



APEC Sustainable Energy Center

# Work Progress Update to the EGEEEC60

**Steivan DEFILLA**

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**President Assistant, APEC Sustainable Energy Center**

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# Outline

- i. **Projects and activities**
  - CNSC Projects
  - ETS Projects
  - SPESS II and APEC Energy Goals
- ii. **Institution building**
  - APSEC Advisory Board and Experts Group
  - CNSC Network
  - CCT being upgraded to CET pillar
  - Information platform
- iii. **Proposed flagship research program**

## 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 energy strategies driving cities through the low-carbon transition (endorsed on 9 March 2023, APEC EWG 01 2023S)

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

- Endorsed: 6 May 2021

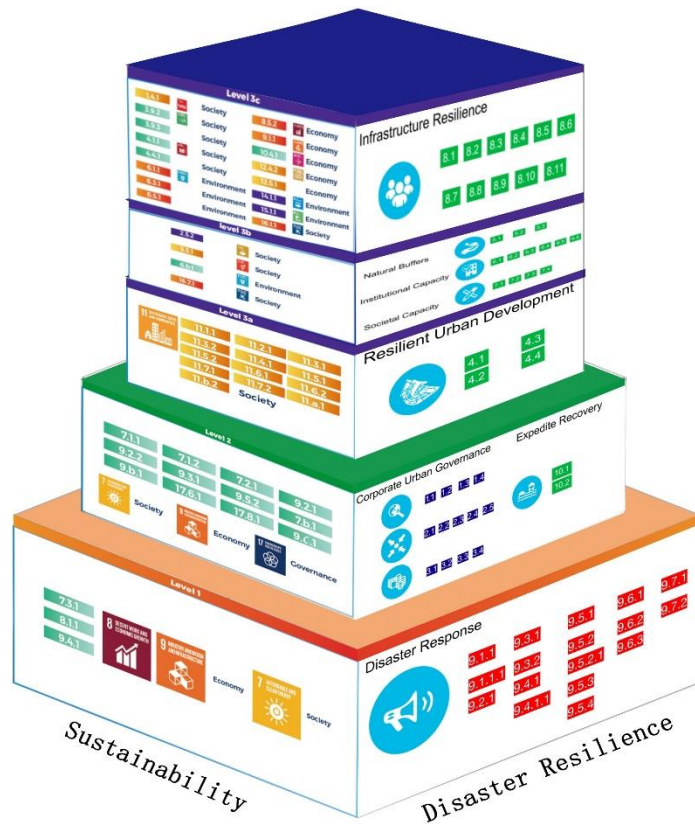
### ■ Project summary

- 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;
- Pilot project concluded; data base is being filled in.

## 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).
- Will be published shortly by APEC Publications

## □ 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 will **train local planning officers** of APEC municipalities to collect the specified data in cooperation with a local university;
- **A multi-stakeholder dialogue** will be used to elaborate 2050/2060 visions and for setting 2030 targets. The group of key stakeholders will include the energy poor populations of the lowest income quintile.

### ■ Progress

- Target region defined: North Sulawesi Province
- Quality Assessment finished.

## Research & activities within the ETS pillar program

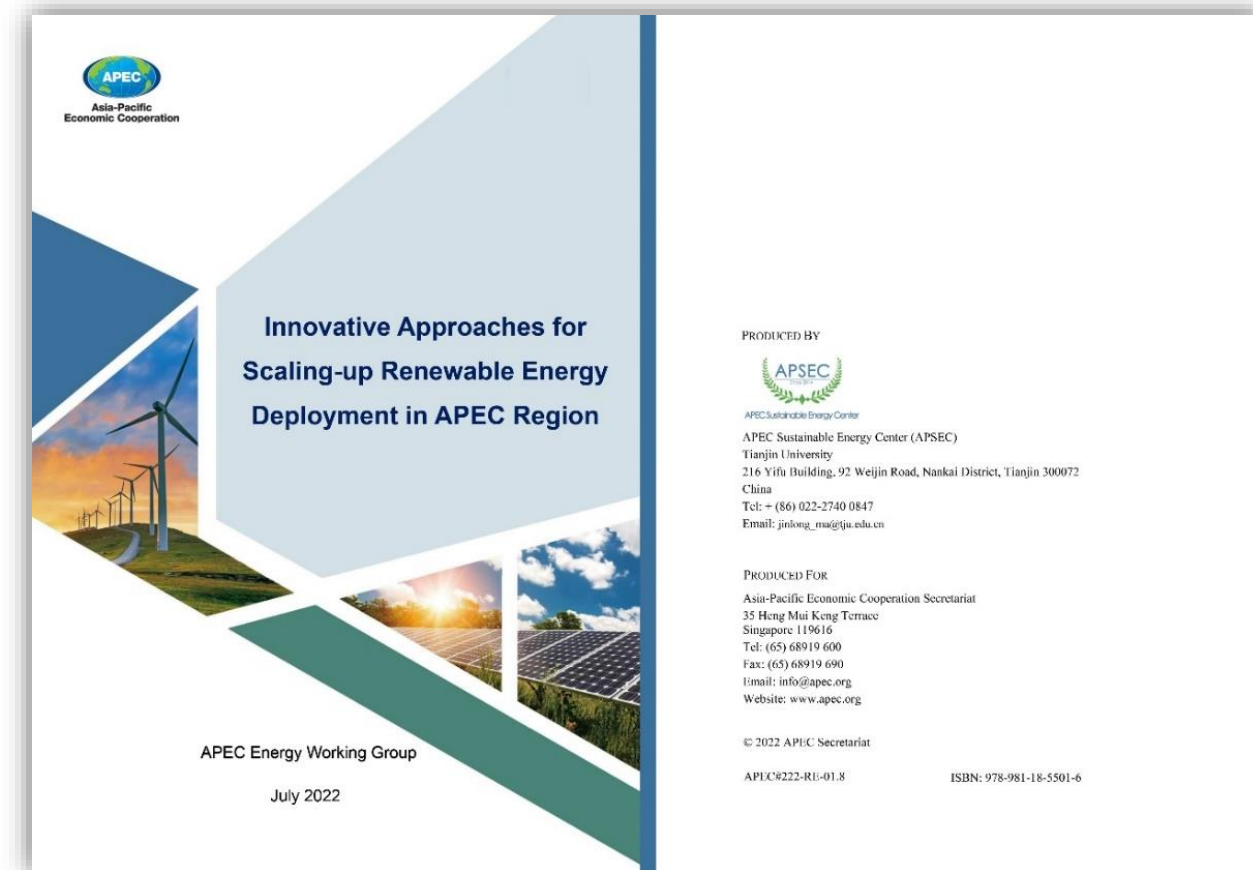
### On-going APEC projects

- 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.



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

### Project Information

- **Proposing economy:** China
- **Co-sponsoring economies:** Hong Kong, China; Indonesia; Korea; Singapore; Thailand
- **Expected start/completion date:** 01/12/2021 - 31/12/2022
- Extension applied;
- The main targeted APEC economies for the research: China; Korea; Japan; Chinese Taipei; Viet Nam and the US.

### Project objective

- The project is to review and analyze the experience of OSW power development and synthesize recommendations **to accelerate OSW development in the APEC region.**
- **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.

To **build up relevant capacity**, the project is to disseminate the knowledge on innovative approaches, best regulatory and policy framework, and market mechanism for supporting OSW development among the key stakeholders in APEC economies.

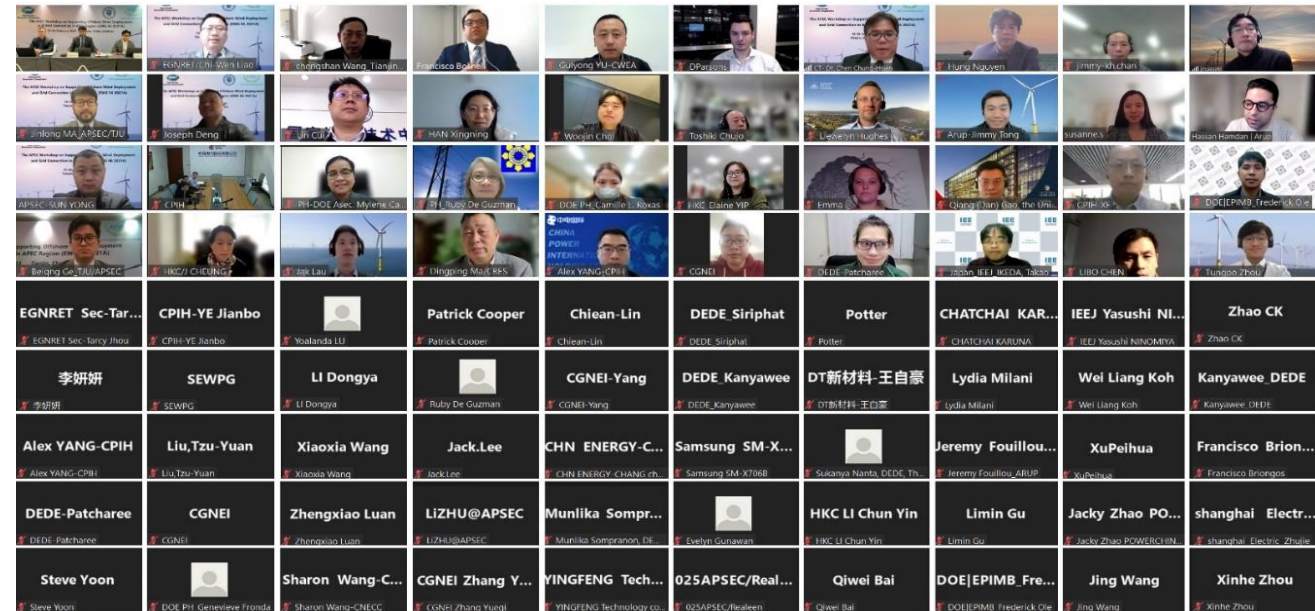
# APEC Projects

## Project tasks and expected outputs

- 1. Research work:** information and data gathering, literature review, stakeholder consultation, case study, and synthesis and assessment.
- 2. Project workshop:** The purpose of the Project Workshop is to engage renewable energy experts, government officials and industrial sectors (technology and OSW power equipment suppliers) to discuss the current technology development and industry supply chain, project development and plant operations in the APEC region.
- 3. Project report:** a reference supporting OSW deployment and grid connection in the APEC region.

## Progress

- Project commencing: January 2022;
- Contractor: **Ove Arup&Partners Hong Kong Limited (ARUP)**
- The first Draft Report : October 2022;
- Project Workshop : February 15-16, 2023



The APEC Workshop on Supporting Offshore Wind Deployment and Grid Connection in APEC Region (EWG 06 2021A)

February 15-16, 2023 Tianjin, China

- More than 120 experts and participants from the International Renewable Energy Agency (IRENA), World Forum Offshore Wind (WFO), and 11 APEC economies including the United States; Australia; Japan; Korea; Viet Nam; Indonesia; Thailand; the Philippines; Chinese Taipei; Hong Kong, China; and China attended the workshop.
- Dr. Chi-Wen Liao (Chair of EGNRET) delivered the opening remarks.

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

### Project Information

- **Proposing economy:** China
- **Co-sponsoring economies:** Hong Kong, China; Malaysia; Singapore; Thailand
- **Expected start/completion date:** 01/12/2021 - 31/12/2022
- Extension applied

### Project objective

- The COVID-19 pandemic has caused significant impacts on the APEC economies. Efforts have been made by different economies to control the spread of the virus, aiming at bringing back social and economic conditions of the societies. Across the region, different economies have formulated programs and stimulus packages for the economic recoveries;
- The project is to gather, analyze, and assess the key issues and **recovery strategies**, the priority and approach **addressing sustainability** and **supporting renewable** energy sector development;
- Relevant experience and knowledge are to be shared **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.

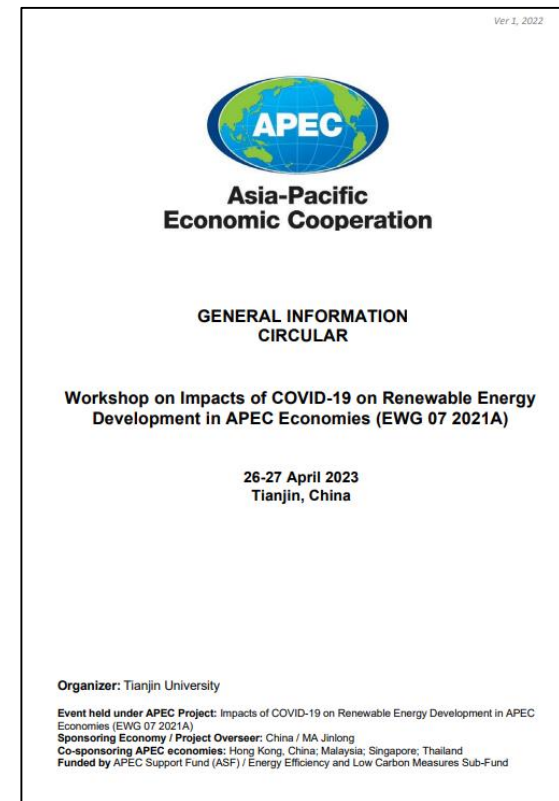
# APEC Projects

## Project tasks and expected outputs

- 1. Research Work:** review, analysis, survey, assessment, investigation
- 2. Project Workshop:** i) exchange information and experiences regarding supporting RE development on the trajectories of economic recoveries; ii) presenting findings of the Research Work and receive comments and feedbacks from the member economies' representatives and participants of the Workshop; iii) capacity building for relevant policy making process and policy implementation.
- 3. The Project Report:** The Project Report will encapsulate the key findings of the Research Work as well as the Workshop, contributing to knowledge dissemination and information sharing.

## Progress

- Project commencing: January 2022;
- Contractor: **DNV Singapore;**
- Project Workshop : April 26-27, 2023.



- The GIC had been sent to the APEC Secretariat and circulated to APEC EWG members;
- The deadlines for any nomination:  
**for speakers will be 12 April 2023;**  
**for expert participants will be 12 April 2023.**



## □ **EWG 01 2022S: Demonstration and Promotion of Energy Resilience tool based on Solar-Powered Emergency Shelter Solutions (SPESS) for Natural Disaster in APEC**

### **Objective**

It provides information on the potential applications and technologies related to solar powered emergency shelter (SPESS) in APEC region.

- **Understanding needs:** geographic climate and resource constraints within the APEC disaster management framework;
- **Selecting related technologies:** overview of research progress in design methods, new materials applications, novel construction and other technologies related to emergency disaster relief shelters;
- **Analysis:** theoretical aspects of the main design principles, design influencing factors and key technology systems related to SPESS;
- **Balance of the plant:** relevant exterior energy supply devices.

### **Progress**

- Second technical draft report completed, “Demonstration and Promotion of Energy Resilience tool based on Solar-Powered Emergency Shelter Solutions (SPESS) for Natural Disaster in APEC”;
- First technical report “Technical Review of Examples of Emergency Shelters in the APEC Region” had been approved.

# APEC New Energy-Related Goals

2011

to reduce APEC's aggregate energy intensity by 45% from 2005 levels by 2035

## Honolulu Declaration

2014

to double the share of renewables in the APEC energy mix, including in power generation by 2030

## Beijing Declaration

Given that APEC members are on track to meet the existing renewable energy doubling and energy intensity goals, members discussed the possibility of developing new goals. **APSEC participates in and supports the small group meetings to explore potential new energy-related goals.**



## 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 of 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 now that can put inputs and guidance to APSEC's development.

<p><b>Igor Skryabin</b> Governor of the Hydrogen Economy Research Cluster Research and Business Development Manager ANU Energy Change Institute, The Australian National University</p>	<p><b>Khee Poh Lam</b> Dean of the School of Design and Environment, The National University of Singapore</p>	<p><b>Henriette Jacoba Roerke</b> Governor Advisor on Sustainable Development, The North Sulawesi Government, Indonesia</p>
<p><b>Clem Arlidge</b> Program Director, Asia-Pacific Economic Cooperation</p>	<p><b>Nan ZHOU</b> Staff Scientist, The Lawrence Berkeley National Laboratory</p>	
<p><b>Nedjib (Ned) Djilali</b> Fellow of Canadian Academy of Engineering Professor of Department of Mechanical Engineering, University of Victoria</p>	<p><b>Stephanie A. Siehr</b> Professor of Environmental and Energy Programs, University of San Francisco</p>	
<p><b>LAI Hon-chung, Harry</b> Principal Energy Advisor, Electrical and Mechanical Services Department, HKSAR</p>	<p><b>Jie TANG</b> Professor, School of Economics and Management, Harbin Institute of Technology (Shenzhen)</p>	
<p><b>Roy Nguntz Dagg</b> Senior Manager, Tariff Regulation &amp; Government Affairs, PNG Power Ltd.</p>	<p><b>Junfeng LI</b> Former Director, National Center for Climate Change Strategy and International Cooperation (NCCSC)</p>	<p><b>Hua GE</b> Associate Professor, Concordia University</p>
<p><b>Paul Butarbutar</b> Director, PT 3GT Servis, Indonesia Executive Director, Indonesia Renewable Energy Society</p>	<p><b>Carolyn Blacklock</b> Acting Managing Director, PNG Power Ltd.</p>	



## 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 September 2022, **APEC Cooperative Network for Low Carbon Energy Efficient Cities** mainly includes **20 cities** from **6 economies**
- **APEC Sustainable City Service Network** includes **58** companies and organizations.

POSITION: Home > Research Work> APEC Cooperation Network of Sustainable Cities (CNSC) > Project Introduction

### Defining a Local Vision for CNSC Members

#### Defining a Local Vision for CNSC Members

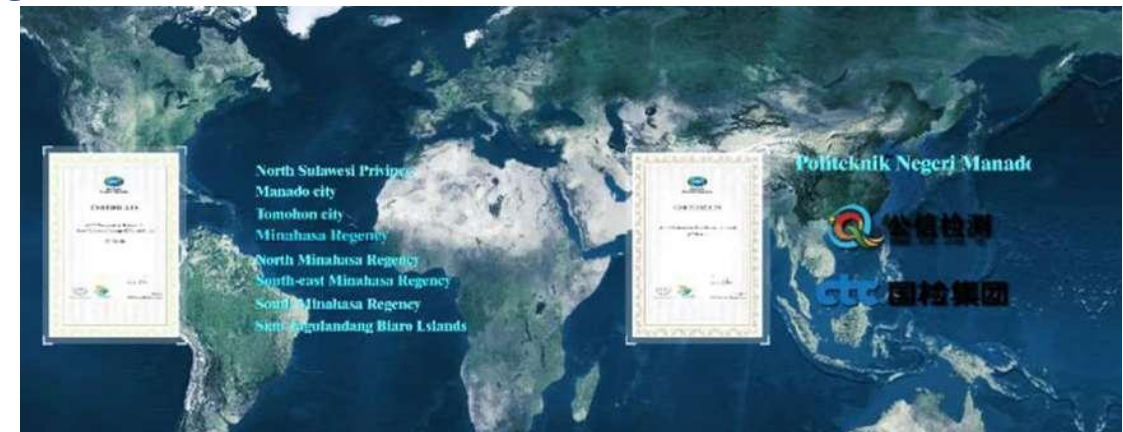
Members of the Cooperative Network of Sustainable Cities (CNSC) elaborate Visions for guiding them towards a carbon-free future. They use Multistakeholder Dialogues (MSD) to do so.

Multistakeholder Dialogue (MSD) is a structured dialogue organized in view of elaborating the views of the CNSC Member. The MSD is guided by the Focal Point of the Member and assisted by APSEC or a designated qualified contractor. The stakeholders of the Member include stakeholder groups such as (1) universities & science parks, (2) green and innovative finance, (3) electricity industry, (4) TOD urban transport sector, (5) manufacturing industry, (6) building and real estate industry, (7) agriculture and food industry, (8) energy poor populations of the lowest income quintiles. The MSD makes all efforts to decide by consensus.

Focal Point designates a senior planning officer of the Member who represents the Member with CNSC and in the MSD. In case of persistent impossibility to generate consensus among MSD stakeholders on a specific question, or persistent disagreement among the MSD stakeholders on that question, the Focal Point of the Member decides on that question.

Vision designates a negotiated document of maximum 500 words (approx. one page) length. The Vision should be inspiring, energizing, hopeful, positive, clear, allow for tough decisions, guide decision-making and allocation of resources, and create consistency. The Member is encouraged to translate the elaborated Vision to the local language. APEC cannot bear the cost of translating the Vision to local language. The Vision should state:

- The Member's overarching purpose if it exists and can be described in one sentence.
- The Member's 3 to 5 core values if they exist and can be expressed around keywords arranged in order of decreasing importance. Core values are values to be preserved in the very long run, even beyond mid-century
- The Member's 3 to 5 biggest current sustainability challenges (in order of decreasing importance)



## CCT upgraded to the CET pillar

- **CCT establishment:** APEC Clean Coal Technology Transfer (CCT) Program Joint Operation Center was established on 20 September 2018.
- **Driving force for transformation and upgrading:** China sets to reach carbon neutrality before 2060 and has seized time to formulate action plan for peaking carbon dioxide emissions before 2030. Clean and Low Carbon Energy system is needed for the APEC region and carbon neutrality of the whole planet.
- Upgrading of CCT Pillar Program to **Future Clean Energy Technology (CET) Pillar Program** was approved in Year 2021. CET (CHN ENERGY) work plan has been confirmed by NEA, and TJU.



CET Program Joint Operation Center was approved to be established by the International Cooperation Department of NEA in March 2021

### 国家能源局

国际司函〔2021〕314号

APEC 可持续能源中心:

来函收悉。经研究, 我司对你中心将“亚太地区清洁煤技术转移项目”升级为“未来清洁能源技术支柱项目”无不同意见。

下一步, 请你中心与有关单位就升级事项做好衔接, 继续坚持高质量发展目标, 提升能力水平, 更好地支撑我参与 APEC 框架下能源合作。

特此函复。



抄送: 国家能源技术经济研究院 (CCT 中心)

### 国家能源局

国际司函〔2021〕1294号

国家能源集团国际合作部:

《国家能源集团关于 CET 联合运营中心工作方案的报告》收悉。经研究, 我司对工作方案无不同意见, 同意由我司主要负责同志任领导小组组长, 我司相关负责同志任领导小组成员, 欧美处负责同志任工作协调小组成员。

下一步, 请你单位就有关事项做好衔接, 推动我国能源高质量发展, 更好地支撑我参与 APEC 框架下能源合作。

特此函复。



源中心)

### 国家能源集团

#### 国家能源集团关于 CET 联合运营中心工作方案的报告

能源局国际司:

根据 8 月 5 日能源局国际司领导有关指示, 集团公司高度重视, 在与天津大学沟通后, 制定了 CET 联合运营中心工作方案, 汇报如下。

#### 一、CET 联合运营中心定位

在 APEC 机制下, 开展组织培训和课题研究, 促进更多优质项目在 APEC 区域落地, 为中国 CET 技术宣传推广、培训交流和合作共享提供一个国际官方平台, 把中国清洁能源技术推向世界。

#### 二、主要工作任务

一是面向 APEC 区域开展中国清洁能源技术成果研究, 在 APSEC 年度指导委员会暨咨询委员会会议上发布, 并在 APEC 和中国公开出版。

二是推动 APEC 区域清洁能源技术交流合作, 开展项目合作与示范。

三是开展清洁能源技术科普和培训活动。

四是搭建清洁能源技术宣传推广平台, 为我国清洁能源

## New working mode of the CET pillar is being explored

Clean energy technology is a whole item and has many categories and different application scenarios. A new systematic and efficient collaborative matrix structure needs to be designed.

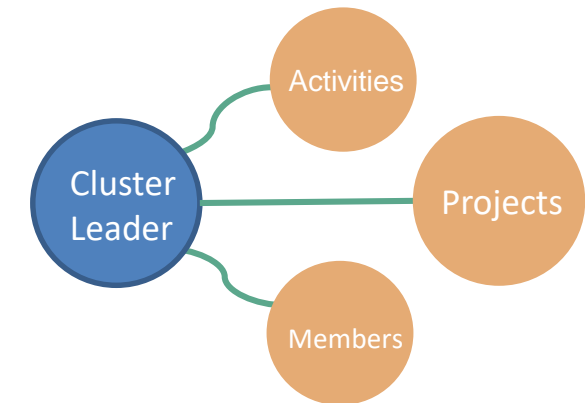
**CHN ENERGY**  
国家能源集团

Hydrogen

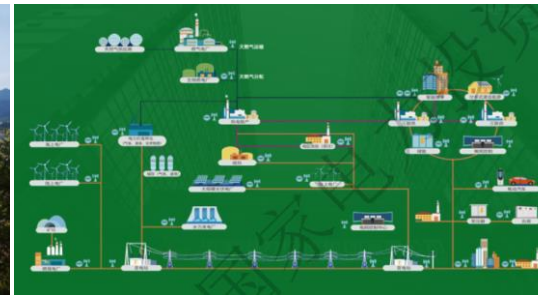


国家电投  
**SPIC**

Smart Energy



Clean heating and cooling





# Information platforms



APEC Sustainable Energy Center

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

## APEC Urban SDG Tracker for Energy and Climate

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



**NEWS**

**APSEC Attended the 63rd APEC Energy Working Group Meeting**

APSEC Attended the 63rd APEC Energy Working Group Meeting... [more]

- Winner Announcement of the 5th APEC Energy Smart | 2022-05-09
- Research Project of Practice and Experience of German Energy | 2022-05-09
- APSEC Participated in the 56th Meeting of APEC Expert Group on | 2022-05-09
- APSEC Participated in the 58th APEC Expert Group Meeting on | 2022-05-09

**NETWORK OF CHINESE PARTICIPATION IN APEC ENERGY COOPERATION**

Overview Organizational Structure Counterparts Networkmembers Notice

Activities

APSEC, as the first international organization led by National Energy Administration, one of the important tasks is to provide high-quality and integrated services for China's international energy cooperation. On the one hand, APSEC carries out Study on the progress and trends of energy cooperation in the APEC region based on the needs of APEC economies to promote China's advanced and



### Project Introduction

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**.

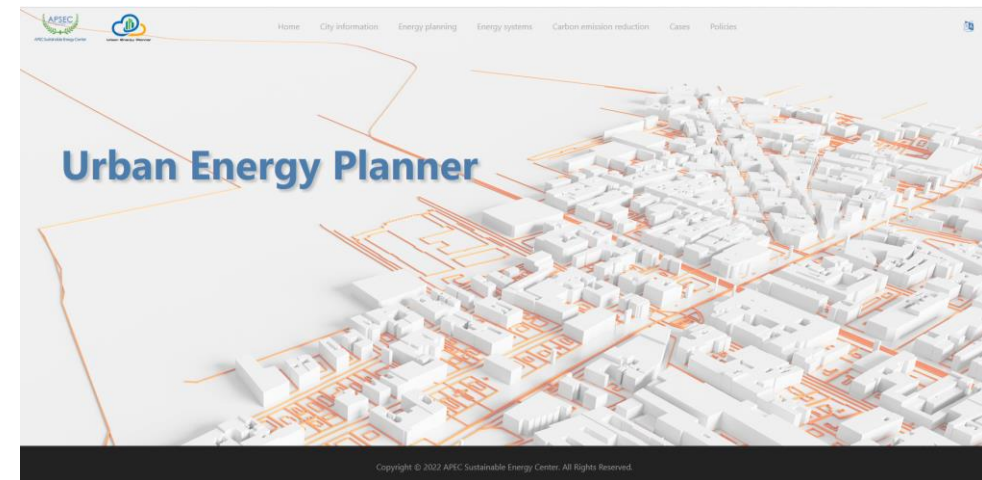
## Social media: Wechat



## Cloud-based Urban Energy Planning Tools

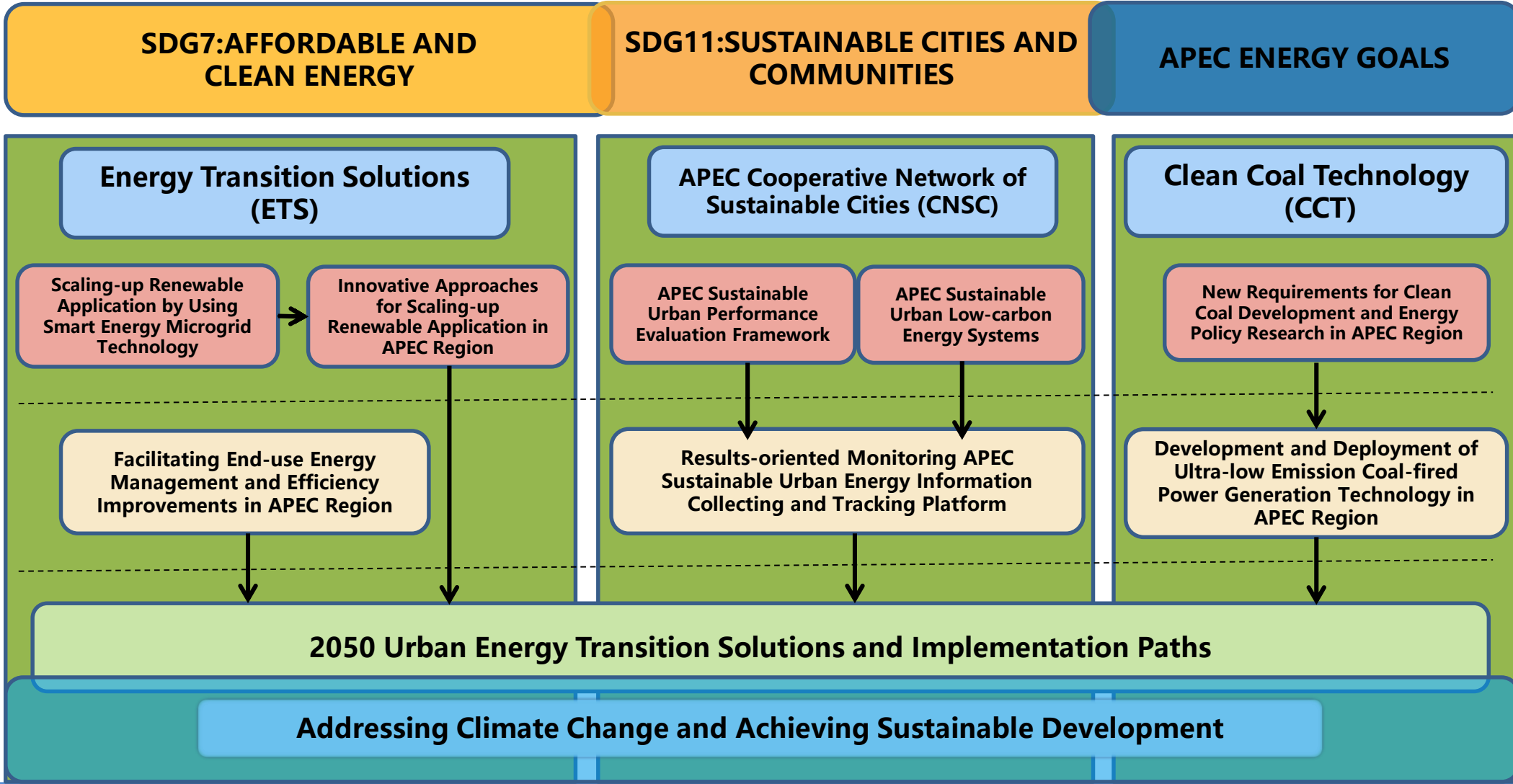


## Indicator-based and Carbon Neutrality Oriented Urban Energy Database

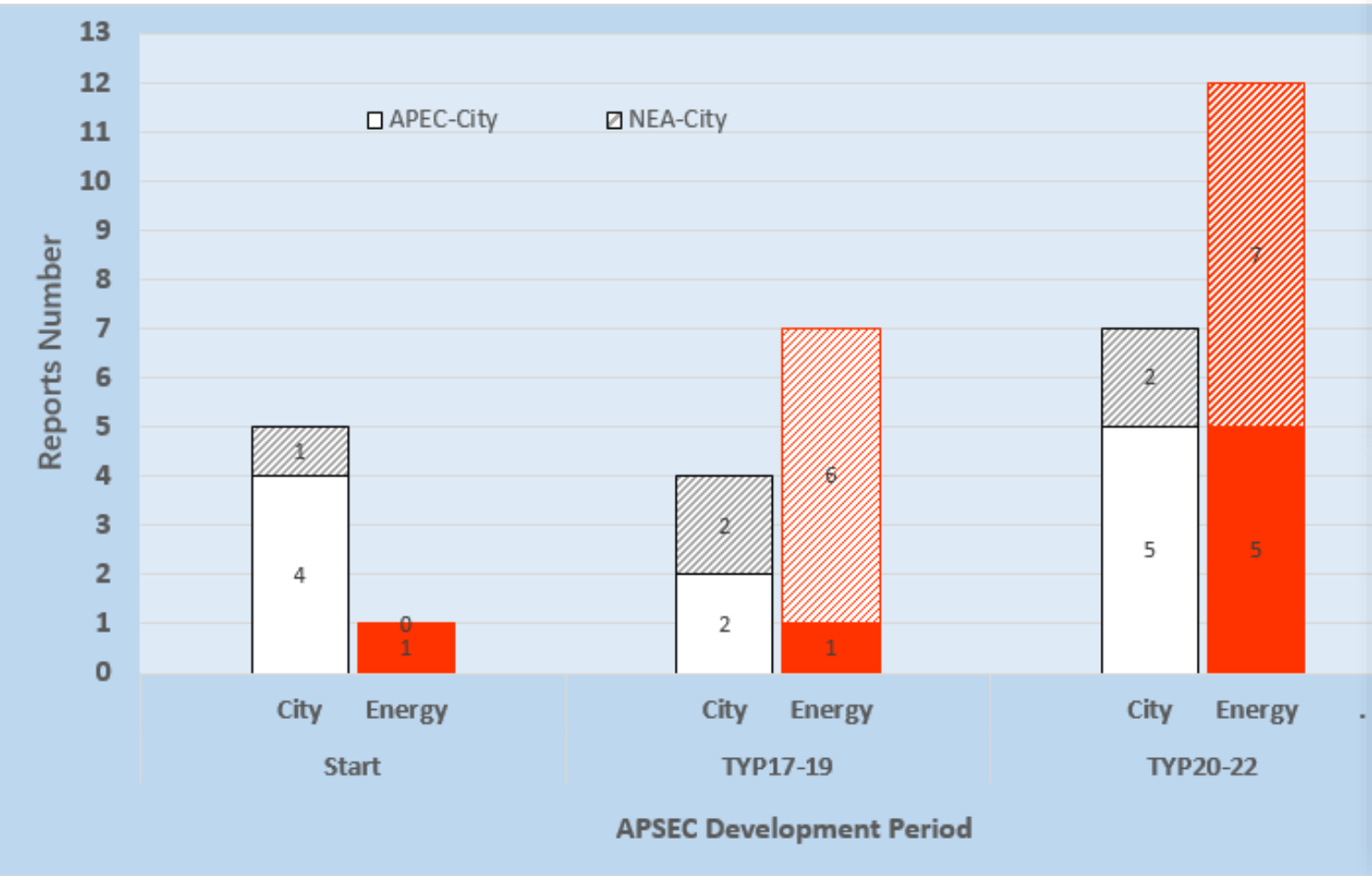


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# Pillars research planned for the 2<sup>nd</sup> Five years



## Research Reports



**19 Reports produced during TYP20-22**

# 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.

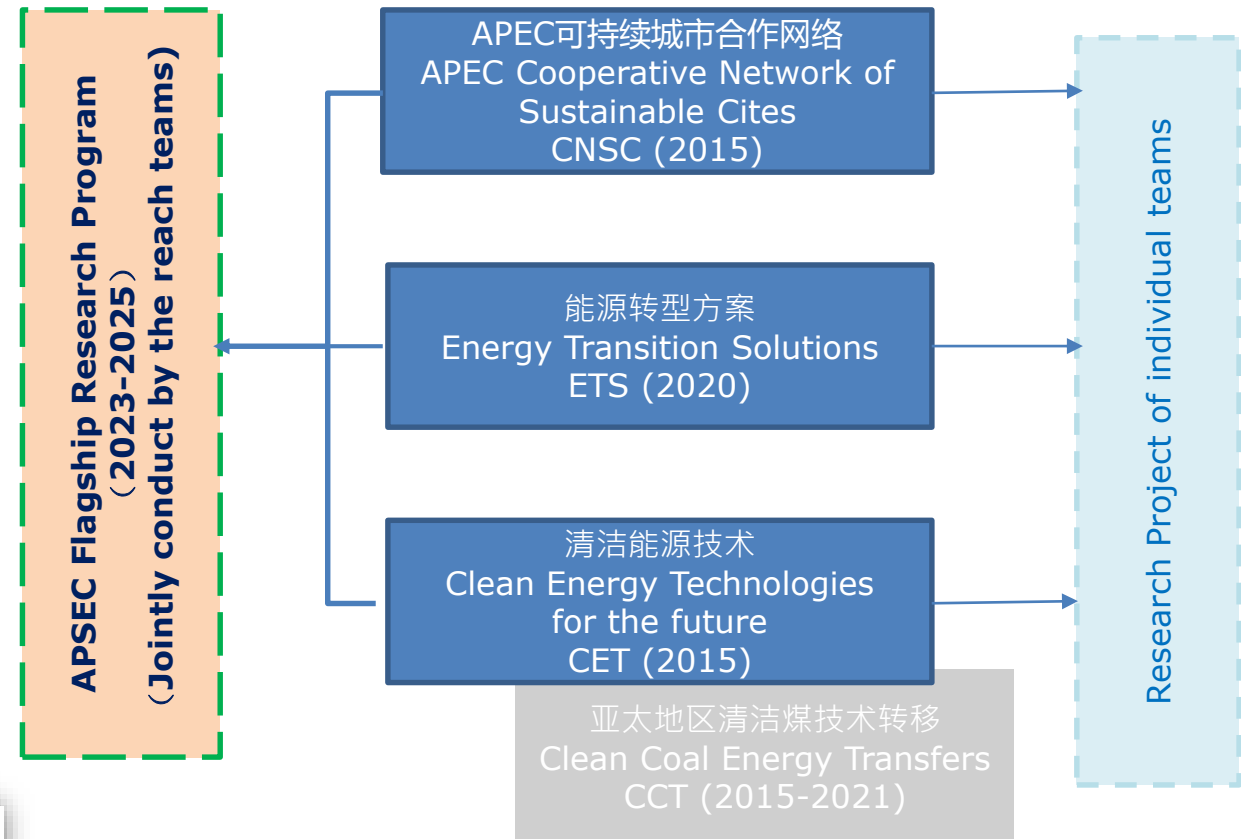


**CET**

**CCT**

Clean Coal Technology Center

## APSEC research programs (new)





## Rationale: Urban energy & climate change

- 60% of the world population in cities, resulting in **massive growth** in demand for **urban energy infrastructure**;
- 2/3 global **energy consumption**, about 50-60% of annual global **carbon emissions**;
- Cities are expected to account for about **80%** of the global energy consumption by 2040.

- **Green and low-carbon development** of urban energy is one of the effective ways to help achieve the 2030 Sustainable Development Goals;
- For carbon neutrality and implementation of the relevant policies, cities are among **the most important jurisdictions and geographic areas** for utilization of renewable energy, achieving energy system modernization, effective management and control of pollution, and reducing carbon emission;
- **Actions in the urban areas** are a critically important part to an economy moving on a low carbon track to the destination of carbon neutral.

**Urban Energy:  
critically important on low  
carbon development and  
carbon neutrality goal**



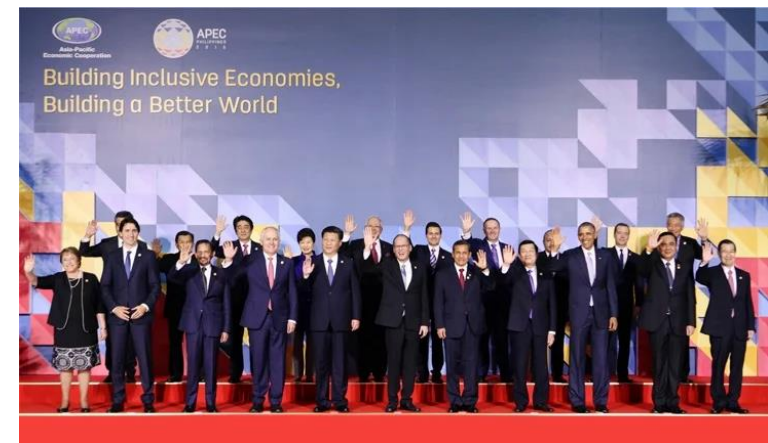
# Continuing APEC Efforts towards sustainable urban development

- The 2014 APEC Leaders' Declaration endorsed the APEC cooperation initiative for jointly establishing the **Asia-Pacific Urbanization Partnership**;  
Commits to further explore pathways to a new-type of urbanization and sustainable city development, featuring **green, energy efficient, low-carbon and people-orientation**;
- The 2015 APEC Leaders' Declaration reaffirmed the commitment to developing a new-type of urbanization that is **environmentally friendly, energy efficient, low-carbon and people-oriented**.

## Three pillars of urbanization under the APEC mechanism:

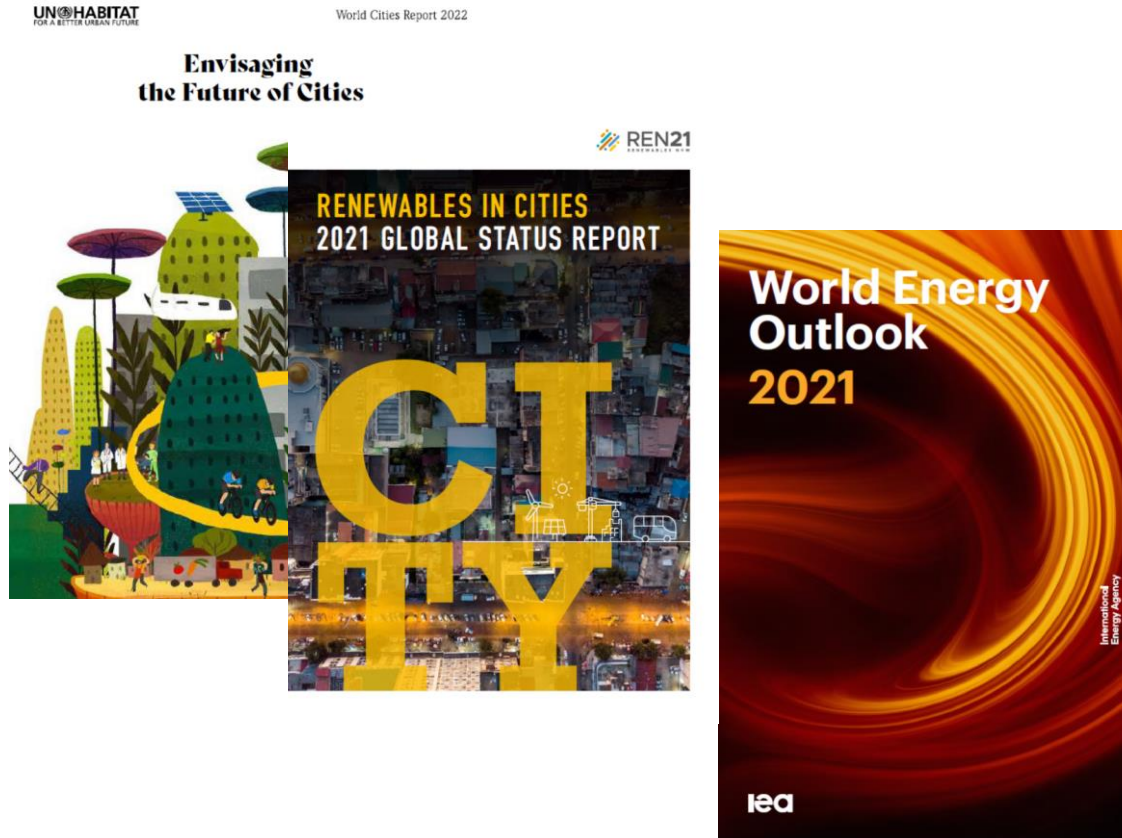
- Energy Smart Communities Initiative (**ESCI**)
- APEC Low Carbon Model Town (**LCMT**)
- APEC Cooperation Network of Sustainable Cities Network (**CNSC**)

CNSC focuses on seeking new driving forces for economic growth through urbanization and sustainable urban development



# Building upon relevant research from other International Organizations

- IEA
- IRENA
- UN-Habitat
- World Bank
- ADB
- REN21



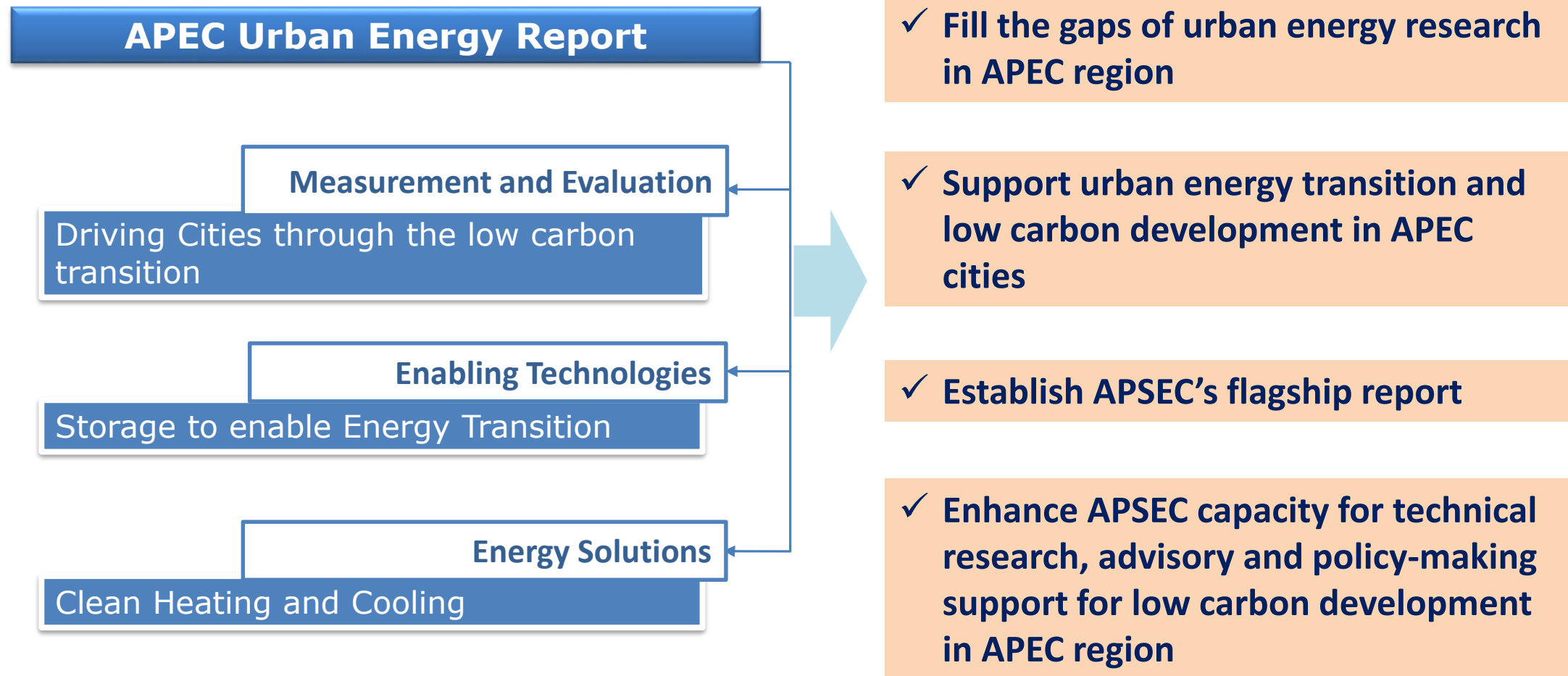
## Systematic study on urban energy transition:

- **Assessment of the pace** of urban low carbon carbon development
- Framework to **evaluate technology** development and support the deployment of technology in urban energy systems
- Policy **recommendation** on urban energy transition toward carbon neutrality
- **APEC-wide** study

## APEC Urban Energy Report

**Energy transition**, including development of renewable energy and the improvement of energy efficiency, are the pathway toward urban carbon neutrality.

## Focus on 'Urban Energy' in APEC region, Jointly Driving Cities through the low carbon transition



# Invitations



**Professional** and international Staff

Self-funded APEC visiting researchers



High-level and **influential** Expert Teams

TEN approved international experts' quota from Tianjin University, long-term professor-level experts



# Welcome to APSEC!



# THANK YOU!

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