POLICY PARTNERSHIP ON SCIENCE, TECHNOLOGY AND INNOVATION (PPSTI)

Programs and Projects

Crowne Plaza Hotel, Mandaluyong City
June 23-24, 2016
What is PPSTI?

- APEC forum for S&T and Innovation (STI) policy partnerships
- Supports cooperation among the stakeholders on STI – government, private sector and academia
- Replaces the Industrial Science and Technology Working Group (ISTWG), with a broadened mandate to include policy development on STI, in 2012
PPSTI: Shaping the Future

The Strategic Plan (2016-2025) outlines the Vision, Mission and Critical Factors in achieving the goals of the PPSTI:

**Vision:** By 2025, PPSTI is to contribute to APEC’s goal of achieving innovative economic growth

**Mission:** PPSTI will support the development of S&T cooperation as well as effective science, technology, and innovation policy recommendations in APEC through collaboration between government, academia, private sector and other APEC fora.
How does PPSTI achieve its goals and priorities?

Vision + Mission

Subgroup

Priorities

KPIs

Building Science Capacity

Promoting Enabling Environment for Innovation

Enhancing Regional Science and Technology Connectivity

1. Enhance Human Capacity
   - Promote and empower early career innovators to drive collaborative cross-sector entrepreneurship
   - Increase S&T awareness
   - Promote and empower early career innovators to drive collaborative cross-sector entrepreneurship

2. Accelerate Commercialization of Science and Technology
   - Promote science and technological entrepreneurship
   - Accelerate S&T knowledge sharing to strengthen regional connectivity as an enabler for innovation
   - Create STI ecosystems & STI networks that strengthen regional STI linkages

3. Increase Science Awareness
   - Promote and empower early career innovators to drive collaborative cross-sector entrepreneurship
   - Increase S&T awareness
   - Promote and empower early career innovators to drive collaborative cross-sector entrepreneurship

1. Promote Science and Technological Entrepreneurship
   - Promote science and technological entrepreneurship
   - Accelerate S&T knowledge sharing to strengthen regional connectivity as an enabler for innovation
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2. Accelerate Commercialization of Science and Technology
   - Promote science and technological entrepreneurship
   - Accelerate S&T knowledge sharing to strengthen regional connectivity as an enabler for innovation
   - Create STI ecosystems & STI networks that strengthen regional STI linkages

3. Promote Public-Private Partnerships for Science and Technological Innovation
   - Promote and empower early career innovators to drive collaborative cross-sector entrepreneurship
   - Increase S&T awareness
   - Promote and empower early career innovators to drive collaborative cross-sector entrepreneurship
How does PPSTI achieve its goals and priorities?

1. Promote and empower early career innovators to drive collaborative cross-economy STI activities to address current and future challenges
2. Accelerate S&T knowledge sharing to strengthen regional connectivity as an enabler for innovation
3. Create STI ecosystems & STI networks that strengthen regional STI linkages

1. Enhance Human Capacity
2. Improve Science and Technology Capacity
3. Increase Science Awareness

1. Promote Science and Technological Entrepreneurship
2. Accelerate Commercialization of Science and Technology
3. Promote Public-Private-Partnerships for Science and Technological Innovation
How does PPSTI work?

- Creates alignment with international frameworks
-Forges partnerships with regional and international bodies
-Mode of operation
  Member economies meet twice a year and operate on consensus basis, in line with APEC rules and guidelines
  Board members include a Chair, (2) Vice Chairs, and an ABAC Representative to serve as the Principal Advisor
-Reports annually to the SOM Steering Committee for ECOTECH through the SCE Fora Report and Senior Officials
Summary of PPSTI 5

- 17 member economies and 8 guests met in Boracay, Philippines on 16-18 May 2015, with the theme “Science, Technology and Innovation for Inclusive Growth”
  
  Chaired by Mr. Chen Linhao (China) with Dr. Amelia P. Guevara (Philippines) and Ms. Christin Kjelland (USA) as vice-chairs, and PPSTI’s Principal Advisor, Mr. Nicholas Brooke

- PPSTI-5 Endorsements and Agreements:
  
  ✓ Endorsed the Annual Work Plan 2015
  ✓ Supported the Philippines in holding a High Level Policy Dialogue on Science and Technology in Higher Education (HLPD-STHE)
  ✓ Agreed to develop a strategy paper to engage private sector in PPSTI initiatives for discussion in future PPSTI meetings
Summary of PPSTI 5

PPSTI-5 Intersessional Actions:

a. Work on the revision of the Strategic Plan to be endorsed at PPSTI including enhancement of identified key performance indicators to make them more specific, measurable, attainable, realistic and time-bound

b. Explore funding options to augment the APEC Science and Technology Sub-Fund such as contributions from member economies and engagement of the private sector, among others

c. Work on elevating PPSTI Policy recommendations to the level of APEC Leaders
Summary of PPSTI 5

PPSTI-5 Notation

a. That it endorsed 16 concept notes for Session 1, 2015. However, despite majority of the proposals receiving rank 1 status, only 1 was funded. Self-funding by member economies remains an option for them to be implemented.

b. Need to undertake structural reforms in managing and funding PPSTI projects, considering the competitive funding environment for PPSTI projects.

c. Expressed its gratitude for the work done by the United States and Korea to implement the PPSTI programs the APEC Science Prize for Innovation, Research and Education (ASPIRE) 2015 and APEC Research and Technology (ART) Program 2015, respectively.

Summary of PPSTI 6

- 16 member economies and 4 guests met in Manila, Philippines on 10-12 August 2015

Chaired by Mr. Chen Linhao (China) with Dr. Amelia P. Guevara (Philippines) and Ms. Christin Kjelland (USA) as vice-chairs, and PPSTI’s Principal Advisor Mr. Nicholas Brooke

PPSTI-6 Endorsements and Agreements:

1. Endorsed the newly-elected Subgroup Chairs and Vice-Chairs, as follows:
   
a. Building Science Capacity – Chair: United States, Vice-Chair: Malaysia
b. Promoting Enabling environment for Innovation – Chair: Philippines, Vice-Chair: United States
c. Enhancing Regional Science and Technology Connectivity – Chair: Chinese Taipei, Vice-Chair: Peru

2. PPSTI Strategic Plan (2015-2025)

3. PPSTI Policy Statement
Summary of PPSTI 6

4. Continue to explore potential cooperation with ABAC on the APEC Innovation Agenda as part of its ongoing effort to better engage with the private sector.

5. Consider further its role to steer, guide and monitor the APEC Centers and Long-Term Mechanisms to ensure effective collaboration and further realize APEC and PPSTI goals.
Summary of PPSTI 6

PPSTI-6 Intersessional Actions:

a. Continue working on the Strategic Plan being a dynamic document, to refine the strategies and key performance indicators (KPIs) to make them

b. Identify flagship overarching projects to encourage collaboration among APEC economies and between PPSTI and other APEC fora. PPSTI will study how the APEC Chief Science Advisors and Equivalent Meeting may be incorporated under the PPSTI framework.

c. Identify mechanisms on how to increase visibility within APEC and enhance cross-fora interactions and collaborations. These will also be considered in designing PPSTI projects and activities.

d. Identify and prioritize the APEC fora that it will work with and compile a list of all projects with cross-fora collaboration.
Summary of PPSTI 6

PPSTI-6 Intersessional Actions:

e. Consider and draft its 2016 Work Plan
f. Consider the endorsement of the proposed APEC Centre for Technology Transfer
g. Implement the recommendations in the SCE-mandated Independent Assessment, once finalized and endorsed by SCE
h. Forward the Executive Summary to SCE for its consideration

PPSTI-6 Notation

a. 10 projects are currently underway in 2015, with 1 and 9 of those being APEC and self-funded, respectively. Eight more projects are being endorsed for APEC funding or proposed for self-funding
Summary of PPSTI 6

PPSTI-6 Notation

b. The S&T Sub-Fund has closed but the Innovative Development, Economic Reform and Growth (IERG) Sub-Fund which will open in 2016 could be tapped for funding

c. APEC Economies Leaders have high expectations for contributions from all APEC fora to promote the economic empowerment of women

d. An SCE-mandated independent assessment will be conducted by Dr. Lyndal Thorburn to provide insights on the effectiveness and efficiency of PPSTI’s activities and programs. APEC economies were requested to provide support to this initiative and complete the survey during the meeting
PPSTI-6 Notation

e. Congratulated Dr. Jong-Seong Kug of Korea for winning the 2015 APEC Science Prize for Innovation, Research and Education (ASPIRE). Dr. Kug was recognized for his work on climate change and seasonal prediction systems.

f. Appreciated the interventions by existing centers and long-term mechanisms:
   ✓ APEC Climate Center
   ✓ Asia Pacific Center for Theoretical Physics
   ✓ APEC Center for Technology Foresight
Summary of PPSTI 6

PPSTI-6 Notation

APEC Research Center for Advanced Bio-hydrogen Technology
APEC Research Center for Typhoon and Society
APEC Cooperation for Earthquake Simulation
APEC Mentoring Center for the Gifted in Science

h. Appreciated the intervention on the proposed APEC Center for Technology Transfer
i. Consider developing standards and criteria for its APEC centers and long-term mechanisms as well as a coordination platform for these centers
PPSTI Policy Statement

A significant output of the PPSTI 6 meeting was the endorsement of the PPSTI Policy Statement

- Promoting the development of common approaches to STI policies that will contribute to policy formulation;

- Encouraging joint R&D and STI activities across APEC economies to advise the policy choices of APEC member economies;

- Strengthening STI policies through evidence-based research and analysis, relying on quality-assured data making full use of opportunities raised by information technology and new sources of data (e.g. Big data);
PPSTI Policy Statement

- Fostering commercialization of research results, inter alia by bringing together government, academia and business representatives

- Emphasizing the digitalization of science, technology and innovation, particularly for the benefits it offers to the ability of Micro, Small and Medium-sized Enterprises (MSMEs) to partner with academia and participate in global value chains;

- Encouraging policy development in the PPSTI's framework through capacity building of APEC member economies consistent with APEC priority agenda on promoting human capital development;
**PPSTI Policy Statement**

- Raising the profile of R&D, commercialization and STI development by highlighting the contributions of science, technology and innovation to sustainable economic growth;

- Supporting Commercialization, and Popularization of Research and Market-based Innovations through Policy Translation (PPSTI 02 2015S)
On-going PPSTI Projects Related to Internet Economy
Internet of Vehicles (IoV)
APEC Internet of Vehicles (IoV)

- An integrated network for intelligent traffic management, dynamic information service, and smart vehicle control

Three Networks into One (V2X)

- Inter-vehicle Network
- Intra-vehicle Network
- Vehicle Mobile Internet
A large system network for wireless communication and information exchange for traffic management system using the internet

It promotes **zero accident, low energy consumption, low emission and high efficiency** and facilitate the harmonious unification of **human, vehicle, road and environment**

The project is implemented by China.
APEC Internet of Vehicles

**Phase 1:** APEC Cooperative Forum on Internet of Vehicles (IoV) and Its Worldwide Application Implementation

- 4-day forum held at the Shanghai Advanced Research Institute (SARI) at the Chinese Academy of Sciences, and at Tongji University, Shanghai, China in April 2014

**Objectives**

- To popularize the concept of IoV system and share experiences in applying ICT technologies on Internet of Vehicles;
- To enlarge the multilateral cooperation among the main three stakeholders (government, private sector and academia) and design a sustainable application model of IoV under APEC framework

**Outcome:** Publication of the IoV White Paper (1st Edition)
Phase 2: An Exhibition and STI Policy Workshop on Intelligent Transportation (Internet of Vehicles—IoV) Standardization in the Asia-Pacific Region

Phase 2: Objectives

- Symposium/Workshop: To increase public and private sector understanding of the best practices of Intelligent Transportation and develop some means for applying IoV in APEC economies

- Exhibitions:
  1. To focus onto **Software Based IoV** technology and application to be a side event of the symposium in Shenzhen and this exhibition will be funded by IEEE
  2. To focus onto **Hardware Based IoV** technology and application, as a side event of Peru’s PPSTI meetings, will be involved into an existing vehicle event in Peru
APEC Smart City Forum and Exhibition on Information Technology
APEC Smart City Forum and Exhibition on Information Technology

- Build smart city technology-applied project that promotes energy efficiency through management of various aspects of a smart city
- Information on energy-smart and low carbon model cities/towns/communities among multi-APEC communities
- Project focuses on internet of things, cloud computing, big data and embedded systems. It aims to enhance physical, institutional and people-to-people connectivity in the APEC region
- **Target:** APEC Smart City Forum and Exhibition on Information Technology, implemented by China in October 2015
Measures and senses the context awareness of things

INTERNET OF THINGS

Communicates and interacts between people, systems, and objects

INTERCONNECTION

Quickly and accurately respond to changes

Predicts and optimises future events

INTELLIGENCE

Policy Partnership on Science, Technology and Innovation

APEC ASIA PACIFIC ECONOMIC COOPERATION

DEPARTMENT OF SCIENCE AND TECHNOLOGY
Various Aspects of a Smart City

Smart City

- Resident / community / healthcare
  - Stock, motorcade, monitor and control, navigate, distinguish, goods
- Commerce / government / emergency
  - Equipment, safety, energy saving
- Smart traffic
  - Industrial automation
  - Pollution detection, alarm
- Communication and information
  - Public safety
  - Telemetry
  - Environment protection
- Water resources protection
  - Prevent fire, reconnaissance, alarm
  - Water quality, water, pollution, safety
  - Low-carbon, energy savings
- Resident / healthcare
  - Logistics, Retail, Auto Service, produce, safety, disaster prevention, water, electricity, oil and gas
- Smart traffic
  - Industrial automation
  - Petrochemical, meteorology
  - Agriculture
  - Finance
- Communication and information
  - Meteorology
  - Agriculture
  - Environment protection
  - Coal
  - Water
  - Finance
  - Ventilation, Gas, Relief location
  - Low-carbon, energy savings
- Water resources protection
  - Electronic payment, real-time information
  - Resident / community / healthcare
    - Communication and information
      - Water resources protection
        - Smart City
Smart City Challenges

Healthcare challenge
- Healthcare in USA: 20% of GDP
- Healthcare in Canada: 50% of provincial tax revenues

Energy security challenge
- Globally, almost one in three people lack access to electricity
- In developed cities, it is difficult to provide stable energy

Water Resource Challenge
- 2.8 billion people are facing water shortage problem
- Trends: 4 billion people in 2030
- Lose 3.6% annual economic growth

Community Healthcare

Low carbon energy savings

Water resources
On-going PPSTI Projects
# Some Ongoing PPSTI Projects

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<tr>
<th>Subgroups</th>
<th>Initiatives</th>
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<tr>
<td>Building Science Capacity</td>
<td><strong>APEC Research &amp; Technology (ART) 2016 Program</strong>&lt;br&gt;One of three formal policy dialogue mechanism as listed in the PPSTI TOR.&lt;br&gt;<strong>Hold workshop to discuss STI policy issues and feed the results into the PPSTI policy discussion.</strong></td>
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<td><strong>Workshop on impact assessment and monitoring of Science, Technology and Innovation Policies</strong></td>
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<td><strong>APEC Workshop on Commercialization and Popularization of Research and Market-based Innovations through Policy Translation</strong></td>
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<td><strong>APEC Workshop on Strategies to Address Non-communicable Diseases (NCDs) through Science, Technology and Innovation: Nutrigenomics Approach</strong></td>
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<td><strong>APEC Workshop on the Establishment of Regional Database on Herbal Medicine</strong></td>
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<td>Improving Micro, Small and Medium Enterprises (MSMEs) Competitiveness through Low Carbon Economy</td>
<td><strong>APEC Climate Symposium</strong></td>
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<td>Enhancing Regional Science and Technology Connectivity</td>
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Challenges in APEC PPSTI initiatives

- Alignment to the PPSTI mission on developing policy recommendations from the programs and projects being implemented
  - Workshop/meeting reports

- Cross-fora collaboration
  - Own working group
GOALS

The PPSTI will support the development of science and technology cooperation as well as effective innovation policy in APEC economies.
“PPSTI, operating as primary fora for science, technology and Innovation (STI) cooperation under the APEC framework, will not only support the development of science and technology cooperation, but also place greater emphasis on innovation and its policy in its deliberations and sponsored activities in APEC economies”
100. “We endorse the PPSTI Policy statement on the development of common approaches to STI policies that encourage joint R&D and S&T activities, advise policy-making and support commercialization and popularization of research and market-based innovations through policy translation.”
Thank you