



APSEC Work Progress Updates

Jinlong Ma

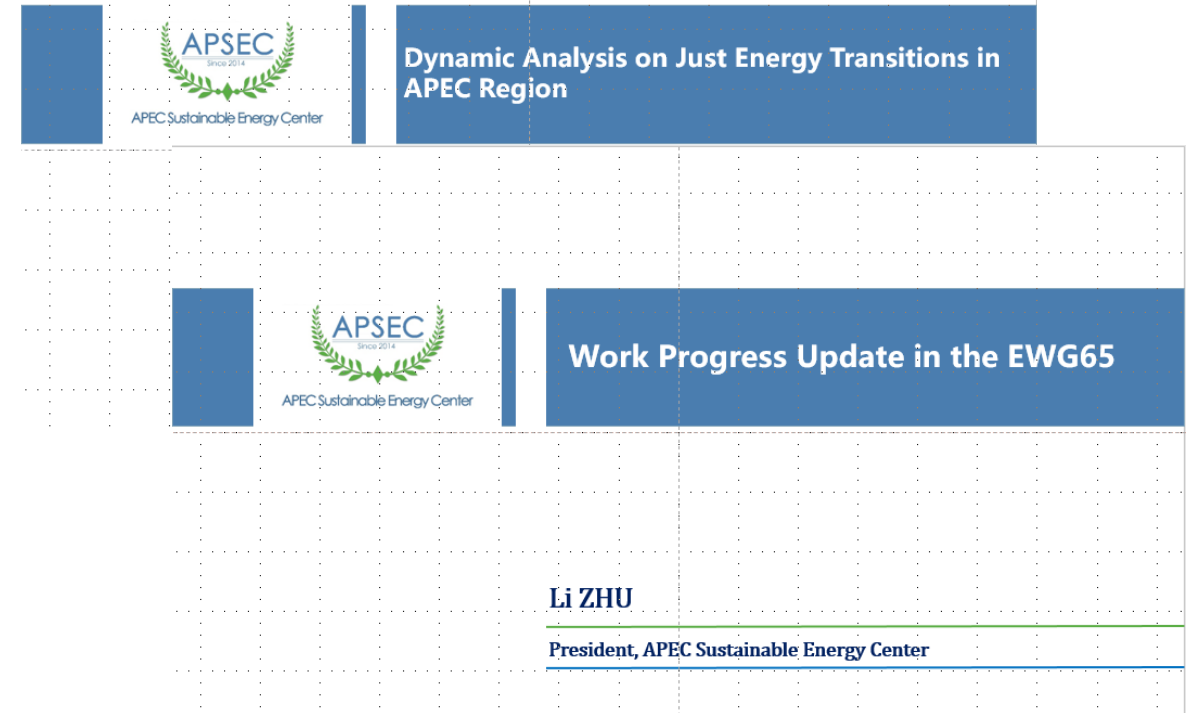
VP, APEC Sustainable Energy Center

APEC EGEE61 and EGNRET59 Meetings, Manila, the Philippines, 17-18 Oct 2023

APSEC Work Progress Updates

- i. **Meetings and event**
- ii. **APEC EWG projects and activities**
- iii. **Flagship research program (2023-25)**

■ Attended the EWG65 and Associated Meeting



- As one of the entity research centers under APEC EWG mechanism, **attended EWG 65 meeting virtually**. Prof. Zhu, the president of APSEC reported work progress and the APEC projects.
- Invited to carry out the policy dialogue research and participate in the Workshop and made a presentation entitled "Analysis of the Dynamics of Just Energy Transition in the APEC Region".

□ Attended the EG's Meeting



APSEC, as one of the entity research centers under APEC EWG mechanism, attended the EGEEEC60 Meeting held in Hong Kong, China, and reported related progress in daily work and the APEC projects.

The 7th APEC Workshop on Sustainable Cities



- March 14, 2023 held in Hong Kong, China
- Theme: Financing Models for Collecting Carbon Neutrality Data and Making APEC Cities Smart
- More than 40 participants from 9 economies.



- i. **Events and meetings**
- ii. **APEC EWG projects and activities**
- iii. **Flagship research program (2023-25)**

APEC EWG 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 (EWG 04 2022A)
- Research on energy strategies driving cities through the low-carbon transition (EWG 01 2023S)
- Demonstration and Promotion of Energy Resilience tool based on Solar-Powered Emergency Shelter Solutions for Natural Disaster in APEC (EWG 01 2022S)
- 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)

❑ 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;
- Benefits of addressing simultaneously **local SDG indicators** as well as criteria of the **Disaster Resilience Scorecard for Cities**.

■ Progress on 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 database, receiving feedback from the test runs;
- Pilot project concluded; database being filled up.
- Assessing compatibility with newly adopted global urban reporting frameworks. Planning modifications where necessary

❑ 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;
- Final report published on APEC Publications website;
- In the process of project completion.

□ 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 project will hold a “Training of Trainers” to **train local planning officers** of APEC municipalities to collect the specified data in cooperation with a local university;
- **A multi-stakeholder dialogue** will be organized 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

- Training of Trainers held on 22 and 23 August 2023.
- Multistakeholder Dialogue planned for 21 to 18 February 2024.
- Project extension request submitted.

❑ Research on energy strategies driving cities through the low-carbon transition (EWG 01 2023S)

- Endorsed : 9 March 2023

■ Summary

- To develop renewable energy and become carbon neutral, cities need to overcome a certain number of challenges and develop corresponding energy strategies. A key requirement is to measure **key energy and climate data**.
- The project is to address the question what ways and methods exist for energy and climate indicators and set up ESG and sustainable accounting in cities.
- Analyzes the Credit Risk Guarantee as a green finance tool to promote carbon neutrality of cities. The Philippines and Metropolitan Manila have been chosen as case example for the analysis.

■ Progress

- **Workshop on Financing Models for Collecting Carbon Neutrality Data** held on 14. 3. 2023 within EGEE60, gathering representatives from APEC cities and international carbon data collecting and reporting organizations;
- Project report completion: December 2023

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

■ **Summary**

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 design methods, new materials applications, novel construction and other technologies related to emergency disaster relief shelters;
- **Analysis:** design principles, design influencing factors and key technology systems related to SPESS;
- **Balance of the plant:** relevant exterior energy supply devices.

■ **Progress**

- Project report: “Technical Review of Examples of Emergency Shelters in the APEC Region”, published.
- Project report: “Demonstration and Promotion of Energy Resilience tool based on Solar-Powered Emergency Shelter Solutions (SPESS) for Natural Disaster in APEC”, published on APEC website (ISBN 978-981-18-7597-7).

□ 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 - 09/30/2023
- 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 power grid integration.
- Provide **recommendations** on policies and technical solutions to promoting OSW in the APEC region.

Capacity building: to disseminate the knowledge on innovative approaches, best regulatory and policy framework, and market mechanism for supporting OSW development among the key stakeholders.

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:** 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;
- Project tasks completed, and reports published.



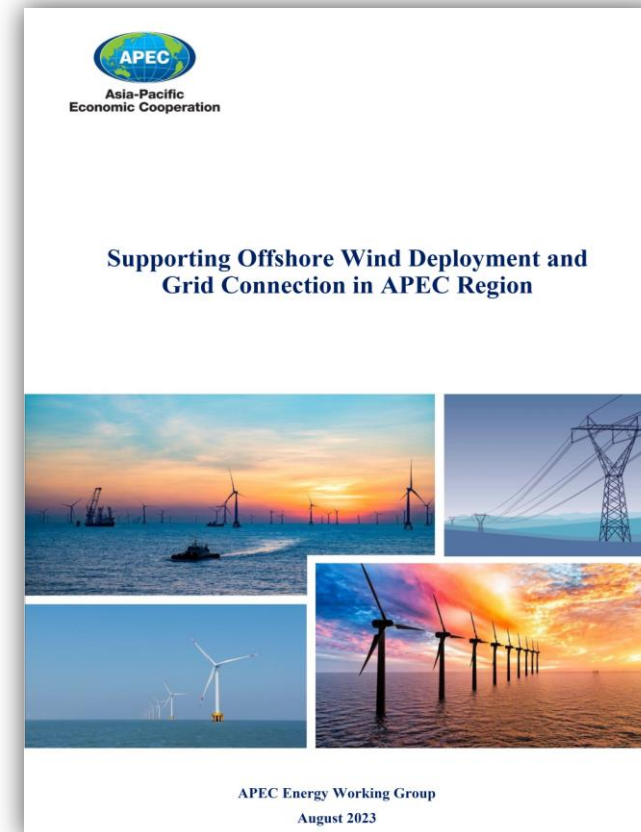
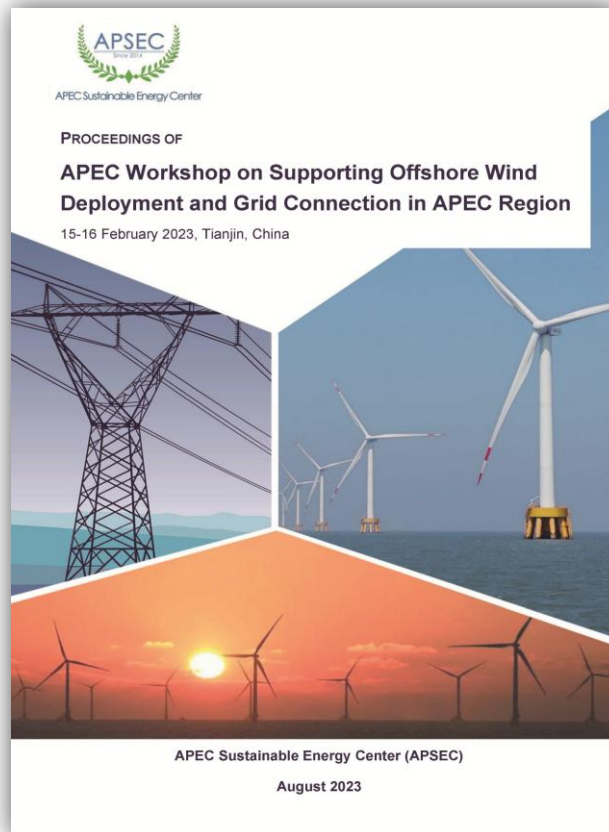
The APEC Workshop on Supporting Offshore Wind Deployment and Grid Connection in APEC Region (EWG 06 2021A)

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.
- **Dr Chi-Wen Liao** (Chair of EGNRET) delivered the opening remarks.

- ❑ Proceedings of APEC Workshop: Support offshore Wind Development and Grid Connection in APEC region produced, available on request

- ❑ Project Report EWG 06 2021A published, available on: <https://www.apec.org/publications/2023/09/supporting-offshore-wind-deployment-and-grid-connection-in-apec-region>



□ 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 - 30/09/2023

Project objective

The COVID-19 pandemic has caused significant impacts on the APEC economies. Across the region, different economies have formulated programs and stimulus packages for the economic recoveries and Post-COVID sustainable development.

- 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** in the APEC region.

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 and in post-COVID period; ii) presenting findings of the Research Work;
3. **Project Report:** encapsulate the key findings of the Research Work as well as the workshop, contributing to knowledge dissemination and information sharing.

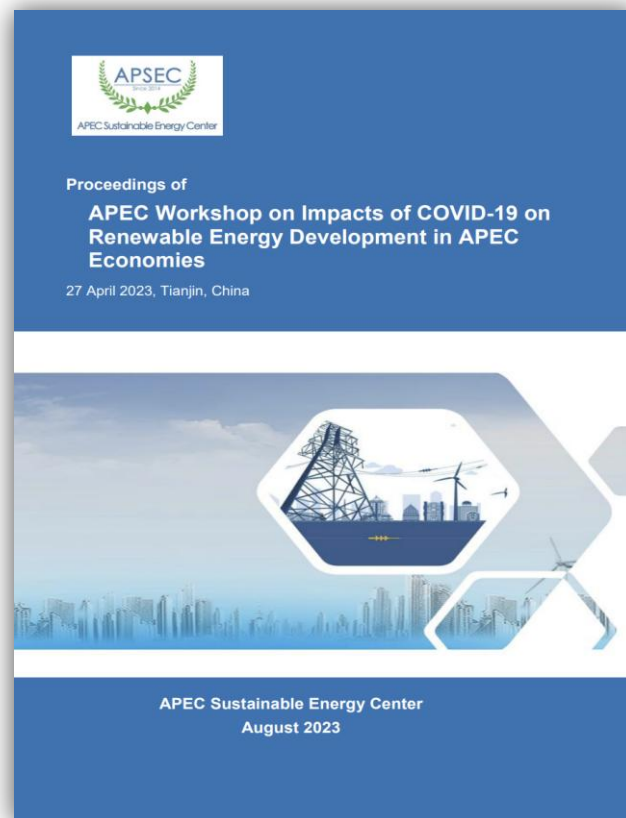
Progress

- Project commencing: January 2022;
- Contractor: **DNV Singapore;**
- Project Workshop: April 27, 2023;
- Project tasks completed, and reports published.

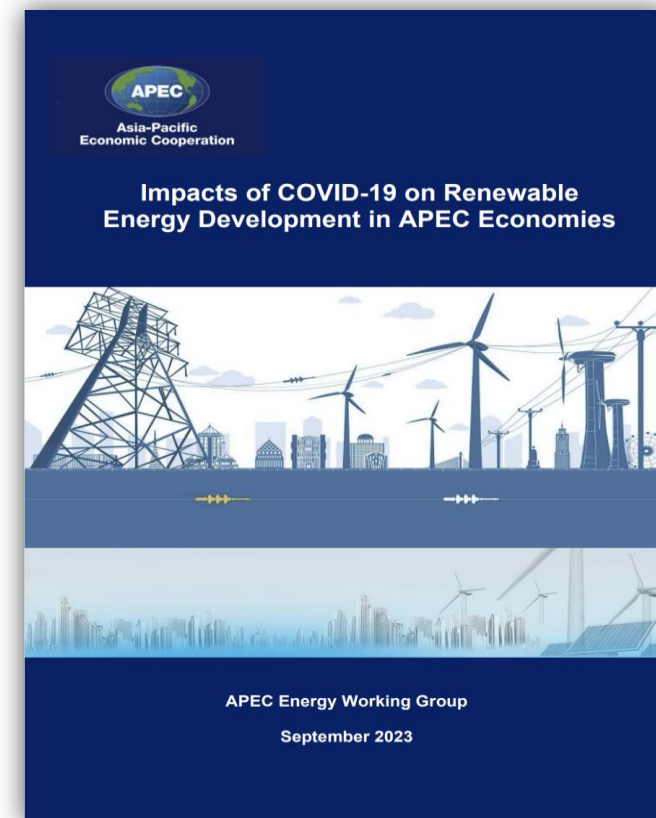


- More than **70 experts** and participants from International Energy Agency, International Renewable Energy Agency (IRENA), United Nations for Project Services(UNOPS), and **13 APEC economies** including the United States; Australia; Japan; Singapore; Hong Kong, China; Chinese Taipei; Thailand; Indonesia; Malaysia; Viet Nam; Peru; Papua New Guinea and China attended.
- **Dr Chi-Wen Liao** (Chair of EGNRET) delivered the opening remarks.

- ❑ Proceedings of the APEC Workshop: Impacts of COVID-19 on Renewable energy Development in APEC economies, available on request



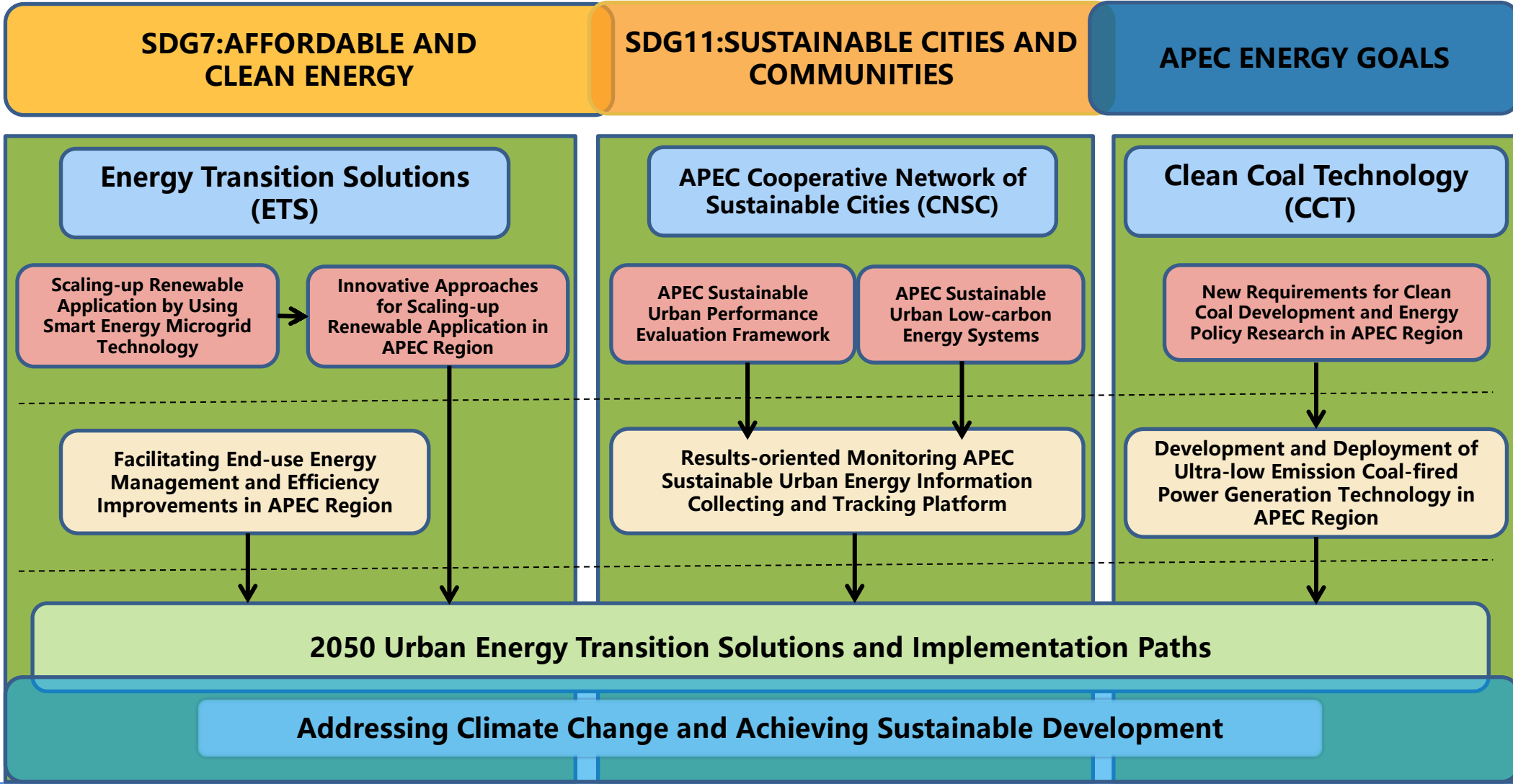
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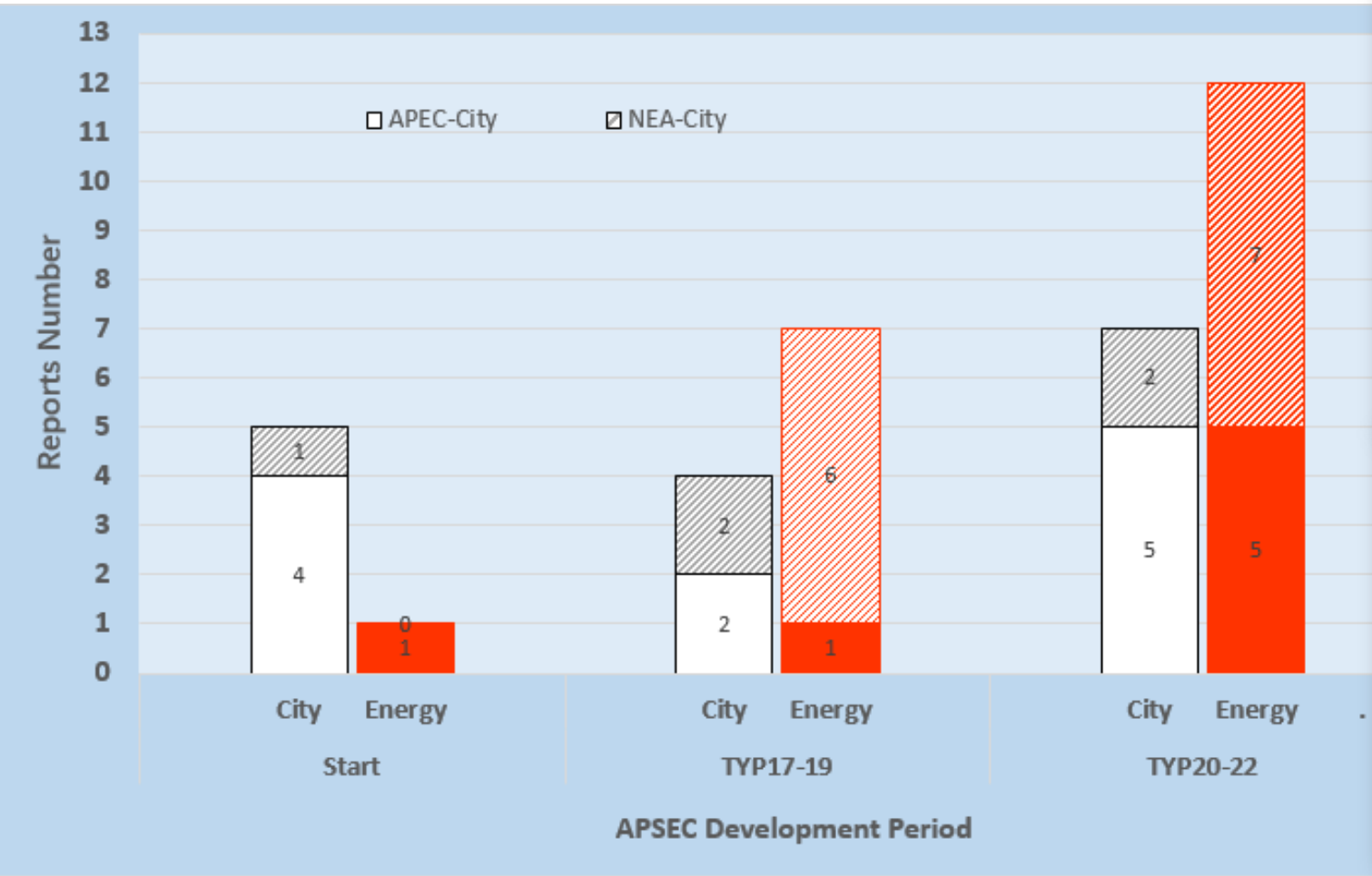
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Pillars research planned for the 2nd Five years



Research Reports

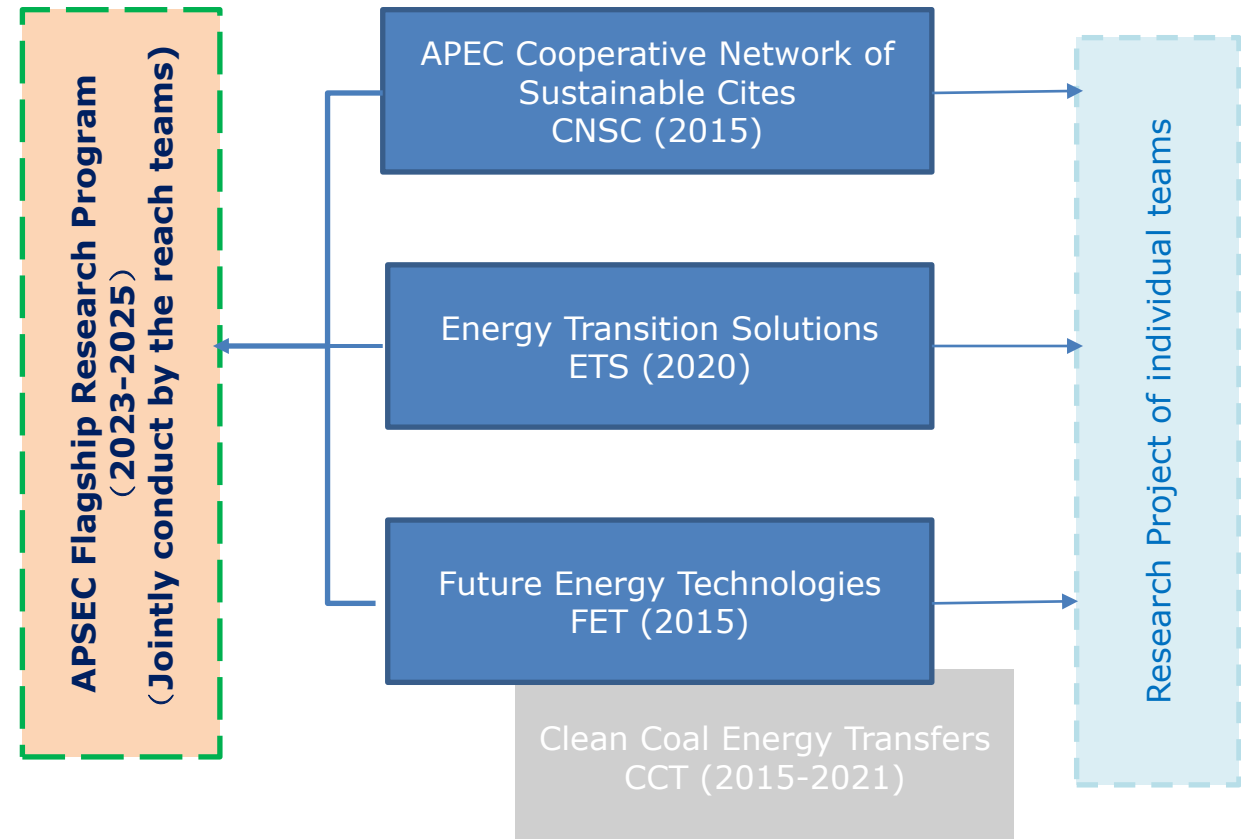


19 Reports produced during TYP20-22

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 Energy Transition Solutions (**ETS**)
- Future Energy Technologies (**FET**)

Research programs (new)



FET

Research direction : 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:

low carbon development & carbon neutrality

Continuing APEC Efforts towards sustainable urban development ^{ter}

- 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:

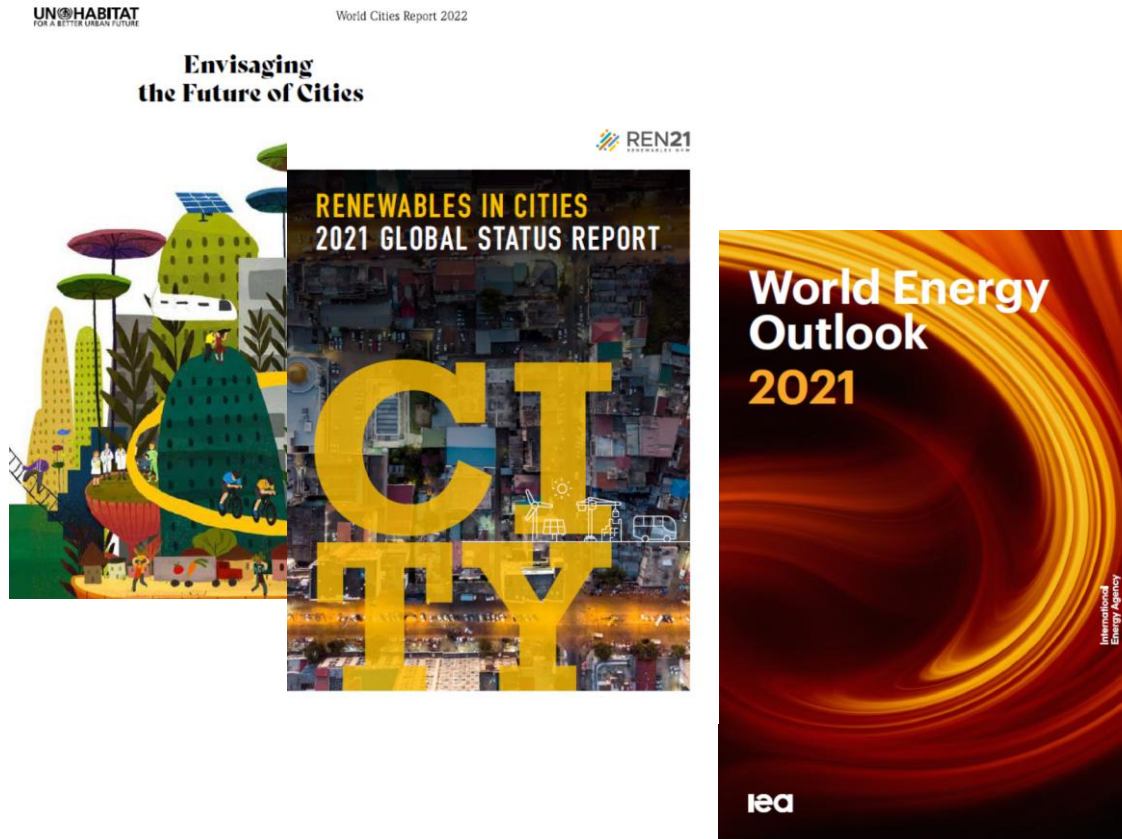
- Energy Smart Communities Initiative (**ESCI**)
- APEC Low Carbon Model Town (**LCMT**)
- APEC Cooperation Network of Sustainable Cities Network (**CNSC**)

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



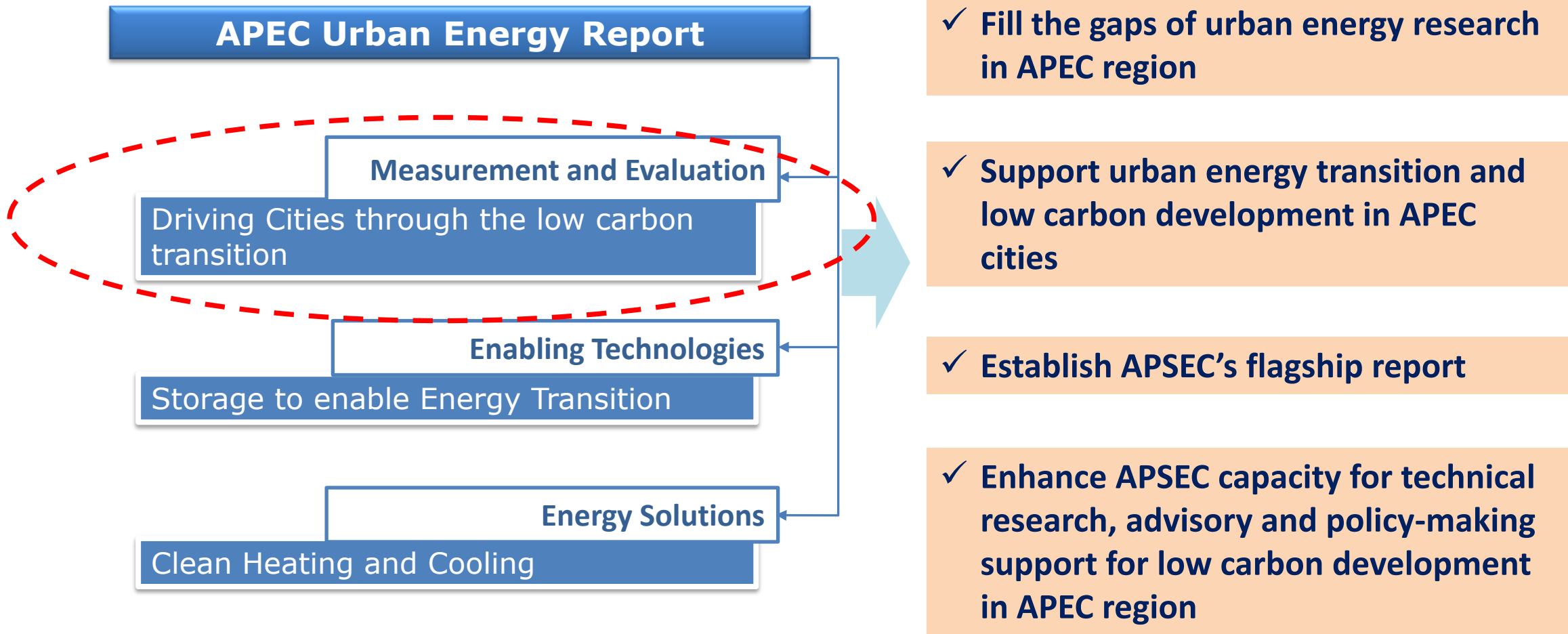
Energy transition, including development of renewable energy and the improvement of energy efficiency, are the pathway toward urban carbon neutrality.

Systematic study on urban energy transition:

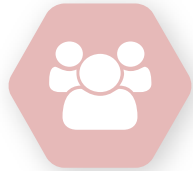
- **Assessment of the pace** of urban low carbon carbon development
- Framework to **evaluate technology** development and support the deployment of technology in urban energy systems
- Policy **recommendation** on urban energy transition toward carbon neutrality
- **APEC-wide** study

APEC Urban Energy Report

Focus on 'Urban Energy' in APEC region: driving cities through the low carbon transition: 2023 - 2025



Invitation



Professional and international Staff

Self-funded APEC visiting researchers



High-level and **influential** Expert Teams

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

THANK YOU!

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