrs-sds:GrossScope1GreenhouseGasEmissions
decimals="0" contextRef=
"Context_Duration_PerflourinatedCarbonsMember"
unitRef="MetricTonnesOfCO2Equivalent">49650
</ifrs-sds:GrossScope1GreenhouseGasEmissions>

<ifrs-sds:Scope1EmissionsLongTermAndShortTermStr
ategyTargetsAndPerformanceAnalysisTextBlock
contextRef="From20210101To20211231">策略:
短期或立即性風險主要來自於能資源使用效率、原物料
成本、氣候與產品相關法規、極端天氣事件包含極端溫
度改變、熱帶氣旋、乾旱等發生，中期則包括自願性協
議、溫室氣體排放成本、低碳技術轉型、客戶偏好改變
與建築節能等，而碳稅、低碳能源或市場需求、氣候參
數的增量改變包含平均溫度或雨量改變、生態系統高脆
弱性與土地利用等，是屬於長期性的風險。
目標:
日月光投控規劃中長期減碳目標，以溫室氣體範疇一與
二全面完成查證的2016 為基準年規劃 2030
年絕對減量 35%。
績效分析:
2021 年以市場基準計算範疇一與二，共排放約 170
萬 tCO2e2，溫室氣體單位營收密集度較 2015
基準年減少
50%。由於產業特性主要排放源來自於電力使用，除了
持續提升能源效率使用，2021 年有 15 個廠區通過
ISO 50001驗證，涵蓋率達 59%。
</ifrs-sds:Scope1EmissionsLongTermAndShortTermStra
tegyTargetsAndPerformanceAnalysisTextBlock>
<ifrs-sds:EnergyConsumed decimals="0" contextRef
="From20210101To20211231" unitRef="Gigajoule">
15426558</ifrs-sds:EnergyConsumed>
<ifrs-sds:EnergyConsumedPercentage decimals="0"
contextRef=
"Context_Duration_RenewableEnergyMember" unitRef
="Pure">0.24</ifrs-sds:EnergyConsumedPercentage>
<ifrs-sds:WaterWithdrawn decimals="0" contextRef
="From20210101To20211231" unitRef="CubicMetre">
25872192</ifrs-sds:WaterWithdrawn>
<ifrs-sds:WaterConsumed decimals="0" contextRef=
"From20210101To20211231" unitRef="CubicMetre">
28600692</ifrs-sds:WaterConsumed>
```

# 台積電、Intel、三星電子ISSB報告(XBRL格式)

國立屏東大學 National Pingtung University

ISSB_TC-SC_TSMC_EN.xml


```
<ifrs-sds:Scope1EmissionsLongTermAnd
ategyTargetsAndPerformanceAnalysisTe
contextRef="From20210101To20211231">
We plan to achieve zero growth in carb
emissions by 2025 and to start decreas
emissions from there on out. In 2030,
restore carbon emissions to the 2020 l
2050, we aim to achieve net zero emiss
just TSMC but also our entire value ch
Strategy:
By optimizing gas usage in manufacturi
processes, introducing exhaust gas aba
equipment and decarbonized energy, enh
existing energy efficiency, expanding
recycling, selecting low-carbon-footpr
materials, developing energy efficient
and practicing other green actions, TS
gradually progressing towards the net
emissions target.
Performance Analysis:
a. Drive Low-carbon Manufacturing
 - Reduced unit GHG emissions by 27%;
 - Reduced unit environmental external
18%.
</ifrs-sds:Scope1EmissionsLongTermAnd
ategyTargetsAndPerformanceAnalysisTex
<ifrs-sds:EnergyConsumedPercentage c
contextRef=
"Context_Duration_GridElectricityMem
="Pure">0.94</ifrs-sds:EnergyConsume
<ifrs-sds:EnergyConsumedPercentage c
contextRef=
"Context_Duration_RenewableEnergyMem
="Pure">0.087
</ifrs-sds:EnergyConsumedPercentage>
<ifrs-sds:EnergyConsumed decimals="(
="From20210101To20211231" unitRef="(
69091200</ifrs-sds:EnergyConsumed>
<ifrs-sds:WaterWithdrawn decimals="-
contextRef="From20210101To20211231"
"CubicMetre">82824000</ifrs-sds:Wate
<ifrs-sds:WaterConsumed decimals="-3
="From20210101To20211231" unitRef="(
77074000</ifrs-sds:WaterConsumed>

<ifrs-sds:WaterWithdrawnPercentageIn
ighOrExtremelyHighBaselineWaterStres
```


ISSB_TC-SC_INTEL.xml


```
<ifrs-sds:GreenhouseGasEmissionsDisclosu
ock contextRef="From20210101To20211231"/
<ifrs-sds:GrossScope1GreenhouseGasEmissi
decimals="-6" contextRef=
"Context_Duration_PerflourinatedCarbonsM
unitRef="MetricTonnesOfCO2Equivalent">11
</ifrs-sds:GrossScope1GreenhouseGasEmiss
<ifrs-sds:GrossScope1GreenhouseGasEmissi
decimals="-6" contextRef=
"From20210101To20211231" unitRef=
"MetricTonnesOfCO2Equivalent">2181000
</ifrs-sds:GrossScope1GreenhouseGasEmiss

<ifrs-sds:Scope1EmissionsLongTermAndShor
ategyTargetsAndPerformanceAnalysisTextBl
contextRef="From20210101To20211231">Targ
In April 2022 we nnounced a new commitment
reach net zero Scope 1 and 2 GHG emissions
2040.
We continued our 100% renewable electricit
commitment for our US, Europe, Israel and
Malaysia operations, and achieved 80% glob
the end of 2021.
Strategy：
Our approach to renewable and alternative
electricity investments has been to reduce
own carbon foot-print while encouraging ot
take similar actions.
Performance analysis:
During 2021, our Scope 1 and 2 emissions
increased by approximately 14% from the 20
baseline. We now have more than 100 altern
and renewable electricity installations wi
capacity of more than 50,000 kW across 23
campuses.
</ifrs-sds:Scope1EmissionsLongTermAndShort
tegyTargetsAndPerformanceAnalysisTextBlock
<ifrs-sds:EnergyConsumed decimals="-6"
contextRef="From20210101To20211231" unit
"Gigajoule">41900000</ifrs-sds:EnergyCon
<ifrs-sds:WaterWithdrawn decimals="-6"
contextRef="From20210101To20211231" unit
"CubicMetre">54100000</ifrs-sds:WaterWit
<ifrs-sds:WaterConsumed decimals="-6" co
="From20210101To20211231" unitRef="Cubic
11600000</ifrs-sds:WaterConsumed>
```


ISSB_TC-SC_SAMSUNG.xml


```
<ifrs-sds:GrossScope1GreenhouseGasEmissions
decimals="-3" contextRef=
"From20210101To20211231" unitRef=
"MetricTonnesOfCO2Equivalent">7604000
</ifrs-sds:GrossScope1GreenhouseGasEmissions>
<ifrs-sds:GrossScope1GreenhouseGasEmissions
decimals="-3" contextRef=
"Context_Duration_PerflourinatedCarbonsMember"
unitRef="MetricTonnesOfCO2Equivalent">4787000
</ifrs-sds:GrossScope1GreenhouseGasEmissions>

<ifrs-sds:Scope1EmissionsLongTermAndShortTermStr
ategyTargetsAndPerformanceAnalysisTextBlock
contextRef="From20210101To20211231">Strategy:
We plan to continually make efforts to reduce
greenhouse gas emissions by expanding the use of
renewable energy, improving process gas treatment
efficiency, developing alternative gases,
replacing high-efficiency facilities, etc.
Performance analysis:
Our total GHG emissions in 2021 stand at 17.4
million tonnes CO2e, a 17% increase from the
previous year. The total GHG emissions increased
due to the installation and activation of the new
semiconductor manufacturing lines. In 2021, we
reduced GHG emissions by a total of 6.41 million
tonnes through 476 projects including improving
gas treatment equipment efficiency, installing
high-efficiency equipment, and enhancing
manufacturing efficiency.
</ifrs-sds:Scope1EmissionsLongTermAndShortTermStra
tegyTargetsAndPerformanceAnalysisTextBlock>
<ifrs-sds:EnergyConsumed decimals="0" contextRef
="From20210101To20211231" unitRef="Gigajoule">
135360000</ifrs-sds:EnergyConsumed>
<ifrs-sds:WaterWithdrawn decimals="0" contextRef
="From20210101To20211231" unitRef="CubicMetre">
185426780</ifrs-sds:WaterWithdrawn>

<ifrs-sds:EffortsToMinimizeUsageOfIEC62474Declar
ableSubstancesTextBlock contextRef=
"From20210101To20211231">We are equipped with a
rigorous pre-inspection and follow-up
management system for parts and raw materials
to prevent hazardous substances from entering
our products. We set the Standards for the
Control of Substances Used in Products based on
```


XBRL eXtensible Business Reporting Language

# 比較：台積電和Intel的能源來源佔比[850400b]

| Energy Consumed, Percentage [Abstract] | 0000050863 | | 2330 | |
|---|---|---|---|---|
| | Energy Source [Domain] | | Energy Source [Domain] | |
| | Grid Electricity [Member] | Renewable Energy [Member] | Grid Electricity [Member] | Renewable Energy [Member] |
| | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 |
| Energy Consumed, Percentage [Abstract] | | | | |
| Energy Consumed, Percentage [Line Items] | | | | |
| Energy Consumed, Percentage | 0.83 | 0.80 | 0.94 | 0.087 |

- 從ISSB的[850400b]這張半導體行業維度表格的數據可知：
  - Intel(美股代號：0000050863)在2021年度的能源消耗中，來自電網電力的佔比為83%，且再生能源比率達到80%。
  - 台積電(台股代號：2330)在2021年度的能源消耗中，來自電網電力的佔比為94%，且再生能源比率僅達到8.7%，遠遜於Intel。

# 比較：Intel、三星和台積的範疇一排放數據[850400c]

Identifier | Pollutant [Axis] | Period

| Gross Scope 1 Greenhouse Gas Emissions... | 0000050863 | | 00593 | | 2330 | |
|---|---|---|---|---|---|---|
| | Pollutant [Domain] | | Pollutant [Domain] | | Pollutant [Domain] | |
| | Perflourinated Carbons [Member] | | Perflourinated Carbons [Member] | | Perflourinated Carbons [Member] | |
| | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 |
| Gross Scope 1 Greenhouse Gas Emissions [Abstract | | | | | | |
| Gross Scope 1 Greenhouse Gas Emissions [Line | | | | | | |
| Gross Scope 1 Greenhouse Gas Emissions | 1120000 | 2181000 | 4787000 | 7604000 | 529337 | 2151937 |

- 從ISSB的[850400c]這張半導體行業維度表格的數據可知：
  - Intel(代號：0000050863)在2021年度的範疇一總排放為2,181,000公噸(CO2 EQ)，其中全氟化合物排放量為1,120,000公噸(佔比51%)。
  - 三星電子(代號：00593)在2021年度的範疇一總排放為7,604,000公噸，其中全氟化合物排放量為4,787,000公噸(佔比63%)。
  - 台積電(代號：2330)在2021年度的範疇一總排放為2,151,937公噸，其中全氟化合物排放量為529,337公噸(佔比25%)。

# 完整比較：Intel、三星和台積(ISSB S2行業別數據)

| Semiconductors Industry [Abstract] | 0000050863 | | | | 00593 | | 2330 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Pollutant [Domain] | | | Perflourinated Carbons [Member] | Pollutant [Domain] | Perflourinated Carbons [Member] | Pollutant [Domain] | | | Perflourinated Carbons [Member] |
| | Energy Source [Domain] | Renewable Energy [Member] | Grid Electricity [Member] | Energy Source [Domain] | Energy Source [Domain] | Energy Source [Domain] | Energy Source [Domain] | | Grid Electricity [Member] | Energy Source [Domain] |
| | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 |
| | Product Type [Domain] | Product Type [Domain] | Product Type [Domain] | Product Type [Domain] | Product Type [Domain] | Product Type [Domain] | Product Type [Domain] | Products Containing IEC 62474 Declarable Substances [Member] | Product Type [Domain] | Product Type [Domain] |
| Greenhouse Gas Emissions Disclosure [Abstract] | | | | | | | | | | |
| Greenhouse Gas Emissions Disclosure [Text Block] | | - | - | - | - | - | - | - | - | - |
| TC-SC-110a.1 [Abstract] | | | | | | | | | | |
| Gross Scope 1 Greenhouse Gas Emissions [Abstract | | | | | | | | | | |
| Gross Scope 1 Greenhouse Gas Emissions [Line | | | | | | | | | | |
| Gross Scope 1 Greenhouse Gas Emissions | 2181000 | - | - | 1120000 | 7604000 | 4787000 | 2151937 | - | - | 529337 |
| Gross Scope 1 Greenhouse Gas Emissions | 2181000 | - | - | 1120000 | 7604000 | 4787000 | 2151937 | - | - | 529337 |
| TC-SC-110a.2 [Abstract] | | | | | | | | | | |
| Scope 1 Emissions, Long-term And Short-term Strategy, Targets And Performance Analysis [Text Block] | Targets：<br>In April 2022 we announced a new commitment to reach net | - | - | - | Strategy:<br>We plan to continually make efforts to reduce greenhouse g | - | Targets:<br>We plan to achieve zero growth in carbon emissions by 202 | - | - | - |
| Energy Management in Manufacturing Disclosure [Abstract | | | | | | | | | | |
| TC-SC-130a.1 [Abstract] | | | | | | | | | | |
| Energy Consumed, Percentage [Abstract] | | | | | | | | | | |
| Energy Consumed, Percentage [Line Items] | | | | | | | | | | |
| Energy Consumed, Percentage | - | 0.80 | 0.83 | - | - | - | - | - | 0.94 | - |
| Energy Consumed | 41900000 | - | - | - | 135360000 | - | 69091200 | - | - | - |
| Water Management Disclosure [Abstract] | | | | | | | | | | |
| TC-SC-140a.1 [Abstract] | | | | | | | | | | |
| Water Withdrawn | 54100000 | - | - | - | 185426780 | - | 82824000 | - | - | - |
| Water Consumed | 11600000 | - | - | - | 148372015 | - | 77074000 | - | - | - |
| Water Withdrawn, Percentage In Regions With Hig | - | - | - | - | - | - | 0.038 | - | - | - |
| Water Consumed, Percentage In Regions With Hig | - | - | - | - | - | - | 0.005 | - | - | - |
| Product Lifecycle Management Disclosure [Abstract] | | | | | | | | | | |
| TC-SC-410a.1 [Abstract] | | | | | | | | | | |
| Product Revenue, Percentage [Abstract] | | | | | | | | | | |
| Product Revenue, Percentage [Line Items] | | | | | | | | | | |
| Product Revenue, Percentage | - | - | - | - | - | - | - | 0.0006 | - | - |
| Efforts To Minimize Usage Of IEC 62474 Declarable Substances [Text Block] | | - | - | - | We are equipped with a rigorous pre-inspection and follow-up management syst | - | TSMC complies with all ESH regulations during the production stage. All produ | - | - | - |
| TC-SC-410a.2 [Abstract] | | | | | | | | | | |
| Efforts To Design For New And Emerging Usage Patterns With Respect To Energy Efficiency In All Product Categories [Text Block] | Processor:<br>In 2021, we launched 12th Generation Intel® Core™ proce | - | - | - | In 2021, the annual energy consumption of our products was reduced by an aver | - | TSMC continues to advance semiconductor manufacturing technologies and ser | - | - | - |
| Semiconductors Industry, Activity Metrics [Abstract] | | | | | | | | | | |
| TC-SC-000.A [Abstract] | | | | | | | | | | |
| Production, Units | - | - | - | - | - | - | 1300000000 | - | - | - |

# 完整比較：台積、聯發科和日月光(ISSB S2行業別數據)

| Semiconductors Industry [Abstract] | 2330 | | | | | 2454 | 3711 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Pollutant [Domain] | | | | Perflourinated Carbons [Member] | Pollutant [Domain] | Pollutant [Domain] | | Perflourinated Carbons [Member] |
| | Energy Source [Domain] | | Renewable Energy [Member] | Grid Electricity [Member] | Energy Source [Domain] | Energy Source [Domain] | Energy Source [Domain] | Renewable Energy [Member] | Energy Source [Domain] |
| | 2021-01-01 - 2021-12-31 | | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 | 2021-01-01 - 2021-12-31 |
| | Product Type [Domain] | Products Containing IEC 62474 Declarable Substances [Member] | Product Type [Domain] | Product Type [Domain] | Product Type [Domain] | Product Type [Domain] | Product Type [Domain] | Product Type [Domain] | Product Type [Domain] |
| Gross Scope 1 Greenhouse Gas Emissions [Abstract] | | | | | | | | | |
| Gross Scope 1 Greenhouse Gas Emissions [Line | | | | | | | | | |
| Gross Scope 1 Greenhouse Gas Emissions | 2151937 | - | - | - | 529337 | 5326 | 90591 | - | 49650 |
| Gross Scope 1 Greenhouse Gas Emissions | 2151937 | - | - | - | 529337 | 5326 | 90591 | - | 49650 |
| TC-SC-110a.2 [Abstract] | | | | | | | | | |
| Scope 1 Emissions, Long-term And Short-term Strategy, Targets And Performance Analysis [Text Block] | 目標:<br>台積公司將再生能源視為邁向淨零排放的重要策 | - | - | - | - | 2020年設定目標:範疇一＆二減量10%(節電量/用電量須達到11%) | 策略:<br>短期或立即性風險主要來自於能資源使用效率、 | - | - |
| Energy Management in Manufacturing Disclosure [Abstract] | | | | | | | | | |
| TC-SC-130a.1 [Abstract] | | | | | | | | | |
| Energy Consumed, Percentage [Abstract] | | | | | | | | | |
| Energy Consumed, Percentage [Line Items] | | | | | | | | | |
| Energy Consumed, Percentage | - | - | 0.087 | 0.94 | - | - | - | 0.24 | - |
| Energy Consumed | 69091200 | - | - | - | - | 444568 | 15426558 | - | - |
| Water Management Disclosure [Abstract] | | | | | | | | | |
| TC-SC-140a.1 [Abstract] | | | | | | | | | |
| Water Withdrawn | 82824000 | - | - | - | - | 382000 | 25872192 | - | - |
| Water Consumed | 77074000 | - | - | - | - | 201000 | 28600692 | - | - |
| Water Withdrawn, Percentage In Regions With Hig | 0.038 | - | - | - | - | - | - | - | - |
| Water Consumed, Percentage In Regions With Hig | 0.005 | - | - | - | - | - | - | - | - |
| Product Lifecycle Management Disclosure [Abstract] | | | | | | | | | |
| Product Lifecycle Management Disclosure [Text Block] | - | - | - | - | - | 聯發科技為無廠IC設計商，僅負責晶片之設計與銷售，並無製造階 | - | - | - |
| TC-SC-410a.1 [Abstract] | | | | | | | | | |
| Product Revenue, Percentage [Abstract] | | | | | | | | | |
| Product Revenue, Percentage [Line Items] | | | | | | | | | |
| Product Revenue, Percentage | - | 0.0006 | - | - | - | - | - | - | - |
| Efforts To Minimize Usage Of IEC 62474 Declarable Substances [Text Block] | 台積公司不僅於生產製造階段完全符合環保、安全與衛生相關法 | - | - | - | - | - | - | - | - |
| TC-SC-410a.2 [Abstract] | | | | | | | | | |
| Efforts To Design For New And Emerging Usage Patterns With Respect To Energy Efficiency In All Product Categories [Text Block] | 透過不斷強化半導體製程技術與製造服務，台積公司於民國110 | - | - | - | - | - | - | - | - |
| Semiconductors Industry, Activity Metrics [Abstract] | | | | | | | | | |
| TC-SC-000.A [Abstract] | | | | | | | | | |
| Production, Units | 1300000000 | - | - | - | - | 130664661000 | - | - | - |

eXtensible Business Reporting Language

# 謝謝大家

# Q&A

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