



# Work Progress Update to the EGEEC 62 & EGCFE 2024 Joint meeting

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# Outline

## i. **Projects and activities**

- CNSC Projects
- ETS Projects
- Projects common to three APSEC teams on APEC Urban Energy 2023 – 2025 (flagship reports)

## ii. **Policy Dialogue and Institution building**

- APSEC Contribution to APEC Peru Policy Dialogue on Green Hydrogen
- APSEC Advisory Board and Experts Group
- CNSC Network
- Information platforms

## iii. **10-year Anniversary Forum of APSEC, 18 – 20 September 2024, Tianjin**

## Research & activities within CNSC pillar program

### On-going APEC Projects

- Research on means to overcome the shortage of basic urban energy-climate data (EWG 04 2021S)
- Research on means to diminish the financing gap for sustainable urban energy (EWG 09 2021S)
- Data Driven Carbon Neutral Disaster Resilient Cities (APEC EWG 04 2022A)

## ❑ **Research on means to overcome the shortage of basic urban energy-climate data (EWG 04 2021S)**

- Endorsed: 6 May 2021

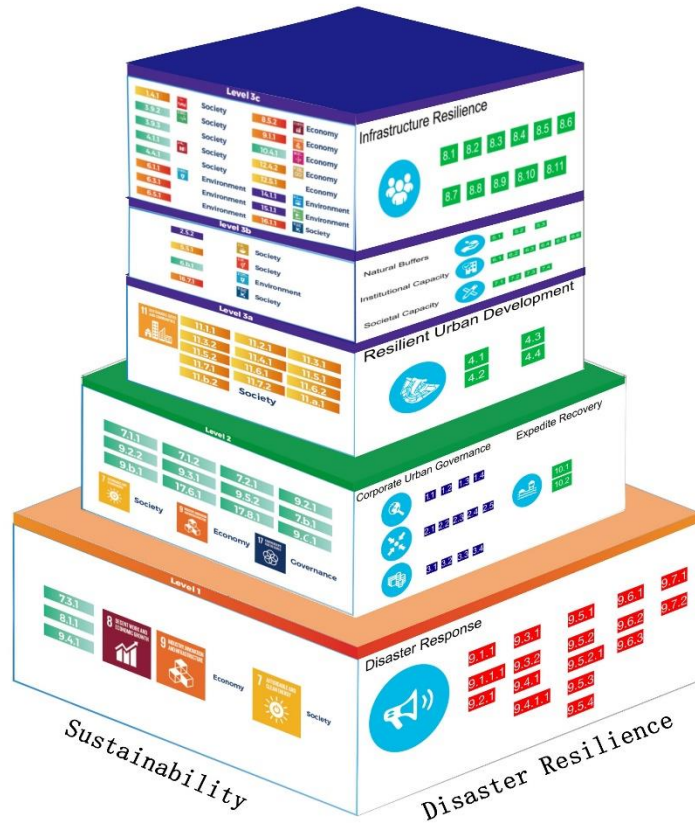
### ■ **Project summary**

- Aims at exploring the feasibility of constructing an urban Sustainable Development Goals (SDGs) database for APEC cities, provisionally named **“APEC Urban SDG Tracker for Energy and Climate”**;
- The purpose of the database is to contribute to filling the **data shortage** of SDG-relevant urban data as described in the previous project reports EWG 11 2018S and EWG 09 2019S.
- Benefits of addressing simultaneously **local SDG indicators** as well as criteria of the **Disaster Resilience Scorecard for Cities**.

### ■ **Project activities**

- Discussing the definition of the available input data sets and the desired output visualization tools with a group of APEC pilot cities and a data user group;
- Programming the input and output portals and the data base, receiving feedback from the test runs;
- Platform set up; data base is being uploaded; up to now it contains data on 28 APEC cities from 4 APEC economies; data for 15 more cities ready for uploading

## Creation of a database for cities with SDGs and disaster resilience data Three commitment levels, depending on the size of cities or municipalities



→ **Commitment level 3:** Implementing and evaluating local action plan  
**Objective:** In-depth transformation towards integrated sustainable development and disaster resilience. Data requirement aiming at monitoring equilibrated in-depth development in all major urban areas, **for large cities;**

→ **Commitment level 2:** Local 2050 vision, 2030 targets, elaborating integrated holistic local action plan for **middle-sized cities**  
**Objective:** Data requirement aiming at achieving rapid progress, driven by key areas: Energy, Industrial Innovation, IT; urban governance;

→ **Commitment level 1:** Improve sustainable development and disaster resilience and showcase results  
**Objective:** Allowing APEC **communities of any size** to participate in the Cooperative Network of Sustainable Cities CNSC network whereby only basic data is needed,

## ❑ Research on means to diminish the financing gap for sustainable urban energy (EWG 09 2021S)

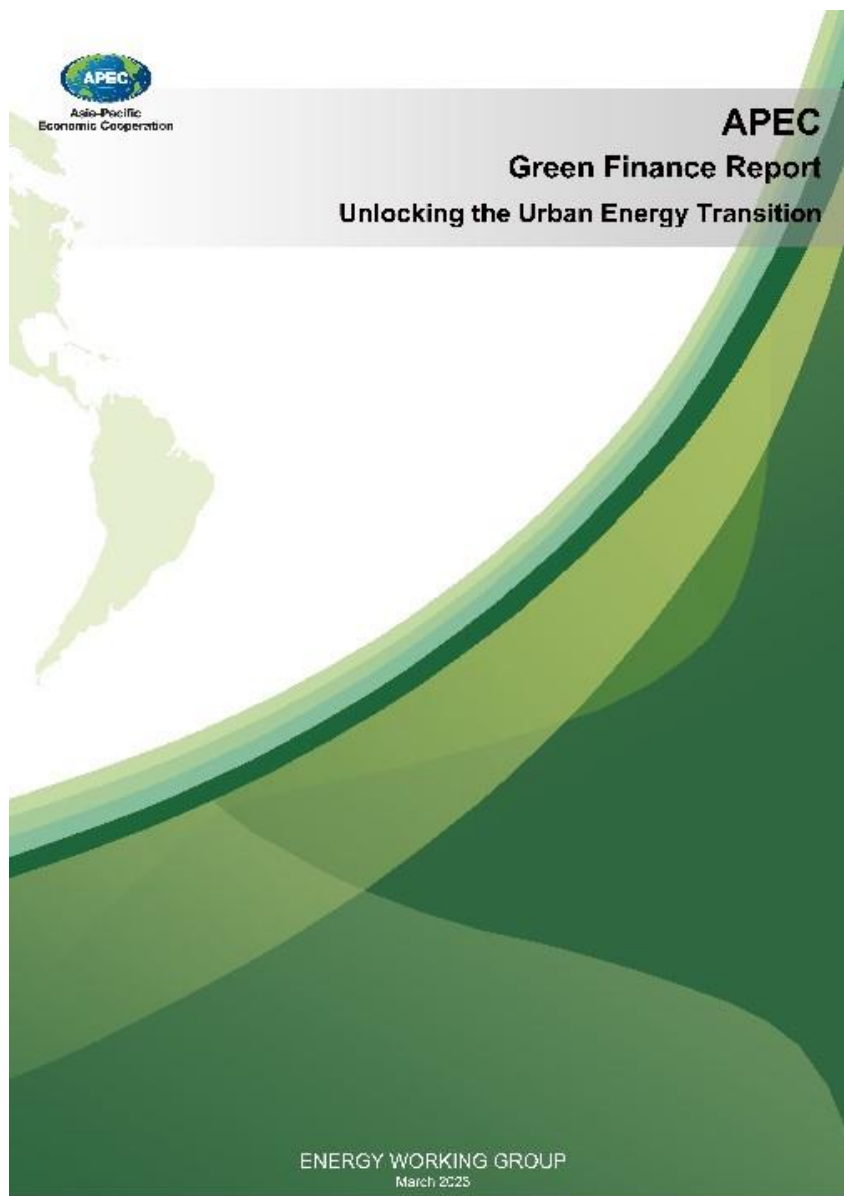
- Endorsed : 29 November 2021

### ■ Summary

- Aim at exploring means for APEC cities and local communities to **diminish the gap** for financing local sustainable energy investments and accelerate the move towards carbon neutrality.
- The project addresses several ways to diminish the local financing gap, namely how cities and towns can enhance the **mobilization of local green finance, catalyse green finance** with other financing tools and channel it in appropriate ways to **local sustainable energy projects**, and how cities can better accede to economy-wide and global green finance.

### ■ Progress

- Organized the **Workshop on Sustainable Cities** held on 9. 12. 2021, gathering representatives from APEC cities (including small and medium sized cities) as well as financial institutions;
- Drafted project report, submitted to EWG for endorsement; endorsed by EWG (12 March 2023).
- Published online on APEC Publications in March 2023



## APEC Green Finance Report – Unlocking the Urban Energy Transition

Published Date      March 2023

### Description

This report describes different global scenarios to reach carbon neutrality by 2050, analyzes their impact on global GDP and on per capita energy consumption, and outlines the existing financing gap. Green finance, underpinned by green taxonomies and to a lesser extent by ESG, has the potential to overcome the financing gap, if it addresses the profitability/risk ratio of green investments.

<https://www.apec.org/publications/2023/03/apec-green-finance-report-unlocking-the-urban-energy-transition>

The second ever APEC Report on Green Finance

## □ Data driven carbon neutral disaster resilient cities, APEC EWG 04 2022A

- Co-sponsored by AUS, CHL, HKC, INA, JPN, PHL, SGP, THA

### ■ Project summary

- Aim at accelerating the development towards carbon neutrality by increasing the number of APEC cities or municipalities having the **capacity to collect relevant data** and use a **multi-stakeholder dialogue** to become carbon neutral and energy inclusive;
- The **relevant data** has been described in Chapter 4 of the APEC Integrated Urban Planning Report and is being tested and improved in pilot phase in project EWG 04 2021S;
- The project has **trained local planning officers** of APEC municipalities (August 2023) and held a 6-day Multistakeholder-Dialogue (MSD) to elaborate 2050/2060 visions and for setting 2030 targets (Feb 2024);
- Carbon neutrality vision and 2030 targets have been adopted.

### ■ Progress

- Project extension for 7 months received in November 2023
- Final Report under preparation; will be submitted to EWG for endorsement in summer 2024.





## The North Sulawesi Province, Indonesia

### A Vision for Carbon Neutrality and Disaster Resilience

From 21<sup>st</sup> – 23<sup>rd</sup> February 2024, the North Sulawesi Province, assisted by international and national partners acting within the framework of the APEC Project EWG 04 2022A, "Data Driven Carbon Neutral Disaster Resilient



Based on the information and trends shown in the above tables, and after discussion of these aspects in the MSD, the MSD decided to adopt the following 2030 targets for the North Sulawesi Province:

Final energy intensity:	0.128 kWh/thousand constant 2010 IDR equivalent to 128 kWh/million constant 2010 IDR.
Emissions intensity:	9 gCO <sub>2</sub> /thousand constant 2010 IDR equivalent to 0.009 tCO <sub>2</sub> /million constant 2010 IDR.
Renewables share in TFC:	60% (high target) 52% (medium target)

	2021	2030 target
	0.131	0.128
	14	9
	27%	60%
	27%	52%

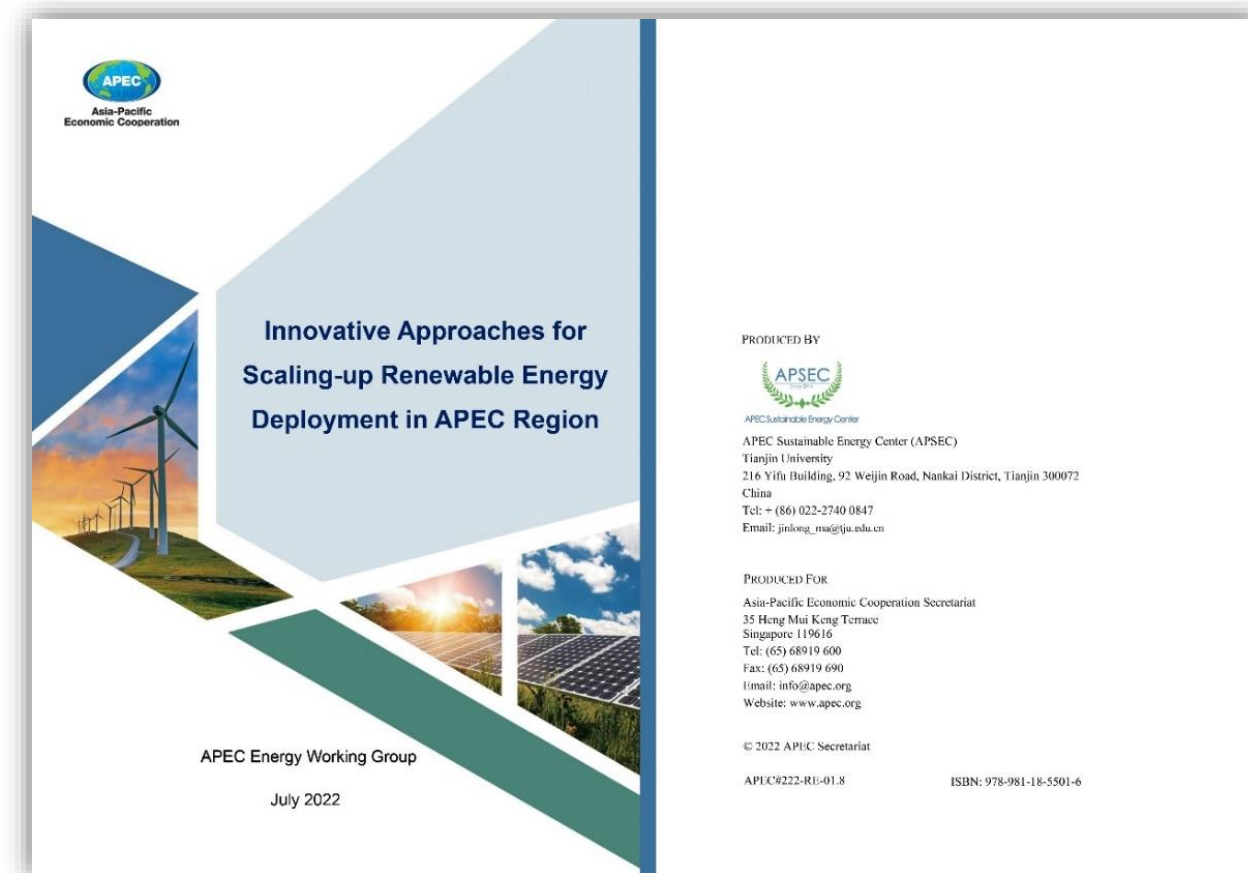
## Research & activities within the ETS pillar program

### Completed APEC projects

- Innovative Approaches for Scaling-Up Renewable Energy Deployment in APEC Region (EWG 04 2020S)
- Support Offshore Wind Deployment and Grid Connection in APEC Region (EWG 06 2021A)
- Impacts of COVID-19 on Renewable Energy Development in APEC Economies (EWG 07 2021A)

## ❑ Innovative Approaches for Scaling-Up Renewable Energy Deployment in APEC Region (EWG 04 2020S)

- Project tasks completed;
- The Project Completion Report submitted;
- The project report published with APEC publication number APEC#222-RE-01.8 and ISBN: 978-981-18-5501-6;
- Report available on the APEC website (<https://www.apec.org/publications/2022/07/innovative-approaches-for-scaling-up-renewable-energy-deployment-in-apec-region>);
- Findings were presented at EWG events, including EGNRET meetings, APSEC forum and others.

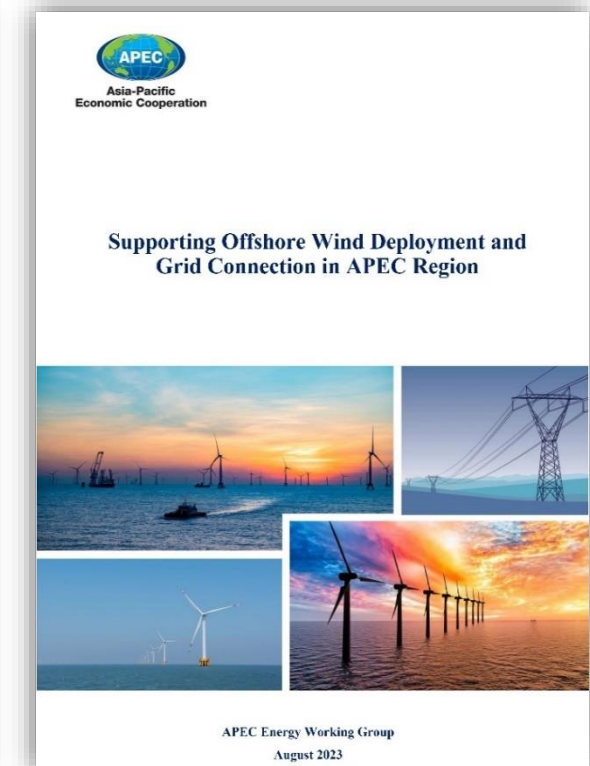
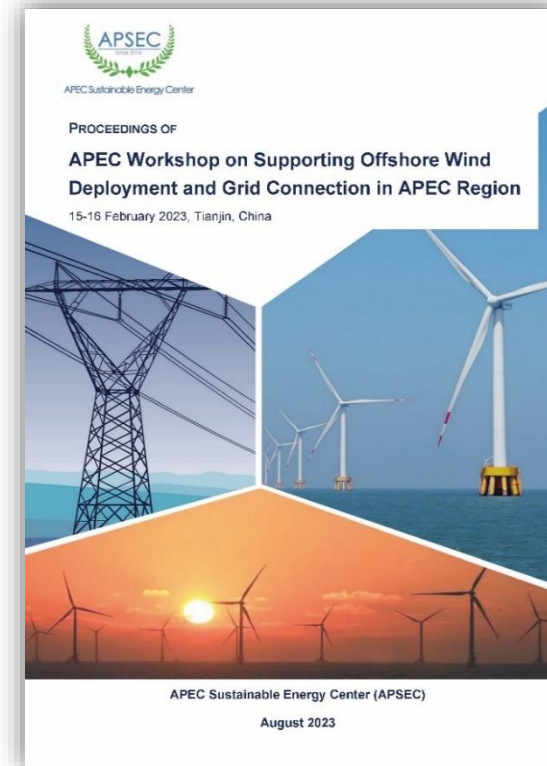


***All tasks finished; CRs completed; project completed.***

## □ Support Offshore Wind Deployment and Grid Connection in APEC Region (EWG 06 2021A)

### Project summary

- **Review** relevant policies and development plans, and planning mechanisms.
- **Analyze** the challenges, barriers, and opportunities for OSW project investment.
- **Support** OSW grid integration.
- Provide **recommendations** on policies and technical solutions to promoting OSW in the APEC region.
- **Build up relevant capacity** for supporting OSW development

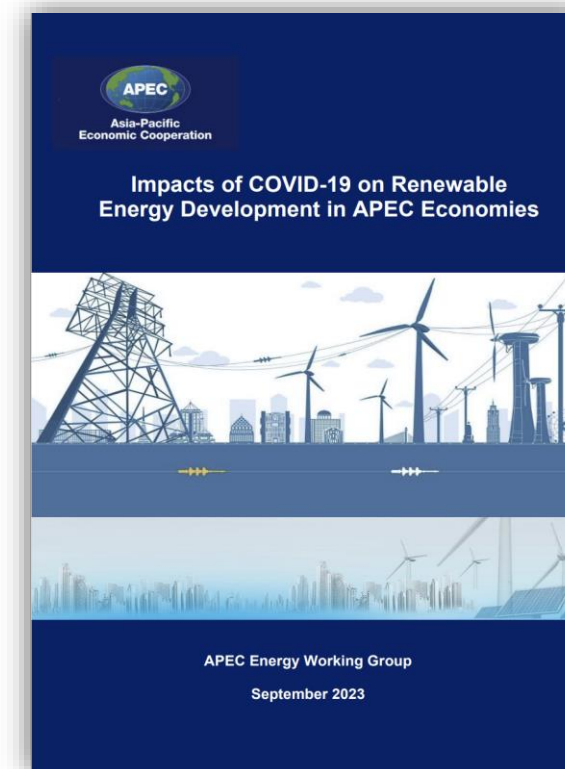
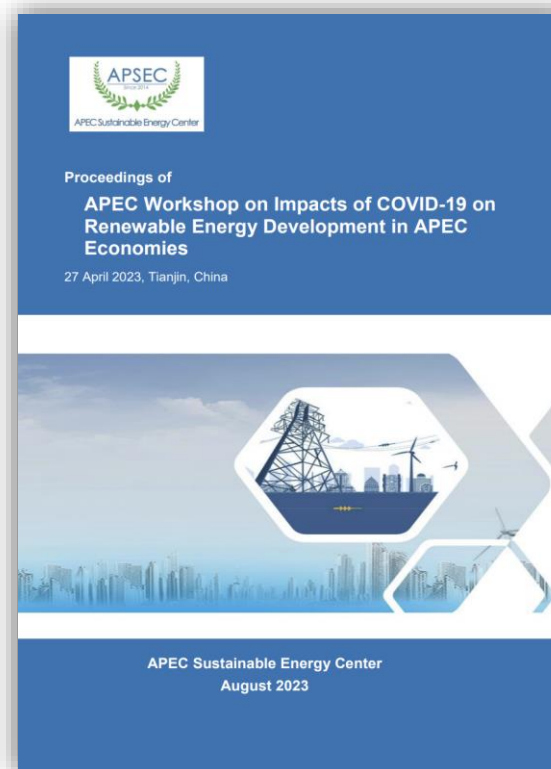


***All tasks finished; CRs completed; project completed.***

## □ Impacts of COVID-19 on Renewable Energy Development in APEC Economies (EWG 07 2021A)

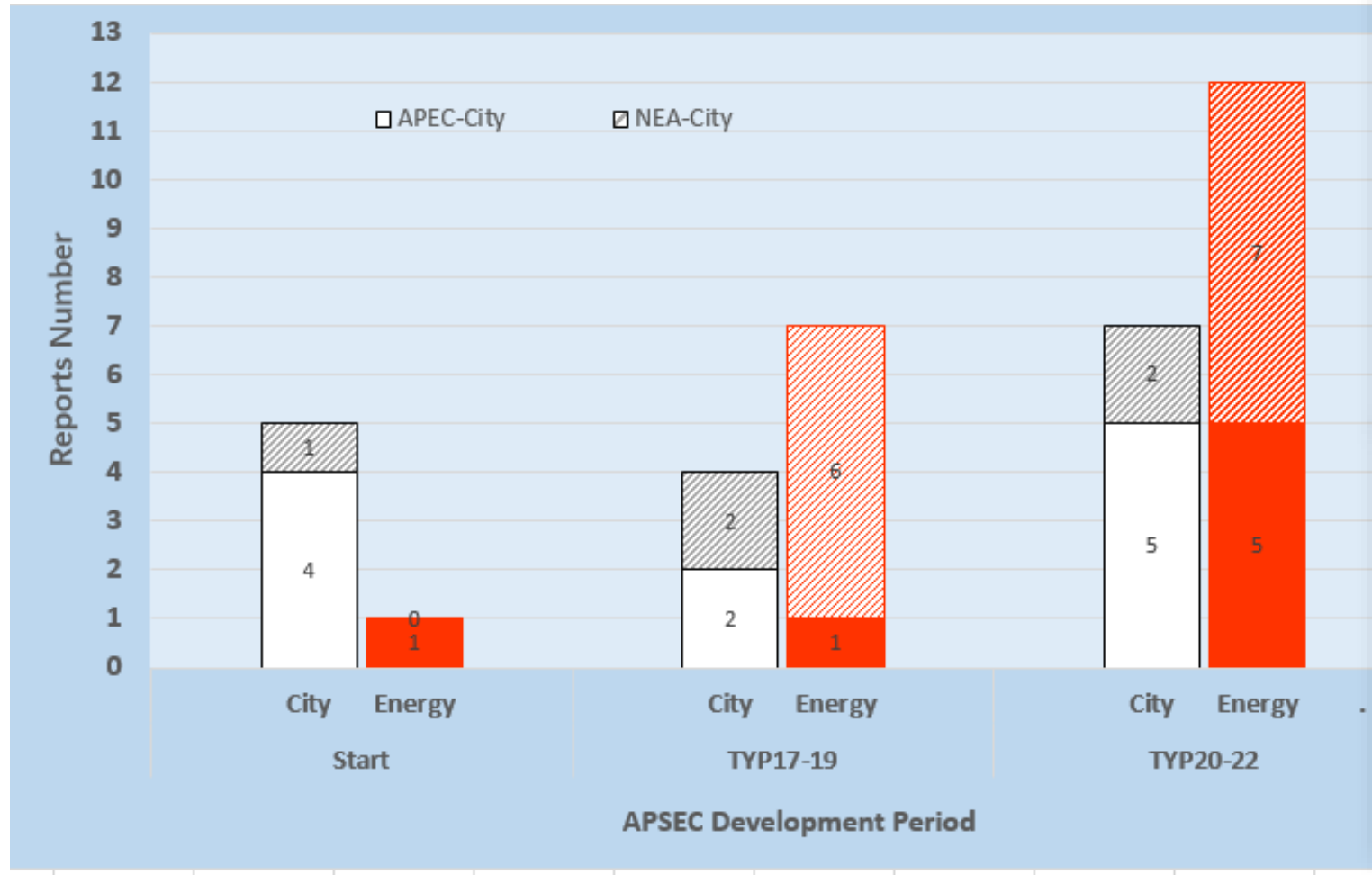
### Project summary

- Gather, analyze, and assess the key issues and **recovery strategies**, the priority and approach **addressing sustainability** and **supporting renewable** energy sector development;
- Share relevant experience and knowledge **toward sustainable and green economic recoveries, enhancing the resilience of the energy systems, sustaining and accelerating renewable energy development**, and facilitating to achieve the renewable energy doubling goal of the APEC region.



***All tasks finished; CRs completed; project completed.***

## Research Reports



**19 Reports produced during TYP20-22**

## Research & activities common to three APSEC research teams

### Ongoing and planned APEC projects 2023 – 2025 (flagship reports)

- Research on energy strategies driving cities through the low-carbon transition (endorsed on 9 March 2023, APEC EWG 01 2023S); English and Chinese reports have been elaborated
- Research on energy storage to enable energy transition in APEC cities (EWG\_03\_2024S): Concept note endorsed by EWG on 19 March 2024. Research has started
- Planned for 2025: Research on urban heating and cooling

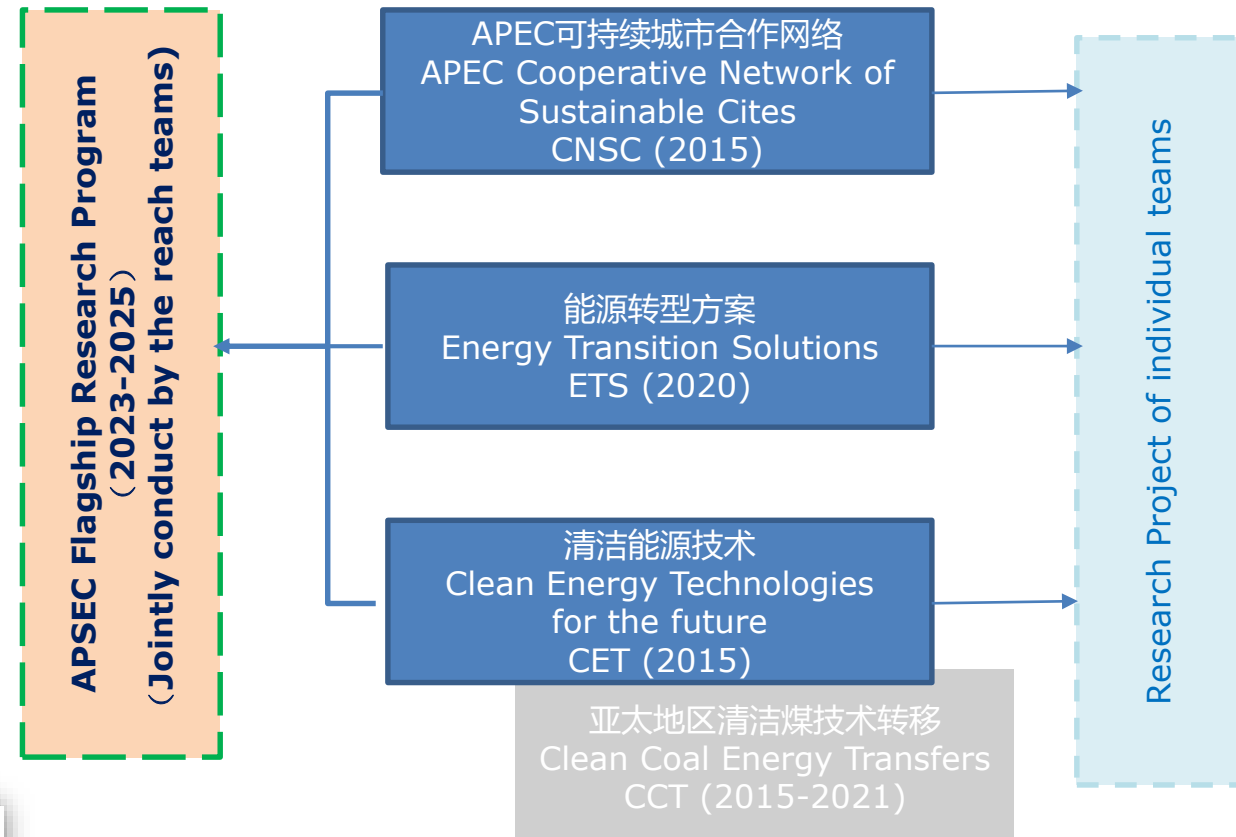
## APSEC research groups

Since 2014, APSEC has conducted a wide range of research on cities and energy, including **three pillar programs**:

- APEC Cooperation Network of Sustainable Cities (**CNSC**),
- Asia-Pacific Clean Coal Technology (**CCT**) Transfer
- Asia-Pacific Energy Transition Solutions (**ETS**);

CCT upgraded to the Future Clean Energy Technology (**CET**) in 2021.

## APSEC research programs (2023-2025)



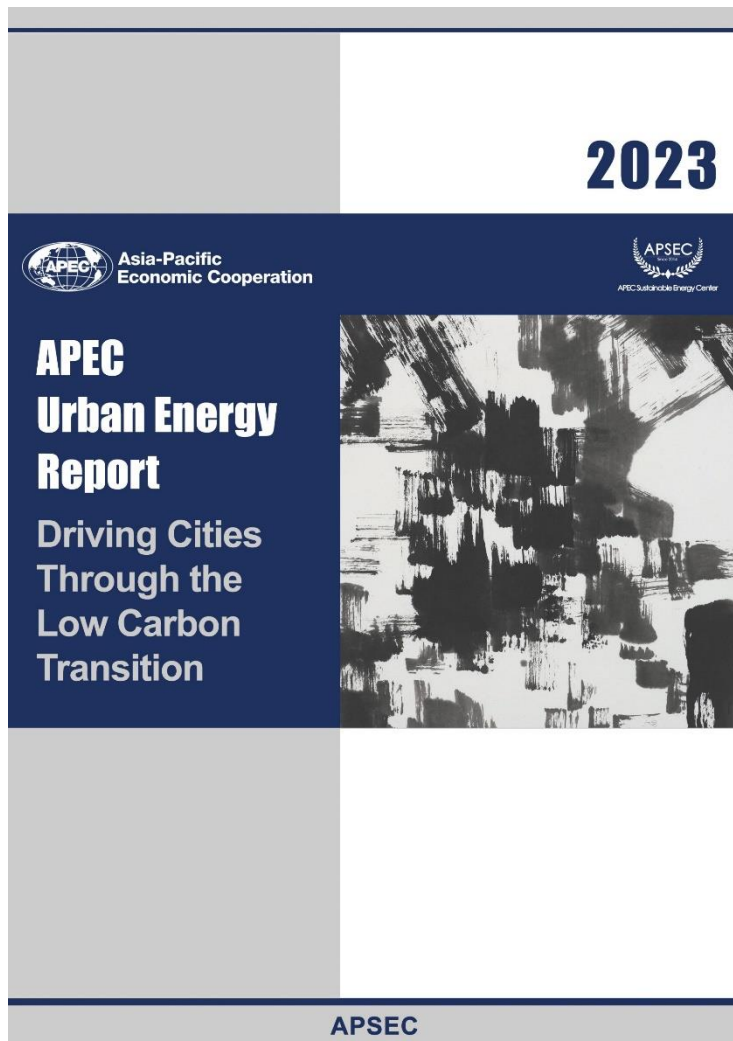
# CET



Clean Coal Technology Center

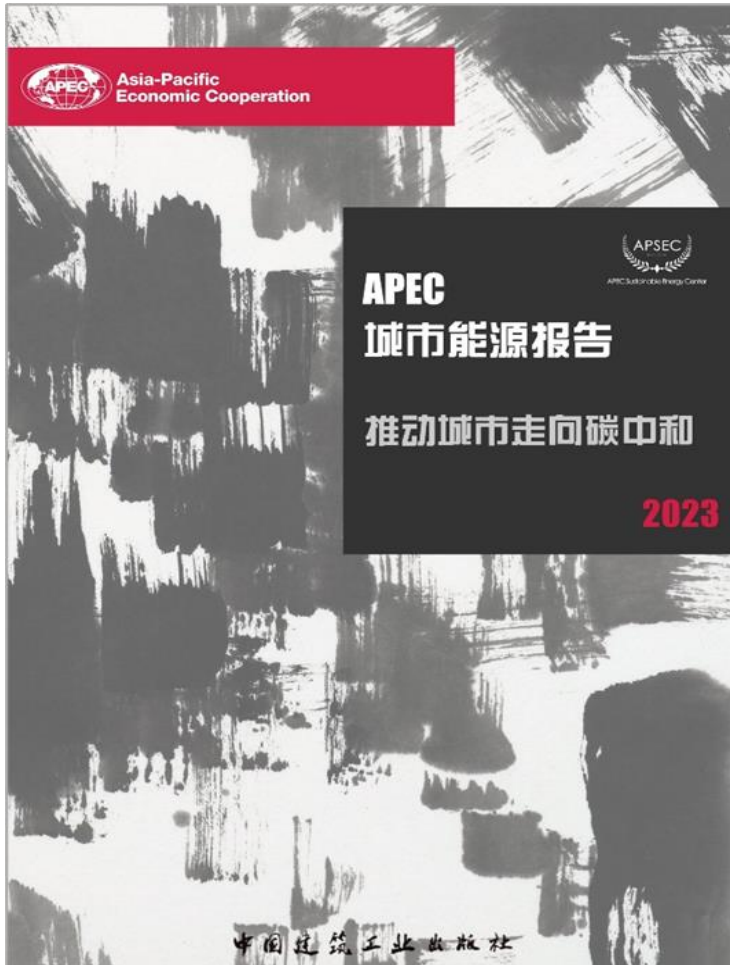


## Ongoing Research & activities common to three APSEC research teams



- Report endorsed by EWG on 17 May 2024 (English version)
- Pending attribution of APEC and ISBN numbers for publication
- Summary: Greenwashing has become a major issue of carbon neutrality requesting cities to keep higher reporting standards. Cities face a density challenge as renewables require large amounts of land. Cities face numerous other challenges, such as the lack of local environmental data as well as high disaster risks that negatively affect financial resources needed for carbon neutrality. The credit risk guarantee (CRG) is a financial instrument that is crucial for carbon neutrality. Environmental, social and governance (ESG) information as well as the Global Reporting Initiative (GRI) are two competing approaches to accounting and public information of cities. The GDP as a measure for value-added should be complemented by a Gross Holistic Product (GHP) containing, among others, information from the System of Environmental-Economic Accounting. Reporting frameworks of the Global Covenant of Mayors (GCoM) and CDP are described in detail. Three APEC case studies are presented in the report.

## Ongoing Research & activities common to three APSEC research teams



- Chinese report: APEC Urban Energy Report, driving cities toward carbon neutrality
- Will be published in China in Chinese language
- Reviews the tools and measures for urban low carbon development,
- Examines the development status, energy structure and carbon emissions of the main APEC cities,
- Synthesizes the challenges faced by these cities in achieving carbon neutrality,
- Discusses urban development indicators and the associated database for the related evaluation and assessment.
- The report summarizes low-carbon development and energy transition practices in the selected cities, and furthermore examines in more details the policies and approaches for low-carbon development and different scenarios over medium and long-terms in Tianjin.

# APSEC Contribution to APEC Peru Policy Dialogue on Green Hydrogen

- **2023.11.30**, during the **65<sup>th</sup> APEC Energy Working Group (EWG) meeting in Thailand**, Professor Zhu Li, Director of APSEC, communicated with Peruvian colleagues, learned about the work arrangement and policy dialogue theme of the Year of Peru 2024, and then established contact with the Peruvian side by email.
- **2023.12.28**, APSEC convened **domestic experts in the field of hydrogen energy and established China's green hydrogen expert team, with 11 experts** from academia and industry. Experts were committed to Peru's formulation of APEC policy guidance and hydrogen energy development in APEC region.

## Tianjin University, National Industry-Education Platform of Energy Storage



Chen Weidong,,  
Outstanding  
Professor, PhD  
Supervisor



Peng Binbin,  
Associate  
Professor



Zou Hongyang,  
Associate  
Professor



Ying Tang,  
Associate  
Professor

## APEC Sustainable Energy Center (APSEC)



Zhu Li, Deputy Director of  
National Energy Storage  
Technology Industry-Education  
Integration Innovation Platform,  
Director of APSEC, Professor



Steivan DEFILLA,  
Assistant Director of  
APSEC, Professor

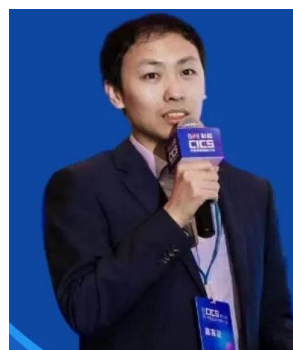


Yu Guanyi, APSEC  
Think Tank, Deputy  
Director, Associate  
Professor

## State Grid Energy Research Institute



Lu Gang, Director of Energy  
Strategy and Planning Research  
Institute, Senior Engineer



Yuan Bo, Energy  
Strategy and Planning  
Research Institute, PhD



Wu Cong, Energy  
Strategy and Planning  
Research Institute, PhD

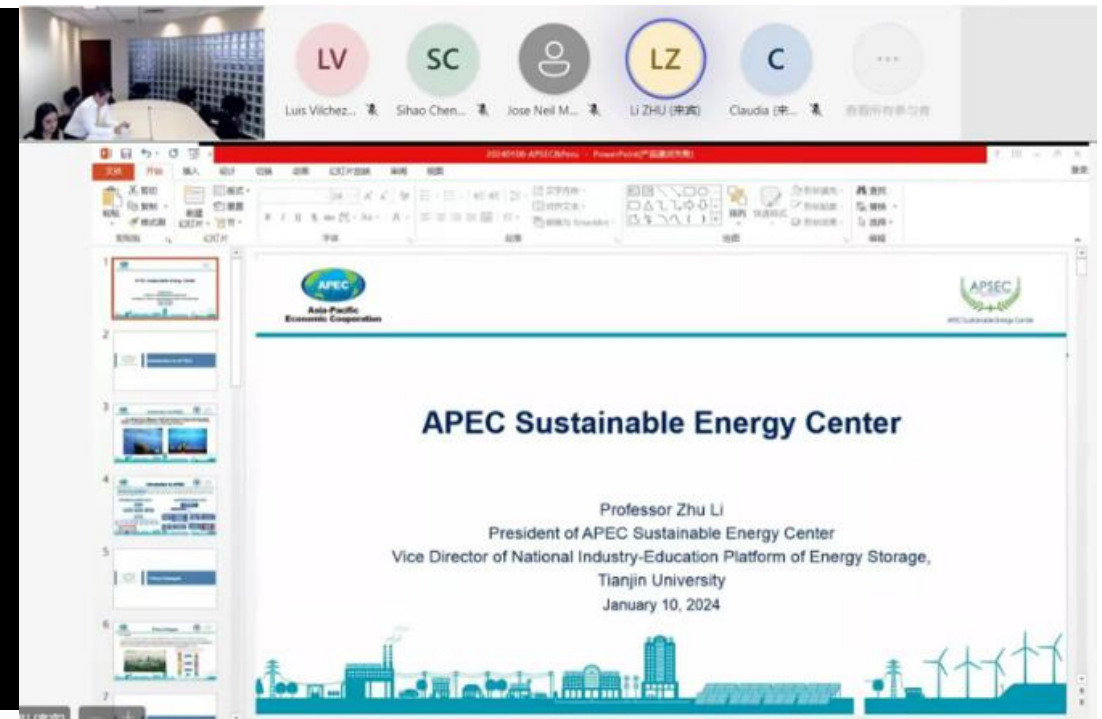
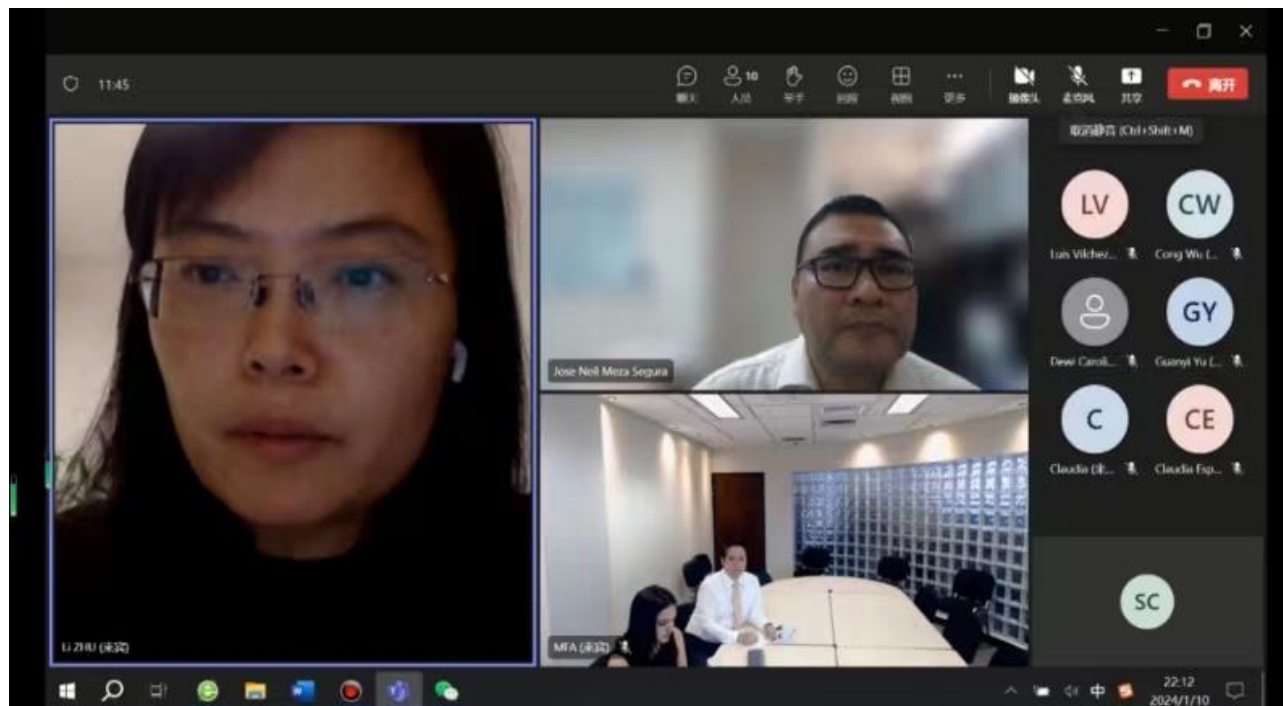
## Energy Electric Power Development Strategy Planning National

## Energy Group New Energy Technology Research Institute



Chang Cheng, Director of International  
Cooperation Department

- **2024.1.10**, APSEC and the Peru team held the **first online seminar**. Professor Zhu Li introduced the center's situation and work basis in the field of green hydrogen from various aspects such as policy dialogue, flagship reports, cooperation networks, policy advice, and energy storage platforms, and put forward cooperation proposals.
- Experts and scholars from both sides reached a consensus on collaboratively developing the green hydrogen policy guidance and roadmap for the APEC region, successfully establishing a cooperative relationship. In the follow-up, they would further clarify the specific content and division of labor for cooperation, and continuously carry out deeper cooperation and exchanges.



- **2024. 2. 12**, APSEC received the Policy Dialogue **Concept Note** from the Peruvian side
- **2024. 2. 21**, APSEC **feedback about the Policy Dialogue** Concept Note, studied the discussion paper (3.12)
- **2024. 3. 27**, in a second online seminar with Peru team, APSEC expressed its commitment to participate in the policy dialogue on the development and implementation of the APEC Regional Low hydrocarbon Policy Framework for APEC Peru Year 2024. APSEC prepared to discuss next steps, such as: conducting in-depth research and assessing the hydrogen technology and market situation, planning the hydrogen energy value chain, and developing a domestic hydrogen energy roadmap or strategy.
- After the meeting, the **minutes of the meeting** were drawn up and sent to the Peruvian side. [Meeting summary on the Peru – China online \(Teams\) meeting](#)



**Time/Way:** 27 March 2024 / Microsoft Teams meeting

**Participants from Peru:**

- Victor Antonio Muñoz Tuesta, Deputy Director for Trade and Investment, APEC Directorate, Minister
- Rommel Angel Castro Pinto, Academic Coordinator, Ministry of Energy and Mines
- Dewi Carolina del Pilar Zamora Mendoza, Hydrocarbon expert, Ministry of Energy and Mines

**Participants from China:**

- Prof. Zhuli, Director APEC Sustainable Energy Center APSEC, and Deputy Director National Innovation Platform for Industry-Education Integration of Energy Storage Technology, Tianjin University
- Prof. Steivan DEFILLA, Assistant Director APEC Sustainable Energy Center APSEC, Tianjin University
- Associate Prof. Yu Guanyi, National Innovation Platform for Industry-Education Integration of Energy Storage Technology, and APEC Sustainable Energy Center APSEC, Tianjin University
- Chang Cheng, Director of International Cooperation Department, Energy Electric Power Development Strategy Planning, National Energy Group, New Energy Technology Research Institute

**The purpose of the meeting:** explore how APSEC can contribute to the development of policy guidance on green hydrogen for the APEC region.

APSEC expressed her gratitude to the Peruvian side for their readiness to involve APSEC in the development of the policy paper. APSEC introduced the subject with a presentation on APEC Policy guidance to develop and implement low-carbon hydrogen policy frameworks in the Asia-Pacific. In the presentation, APSEC referred to the "Green Innovation and Sustainable Development Forum" held during the 2023 APEC meeting in San Francisco on 13th November 2023, and APSEC President's

- **2024.4.12**, APSEC received an invitation letter from the Peruvian side, meeting summary and mutual agreements, [Discussion paper] APEC Policy guidance.
- **APSEC conducted a survey on the progress of hydrogen energy in APEC economies:** According to the full research, **14 of the 21 economies in the APEC region have put forward hydrogen-related development policies**, such as hydrogen energy development strategy, hydrogen energy development vision, hydrogen energy development strategy map, and medium-and long-term planning for hydrogen energy industry development guidelines and development suggestions. Among the APEC fund projects, there are six hydrogen energy related projects.
- **2024.4.16**, APSEC organized a **meeting of green hydrogen experts in China** to discuss and analyze these documents.
- **2024.4.22** APSEC transmitted **its detailed proposals for Revision** of the '[Discussion paper] APEC Policy guidance' to Peru

## Intelligence Network Enhancement

### >> APSEC Expert Team

APSEC has always provided high-level international energy cooperation intellectual results and high-end consulting services as its main service since its establishment. With the continuous development and integration of high-end intellectual resources in the domestic and international energy fields, APSEC has successively established the Tianjin University Academic Committee, the Domestic Expert Group and the APEC High Level Expert Advisory Committee.

#### Tianjin University Academic Committee

##### Qi ZHANG

Professor, Doctoral Supervisor, School of Architecture, Tianjin University  
Deputy Director of the Architectural Professional Steering Committee of the National Higher Education Institutions  
Member of the 7th State Council Academic Degrees Discipline Review Group  
Elected to the "100 Architects of Contemporary China"



##### Chengshan WANG

Dean, Professor and Doctoral Supervisor of School of Electrical and Information Engineering, Tianjin University. Chief Scientist of National Program on Key Basic Research Project (973 Program) Recipient of the National Science Fund for Distinguished Young Scholars. Member of Department of Energy and Transportation Scientific and Technological Commission of Ministry of Education of the People's Republic of China. Expert of Expert Group of Smart Grid Key R&D Program, Ministry of Science and Technology of the People's Republic of China



##### Wei ZHANG

Professor, Doctoral Supervisor of College of Management 1 and Economics, Tianjin University. Leader of "Innovation team of Ministry of Education"  
Co-President, China Academy of Management  
Vice-Chairman for MoE's Advisory Board of Management Science and Engineering Having Been Awarded the First Prize for Outstanding Achievements in Philosophy and Social Sciences in Tianjin Many Times.



##### Donghan JIN

Deputy Chairman of University Council and President, Tianjin University Academician and Professor of Chinese Academy of Engineering

##### Youhai SUN

Dean, Professor and Doctoral Supervisor of Law School, Executive Dean of Research Institute of China Green Development, Tianjin University Member of the National Environmental Advisory Committee  
Advisor of Institution of Green Economy, Counsellors' Office of the State Council, Vice President of Research Institute of China Environmental Resources Law, Deputy Director of Academic Committee of Center for Judicial Studies, the Supreme People's Court of the People's Republic of China



##### Xinbin MA

Dean, Professor and Doctoral Supervisor of School of Chemical Engineering and Technology, Tianjin University Deputy Director of Tianjin Chemical Industry Collaborative Innovation Center Director of Key Laboratory of Green Synthesis and Transformation, Ministry of Education of the People's Republic of China Recipient of the National Science Fund for Distinguished Young Scholars Chief Scientist of "863" Project of Ministry of Science and Technology of the People's Republic of China Technology Leader of "Ten Thousand People Plan"



### APSEC Advisory Board

APSEC Advisory Board composed of leaders from the government, business and research sectors officially recommended by 21 APEC economies, which has 14 experts from 9 economies now that can put inputs and guidance to APSEC's development.



## CNSC Network building-up

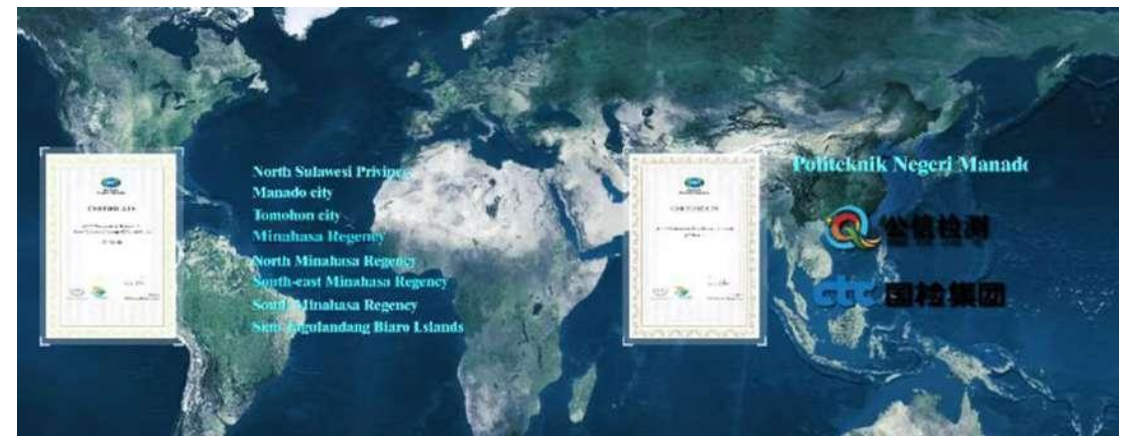
- A Checklist for elaborating a **Local Carbon Neutrality Vision for CNSC Members** is online, the details can be found on APSEC website  
<http://apsec.tju.edu.cn/index.php/En/Xiangmu/article/id/51.html>.
- Ongoing invitations and contact information updates.
- As of May 2024, **APEC Cooperative Network for Low Carbon Energy Efficient Cities** includes **22 cities** from **7 APEC economies**
- **APEC Sustainable City Service Network** includes **58** companies and organizations.



### Defining a Local Vision for CNSC Members¶

Members of the Cooperative Network of Sustainable Cities (CNSC) have signed a CNSC Membership Declaration and pledged to use a Multistakeholder Dialogue (MSD) for elaborating a Vision guiding them towards a carbon neutral, disaster resilient and energy-inclusive future. ¶

The Multistakeholder Dialogue (MSD) is a structured dialogue organized in view of elaborating the vision of the CNSC Member. The MSD is guided by the



<http://apsec.tju.edu.cn/>

## APEC Urban SDG Tracker for Energy and Climate

<http://apeccitystats.tju.edu.cn/client/homePage>



The absence of urban data relating to sustainability is a root cause of insufficient urban sustainability. Without relevant data, cities cannot formulate the right policies for becoming more sustainable. This Urban SDG Tracker for Energy and Climate for APEC cities is designed to improve this situation. The participating cities will have the possibility to showcase and monitor their development step by step, including for the elaboration of visions for 2050 and intermediary goals for 2030. In the framework of this project, the term "city" is to be understood as "local community of any size". This opens the possibility for **small and medium size cities** to fully cooperate in this project.

More than any other region of the world, the APEC region is hit by natural disasters. This is the result of the geological Ring of Fire consisting of hundreds of volcanoes and geological faults, combined with the Pacific Ocean as largest water mass of the globe. Climate change is expected to hit this region harder than others. For this reason, it has been decided to include two different kinds of indicators in the data base: A group of sustainability indicators derived from the **Global Indicator Framework after the latest review** and a group of disaster resilience indicators taken from the **UN Disaster Resilience Scorecard for Cities Detailed Assessment**.

**Social media:  
Wechat**



### Cloud-based Urban Energy Planning Tools



### Indicator-based and Carbon Neutrality Oriented Urban Energy Database



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## 10-year Anniversary Forum of APSEC

- Date: 18 – 20 September 2024
- Place: Tianjin, China
- Official invitation and detailed program will follow later
- Hope to see everyone in Tianjin!



# Welcome to APSEC!



# THANK YOU!

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