出國報告（出國類別：國際會議）

參加 APEC 2023 第三次資深官員會議
化學對話會議
(APEC 2023 SOM 3 CD)

服務機關：環境部化學物質管理署
姓名職稱：蕭寶桂特約高級環境技術師、劉建良視察、趙怡婷技士、
賴致勳技士
派赴國家：美國華盛頓州西雅圖
出國期間：民國112年8月1日至8月7日
報告日期：民國112年10月30日

摘要

2023 年亞太經濟合作會議（Asia-Pacific Economic Cooperation，以下簡稱 APEC）第三次資深官員會議（The Third Senior Officials' Meeting，以下簡稱 SOM 3）於華盛頓州西雅圖舉行，此次主要參與 SOM 3的四場會議及一場活動，分別為：一、8月2日的化學對話產業預備會議（Industry Pre-Meeting，以下簡稱 IPM）；二、化學物質回收對話會議（APEC Advanced Chemical Recycling Dialogue）；三、8月3日的化學對話會議（31st Chemical Dialogue，以下簡稱 CD）；四、8月4日由標準與符合次級委員會（Sub-Committee on Standards and Conformance，簡稱 SCSC）召開的溫室氣體圓桌會議；五、由 SCSC 安排的微軟（Microsoft）參訪活動。

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目的

環境部化學物質管理署（自2023年8月22日起，行政院環境保護署毒物及化學物質局改制為化學署，本報告以下皆以化學署稱之）於2016年12月28日成立，隨著業務發展趨於穩定，自2020年起參與化學對話，累積已參與八屆（第24屆至第31屆）的化學對話會議，熟悉 APEC 次級論壇運作。

惟化學署業務除與 APEC 化學對話有所連結以外，亦與緊急應變、相關國際標準息息相關，因此，此次會議除固定出席的 IPM 及 CD，亦出席先前未接觸過的 SCSC 及其相關活動。透過參與 IPM、CD，以及 SCSC 等次級論壇，以全方位掌握國際間化學物質管理相關議題，以及來自其他 APEC 次級論壇中，與化學署有所關聯的議題。

出國行程

本次出國時間共七日，行程如下：

表 1　美國華盛頓州 2023 年 APEC 化學對話行程表

日期	天數	地點	行程
112/8/1	第1天	臺北→加州舊金山→華盛頓州（轉機）	啟程 8/1 BR8臺北桃園->舊金山 8/1 UA1986舊金山->西雅圖
112/8/2	第2天	華盛頓州西雅圖	參加化學對話業界預備會議
112/8/3	第3天	華盛頓州西雅圖	參加化學對話會議
112/8/4	第4天	華盛頓州西雅圖	參加溫室氣體圓桌會議、參訪微軟
112/8/5	第5-7天	華盛頓州西雅圖→臺北（直飛）	返程 8/5 BR25西雅圖->臺北桃園
112/8/6			
112/8/7			

一、化學對話產業預備會議

（一）時間：8 月 2 日上午

（二）背景：會議目的為於化學對話全體會議前，召集各經濟體的產業代表，探討產業現況、挑戰，以及就產業於後續全體會議，擬提出的政策建議及策略方向，先行凝聚共識。

（三）出席概況：此次為虛實混合會議；澳洲、加拿大、智利、韓國、墨西哥、新加坡、美國、越南，以及我國等 9 個經濟體實體出席會議；馬來西亞、祕魯、俄羅斯、泰國、印尼、日本等經濟體為線上出席會議。

（四）討論：化學產業代表說明其產業現況及面臨的挑戰。

1. 循環經濟：全球持續推動綠色經濟，朝向更綠（greener）的趨勢，但過程不是那麼容易。

2. 化學品全球調和制度（GHS，Globally Harmonized System of Classification and Labelling of Chemicals，GHS）：各經濟體陸續採行第七版但也面臨挑戰，因此，探討 GHS 版本更新時間從兩年改為四年的可行性，以及是否應邀請聯合國的代表參加化學對話的可能。

3. 多邊參與：探討增加各經濟體對國際規範，例如斯德哥爾摩公約等的參與，或與世界貿易組織（WTO）等單位合作，以討論化學品安全和監理機制，並在快速變化的供應鏈體系，共同發展更多化學物質的安全替代。

（五）化學署發言：摘要隔天（8 月 3 日）於化學對話全體會議擬進行簡報–緊急應變的內容

二、化學物質回收對話會議

（一）時間：8 月 2 日上午

（二）背景：此次為化學對話第一次召開以化學物質回收為議題的會議，由產業代表–美國化學產業協會舉辦，會中原訂邀請德州眾議員湯普森（Ed Thompson），以及德州參議員漢考克（Kelly Hancock）出席會議，分享州政府的化學物質回收政策；不過，參議員漢考克未出席會議，致會議進行時間短暫。

（三）出席概況：此次為虛實混合會議；澳洲、加拿大、智利、韓國、墨西哥、新加坡、美國、越南，以及我國等 9 個經濟體實體出席會議。

（四）觀察：由於該會議為此次第一次召開，非例行性會議，惟於化學對話期間召開，推測近期美國化學產業協會可能擬進行化學政策遊說，因此，安排此會議。

三、化學對話全體會議

（一）時間：8 月 3 日全天

（二）出席概況

1. 經濟體：此次為虛實混合會議；澳洲、加拿大、智利、韓國、墨西哥、菲律賓、新加坡、美國、越南，以及我國等 10 個經濟體實體出席會議；馬來西亞、紐西蘭、祕魯、俄羅斯、泰國、印尼、日本等 7 個經濟體為線上出席會議，合計達 17 個經濟體。

2. 出席門檻：化學對話每次會議至少需 14 個（21 個經濟體*3 分之 2）出席，若連續兩次未達到該門檻，將檢討化學對話是否持續；因第 30 屆化學對話（即 2023 年 2 月召開的會議），僅開放實體會議，出席經濟體不踴躍，此次改回虛實混合，符合門檻，暫時免於被檢討落日的可能性。

（三）化學對話主席開場：目前正在訂定化學對話 2024-2027 年亞太區化學策略架構（Strategic Framework for Chemicals in the Asia-Pacific Region 2024-2027），徵求各經濟體意見，並於 112 年 8 月 31 日前回覆意見。（本署後續亦有配合辦理）

（四）APEC 提案概況

1. APEC 秘書處：今年第一階段提案，總申請件數 74 件、獲准 53 件，獲准率高，達 71%；另外，化學對話今年第二階段申請件數達 5 件，其中 1 件巴布亞紐幾內亞的提案因連署經濟體不足，未獲准，其餘 4 件（美國 3 件、韓國 1 件）皆獲准。

2. 官方主席：可能因 COVID-19 爆發，提案較多以線上召開，加上有支持 COVID-19 的資金挹注，獲准率高，好的想法永遠不嫌晚，期待各經濟體儘速提案。

（五）CTI 主席：目前的產業對話，分別為汽車對話以及化學對話 2 個，鼓勵各經濟體持續共同合作，促進包容性，例如在 GHS、海洋廢棄物、循環經濟等議題。

（六）法規合作：出席經濟體皆進行法規更新，我國化學署由蕭寶桂特約高級環

境技術師說明，包括：我國因應國際趨勢、為促進跨部會整合，以及為提升規範一致性所做的相關法規調整。

（七）我國規劃提案說明：國立高雄科技大學陳政任特聘教授以及化學署劉建良視察以「化學緊急應變的法規推廣與執行」（Regulatory Promotion and Implementations of Chemical Emergency Preparedness）為題，進行 10 分鐘簡報，說明我國化學緊急應變的培訓課程，根據統計，自 2021 年 8 月起，培訓相關產業應變人員約一萬餘人；此外，今年將提出自籌提案內容。簡報亦播放自製培訓課程影片，引起高度關注；會後澳洲評論，「是一流的設備」；其他經濟體如越南、新加坡、美國化學相關產業、官方代表爭相詢問，各經濟體表達參與意願。化學署後續規劃於今年送交化學對話秘書處。

（八）全球化學品統一分類標示系統 (GHS)：我國勞動部代表說明 G.R.E.A.T.網站，已逾 60 萬人次瀏覽，並持續維護該網站；化學對話主席亦表達對我國的感謝。

（九）資訊交換：美國環保署代表分享毒性化學物質管理清單（Toxics Release Inventory，簡稱 TRI），此清單自 1986 年起設置，涵蓋每年產業於化學品運作的資訊，包含有毒、致癌、對人類健康造成嚴重影響的化學物質，全球約 50~60 個經濟體擁有類似的系統，其資訊供政府部門、學術界、產業界、非政府組織及社區團體等參考，更多 TRI 內容，亦可至網頁瀏覽：www.epa.gov/tri/tri-data-and-tools。

（十）海洋廢棄物及永續性：我國海洋委員會代表說明提案的進度，以及提案的研討會時程規劃，訂於 9 月 20 日至 21 日舉行為期兩天的會議，內容聚焦於討論我國海廢的解決方案，以及多面向的交流討論。

四、圓桌會議：新興技術標準如何制定及溫室氣體排放測量之應用

（一）時間：8 月 4 日上午

（二）背景：該圓桌會議是由標準與符合次級（Sub-Committee on Standards and Conformance，以下簡稱 SCSC）委員會舉辦，分為兩個場次。

（三）內容：第一場次溫室氣體測量、揭露及認驗證的標準、方法論和最佳範例。越南、澳洲講者說明該國的政策、規範，以及相關時程策略等。

第二場次的講者，分別來自紐西蘭政府部門，亞馬遜（Amason）、碳揭露計畫（CDP），以及非營利機構 WattTime 等，說明如何運用人工智慧、衛星等新興技術，監測或評估溫室氣體排放，並進一步產出數據。

（四）觀察：此次是首次出席標準與符合次級（SCSC）委員會；該論壇因是以標準為主軸，舉凡循環經濟標準的實踐、產品循環資料（circularity data）交換、減少塑膠污染、溫室氣體排放量測、利用電池再利用驗證系統支持減碳及循環經濟等議題，皆為其探討議題。

五、微軟參訪

（一）時間：8 月 4 日下午

（二）背景

該參訪是由標準與符合次級（SCSC）委員會舉辦，前往微軟（Microsoft）位於西雅圖的總部。

（三）內容

至簡報室聽取該公司在永續相關工作的現況、機會及挑戰，以及其近期積極發展推動的永續雲端工具等。

（四）摘要

微軟在溫室氣體排放上，範疇一約占 1.07%、範疇二約占 2.22%，其餘高達 96.71%皆為範疇三，因此，在減碳努力的方向，即以降低範疇三為主要工作方向。然而，微軟亦面臨資料不易收集、電力排放評估過時、碳移除沒有清楚明確且普及化的品質標準，導致在碳會計的評估，存在不少挑戰；因此，為了改善碳會計，微軟採行三個機制，互相搭配：1. 設置方法論治理委員會（Methodology Governance Council）；2. 建構原物料方法（materials methodology）；3. 建立遙測驅動設備（Telemetry-Driven Devices）方法論。

心得與建議

一、觀察與心得

（一）虛實混合，提高出席數

由於前次（2023年2月）化學對話會議，為實體會議，未開放線上會議，出席經濟體僅個位數；按照化學對話的規定，每次會議的法定出席門檻，須至少三分之二的經濟體出席（21個經濟體的三分之二為至少14個經濟體出席）；如果連續兩屆未達14個門檻，日後將檢討化學對話存續與否。

據推測及觀察，各會員國出國預算在 COVID 期間刪減未及新增可能為原因之一。第二，CD 的3個目標[1]現階段沒有重大爭議性，且無領袖級的指示做為支撐，因此，可能是各經濟體代表爭取出國預算不易獲得，導致出席實體會議不踴躍。

因此，在上述考量下，為了避免被檢討存續，此次會議恢復虛實混合的會議形式，出席經濟體達到17個，因而滿足會議門檻。

另一方面，由於APEC原本有3個產業對話，分別為生命科學對話、汽車對話、化學對話；對話的精神在於有產業代表參與，降低 APEC 的政治性；然而，生命科學對話目前已落日，即目前僅存汽車對話和化學對話此兩個產業對話，此次不再僅限實體出席，可能也突顯 APEC 或於 APEC 具有主導力量的美方有意維持產業對話的想法。

（二）主辦經濟體提供立法部門曝光機會

儘管如上所述，化學對話是 APEC 所屬論壇中，政府部門連結產業代表的會議，然而，此次會議召開期間，穿插化學物質回收對話會議，此會議原本安排一名參議員以及一名眾議員，共兩名議員出席分享；惟後來僅一名議員出席，加上各經濟體與會者可能也不甚瞭解此化學物質回收會議的性質，因此，於會議中的發言，不太熱烈，以致會議時間十分短暫。

此外，此次會議安排的議員分享，皆為美國德州的議員，推測可能有部分政治性

[1] 3個目標分別為：擴大和支持該地區的法規合作和協調，促進貿易並提高化學物質的合理管理標準；促進對化學產業作為永續經濟、環境與社會發展的創新方案提供者角色之認知；促進產業和政府之間的有效合作，以改善化學產品的管理和安全使用。

存在，例如：經由相關法案的協助，增加在國際場域曝光的機會等；後續是否成為常態，值得留意。

二、建議

（一）化學對話的分享，思考注入多元議題與形式的可能性

由於化學對話長期以來，以四個虛擬工作小組（working group）[2]為主軸，進行相關議題的探討或事務的推動；此次以近年化學對話未曾探討過的主題—化學緊急應變，於會中進行簡報，搭配播放化學緊急應變培訓課程的影片，引起現場迴響；另外，美國於會中，分享其毒化物資料庫及管理等相關資訊，亦是近年較少觸及的話題，因此，未來可進一步思考增加不同的議題、不同的簡報形式，於會議上發表，為化學對話開啟更多元探討的可能性。

1. 分享議題：目前化學署例行性的報告以法規更新為主，日後亦可定期更新化學緊急應變培訓課程的進度，例如：當年度的培訓人次、培訓時數、獲培訓的經濟體，以及累計南區毒化災專業訓練中心（以下簡稱南訓場）自成立以來的培訓人次、培訓時數、獲培訓的經濟體等，向各經濟體展現我國於能力建構的量能。

   另外，亦可參考上述美國分享毒化物資料庫經驗，定期說明毒化物資料庫涵蓋物質、運作人等動態資訊，加深各經濟體對我國化學物質管理的形象。

2. 分享形式：多數經濟體在進行說明時，一種是直接口頭說明，另一種是搭配簡報說明；根據本團隊出席化學對話的經驗，有兩次簡報搭配影片呈現，皆受到與會者高度關注，一次是日本產業代表於線上會議期間，播放日本的回收宣導短片，另一次是化學署本次會議於實體會議播放南訓場培訓影片，從兩次的成效來看，皆帶來正面的效益，並於會後引起

[2] 四個虛擬工作小組（working group）即法規合作及謀合虛擬工作小組（Virtual Working Group on Regulatory Cooperation and Convergence，簡稱 VWGRCC）、GHS 虛擬工作小組（Virtual Working Group on GHS，簡稱 VWGGHS）、資訊分享虛擬工作小組（Virtual Working Group on Data Exchange，簡稱 VWGDE），以及海洋廢棄物虛擬工作小組（Virtual Working Group on Marine Debris，簡稱 VWGMD）。

廣泛的詢問或討論，因此，後續如能納入多元的分享形式，推廣宣傳可達到事半功倍的效果。

（二）發掘相關業務之次級論壇或委員會

此次出席第三次資深官員會議，是以參與化學對話為重要目的，然而，亦於會議期間，出席化學對話以外的次級論壇，如 SCSC，亦從中發現與環境部業務範疇的關聯性，雖然此次未能出席 SCSC 的全體會議，僅有機會出席特定主題的圓桌會議，以及參訪活動；惟根據初步掌握資訊，此次議程涵蓋循環經濟標準的實踐、產品循環資料（circularity data）交換、減少塑膠污染、溫室氣體排放量測、減少飲用水含鉛，以及利用電池再利用驗證系統支持減碳及循環經濟等內容，顯示 SCSC 當中，涉及若干與環境部業務關聯的議題，後續將持續與我國聯絡窗口，保持密切聯絡，探索化學署可能介入的討論內容，擴大化學署於 APEC 其他論壇的參與。

（三）伺機掌握國際級企業之推動軌跡

此行因透過 SCSC 安排，得以參訪微軟，透過微軟的簡報，瞭解到即便如微軟此類型的國際級大廠，亦積極掌握國際間永續發展的趨勢，以及投入龐大資源，以推動相關作為；與此同時，其也面臨因應全球趨勢而衍生的困難及挑戰；換言之，國際大廠的人力、時間、資金等各類資源，雖然皆遠高於中小企業，卻仍出現部分瓶頸，亦從中逐步找到解決之道，其經驗軌跡除了值得作為我國企業參考的路徑，因此，建議日後可透過 APEC 等次級論壇場域，增加與產業代表互動的機會，互動交流，減少更多探索及減緩挑戰的成本。

（四）培養我國來自產業的國際交流化學人才

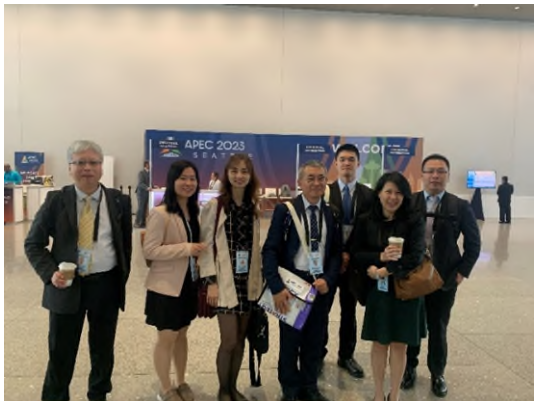
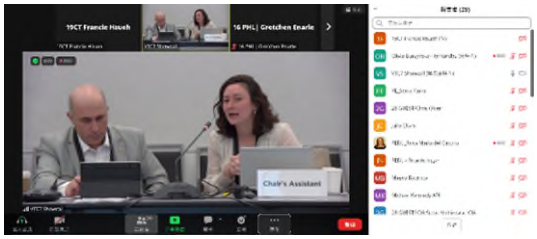
觀察歷屆化學對話各經濟體的代表，如美國、澳洲、泰國、新加坡、馬來西亞等經濟體，皆有產業代表出席與會；以企業代表為例，馬來西亞有巴斯夫（BASF）、新加坡有殼牌（Shell）、泰國有陶氏化學（Dow）、美國有科慕（Chemours）等知名跨國化學集團代表出席；如以化學產業公協會為例，澳洲有澳洲化學協會（Chemistry Australia）、日本有日本化學工業

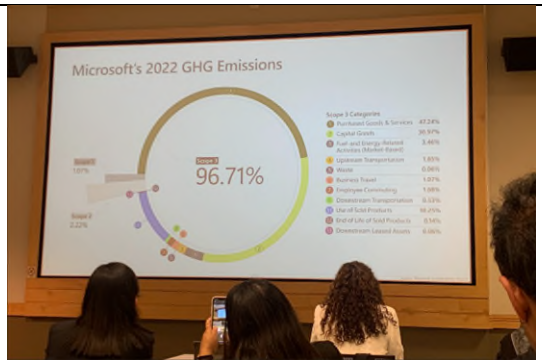
協會（Japan Chemical Industry Association，簡稱 JCIA）、新加坡有新家坡化學工業理事會（Singapore Chemical Industry Council，簡稱 SCIC）、美國有美國產業協會（American Chemistry Council，簡稱 ACC）等代表與會。且產業代表亦於會議中侃侃而談，分享經濟體政策，以及產業發展困境。

因此，我國出席化學對話的身分，除了目前來自化學署和勞動部職業安全衛生署等政府部門代表以外，亦可逐步從產業，挑選對於國際交流事務具有熱情之化學人才，共同出席化學對話會議。

附錄

一、本團參與會議實錄

	
我代表團出席化學對話產業預備會議。	我代表團出席化學對話產業預備會議，並於會場大廳合影。
	
圖左為化學對話的產業共同主席、來自智利的 Sergio Barrientos。	化學署由蕭寶桂特約高級環境技術師說明法規更新。
	
國立高雄科技大學陳政任特聘教授以及化學署劉建良視察說明化學應變培訓課	我代表團會後與兩位共同主席合照；左四為來自美國的官方主席 Kent

程。	Shigetomi、左五為來自智利的產業共同主席 Sergio Barrientos。
	
圓桌會議的第一場次。	圓桌會議的第二場次。
	
APEC 標準及符合性 SCSC 安排微軟參訪行程。	圖為微軟於簡報室說明碳排分布概況。

資料來源：本代表團攝影

二、產業預備會議議程

CHEMICAL DIALOGUE INDUSTRY PRE-MEETING

AGENDA

Location: Seattle Convention Center, Summit Building
Room: 343-344
2 AUGUST 2023

Relevant documents may be found on the APEC Collaboration System (ACS): here

WEDNESDAY, 2 AUGUST 2023	
09:00-11:00 PDT	**APEC Chemical Dialogue Industry Pre-Meeting**
09:00-09:25 [25 min]	**1. Welcome and Introductions**
09:00-09:05 [5 min]	**1.1 Welcome from Industry Co-Chair** ▪ **Mr. Sergio Barrientos**, Chemical Dialogue Industry Co-Chair The Industry Co-Chair will welcome delegates and provide a brief summary of industry specific developments since CD30.
09:05-09:25 [20 min]	**1.2 Delegation Introduction and Adoption of Meeting Agenda** ▪ **Mr. Sergio Barrientos,** Chemical Dialogue Industry Co-Chair One individual from each delegation will be asked to indicate: 1. The economy they are representing 2. Identify specific challenges currently faced by the chemical industry in that economy; and 3. Identify priority items for that delegate on the CD's agenda.
09:25-09:40 [15 min]	**2. CD APEC Projects/Project Proposals**
09:25-09:30 [5 min]	**2.1 APEC CD Project Updates**

	1. **Capacity building on GHS implementation convergence practices** (Singapore)
09:30-09:40 [10 min]	**2.2 <u>New APEC Project Proposals</u>** The CD has several new project proposals on its agenda. The project proponents will summarize these new proposals for industry delegates and then seek industry comment and support for the proposal at the CD plenary on 17 February. • Risk Assessment Project • OECD MAD Workshop
09:40-10:00 **[20 min]**	**3. Regulatory Cooperation and Convergence**
09:40-10:00 [20 min]	**3.1 <u>Regulatory Updates</u>** The Industry Co-Chair will ask IPM delegates to discuss any regulatory developments in their economies of particular importance to industry. In particular, delegates will be asked to identify: (a) the impacts these changes have had on business, (b) any challenges that industry has experienced, and (c) potential ways that the CD might be able to address those challenges on a regional basis.
10:00-10:45 **[45 min]**	**4. Virtual Working Group Updates**
10:00-10:20 [20 min]	**4.1 <u>Reports of Virtual Working Groups</u>** The CD conducts most of its work through a series of virtual working groups ("VWGs"). Industry representatives of these VWGs will seek input on any items of note from their work since SOM3 of last year. These reports are intended to: • Summarize any documents being tabled at the CD; • Seek industry input on any updates since CD30 (SOM1 2023); and • Seek industry consensus on any decision points being posed to the CD. **These agenda items should not be a full summary of the updated to be presented at the CD.** • VWG on Regulatory Cooperation and Convergence *(5 minutes)* • VWG on GHS *(5 minutes)* • VWG on Data Exchange *(5 minutes)* • VWG on Marine Debris *(5 minutes)*
10:20-10:45 [25 min]	**4.2 <u>Cross Collaboration Opportunities with Additional APEC Subfora</u>** This will be an open discussion, moderated by the Industry Co-Chair, to discuss ways the Chemical Dialogue can cross collaborate with additional APEC subfora - including the Alliance for Supply Chain Connectivity and Sub-Committee on Customs Procedures (SCCP) on supply chain issues; or Subcommittee on Committee on Standards and Conformance (SCSC) or the Group on Services (GOS) on topics that may include GRPs regulatory cooperation, or circular economy.
10:45-11:00 **[15 min]**	**5. Meeting Summary and Next Steps**

10:45-10:55 [10 min]	**5.1 <u>Meeting Summary</u>** ▪ **Mr. Di Wolff**, APCIC A representative from the APCIC will summarize the day's discussions and read the list of agreed upon action items for revision and endorsement by delegates.
10:55-11:00 [5 min]	**5.2 <u>Closing Remarks</u>** ▪ **Mr. Sergio Barrientos**, Industry Co-Chair The Industry Co-Chair will provide closing remarks for the Industry Pre-Meeting. Participants are invited to stay for the APEC chemical recycling dialogue.

三、化學物質回收對話議程

APEC Advanced Chemical Recycling Dialogue

AGENDA

Location: Seattle Convention Center, Summit Building
Room: 343-344
2 AUGUST 2023

11:00-12:30 PDT	APEC Advanced Chemical Recycling Dialogue
11:00-11:10 [10 min]	**Introductions** ▪ Mr. Demetrius Jones, American Chemistry Council
11:10-11:30 [20 min]	**U.S. State Advanced Chemical Recycling Policies: Key Takeaways for APEC Economies** *Potential Speakers:* ▪ State Representative Thompson, Texas [virtual - confirmed] ▪ State Senator Hancock, Texas [virtual - confirmed]
11:30-11:45 [15 min]	**Discussion of U.S. State Advanced Chemical Recycling Policies**
11:45-12:00 [15 min]	**Private Sector Perspectives of Advanced Chemical Recycling Policies** *Potential Speakers:* ▪ TBD
12:00-12:15 [15 min]	**Discussion of Private Sector Perspectives**
12:15-12:30 [15 min]	**Conclusion/Next Steps** ▪ Mr. Demetrius Jones, American Chemistry Council

四、化學對話全體會議議程

Asia-Pacific Economic Cooperation

31st Chemical Dialogue ("CD31") AGENDA

"Creating a Resilient and Sustainable Future for All"

Location: Seattle Convention Center, Summit Building
Room: 343-344
3 August 2023

Relevant documents may be found on the APEC Collaboration System (ACS): here

THURSDAY, 3 AUGUST 2023	
09:00-14:20 PDT	**31st APEC Chemical Dialogue (CD)**
09:00-09:40 [40 min]	**1. Welcome and Introductions**
09:00-09:05 [5 min]	**1.1 Introduction from Government Co-Chair** ▪ **Kent Shigetomi**, Chemical Dialogue Government Co-Chair The Government Co-Chair will convene the first meeting of the Chemical Dialogue ("Dialogue" or "CD") in 2023 and provide a brief outline of the objectives and operating procedures for the [hybrid?] meeting.
09:05-09:10 [5 min]	**1.2 Welcome from Industry Co-Chair** ▪ **Sergio Barrientos**, Chemical Dialogue Industry Co-Chair The Industry Co-Chair will welcome delegates and provide a brief summary of industry specific developments since CD30, including the CD industry letter presented to the CTI during SOM2.
09:10-09:40 [30 min]	**1.3 Delegation Introduction and Adoption of Meeting Agenda** ▪ **Kent Shigetomi,** Chemical Dialogue Government Co-Chair ▪ **Sergio Barrientos,** Chemical Dialogue Industry Co-Chair Each delegation will be asked to indicate: 1. The economy they are representing

	2. Whether they are representing government or the private sector 3. Indicate if they would like to propose a change to the agenda or adopt it as is 4. Priorities for the meeting. For example, GHS, regulatory cooperation, sustainability and marine debris etc.
09:40-10:10 [30 min]	**2. APEC 2023 Priorities and Management Update** *(Presenters are encouraged to reserve several minutes for questions following each presentation)*
09:40-10:00 [20 min]	**2.1 Update on the CD Strategic Framework** ▪ **Kent Shigetomi,** CD Government Co-Chair ▪ **Sergio Barrientos**, CD Industry Co-Chair Meeting Documents ▪ 2023/SOM3/CD/CD Strategic Framework 2024-2027 CD Industry Co-Chairs will provide an overview of the updated CD Strategic Framework for discussion.
10:00-10:10 [10 min]	**2.3 APEC Secretariat Update** ▪ **Uyen Pham**, APEC CD Secretariat Meeting Documents ▪ 2023/SOM3/CD/APEC Secretariat Update The APEC CD Secretariat will briefly summarize any relevant administrative developments within APEC and will provide an overview on the APEC project cycle process.
10:10-11:00 [50 min]	**3. Regulatory Cooperation and Convergence** *(Presenters are encouraged to reserve several minutes for questions following each presentation)*
10:10-10:40 [30 min]	**3.1 Regulatory Updates** Economy interventions (TBC) • Australia • Canada • China • Indonesia • Japan • Korea • New Zealand • Philippines • Russia • Singapore • Chinese Taipei • Thailand • United States • Viet Nam This session will allow for economies to briefly (5 min per economy) introduce any regulatory updates. Economies may notify the APEC Secretariat if they would like to be added to the list of economy updates. If possible, please table your intervention in advance with the APEC Secretariat.

10:40-10:50 [10 min]	**3.2 <u>Virtual Working Group on Regulatory Cooperation and Convergence (VWGRCC)</u>** ▪ **Raleigh Davis**, Industry Co-Chair, VWG on Regulatory Cooperation and Convergence <u>Meeting Documents</u> ▪ 2023/SOM3/CD/VWG on Regulatory Cooperation and Convergence The industry co-chair of the VWGRCC will provide an update regarding the implementation of the VWG work plan for 2023, including new proposed APEC-funded concept notes. This includes one project focused on increasing access to CD-endorsed risk assessment tools.
10:50 – 11:00 [10 min]	**3.3 <u>Regulatory Promotion and Implementations of Chemical Emergency Preparedness</u>** ▪ **Pao-Kuei Hsiao,** Chinese Taipei Chinese Taipei will provide a presentation on regulatory promotion and the implementation of chemical energy preparedness.
11:00-11:40 **[40 min]**	**4. Globally Harmonized System for the Labelling and Classification of Chemicals (GHS)** *(Presenters are encouraged to reserve several minutes for questions following each presentation)*
11:00-11:10 [10 min]	**4.1 <u>Preparation Checklist and Guidance on How to Upgrade to Higher GHS Version Concept Note</u>** ▪ **Mr. Raditya Eka Permana,** National Authority for Chemical Weapons Convention, Directorate for Upstream Chemical Industry, Ministry of Industry, Indonesia <u>Meeting Documents</u> ▪ 2022/SOM3/CD/XX This project's aim is to develop a guidance for economies to be able to easily adapt when there is a new revision to GHS being introduced by the U.N. A representative from Indonesia will provide an update on the project's progress.
11:10-11:20 [10 min]	**4.2 <u>Status of the G.R.E.A.T. Project</u>** ▪ **Jean Chen**, Chinese Taipei <u>Meeting Documents</u> ▪ 2023/SOM3/CD/XX Chinese Taipei will deliver a short update on the GHS Reference Exchange and Tool ("G.R.E.A.T.") project and website.
11:20-11:30 [10 min]	**4.3 <u>Virtual Working Group on GHS</u>** ▪ **Fabien Henry**, Industry Co-Chair, VWG on GHS

	Meeting Documents ▪ 2023/SOM3/CD/XX An update regarding implementation of the VWG on GHS 2023 work plan, the 2023 survey report, and the GHS convergence proposal will be provided.
11:30-11:40 [10 min]	**4.4 Capacity Building on GHS Implementation Convergence Project Update** ▪ **Fabien Henry,** Industry CD Representative Meeting Documents ▪ 2023/SOM3/CD/XX With a focus on promoting convergence of GHS implementing regulations, this project aims to create a series of webinars for regulators and industry to address needs identified in the past APEC CD surveys on GHS implementation convergence and initiate exchanges on possible ways forward. A representative from the "Capacity Building on GHS Implementation Convergence" project will provide an update on the project's progress.
11:40 – 12:30	**Lunch Break**
12:30-12:40 [10 min]	**5. CTI Update**
12:30-12:40 [10 min]	**5.1 Committee on Trade and Investment (CTI) Chair Update** ▪ **Blake Van Velden,** CTI Chair [virtual participation] Meeting Documents ▪ 2023/SOM3/CD/XX-XX Mr. Blake Van Velden will present the latest updates on the CTI during 2023, as well as CTI's collaboration with the Chemical Dialogue.
12:40 – 13:10 [30 min]	**6. Data Exchange**
12:40-12:55 [15 min]	**6.1 Toxics Release Inventory** ▪ **Dr. Steve Devito,** Office of Chemical Safety and Pollution Prevention, U.S. EPA [virtual participation] Meeting Documents ▪ 2023/SOM3/CD/On the Toxics Release Inventory The U.S. Environmental Protection Agency's Toxics Release Inventory (TRI) is a resource for learning about toxic chemical releases and pollution prevention activities reported by industrial and federal facilities. TRI data support informed decision-making by communities, government agencies, companies, and others.
12:55-13:10 [15 min]	**6.2 Virtual Working Group on Data Exchange – Progress Report** ▪ **Cissie Yeung,** on behalf of the Virtual Working Group on Data Exchange Meeting Documents ▪ 2023/SOM3/CD/XX

	An update will be provided regarding implementation of the VWG on Data Exchange work plan, including an update on the proposed series of informational webinars.
13:10-13:50 [40 min]	**7. Marine Debris and Sustainability**
13:10-13:20 [10 min]	**7.1 Green Chemistry and the Sound Management of Chemicals Project Update** ▪ **Zoe Emdur,** U.S. Environmental Protection Agency The objective of this project (CD02 2022A) is to promote knowledge sharing and raise awareness within APEC member economies on innovations, practices, and policies among regulators, industry, and supply chain stakeholders to extend the application of sustainable chemistry principles and implementation of source reduction practices to advance the sound management of chemicals. A representative from EPA will provide an update on this project's progress.
13:20-13:30 [10 min]	**7.2 OFWG Project Update: OFWG 05 2023S APEC Workshop on Regional Marine Debris Management** ▪ **Tsai, I-Ting,** Executive Officer, Ocean Affairs Council, Chinese Taipei Meeting Documents ▪ 2023/SOM3/CD/XX - XX A representative of Chinese Taipei will give an update on the progress of activities.
13:30-13:40 [10 min]	**7.3 Readout of the APEC Chemical Recycling Dialogue** ▪ **Demetrius Jones,** CD Industry representative A CD representative will provide a summary of outcomes from the APEC Chemical Recycling Dialogue on 2 August.
13:40-13:50 [10 min]	**7.4 Virtual Working Group on Marine Debris** ▪ **Olivia Hernandez**, Virtual Working Group on Marine Debris Meeting Documents ▪ 2023/SOM3/CD/Virtual Working Group on Marine Debris The coordinator for the Virtual Working Group on Marine Debris will present on APEC's recent work on marine debris, including related work taking place in the CTI, OFWG, GOS, SCSC etc.
13:50-14:20 [30 min]	**8. Meeting Summary and Next Steps**
13:50 -14:05 [15 min]	**8.1 Meeting Summary** ▪ **Dj Wolff**, Asia Pacific Chemical Industry Coalition (APCIC) A representative from APCIC will summarize the day's discussions and read the list of agreed upon action items for revision and endorsement by delegates.

14:05-14:10 [5 min]	**8.2 Document Classification** ▪ **Uyen Pham**, APEC CD Secretariat Meeting Documents ▪ 2023/SOM3/CD/Document Classification List The APEC CD Secretariat will review the Document Classification List and ask delegates to endorse any revisions within the next two weeks.
14:10-14:20 [10 min]	**8.3 Closing Remarks** ▪ **Kent Shigetomi**, Chemical Dialogue Government Co-Chair ▪ **Sergio Barrientos**, Chemical Dialogue Industry Co-Chair The Government and Industry Co-Chairs will provide closing remarks for the 30th Chemical Dialogue.
END OF 31st CHEMICAL DIALOGUE	

五、化學署簡報

Asia-Pacific Economic Cooperation

行政院環境保護署
毒物及化學物質局
Toxic and Chemical Substances Bureau
Environmental Protection Administration
Executive Yuan

Capacity Building for Chemical Emergency Preparedness

Presenter: Mr. Chien-Liang Liu
Executive Officer, Hazard Control Division
Toxic and Chemical Substances Bureau
Environmental Protection Administration, Executive Yuan
Prof. Jenq-Renn Chen
Dept of Safety, Health and Enviro. Eng.
Director, EPA Southern Emergency Response Team (SERT)
National Kaohsiung University of Science and Technology

Chinese Taipei

1

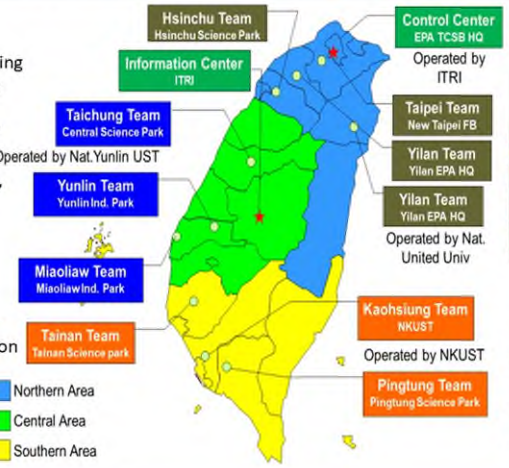
Objectives and Alignment to APEC

- The project aims to build the emergency preparedness capabilities of APEC economies in response to chemical incidents through knowledge and practical skills training such that economic or environmental losses and damages can be reduced, especially in developing economies.
- The shared Goal 3 of Chemical Dialogue is "To enable effective cooperation between industry and governments to improve chemical product stewardship and safe use." Hence this project aims to improve the building capacity toward a safer environment through practical on-site courses with extensive hands-on sessions.
- This project also echoes APEC's focus on supporting capacity building in APEC developing economies; therefore, through various levels of training courses, it provides individual economies with the safety protection needs of chemical incidents and promotes the establishment of incident response safety in the public and private sectors.
- Therefore, this self-funded project plans to hold a five-day incident response training course to strengthen the chemical substance safety network, particularly, *free* for the participation of APEC developing economies.

2

EPA Emergency Response Team (ERT) System

- Chinese Taipei EPA has established an ERT system in responding to incidents involving toxic and hazardous chemicals according to "Disaster Prevention and Response Act"
- 10 ER teams located inside industrial park or science park, each with 18 members and equipped with extensive response resources
- 1 ER Information Center
- 1 Monitor & Control Center
- Around 450 incidents per year were reported to ER Information Center and 1/10 of them required response assistance from ERT. To date, ERTs have responded to more than 1,000 incidents.




Information Center

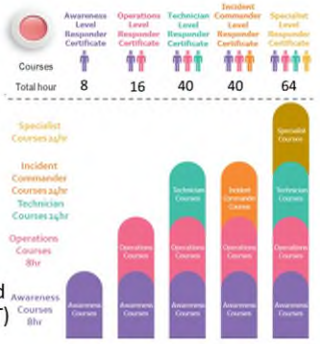

SERT Warehouse


SERT ER Car park

3

Background of Training System

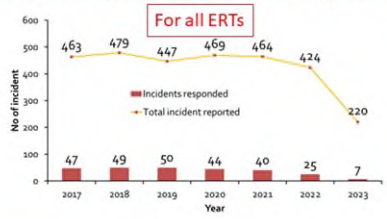
- Our EPA also established a new "Regulations on the Management of Emergency Responders of the Toxic and Concerned Chemical Substance" in Nov. 2020 which layout the detailed training requirement of responders of chemical incidents for facilities handling toxic and concerned chemicals
- A comprehensive training course was also developed which follows closely NFPA 472 Standard for Competence of Responders to Hazardous Materials. The trainings are divided into 5 courses:
  - Awareness course, 8 hr
  - Operation course, 8 hr
  - Technician course, 24 hr
  - Incident Commander course, 24 hr
  - Specialist course, 24 hr
- A new training ground with extensive hands-on training facilities was funded by our EPA, planned and built by Southern Emergency Response Team (SERT) right inside NKUST campus
- Course materials and tests are developed by SERT which included extensive experiences from SERT's incident responses
- Four training centers, including SERT, were certified to offer the training

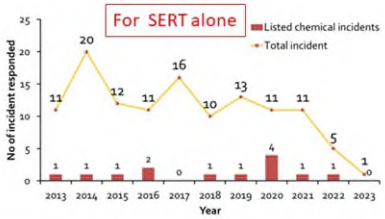


4

Training Statistics

- Training starts on August 2021, and more than 10,000 responders from relevant industries were trained in SERT, and more than 20,000 were trained for all training centers in the past two years.
- SERT also signed an agreement with Texas A&M Engineering Extension Service (TEEX), passed TEEX site inspection, and became a Cooperative Learning Centers(CLC) member since June 2022. SERT could provide training certificates in compliance with OSHA "29 CFR 1910.120(q)".
- Surprisingly, the number of incidents responded to by SERT and other ERTs drops by more than 50% since 2022, suggesting that the training has indeed raised the awareness and preparedness of handling chemicals





5

EPA SERT training ground

- Pollution control room
- Semi ESG training room
- Augmented reality simulation training room
- Laboratory disaster and leak detection training module
- Semi-outdoor pipe/tank leak patching training module
- Lecture room
- Maze
- Detection training room
- Decontamination training room
- Leak sealing device training room
- Small ER resource storage room
- Large ER resource storage & dispatch room
- Turnout gear testing and washing facility
- Self-contained breathing apparatus testing facility
- Outdoor complex training module

6

SERT Facilities

Table-top drill
- Crise 3D simulation of fire/hazmat incidents
- Incident commander training

PPE Training
- PPE Selection
- PPE maintenance
- PPE Decontamination

Semi ESG Safety
- Gas cabinet/cylinder leak training
- Specialty liquid leak training

Tank truck
- Tank truck leak patching
- Tank truck transloading

SERT Training Facilities

Pipe/tank leak training
- Tank and pipe multiple leaks
- Pressure and ambient leaks
- Leak patching with PPE

Complex Leak & fire training
- Multiple fires and leaks
- Industrial fire fighting
- IC field training

Maze
- Confined space walking maze
- ER stress with PPE

Leak source detection
- Ventilated chamber
- Detection of real gaseous chemicals

7

Training facilities

8

Work plan

- The proposed training course will be a customized, five-day Technician course delivered in English. Certificate from SERT and TEEX will be delivered upon completion of the course.
- This project will provide training fees, hotel and meals for up to 20 participants with 1~2 participants for each economy. Limited funding is available for travel to Taipei and the SERT training ground for applicants from developing economies. Additional participation on discounted fees and self-lodging is also possible upon request.
- The work plan is as follows

Date	Key Activity	Deliverable
Sep - Oct 2023	Prepare initial agenda	Initial agenda
Jan - Feb 2024	Finalize agenda and trainers. Complete Non-Member Participant registration, as necessary	Confirm date and agenda
Mar - Apr 2024	Begin outreach to potential participants	Produce eDM
Jun - Jul 2024	Finalize agenda and participants. Send invitation and nomination form to relevant APEC for a complete Non-Member Participant registration, as necessary	Invitation list (participants)
Sept 2024	Implement training	Training
Dec 2024 - Feb 2025	Implement summary report	Summary Report

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Beneficiaries

- The project will give priority to the participation of developing economies, including government representatives and industry representatives involved in chemical reactions, as well as professionals or school professors engaged in related teaching work, to further narrow the gap in emergency technologies and skills among APEC members.
- Moreover, in order to expand the training effect, the project will provide different training scenarios according to the background of the trainees.
- Our course organizers will collect member economies and gender data on participants and, where possible, incorporate gender perspectives into training, including gender-balanced trainers or participants, to ensure the project allows for inclusive growth.
- Participants will include APEC economy and industry representatives. The training will be held in 2024 and invite participants from the CTI and SOM Steering Committee on Economic and Technical Cooperation (e.g., Emergency Preparedness working group).

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APEC
Asia-Pacific
Economic Cooperation
行政院環境保護署
毒物及化學物質局
Toxic and Chemical Substances Bureau
Environmental Protection Administration
Executive Yuan
Thank you for your Attention!
All comments/question welcome:
Mr. Chien-Liang Liu
Chienliang.liu@epa.gov.tw
Prof. Jenq-Renn Chen
jrc@nkust.edu.tw
國立高雄科技大學
National Kaohsiung University of Science and Technology
SERT
南區毒化災專業訓練中心
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六、標準與符合次級委員會圓桌會議議程

Session 2 10:40 – 11:50 am	**Monitoring and Reporting of Greenhouse Gas Emissions: Tools and Technologies** *This session will highlight tools and emerging technologies that are being utilized in the monitoring and reporting of greenhouse gases. Speakers will showcase how data serves as a powerful tool in this space and the role of technologies, such as satellites and other remote sensing technologies using AI, in quantifying and mapping this data.* **Adam Dubas,** Principal Advisor, Trade and International Team, Ministry of Business, Innovation, and Employment, New Zealand **Ken Haig,** Head of Energy and Environmental Policy, Amazon Web Services **Alexandra Hill,** Manager, Cities, States, Regions and Public Authorities, CDP North America **Lekha Sridhar,** Senior Policy Analyst, WattTime *Moderated by:* **Richard Ziegler**
11:50 am – 12:00 pm	**Summary and Site Visit Logistics**
12:00 – 1:00 pm	**Lunch**
Site Visit 1:00 – 5:00 pm	**Site Visit – Microsoft Redmond Campus** *This site visit will showcase Microsoft's campus modernization project and its commitment to leading on sustainability, including a demo of its tools and technologies, such as Microsoft Cloud for Sustainability, and the standards that guide its sustainability efforts. Registration for the site visit is included in the registration for the workshop and is required in advance. For any questions, please contact Liesl Kim of US-SEGA at liesl.kim@cadmusgroup.com.*

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