

USA Project update

EGEEC -57
Australia (Virtual)
October 6-8, 2021



**Asia-Pacific
Economic Cooperation**

*APEC PROJECT: EWG 05 2019A Sustainable
Mobility: Routes for integrating the Energy
and Transport Sectors for Urban Cities*

Motivation and Project outputs

- “68% of the world’s population is projected to live in urban areas by 2050”, says the [United Nations](#)
- The rapid rise in economic growth and urbanization results in heavy traffic congestion in cities within APEC economies, thus requiring efficient and sustainable mobility solutions that is geared towards high-capacity, clean transport options.
- Our objective was to find integrated pathways for sustainable mobility – specifically finding key coordination points between the transport and energy sectors at the initial planning stages – that will enable greater deployment of clean transport options.

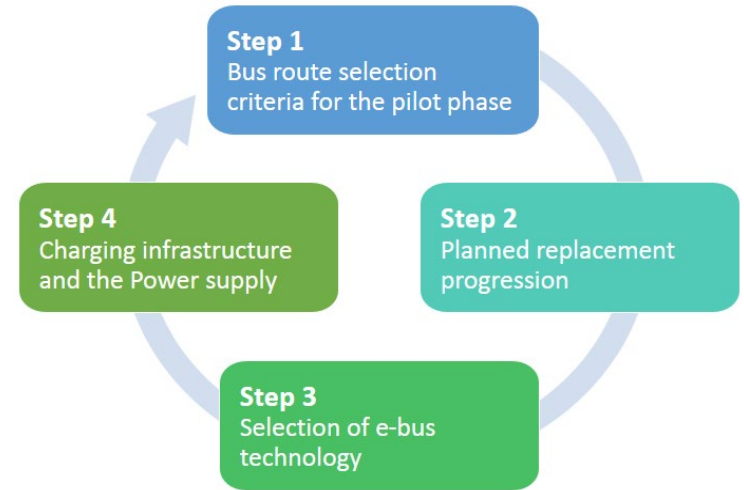
Project outputs (all tasks have been completed):

- 1) Case study – “Planning a transition to electrification of public transit systems – Learnings from the bus rapid system of Metrobus in Mexico City” (submitted to APEC for approval)
- 2) Webinar and panel discussion to disseminate the case study findings (Feb 2021)
- 3) Capacity building ‘virtual’ workshop (August 2021)

Case Study: PLANNING A TRANSITION TO ELECTRIFICATION OF PUBLIC TRANSIT SYSTEMS: LEARNINGS FROM THE BUS RAPID TRANSIT SYSTEM OF METROBUS IN MEXICO CITY

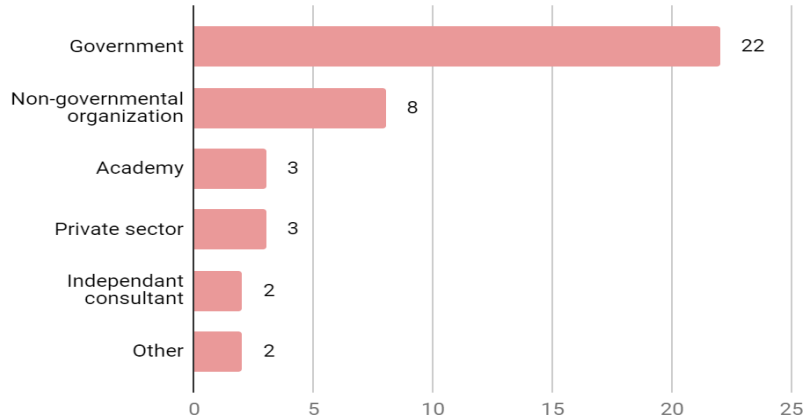
This case study highlights the strategies and actions that allowed the successful execution of this first stage in the replacement of traditional buses using ICEs.

The analysis emphasizes the methodology for choosing the technology and the necessary recharging infrastructure, including a discussion of the impacts of the replacement plan, such as cost savings and reduction of pollutant emissions.

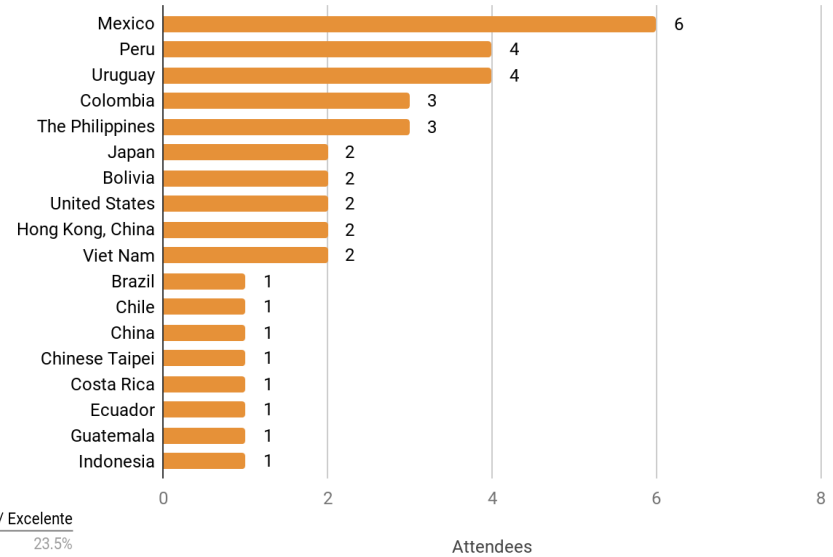


Steps for the development of the pilot phase project

Webinar: The Learnings from the Planning of the Pilot Phase in Metrobus BRT, Mexico City

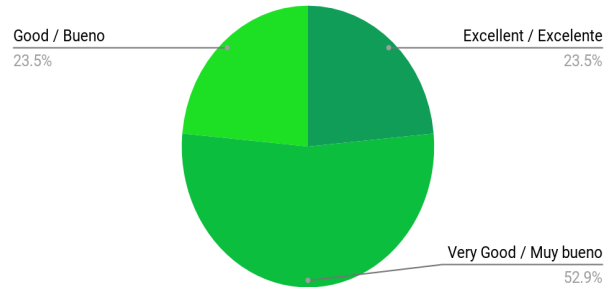


Participation by sector



Attendees

Participation by economy



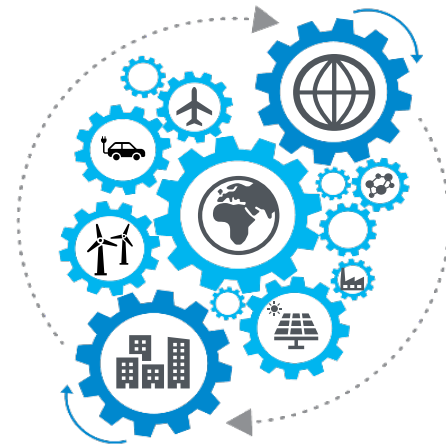
Webinar overall rating

Virtual Workshop: Key Messages

Integrated Sustainable Mobility for Urban Cities

Key messages

- Covid 19 recovery presents the opportunity to synergize the transport and energy sectors to decarbonize transport while creating jobs in the process.
- Equity and justice are key aspects to keep in focus in urban electrification projects: electrification should meet mobility needs that are not currently being met.
- The greatest planning and design complexity lies not in the vehicle technology or the charging infrastructure, but in the communication between the two.
- There is no single entity that should secure charging points. There are several business opportunities in this area to diversify the sources so that the infrastructure can properly support the users.
- The target of zero-emission is not enough, it must be integrated at every level of decision making and backed by renewable energy targets and support policies.
- Electricity distribution systems are essential for social welfare, there is a need for a new grid architecture and policies to make the management and coordination of new distribution technologies and modernization more effective. To minimize the impact of extreme events, building resilience into the infrastructure design is key.





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Economic Cooperation**



APEC Workshop on Evaluation of Energy Technologies, Programs and Policies EWG 12 2019A

Edward Vine, Project Overseer
Lawrence Berkeley National Laboratory, USA

Objectives

- Bring together policy makers and evaluation practitioners to highlight evaluation methods and analysis, and the evaluation of energy technologies, programs and policies.
- Provide insights of the value of having robust evaluation practices through the presentation of best practice, case studies and workshop sessions.
- Step in developing a platform to discuss and exchange experiences, current strategies, policies, protocols, and regulations for designing and implementing program and policy evaluations.

Four 2-Hour Webinar Sessions Held in September 2021

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|-----------|---|
| Session 1 | Purpose of evaluation – Sept. 14 – Tajbee Ahmed |
| Session 2 | Evaluation design – Sept. 16 – Charles Michaelis |
| Session 3 | Collecting data for effective evaluations – Sept. 21 – Jane Peters |
| Session 4 | Strengthening the value of evaluation and evaluation capacity building – Sept. 23 – Ed Vine |

Post-Workshop

- Evaluation Survey
 - We will be sending you a link to an evaluation survey to complete after the workshop
- Presentations
 - Will contained and discussed in APEC Report
- Draft report
 - Will be sent to participants and APEC for review

The APEC workshop on University Collaboration to Support Data Gathering and Analysis in Energy Efficiency and Renewable Energy (EWG 06 2019A)

BACKGROUND

The US-led APEC-funded workshop on **University Collaboration to Support Data Gathering and Analysis in Energy Efficiency and Renewable Energy (EWG 06 2019A)** was organized by Claremont McKenna College, California, United States, and King Mongkut's University of Technology Thonburi, Thailand. Co-sponsoring APEC economies are Thailand; the Philippines; Chinese Taipei, and Australia. The project received APEC Support Fund (ASF) funding under the Energy Efficiency and Low-Carbon Measures sub-fund. The original plan was to host the workshop in Bangkok, Thailand in 2019. However, due to the COVID-19 pandemic, the workshop was an online event from **8-9 June 2021**.

GOALS

APEC's Energy Working Group (EWG) and its subfora have identified a broad range of strategic goals to work towards between 2019-2023. They are in line with the APEC aspirational goals endorsed by APEC Ministers and Leaders to 1) double the share of renewables in the APEC energy mix by 2030 and 2) reduce APEC's energy intensity by 45% from 2005 levels by 2035. These ambitious goals and projects require extensive data gathering and synthesis, in addition to the work the policymakers are already doing. Each APEC economy has excellent Universities that could provide additional capacity for this work by offering project-based courses based on the information and analysis that policymakers identify as necessary to meet these goals.

The two-half-day workshop brought together APEC members, faculty from APEC universities, and members of APERC and APSEC to talk about potential EWG/University collaborations. The policymakers and faculty actively participated and discussed possible projects that would benefit both the EWG and the university partner.

PROJECT OBJECTIVES

The project aims to:

1. **Build the capacity of workshop participants** by developing a network between the EWG, APERC, APSEC, and University faculty in APEC economies
2. **Share an example of collaborative projects by Universities** in APEC economies that address the APEC energy efficiency and renewable energy goals
3. **Develop project ideas**, between the policymakers and University faculty in APEC economies, as project-based courses that will help inform energy efficiency and renewable energy goals

VIRTUAL WORKSHOP

The online workshop, using Zoom platform, took place in a GMT+7 time zone, from 8:00-12:00 on June 8 and 9 of June 2021. **There were 24 speakers and 36 participants attended the two half-days online workshop.** They were policymakers, researchers, and University faculty and students from 18 APEC economies. These include Australia; Brunei Darussalam; Canada; Chile, Hong Kong, China; Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; The Philippines; Singapore; Chinese Taipei; Thailand; United States of America; Viet Nam.

METHODOLOGY

In addition to the workshop, a website (apec-collab.kmutt.ac.th) aims to increase the workshop's efficiency and encourage participant's engagement before and after the online meeting, such as depositing workshop materials and information on the speakers and participants. Many presentation files are available for download from this link: https://apec-collab.kmutt.ac.th/?page_id=1026. To use the time during the workshop more efficiently, speakers submitted a pre-recorded video presentation for others to watch before the event. *The first day (8 June 2021)* started with an introduction and objectives of the workshop, followed by a series of presentations by the faculty on examples of collaborative projects and a session about policymaker's needs for data. Subsequently, there was a half an hour wrap-up discussion.

The second day (9 June 20121) started with a panel of students talking about their experiences of the previous joint projects and small group discussions. The 3 group discussions included: 1) Community Development, 2) City, Buildings, and Transportation, and 3) Renewable Energy. Each speaker summarized his or her presentation and the discussion focused on exchanging ideas and experiences and developing collaborative projects. Subsequently, the moderators reported lessons learned from each group discussion and a brainstorming session by all participants concluded the workshop.

RESULTS

The workshop went well and was a fruitful and interactive event, despite being a virtual meeting. It has attracted the University faculty and researchers from 22 institutions with a range of expertise in energy-related fields and other disciplines that would benefit the future collaboration on the APEC energy goals, such as economics and urban planning. The following summarizes the result of the group discussions and brainstorming:

1. **Direct and indirect benefits.** Drawn from the experiences of university faculty and students who participated in the previous projects, in addition to the immediate academic achievement, the students seemed to develop a more profound and long-term interest in promoting clean energy and a sustainable environment. Therefore, supporting project-based learning is a valuable strategy for capacity building among the young generation in the APEC region. Working with colleagues from other cultures and disciplines also widens their perspectives.
2. **Multi-disciplinary approach.** Joint projects on data gathering and analysis for the APEC energy goals could benefit more from a multi-disciplinary approach that could help to address social and economic impacts of the energy efficiency and renewable energy projects. These aspects are also essential to the broader adoption of energy efficiency and renewable energy implementation. For example, innovative energy-efficient technologies for commercial buildings may cost more than standard practice, while a healthier and more comfortable working environment contributes to building occupant's better work performance. In this case, the financial analysis may provide quantitative evidence for building owners to opt for cleaner technologies.
3. **Public health concerns.** One of the lessons learned from Viet Nam's solar and wind power success, in addition to a strong will from the policymakers, was that one of the key factors was immense public support. Like other developing economies such as Thailand and Indonesia, Viet Nam has faced severe air pollution issues, which people experience in their everyday life. Thus, the expansion of renewable energy production provides a tangible solution to cleaner air and better quality of life.
4. **Communication and community engagement.** User's participation and engagement are essential to the success and sustainability of energy efficiency and renewable energy projects for community development. Local universities are also well-positioned to facilitate the communication between the policymakers and the communities, particularly in the rural areas.
5. **Energy Data Transparency.** In some economies, there seemed to be a barrier to obtaining energy data due to limited public access to the actual consumption by each sector. Researchers agreed that energy data transparency would benefit the analysis of actual energy use and provide a better policy implication.

NEXT STEPS

There are at least four groups of university faculty who expressed interest in developing collaborative projects in the following themes:

1. **Analysis of distributed renewable energy in the APEC region** lead by Dr. Norasikin Ahmad Ludin (Malaysia)
2. **Energy performance of buildings in the tropics** lead by Dr. Masayuki Ichinose (Japan)
3. **Smart urban mobility and electric vehicle** by Dr. Yossapong Laoonual (Thailand)
4. **Smart community: energy monitoring and planning for the local community** lead by Dr. Worajit Setthapun (Thailand)

Each group will continue their discussion after the workshop and send updates to the project website. In the meantime, information on funding opportunities would help to get these ideas off the ground. The project overseer also encouraged other participants to follow the new information and, hopefully, they may decide to develop more collaborative projects in the future. **Finally, the preparation of a follow-up concept note is another step towards fostering these collaborations and maximizing their impact.**

APEC Concept Note

Project Title:	APEC Workshop Furthering University Collaboration to Support Data Gathering and Analysis in Energy Efficiency, Renewable Energy, and Energy Resiliency
Fund Source (Select <u>one</u> only):	
<input type="checkbox"/> General Project Account (GPA) <input type="checkbox"/> Trade and Investment Liberalization and Facilitation Special Account (TILF) <input type="checkbox"/> APEC Support Fund (ASF) – General Fund <input checked="" type="checkbox"/> APEC Support Fund (ASF) – Sub-Fund: Energy Efficiency, Low Carbon and Energy Resiliency Measures	
APEC forum:	Energy Working Group/Energy Efficiency & Conservation (EGEEC)/New & Renewable Energy Technologies (EGNRET)
Proposing APEC economy:	United States
Co-sponsoring economies:	Australia; Canada; Hong Kong, China; Chinese Taipei, Thailand
Expected Start Date:	December 2021
Project Completion Date: <small>See Chapter 7 Guidebook on APEC Projects</small>	June 2023
Project summary: <i>In 150 words -</i> <ul style="list-style-type: none"> • What is the issue that you will address or examine in your project? • Outline the key things your project will do, in terms of what, where, when and with whom. <small>(Summary <u>must be</u> no longer than the box provided. Cover sheet must fit on one page)</small>	<p>The EWG, its expert groups, and task forces are working on projects with ambitious targets and goals that require extensive data collection and analysis. Faculty at universities in APEC economies can help with these projects. A virtual workshop was held in June 2021 (EWG 06 2019A), involving policymakers and faculty from 17 different economies and researchers from APSEC and APERC to discuss potential collaborative projects. Projects were identified around 1) policy and technology of distributed energy systems utilizing renewable energy (RE); 2) analysis of RE and energy efficiency in the built environment; and 3) installation of RE in rural communities. The 3-day in person workshop will take place in Thailand during the 3rd quarter of 2022 and will bring together APEC members, faculty, and research institutes to 1) assess ongoing projects and share results; 2) incorporate economic analysis into projects, and 3) identify ideas for new projects aimed toward the energy resiliency strategic priority objectives and APEC goals.</p>
Total cost of proposal: <small>(APEC funding + self-funding):</small> USD \$100,000 + \$45,000 = \$145,000	Total amount being sought from APEC (USD): 100,000 By category: Travel: \$70,000 Labor costs: \$20,000 Hosting: \$10,000 Publication & distribution: Other: \$0 <small>(See Guidebook on APEC Projects, Ch. 9 to ensure all proposed costs are allowable.)</small>

Project Overseer Information and Declaration:

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As Project Overseer and on behalf of the above said Organization, I declare that this submission was prepared in accordance with the **Guidebook on APEC Projects (the Guidebook)** and any ensuing project will comply with said Guidebook. Failure to do so may result in the BMC denying or revoking funding and/or project approval. I understand that any funds approved are granted on the basis of the information in the document's budget table, in the case of any inconsistencies within the document. By submitting this APEC Concept Note to the APEC Secretariat, you (each Project Overseer or point of contact) agree that the APEC Secretariat will collect, use, disclose, and transmit the data contained in the APEC Concept Note, which you have provided to the APEC Secretariat, in accordance with the Singapore's Personal Data Protection Act 2012 and the APEC Secretariat's data protection policy (<https://www.apec.org/PrivacyPolicy>). The APEC Secretariat will transfer any data provided in this form, which may contain personal data of Project Overseer(s), to APEC member economies overseas via the APEC Secretariat.

 Name of Project Overseer / Date