Project Summary

APEC Project - Filling the Gap to Reach the Goal of Doubling Renewable Energy in the APEC Region-Phase 2

(EWG 02 2019A)

Chinese Taipei

April 2022

Project background

Objective

The objectives of this project are developing a practical roadmap towards achieving doubling renewable energy goal and the priority for the policy recommendations including electricity, transportation and heating.

Research Process

Framework Design

- Current Status and Development Policies on Renewable Energy in different aspects in power, transportation sectors and heating

Data Collection

- Identify challenges and gap which need to overcome in the process for reaching the goal in different aspects in power, transportation sectors and heating

Analysis

- Using the P.E.S.T. analysis. (Political, Economic, Social and Technological)
- Assess major external factors that influence its operation
- Conduct one APEC Workshop

Roadmap Development

Recommendations

Milestones

- Short-Term
- Mid-Term
- Long-Term

Workshop

23 Sept 2021

70 participants from 12 Economies (35 female: 35 male)

Summary:

- RE updates and experiences shared by the Japan, Thailand, Chinese Taipei, and USA.
- Roadmap development experiences shared by Australia, ASEAN Center for Energy, IRENA.
- Active discussions on the findings of the project. Suggestions were collected, e.g. considering COVID-19 impacts in the research.
- Support from APERC and EGEDA for APEC RE data and information.

Output

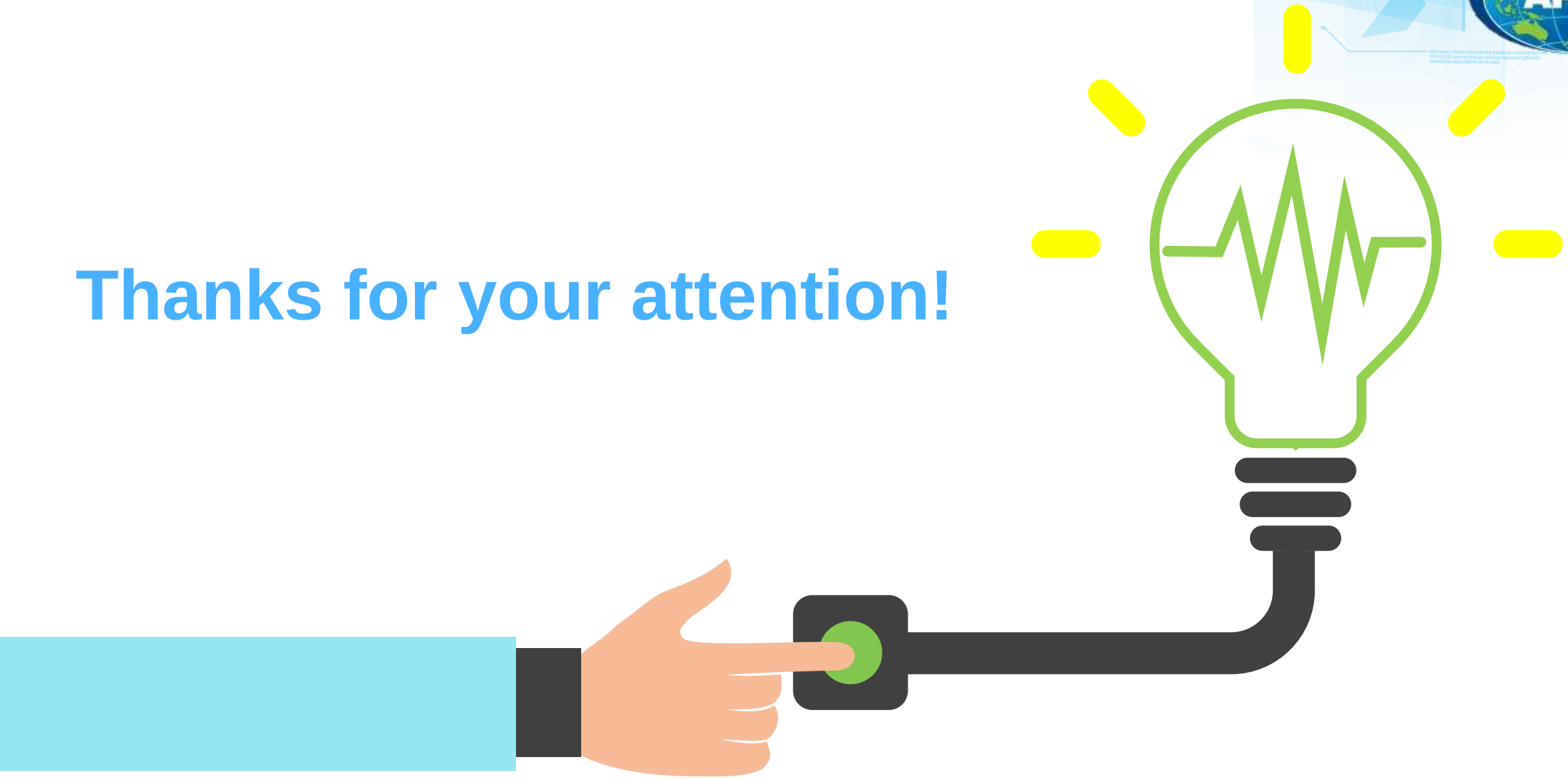
1. Recommendation-overall concept

- Implementing More Ambitious and Dedicated Renewable Energy Targets
- Long-Term Support for Renewable Energy Development
- Enhancing Supporting Policies and Policy Enforcement
- Increasing Positive Cross-Cutting Effects of Renewable Energy on Sustainable Development
- Enhancing the Integration of Renewables Used in Different Sectors
- Increasing Economic Incentives
- Increasing Regional Engagement and Cooperation
- Urgency of Market Reform

	Short-Term (Today-2023)	Mid-Term (2024-2026)	Long-Term (2027-2030).
Target	Set a long-term target	Regularly review renewable energy targets	Achieve long-term target
Policy	Develop relevant support mechanisms and regulations	Establish target-specific supporting projects and develop specific regulations	Integrate policies
Mechanism	Remove subsidies for fossil fuel	Provide favorable investment loans or financial incentives	Develop risk mitigation instruments
Cooperation	Experience sharing	Technology transfer involving strategic/cooperative alliance	Adopt advanced and renewable energy technology and policies

2. Recommendations for Power Sector
3. Recommendations for Transportation Sector
4. Recommendations for Heating Sector

Thanks for your attention!



Overview of Recommendation for Power Sector

Key Aspect	Challenges	Recommendations
Political	◆ High up-front investment costs ◆ High investment risk	◆ Capital grants and operating grands ◆ Low interest or no interest loan/ long term loans/ loan guarantees ◆ Tax incentives (tax credits, reduction, accelerated depreciation)
Economic	◆ Lack of policies for specific renewable heating on specified sectors ◆ Lack of standards for heating equipment	◆ Building regulation for specific renewable heating technologies (ex. Solar thermal system for hot water) ◆ Standard for heating equipment (prevent less efficient technology design, create greater confidence in the reliability of the technology, reduce investment risk)
Social	◆ Lack of public awareness ◆ Lack of skilled labors for installing	◆ Information campaigns (technical assistance, finance advice, labeling of appliances, information distribution) ◆ Provide training to increase installer knowledge
Technological	◆ Fossil fuel subsidies ◆ Enhance the Economic competitiveness of RE technologies	◆ Balance the subsidies for fossil fuel and RE technologies ◆ CO2 taxes and carbon trading system

Overview of Recommendation for Transportation Sector

Key Aspect	Challenges	Recommendations
Political	◆ Lack of clear land ownership ◆ Fossil fuel subsidies	◆ Remove fossil fuel subsidies ◆ Blending mandates ◆ Monitoring mandate ◆ Providing a long term policy framework ◆ Creating domestic land-use database
Economic	◆ Limited financial resources to new technology development ◆ Commercial scale ◆ Feedstock cost fluctuation ◆ Relative low oil price	◆ Grants and loan guarantees ◆ Tax incentive ◆ Certification ◆ Remove trade barriers
Social	◆ Lack of skilled labor (feedstock, refinery, blending, etc.) ◆ Public awareness	◆ Cross APEC economy - collaboration on capacity building ◆ Training Programs ◆ Public discussion
Technological	◆ 10%-15% ethanol in gasoline vehicle compatibility constraints ◆Advanced biofuel technologies are not yet commercialized ◆Poor rural areas are lack of infrastructure ◆Poor accessibility to rural areas	◆ International collaboration ◆ Technology transfer ◆ Ensuring sustained funding and support mechanism to innovate advanced biofuel technologies ◆ Infrastructure policies on a domestic level

Overview of Recommendation for Heating Sector

Key Aspect	Challenges	Recommendations
Political	◆ Lack of long-term targets and planning ◆ Permitting procedures and regulations ◆ Lack of subsidies or incentive schemes	◆ Provide clear direction of travel; sends signals to consumers and industry ◆ Streamlining application and permitting procedures on a higher level ◆ Aligning RHC policies with other policies such as energy efficiency ◆ Mandates or obligation for existing and new buildings
Economic	◆ The growth of RHC market and the advancement of industry are relatively slow ◆ Lack of market with innovation and potential ◆ Higher upfront investment costs ◆ Lack of economies of scale resulting in higher system costs	◆ Investment support via grants and low interest loans ◆ Heat generation-based subsidies to reduce payback periods and provide long-term policy support. ◆ Making use of existing energy infrastructure and other infrastructure projects reduces upfront investment costs ◆ Energy taxation and carbon pricing. ◆ Removal of fossil fuel subsidies.
Social	◆ Rapid urbanization and growth of economy ◆ Climate change ◆ Lack of public awareness ◆ Resources and infrastructure differences	◆ Early planning for climate change and upcoming urbanization issues ◆ Enhance global and regional cooperation and knowledge sharing
Technological	◆ Some RHC technologies may not fully meet industrial heat requirements ◆ Building codes and applications differences ◆ Lack of data and statistics	◆ Talent cultivation ◆ Mix the use of technologies that are specific to local resource potential, unique heat demand/supply and available infrastructure, such as district heating and cooling networks. ◆ Organization and funding for resource mapping and zoning by local authorities. ◆ Technology-related research, development and demonstration funding.