

# ASEIC

Annual Report 2016

ASEM SMEs Eco-Innovation Center



Small and Medium  
Business Administration



ASEM  
SMEs  
Eco-Innovation  
Center



# ASEIC

Annual Report 2016

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# ASEIC

ASEM SMEs Eco-Innovation Center



ASEIC is celebrating our third year since becoming an independently-managed foundation in 2014. In order to achieve our goal of promoting the eco-innovation of SMEs through Asia and Europe cooperation, ASEIC organizes a range of green growth initiatives for SMEs in the ASEM region: the ASEM Eco-Innovation Consulting Project helps SMEs in ASEM member states adopt green technologies and management practices; the ASEM Eco-Innovation Index evaluates the eco-innovation performance of ASEM member states to inform their strategic planning; the ASEM Inclusive Eco-Innovation Program facilitates the application of appropriate technologies to member states in Asia; the Green Business Center encourages SMEs in member states to expand to overseas markets and accelerates technology exchange; and the Global Eco-Innovation Forum sparks conversation on eco-innovation among various experts from around the world.

2016 was a year that gave us a greater sense of mission. Through the Chair's Statement of the 11th ASEM Summit held in Mongolia in July 2016, ASEM Leaders recognized ASEIC's role in supporting the sustainable development of Asia and Europe by spreading awareness of eco-innovation and strengthening technological cooperation among SMEs.

This year, ASEIC will redouble promotional efforts to increase our international visibility and bolster cooperation among SMEs of ASEM member states. In addition, to prepare agenda items for the upcoming 7th ASEM Economic Ministers' Meeting in September, ASEIC is planning an ASEM Working Group Seminar on Eco-Innovation Competence of SMEs and an international forum on driving eco-innovation in SMEs worldwide. Further, we will collaborate with partners from all corners of the world to improve upon our existing projects and develop new ones, and will play our part as an important bridge for eco-innovation between SMEs in Asia and Europe.

We will work harder. I ask for your continued interest and support.

Thank you.

March 2017

**Sung Myung-ki**

Chairman, ASEM SMEs Eco-Innovation Center





# Introduction •

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ASEM SMEs Eco-Innovation Center

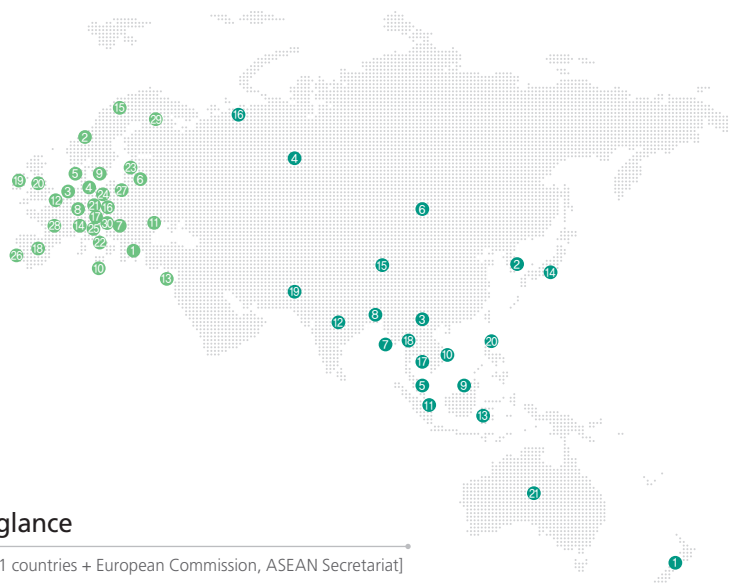
## About ASEIC

The ASEM SMEs Eco-Innovation Center (ASEIC) is an intergovernmental body that promotes the green growth of small and medium-sized enterprises (SMEs) in Asia and Europe. It was endorsed at the 8th ASEM Summit in 2010 and established in South Korea in 2011. ASEIC's major initiatives include the ASEIC Eco-Innovation Consulting Project, ASEM Inclusive Eco-Innovation Program, ASEM Eco-Innovation Index, Global Forum, Working Group Seminar and Green Business Center.

### About the Asia-Europe Meeting (ASEM)

In October 1994, Singapore proposed building an intergovernmental process founded on equal partnership between Asian and European countries. Following this proposal, the first ASEM Summit took place in Thailand in 1996, marking the start of ASEM. Currently consisting of 51 member states, the European Commission, and the ASEAN Secretariat, ASEM holds summits every two years, alternating between Asian and European locations. Apart from the Summit, which is the highest-level forum, there are various levels of regular meetings such as the Senior Officials' Meetings and Ministerial Meetings, including the Foreign Ministers' Meeting, Economic Ministers' Meeting, and Finance Ministers' Meeting. ASEM undertakes a wide range of initiatives promoting political, economic, and socio-cultural cooperation.

\* Source: "ASEM Overview." September 2010. Ministry of Foreign Affairs, Republic of Korea



### ASEM at a glance

ASEM members [51 countries + European Commission, ASEAN Secretariat]

- Asia group (21 countries + ASEAN Secretariat)

1 New Zealand, 2 Korea, 3 Lao PDR, 4 Russia, 5 Malaysia, 6 Mongolia, 7 Myanmar, 8 Bangladesh, 9 Brunei Darussalam, 10 Vietnam, 11 Singapore, 12 India, 13 Indonesia, 14 Japan, 15 China, 16 Kazakhstan, 17 Cambodia, 18 Thailand, 19 Pakistan, 20 The Philippines, 21 Australia

- Europe group (30 countries + European Commission)

1 Greece, 2 Norway, 3 Netherlands, 4 Germany, 5 Denmark, 6 Latvia, 7 Rumania, 8 Luxembourg, 9 Lithuania, 10 Malta, 11 Bulgaria, 12 Belgium, 13 Cyprus, 14 Switzerland, 15 Sweden, 16 Slovakia, 17 Slovenia, 18 Spain, 19 Ireland, 20 United Kingdom, 21 Austria, 22 Italy, 23 Estonia, 24 Czech Republic, 25 Croatia, 26 Portugal, 27 Poland, 28 France, 29 Finland, 30 Hungary

## History

The establishment and operation of ASEIC was officially endorsed at the 8th ASEM Summit, and it was inaugurated on June 15, 2011. ASEIC was operated by the Small and Medium Business Corporation (SBC) until it became an independently-managed foundation in 2014 to better implement projects that foster the inclusive green growth of ASEM member states. ASEIC has since supported technological cooperation and driven eco-innovation among SMEs in the ASEM region, solidifying its position as an intergovernmental body committed to greening SMEs.

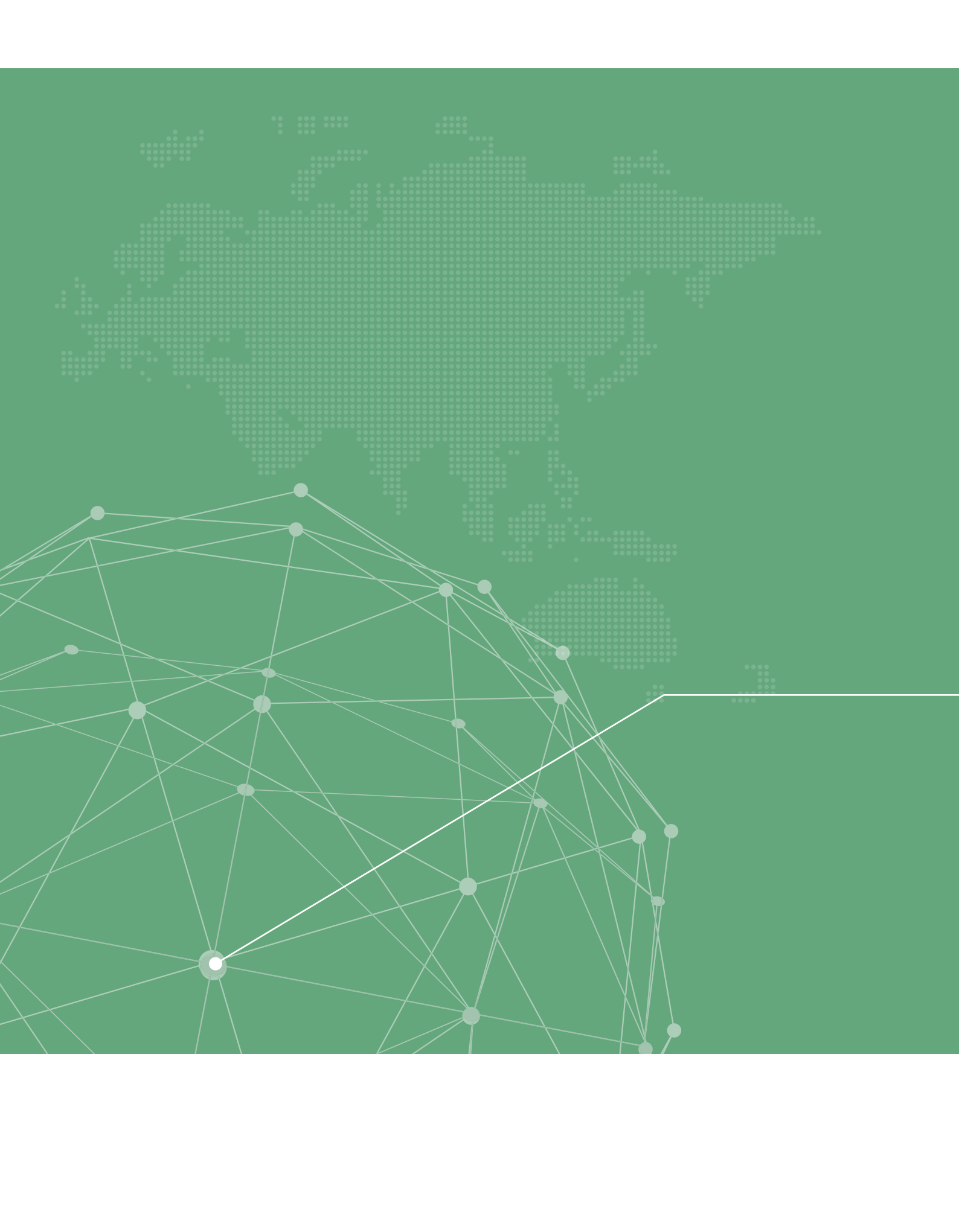
## ASEIC Activities

ASEIC envisions spreading the benefits of eco-innovation to SMEs around the world with ASEM governments playing a central role in the process. To this end, ASEIC actively supports SMEs in Asia and Europe so that they can implement practical eco-innovation projects with concrete results. It also works hard to facilitate communication between the governments, businesses, and individuals of ASEM member states. ASEIC has six major initiatives: the ASEM Eco-Innovation Consulting Project, ASEM Inclusive Eco-Innovation Program, ASEM Eco-Innovation Index, Global Eco-Innovation Forum and Working Group Seminar, and Green Business Center.

The ASEM Eco-Innovation Consulting Project sends a team of professional consultants to SMEs in the ASEM region and provides customized consulting services to improve their green competitiveness. The ASEM Inclusive Eco-Innovation Program matches SMEs in ASEM member states with eco-innovation technologies and helps them share technologies with each other. Meanwhile, the ASEM Eco-Innovation Index is a set of quantitative and qualitative indicators of each ASEM member state's eco-innovation performance, based on which these countries can understand their own eco-innovation landscape and form relevant policies. The Global Eco-Innovation Forum and Working Group Seminar serve as a venue for experts from various fields to share their insights on eco-innovation. The Green Business Center encourages SMEs in ASEM member states to expand to overseas markets and accelerates technology exchange between countries. ASEIC also promotes, internally and externally, its activities and the principles of eco-innovation through regular newsletters.

## ASEIC Vision








# Major Projects in 2016 and Outcomes

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ASEM SMEs Eco-Innovation Center







# ASEM Eco-Innovation Consulting Project

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ASEM SMEs Eco-Innovation Center

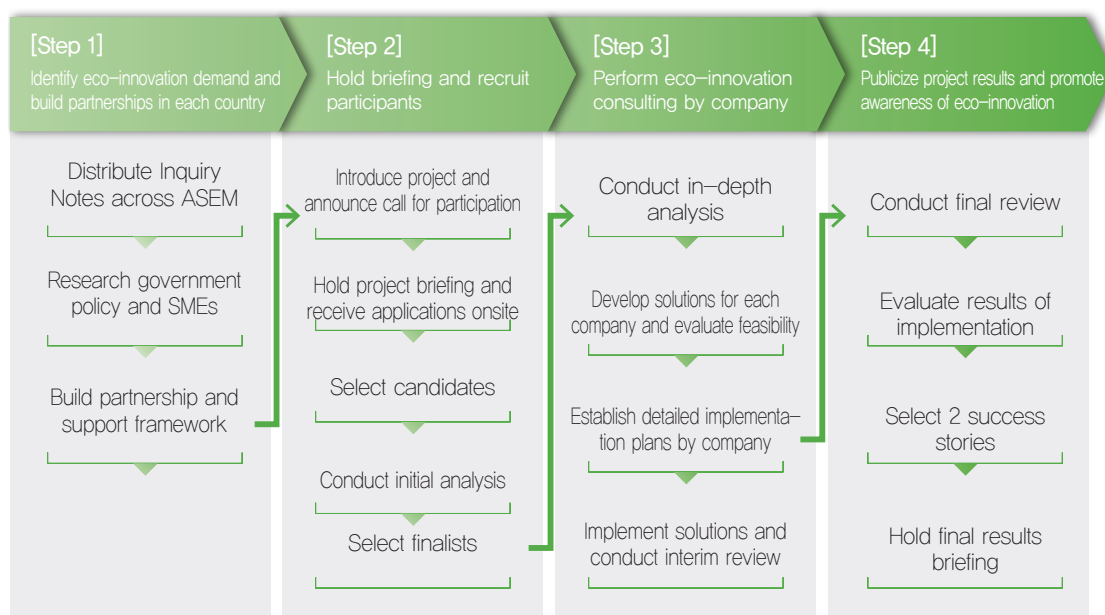
## ASEM Eco-Innovation Consulting Project

### Customized Consulting to Reduce Emissions and Improve Efficiency in ASEM SMEs' Production, Process, System, and Management

Increasingly, the international community needs measures to respond to the energy and environmental crisis while realizing the growth potential of businesses. Yet SMEs in developing countries, which are facing environmental problems from rapid economic growth and industrial development, are struggling to access the information necessary for green growth. Despite the fact that green marketing, developing new markets in response to environmental regulations, adopting sustainable management systems, and ensuring the cost competitiveness of resources and energy are deemed important growth opportunities for businesses, many SMEs in developing countries lack the resources for self-assessment and the know-how to identify the technologies they need or the areas they should improve on.

The ASEM Eco-Innovation Consulting Project aims to help SMEs in developing countries quickly adapt to this paradigm shift in the industrial environment and leverage new opportunities. Accordingly, ASEIC dispatches a team of consultants to SMEs in developing countries of the ASEM region, where it conducts on-site assessments and customized consulting one-on-one. Through these activities, the team provides support on eco-innovative technologies and quantifies their economic and environmental benefits, thereby raising the SMEs' awareness of eco-innovation. The team assesses the SMEs in four areas, namely, Production, Process, System, and Management, and strives to develop solutions that deliver concrete results. These solutions vary by country, such as supplying optimal green technologies, suggesting higher-efficiency equipment, or proposing other economically feasible measures. Near the end of the consulting, the team quantifies the environmental benefits (e.g. CO<sub>2</sub> emission reduction) and economic benefits (e.g. cost savings) expected from its solutions in order to help SMEs practice eco-innovation and achieve sustainable growth. When the consulting is complete, a workshop is held to wrap up the project and share the success stories of each company that participated. Finally, the team surveys the participants to measure how much their awareness of eco-innovation has improved as a result of the project.

In 2016, Thailand, the Philippines, and Vietnam participated in the project, while in Malaysia the consulting team focused on follow-up measures.



Consulting Framework

## Identifying Demand for the Eco-Innovation Project and Optimizing Project Results

After collecting Inquiry Notes from participating ASEM countries, the consulting team defined the scope of the project, taking into account local demand, availability of ASEIC's pool of experts, and potential for success, in order to maximize results.

The consulting team performed an initial analysis from April to June and a more in-depth analysis on companies that were selected to participate in the project. The team then developed eco-innovation solutions and execution strategies, considering the nature and needs of each company. It also followed up by conducting a final inspection to ensure that the solutions were being implemented, and if not, to find out why. Once solutions were finalized, the team created an implementation plan considering investment cost, payback period, and expected benefits, so that each company would be able to estimate their return on investment.

Following the final inspection, a briefing was organized to share the success stories of participating companies and to award project completion certificates.

### 1st Workshop Schedule

Country	Organization	1st Briefing
The Philippines	Department of Environment and Natural Resources (DENR or DTI)	June 21, 2016: DENR Conference Room, Quezon City 25 attendees
Thailand	National Science and Technology Development Agency (NSTDA)	June 9, 2016: SME Bank Tower, Bangkok 40 attendees
Vietnam	State Agency for Technology Innovation (SATI)	July 21, 2016: 165 Guesthouse, Ho Chi Minh City 100 attendees
Malaysia (Follow-up)	Standards and Industrial Research Institute of Malaysia Berhad (SIRIM)	July 26, 2016: Concorde Hotel, Shah Alam 30 attendees



1st Workshop in Malaysia

## → ASEM Eco-Innovation Consulting Project



1st Workshop in Vietnam



1st Workshop in Malaysia



1st Workshop in Vietnam

## 2nd Workshop Schedule

Country	Organization	Final Results Briefing
The Philippines	Department of Environment and Natural Resources (DENR or DTI)	November 16, 2016: Loreland Resort, Antipolo City 50 attendees
Thailand	National Science and Technology Development Agency (NSTDA)	November 23, 2016: Thailand Science Park 40 attendees
Vietnam	State Agency for Technology Innovation (SATI)	November 9, 2016: 165 Guesthouse, Ho Chi Minh City 30 attendees





2nd Workshop in Philippines



2nd Workshop in Thailand



2nd Workshop in Vietnam

The biggest goal of the consulting team's on-site assessments and guidance on eco-innovation was to induce SMEs to change their practices by showing them concrete figures on the benefits expected from implementing its solutions. For SMEs that were unsure of how to initiate change, the consulting team suggested an action plan. This approach helped strengthen the SMEs' capacity for green management and for responding to environmental regulations. A post-project survey showed that participating companies' awareness of eco-innovation improved by 41.6% on average. In terms of green product awareness, Thai participants showed an 82.61% increase. In the technology deployment category, awareness levels of Philippine, Thai, and Vietnamese participants rose by 41.2%, 68.18%, and 38.5%, respectively.

## ASEM Eco-Innovation Consulting Project

Country	Expected Benefit		No. of Solutions	No. of Solutions Implemented	Implementation Rate
	Economic	Environmental			
The Philippines	Savings of KRW 201 million	Reduction of 283.77 tCO <sub>2</sub>	69	53	76%
Thailand	Savings of KRW 164 million	Reduction of 230 tCO <sub>2</sub>	50	24	48%
Vietnam	Savings of KRW 1,458 million	Reduction of 13,070 tCO <sub>2</sub>	29	6	23%

## Follow-up Results

In Malaysia, the consulting team carried out inspections to monitor whether the proposed eco-innovation solutions were actually implemented, and if not, to identify causes or obstacles. Based on its findings, the team ran a capacity-building program and set out to foster an environment in which businesses spread eco-innovation practices on their own initiative. After sending out the inspection results to participating companies, the team researched their demand for eco-innovation capacity building. Carefully considering their needs, the team conducted an eco-innovation training program in the second half of the year. The program covered a general overview of eco-innovation, energy saving theory, waste management theory, case studies, and practical application. Furthermore, in conjunction with International Greentech & Eco Products Exhibition & Conference Malaysia (IGEM), the team held an eco-business matching session to create new green business opportunities for Korea and Malaysia and to encourage technology exchange. Through this event, a total of 20 consultations took place and two MOUs were signed. When participants were surveyed after the session, Korean and Malaysian businesses reported a 91.6% and 81.8% increase, respectively, in their understanding of each other's markets. Korean businesses also showed an 89.5% satisfaction rate and Malaysian businesses 90%.



Eco-Business Matching in Malaysia




Capacity-Building Seminar in Malaysia





# ASEM Inclusive Eco-Innovation Program

ASEM SMEs Eco-Innovation Center



## ASEM Inclusive Eco-Innovation Program

### ASEM Inclusive Eco-Innovation Program

This program uses eco-innovation as a medium for spurring technology exchange and creates opportunities for SMEs to expand to global markets and strengthen their capabilities. ASEIC seeks to provide an online platform where SMEs can specify the eco-innovation technologies they need and/or those they are able to supply, conveniently browse the technologies on offer, and interact with other companies. At the same time, ASEIC organizes offline sessions for companies to discuss technology matching in further detail, enhancing technology exchange between Asia and Europe.

### Eco-Innovation Technology Classification System

To facilitate technological cooperation among ASEM member states, ASEIC devised an eco-innovation technology classification system. It reviewed existing taxonomies in science, environmental technology, green technology, etc. and divided eco-innovation technologies into 14 categories, 97 subcategories, and a further 406 categories, taking into account their transfer, adoption, and diffusion.



Eco-innovation technology classification

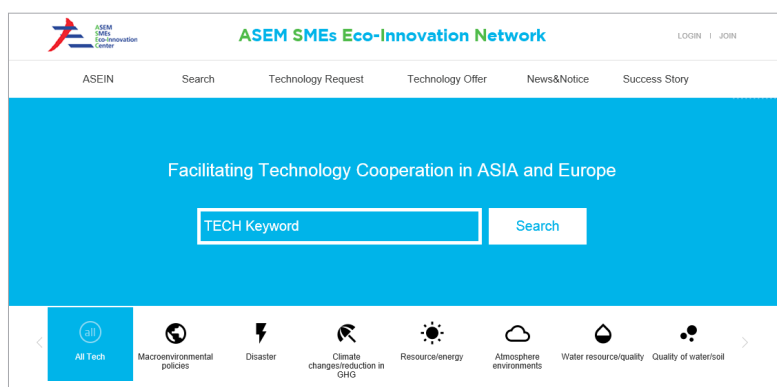
### Online Platform for Technology Cooperation: ASEM SMEs Eco-Innovation Network (ASEIN)

In 2016, ASEIC operated the test version of its online platform ASEIN (ASEM SMEs Eco-Innovation Network) which aims to provide matching opportunities for SMEs with eco-innovation technologies in the ASEM region. The website contains



information on the technologies in demand by local businesses in Hungary, Indonesia and Laos, as well as technologies from Korean suppliers. Thus, users can post or search for technologies on the platform. Moreover, the platform provides detailed information on the technological needs specified by individual companies along with detailed reports of on-site assessments by experts.

The ASEIN database targets SMEs from the 51 ASEM member countries and provides more than 200 technology offer data and more than 100 technology request data. In order to enable accurate, in-depth matching between users at the technology request and offer ends, ASEIN utilizes the 14 eco-innovation technology classifications.



ASEIN website (<http://asein.aseic.org>)

## Technology Matching Events

On October 22, 2016, ASEIC held an eco-innovation technology matching event at the Gran Meliá hotel in Jakarta, inviting Korean and Indonesian SMEs interested in technology exchange to the event. A total of six Korean firms attended,



Eco-innovation technology matching event in Hungary

### → ASEM Inclusive Eco-Innovation Program

including an eco-friendly food company related to water treatment. These firms held one-on-one discussions with Indonesian companies about technical collaboration opportunities. In addition, ASEIC participated in Indometal 2016 held in Indonesia on October 24 and provided cooperation opportunities for Korean and Indonesian businesses.

On November 22, 2016, ASEIC organized another eco-innovation technology matching fair at the Mercure Budapest City Center Hotel in Hungary, enabling Asian and European SMEs to work together in earnest. The fair brought together Korean eco-innovation technology suppliers with Hungarian technology buyers, and Hungarian suppliers with Korean buyers. Six companies attended from Korea, including an energy-efficiency IT company and a supplier of a technology that utilizes magnetic field control to save energy during production.



Company visit and eco-innovation technology demo (Hungary)



One-to-one technology matching fair (Eastern Europe)



One-to-one business matching fair (Indonesia)




Indonesia eco-innovation technology matching fair



# Global Eco-Innovation Forum 2016

ASEM SMEs Eco-Innovation Center





## Global Eco-Innovation Forum 2016

ASEIC held the Global Eco-Innovation Forum 2016 under the theme, “Enhancing SMEs’ Eco-Innovation Readiness in Post-2020” on Wednesday, June 1, 2016 at Selena Hall, Imperial Palace Seoul. Representatives from ASEM member states and eco-innovation experts were invited to the forum. The importance of eco-innovation has been growing since the Paris Agreement was adopted in late 2015 and came into force in 2016, ushering in the post-2020 era. This calls for efforts to help SMEs recognize the potential of eco-innovation and spread awareness among SMEs across ASEM member states. The Global Eco-Innovation Forum 2016 aimed to achieve common goals in responding to climate change and promoting eco-innovation. It attracted around 200 attendees, including the Chairman of ASEIC, Director of the Productivity & Technology Bureau of the Small and Medium Business Administration (SMBA), President of the Climate Change Center (CCC), representatives from 23 ASEM member states including the Myanmar Ambassador to Korea, and eco-innovation experts.



In the opening ceremony, Raimund Bleischwitz, Dean of University College London (UCL), delivered a keynote speech on “Climate Change and Enhancing SMEs Eco-Innovation.” He emphasized that in today’s age of resource depletion and climate change, SMEs need to create a new business model involving eco-innovative processes, productions, and systems. Professor Bleischwitz is also Deputy Director at the UCL Institute for Sustainable Resources and, since 2010, has served as a project lead for the Eco-Innovation Observatory (EIO), an initiative under the Eco-Innovation Action Plan by the Environment Directorate-General of the European Commission. Dr. Noh Dong-woon, Senior Economist at the Korea Energy Economics Institute (KEEI), also gave a presentation on the “Role of Technology for the Attainment of Post-2020.” He first dealt with key issues regarding the Paris Agreement and stressed that developing and promoting low-carbon technologies through international cooperation is critical to reducing greenhouse gas emissions. In particular, he noted that improving energy efficiency and expanding renewable energy were important strategies.



Global Eco-Innovation Forum 2016

In the afternoon portion of the forum, eco-innovation experts from Asia and Europe participated in a series of breakout sessions. They discussed in depth about cooperative measures to promote eco-innovation across ASEM member states in the new climate regime, specifically addressing the following topics: “Paris Agreement and Implementation of SMEs,” “Post-2020 and Green Economy,” and “ASEM Countries’ Collaborative Efforts in Post-2020.”



Director Choi Cheol-ahn of the Productivity & Technology Bureau of SMBA delivering welcoming remarks



Chairman Han Duck-soo of Climate Change Center delivering congratulatory remarks

In the first breakout session, Director An Yoon-gih of POSCO Research Institute presented on “International Carbon Market Mechanism,” while Senior Policy Researcher Kenji Asakawa at the Institute for Global Environmental Strategies (IGES) investigated the “Outline and the Current Status of the Joint Crediting Mechanism (JCM),” and Director General



## Global Eco-Innovation Forum 2016

Shin Hyun-woo of the Green Technology Center (GTC) covered “Climate Technology Center Networks and Green Technology Transfer.” In the second breakout session, Barbara Liskova, Project Manager in Slovak Innovation and Energy Agency (SIEA), discussed the “State of Green Economy in Slovakia,” and Senior Policy Officer Eun Joo Allison Yi of the World Bank talked about “The World Bank Group’s Korea Green Growth Trust Fund.” Nam Ki-tae, Team Leader of the Korea Energy Agency (KEA), gave an overview of “The Korea Energy Agency - Energy Saving Company (ESCO) Program.” In the final session, Professor Hung-Suck Park of Ulsan University presented on “ASEM Members - Korea’s Eco-Innovation Case,” followed by National University of Laos Professor Phouphet Kyophilavong’s presentation on “ASEM Members - Lao PDR’s Eco-Innovation Case.” Project Manager An Sang-joon of the Korea Institute of Industrial Technology (KITECH) discussed the “ASEM Eco-Innovation Consulting Program (Malaysia, The Philippines),” and Venkatachalam Anbumozhi, Senior Energy Economist at the Economic Research Institute for ASEAN and East Asia, explored “ASEAN: Eco-Innovation and SME Interfirm Networks for Circular Economy and 2030 targets.”



Breakout session



Breakout session

Through the Global Eco-Innovation Forum 2016, ASEIC created a platform for participants to propose to the international community new measures of spreading eco-innovation among Asian and European SMEs in this age of climate change and limited resources and to discuss ways they can collaborate to respond to these challenges.



Professor Raimund Bleischwitz of University College London giving keynote speech



# Working Group Seminar



ASEM SMEs Eco-Innovation Center



## Working Group Seminar

The ASEM Working Group Seminar on Eco-Innovation Competence of SMEs was endorsed as one of ASEM's official 2015-2016 programs at the 10th ASEM Summit held in Italy in October 2014. Aiming to bring together ASEM government officials and eco-innovation experts to develop ideas for joint projects that address their common interests, the seminar is currently underway amid high anticipation from member states. Since June 2015, when the Workshop on ASEM SMEs Eco-Innovation Competence took place, ASEIC has hosted a total of three working group seminars to create collaboration opportunities among member states. The project proposals from the seminars were approved as ASEM's 2017-2018 programs at the 11th ASEM Summit in Mongolia in July 2016 and will be jointly executed with ASEM members.

### Second ASEM Working Group Seminar on Eco-Innovation Competence of SMEs

The second ASEM Working Group Seminar on SMEs Eco-Innovation Competence was held from March 19 to 20 in Bratislava, Slovakia. It was hosted by the Small & Medium Business Administration (SMBA) of Korea and co-organized by ASEIC and the Slovak Business Agency (SBA). Representatives from 15 member states attended the seminar and presented their country's policies and projects that support the eco-innovation of SMEs. They also discussed the ways in which Asia and Europe could cooperate to help SMEs in the regions practice eco-innovation.

The representatives of each member state discussed in greater detail the three main topics that were proposed during the first seminar (Seoul, November 2015)—developing training on eco-innovation for SMEs, eco-innovation advisory services for SMEs, and eco-innovation capacity building for governments—and brainstormed seven project ideas based on the shared interests of member states. On the second day of the event, participants visited a Slovakian SME known for its eco-innovation practices. The company attracted attention from participants with its resource circulation model, which involved producing new construction materials by recycling by-products and waste from automobile production, one of Slovakia's major industries.

\* Member states in attendance: Belgium, Cambodia, China, Croatia, Czech Republic, Denmark, Hungary, Korea, Laos, Malaysia, Poland, Romania, Slovakia, Thailand, and Vietnam



Second ASEM Working Group Seminar on Eco-Innovation Competence of SMEs in Slovakia





Site visit to eco-innovative Slovakian firm

### Third ASEM Working Group Seminar on Eco-Innovation Competence of SMEs

The third ASEM Working Group Seminar on Eco-Innovation Competence of SMEs took place from May 31 to June 2 at the Imperial Palace Hotel in Seoul, alongside the second ASEIC Global Eco-Innovation Forum. The seminar was a follow-up meeting of the second ASEM Working Group Seminar held in Bratislava, Slovakia. On the first day, participants presented case studies of eco-innovation in ASEM member states and had breakout sessions to draft up proposals for seven projects, tentatively titled: Foresight for Eco-Innovation, Green Deals for ASEM, Global Recognition of Environmental Technology Verification, IT Information Platform, Business-to-Business (B2B), Consulting Services, and On/Offline Training Program Development.

On the second day, the working group put forward a recommendation on increasing SMEs' competitiveness to realize sustainable development and agreed to propose the projects as official ASEM collaboration projects at the 11th ASEM Summit. On the last day, participants attended the International Exhibition on Environmental Technology & Green Energy and deepened their understanding of Korean SMEs' eco-innovative technologies.

\* Member states in attendance: Denmark, Hungary, Korea, Laos, Poland, Romania, Slovakia, Thailand, the Philippines, Vietnam, and Malaysia

Working Group Seminar



Third ASEM Working Group Seminar on Eco-Innovation Competence of SMEs in Korea



Presentation of Asia-Europe joint projects



Representatives of member states in discussion



## 11th Asia-Europe Meeting (ASEM11) Summit

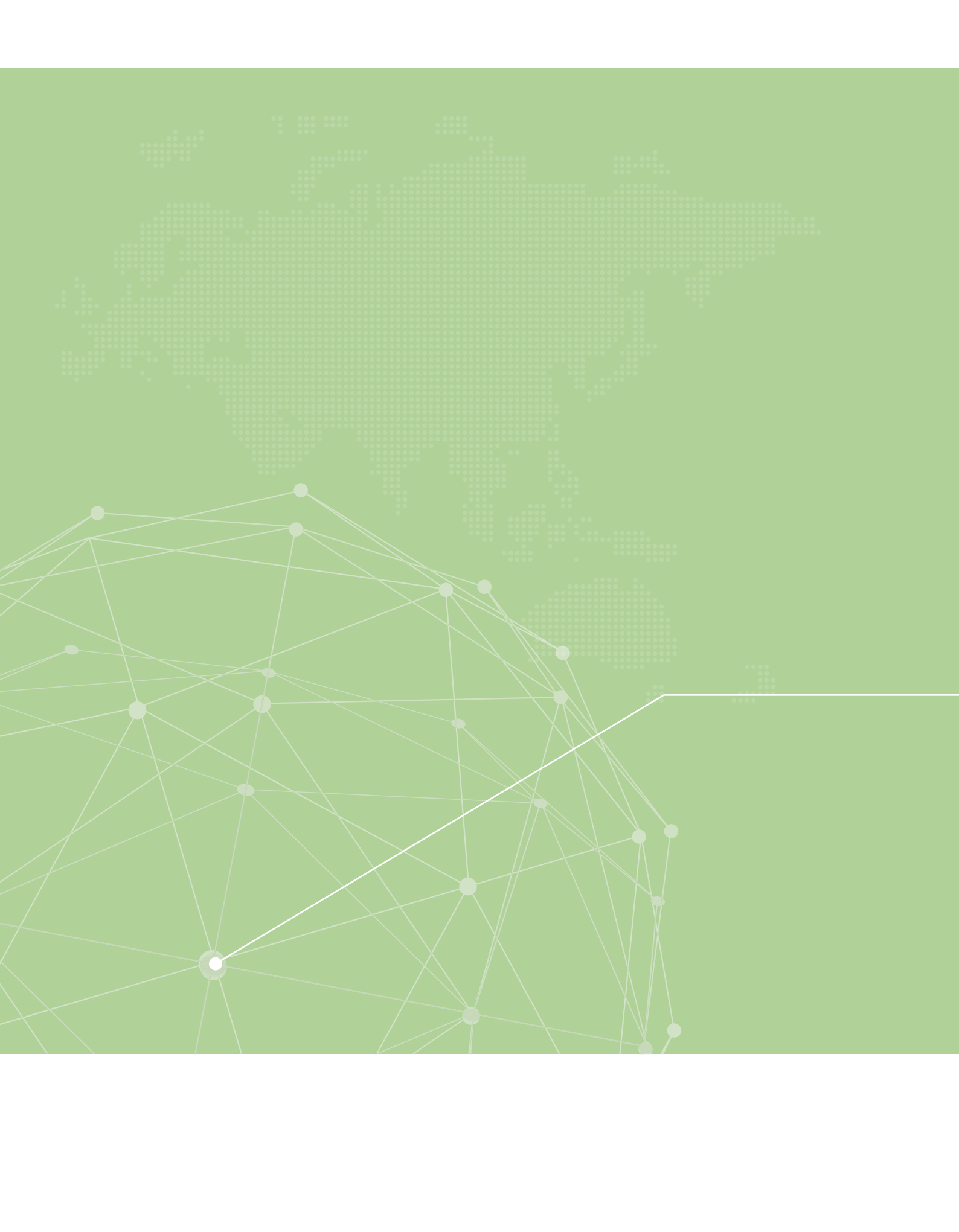
The 11th Asia-Europe Meeting (ASEM11) Summit on “20 Years of ASEM: Partnership for the Future through Connectivity” was held from July 15 to 16 in Ulaanbaatar, Mongolia. The summit was attended by the heads of 51 ASEM member states across Europe and Asia, the President of the European Council, the President of the European Commission, and the Secretary General of ASEAN. The meeting was hosted and chaired by Mongolian President Tsakhiagiin Elbegdorj. Then South Korean President Park Geun-hye also attended the summit, accompanied by a delegation consisting primarily of SMEs.

During the summit, Leaders celebrated the 20th anniversary of ASEM, reviewed the history and achievements of ASEM since its foundation in 1966, and produced concrete measures to strengthen cooperation between Asia and Europe for the next 10 years. Through the Chair’s Statement of the 11th ASEM Summit, the Leaders acknowledged ASEIC’s role in “supporting sustainable development of Asia and Europe through disseminating information, sharing knowledge and best practices on eco-innovation and promoting technological cooperation among MSMEs.”

ASEIC reported the results of all three ASEM Working Group Seminars on Eco-Innovation Competence of SMEs and gained approval through the Chair’s statement to continue hosting the seminars from 2016 to 2018. The Asia-Europe SMEs Creative Eco-Innovation Open Platform, jointly proposed by ASEIC and 14 countries, was also recognized as an official project. The Open Platform is a collaboration platform for ASEM member states to execute the seven aforementioned joint projects under the three topics of developing training on eco-innovation for SMEs, eco-innovation advisory services for SMEs, and eco-innovation capacity building for governments.



The 11th ASEM Summit





# Green Business Center

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ASEM SMEs Eco-Innovation Center

## Indonesia Green Business Center

In 2016, the Indonesia Green Business Center (GBC) provided steady support to tenant companies and continued to work closely with its partner, the Indonesian Ministry of Cooperatives and SMEs (KUKM). It also performed a wide range of roles while its reputation grew stronger as an intermediary among Indonesian, Korean, and other overseas organizations.

### Collaborative Network for Korean Organizations Seeking to Operate in Indonesia

The Indonesia GBC has increased its visibility at home and abroad through its activities and promotional efforts. As a result, the GBC receives requests for assistance and cooperation from an increasing number of Korean organizations that wish to find Indonesian partners and run new programs or hold events in Indonesia. The GBC has responded with enthusiastic support and served as a partnership network connecting Korea and Indonesia.

Notably, many public institutions in Korea have sought help from the GBC, given its joint operation by the Korean and Indonesian governments. The Science and Technology Policy Institute (STEPI), for example, was slated to organize the APEC Research and Technology 2016 Extension Program last July in Indonesia, but was experiencing difficulties because it had limited access to local contacts. Yet with GBC's cooperation and support, the institute was able to successfully arrange the event. As for the GBC, it became involved in the event as a co-organizer, expanding the scope of its activities. In September, the GBC's conference room was used as a training center for the Small Business Indonesian Expansion Support Program, a partner effort by the Micro-Enterprise Policy Bureau of the Small & Medium Business Administration (SMBA) and Small Enterprise and Market Service (SEMAS). In November, a delegation from the SME & Large Business Cooperation Foundation visited the GBC and discussed collaboration opportunities regarding its partnership model for SMEs and large businesses expanding to international markets together. The President of the Small and Medium Business Corporation (SBC) also paid a visit to exchange views on future cooperation.

Apart from public institutions, private institutions also reached out to the GBC. As part of its youth exchange program, nonprofit organization Human Resources Development Academy approached the GBC to use its educational facilities and requested a lecture on studying in Indonesia. A local consulting firm worked with the GBC as well as the Korean Association in Indonesia, Korea Trade-Investment Promotion Agency, Korean Chamber of Commerce and Industry



APEC Research and Technology 2016 Extension Program



The President of the Small and Medium Business Corporation (SBC) Visit

Indonesia, etc. to publish a comprehensive guide on Indonesia and its investment, business, and living environment for people looking to move to the country. The GBC has thus brought its unique expertise to helping organizations successfully carry out their activities in Indonesia.



Human Resources Development Academy

## Strengthening and Expanding Cooperation with KUKM

ASEIC has always maintained close working relations with KUKM in jointly operating the GBC, and in 2016, it focused on expanding the scope of their collaboration.

To start, the expired MOU between KUKM and SMBA was renewed to ensure the continued operation of the GBC. In addition, ASEIC took the level of inter-agency cooperation one step further through new initiatives that contributed to the private sector and local communities of Indonesia. A prime example is the GBC's participation in the Mount Sinabung Volcanic Disaster Relief Program at the request of KUKM. The GBC induced CSR efforts from Korean companies, including the Busan Port Authority's donation of 250 million IDR, which helped the GBC as well as Korea build goodwill in the local community. Other new initiatives include industrial-academic partnership activities. Having signed an industrial-academic partnership agreement with the Catholic University of Korea, in February the GBC created short-term internship opportunities at three Indonesian government agencies (including KUKM) for four of the university's students. As a result, Korean university students had the chance to gain experience working in an overseas government, while the Indonesian government could leverage great student talent from Korea.

In December, the GBC organized the Indonesia-Korea SMEs Green Business Forum (co-hosted by KUKM, SMBA, and ASEIC). The forum was attended by around 150 related organizations and SMEs. The Chairman of ASEIC and Deputy Minister Meliadi Sembiring of KUKM also attended, adding more meaning to the event. Many experts from Korea and Indonesia learned about the green and SME policies of each other's countries through presentations and discussions, and sought measures for mutual growth. These experts came from various institutions, including the Indonesia-Korea Joint Secretariat for Economic Development, Indonesian Ministry of Cooperatives and SMEs, Ministry of Environment, Ministry of Trade, Indonesian Agency for Agricultural Research and Development, and Korean Chamber of Commerce and Industry Indonesia. The GBC will uphold strong ties with KUKM through fresh new initiatives in the future.





The Mount Sinabung Volcanic Disaster Relief Program



Industrial-academic partnership agreement with the Catholic University of Korea

Based on past experience, the GBC is preparing to expand its reach to other ASEM member states. As it currently only has Indonesian and Korean tenants, it will endeavor to attract companies from other ASEM member states. Further, the GBC plans to publish an English guide on Indonesian investment and environmental policies and distribute it to embassies and chambers of commerce in these countries. Through such activities, the GBC will strive to become a key player for supporting organizations in ASEM member states looking to do business in Indonesia. It will also develop into a leading hub for government-to-government and business-to-government cooperation between Korea and Indonesia, and thereby benefit the private sector and local community.



The Indonesia-Korea SMEs Green Business Forum





# 2016 ASEM Eco-Innovation Index

ASEM SMEs Eco-Innovation Center



## 2016 ASEM Eco-Innovation Index

The ASEM Eco-Innovation Index (ASEI) researches and evaluates the eco-innovation performance of ASEM member states to improve their performance and spread eco-innovation. ASEIC developed a set of indicators in 2012 to analyze the eco-innovation activities of 15 ASEM member states, which increased to 25 in 2013, 49 in 2014, and finally to all 51 states between 2015 and 2016, aggregating data on and assessing each country's eco-innovation policies and systems as well as the eco-innovative practices of their businesses.

The 2016 research updated data and made improvements to existing indicators and index methodology. ASEIC also conducted joint research with ASEM member states and built partnership networks in each country, focusing on establishing the index as an instrument to help ASEM members understand their own eco-innovation landscape and to inform relevant policy-making and strategy-building. Furthermore, ASEIC aimed to further develop the index into a useful assessment tool for accomplishing the Sustainable Development Goals (SDGs) laid out by the United Nations.

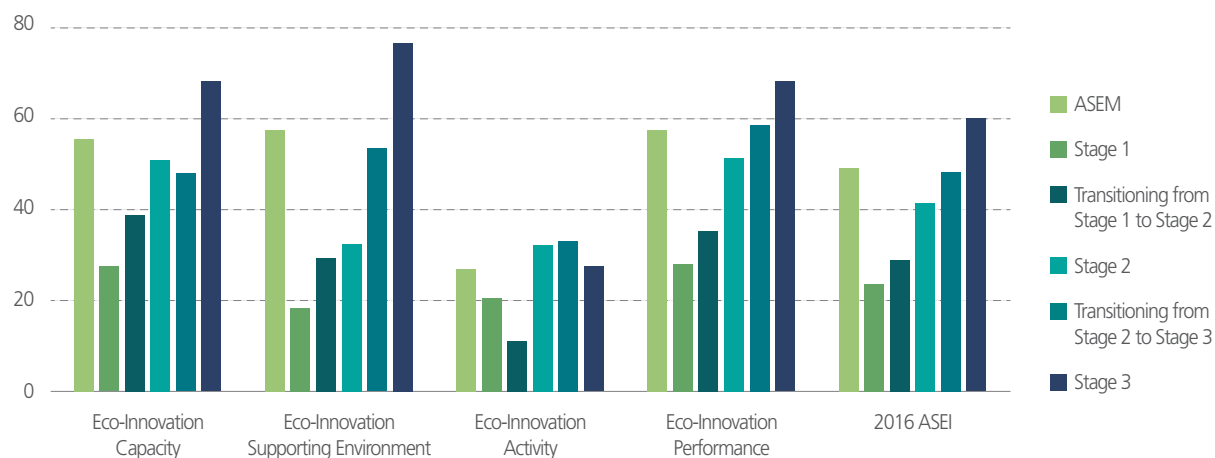
ASEI is designed based on the input-output model, which is often used to measure innovation at the government level, and is grouped under four criteria: Eco-Innovation Capacity, Eco-Innovation Supporting Environment, Eco-Innovation Activity, and Eco-Innovation Performance. Eco-Innovation Capacity refers to the human resources, social structures, innovation capabilities, etc. that form the bedrock of eco-innovation in a country. Eco-Innovation Supporting Environment includes government regulation and financial support systems encouraging eco-innovation, and the corporate investment environment for green technology. Eco-Innovation Activity ranges from a country's utilization of resources to its practice of eco-innovation. Eco-Innovation Performance shows a country's eco-innovative achievements in economical, social, and environmental areas.

### ASEI Indicators

Indicators		Source	Year Collected
1. Eco-Innovation Capacity	1.1. Potential to improve national competitiveness	GCI (WEF)	2015
	1.2. General innovation capacity of nation	GII (INSEAD)	2015
	1.3. Green R&D capacity of research institutes	Cleantech	-
	1.4. Number of companies with green innovative technology	Cleantech	-
	1.5. Awareness level of companies' sustainable management	United Nations Global Compact	2015
2. Eco-Innovation Supporting Environment	2.1. Government expenditure on green R&D	OECD	2013
	2.2. Implementation of environmental regulations	WEF	2015
	2.3. Green technology industry investment environment	Cleantech	-
	2.4. Green innovative technology investment level for SMEs	Cleantech	-
3. Eco-Innovation Activity	3.1. Number of companies with commercialized green technology	Cleantech	-
	3.2. Participation level in environmental management	ISO	2014
	3.3. Economic influence of major eco-friendly corporates	Trucost & Sustainalytics	2015
	3.4. Green patents	OECD(WIPO)	2014
	3.5. Distribution of renewable energy	IEA	2015
4. Eco-Innovation Performance	4.1. Quality of life related to environmental factors	EPI	2015
	4.2. Greenhouse gas emission intensity	IEA	2015
	4.3. Energy sustainability level	ESI (WEC)	2015
	4.4. Water resource consumption intensity	IMD	2014
	4.5. Employment rate in green technology industry	Cleantech	-
	4.6. Green market size	UK BIS	2011-2012

Note: dark green cells denote indicators that are reflected in ASEI 2016.

## ASEI Results by National Development Stage

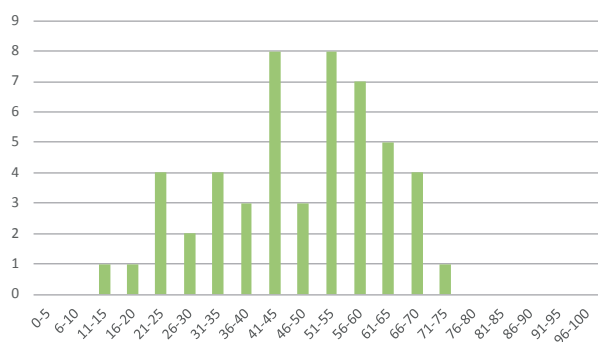


The distribution of ASEI scores by country was analyzed using national development stage. The World Economic Forum (WEF) 2015 divides an economy's development into five stages based on GDP and the share of exports represented by raw materials. Using this as reference, ASEI classified ASEM member states into three groups by development stage. In all areas except Eco-Innovation Activity, the average ASEI score increased as a country's stage of development advanced. That is, countries at more developed stages scored higher in Eco-Innovation Capacity, Supporting Environment, and Performance categories. The difference in average scores between the three groups was most prominent in the Eco-Innovation Supporting Environment category. However, ASEI scores in the Eco-Innovation Activity category were not correlated with national development stage. The average Eco-Innovation Activity score of countries in Stage 2 and of countries transitioning from Stage 2 to 3 were both higher than that of countries in Stage 3. In particular, several European countries in Stage 2 or those transitioning from Stage 2 to 3 scored relatively high in Eco-Innovation Activity. Romania, which belongs to Stage 2, scored the highest out of all member states in terms of "participation level in environmental management" (Indicator 3.2). Bulgaria (Stage 2) and Estonia (transitioning from Stage 2 to 3) also scored higher in "participation level in environmental management" than all Stage 3 countries except Italy and the Czech Republic. Lithuania, which is transitioning from Stage 2 to 3, obtained the highest score in "green patents" (Indicator 3.4).

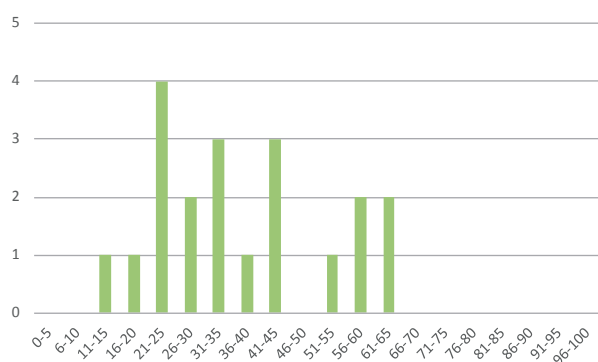
## Distribution Analysis

A distribution analysis on ASEM member states' overall ASEI score and their scores by category showed that around half of them had an overall score between 41 to 60 points. Most European countries were distributed between the 51 to 55-point range, while most Asian countries belonged to the 21 to 25-point range. The distribution pattern of European countries' scores followed an almost symmetrical bell-shaped curve. Asian countries diverged into a small group scoring 51 points or more and a large group scoring 45 points or less. This small group with high ASEI scores included New Zealand, Australia, Malaysia, Japan, and Singapore. This group can be deemed the leaders of eco-innovation in Asia.

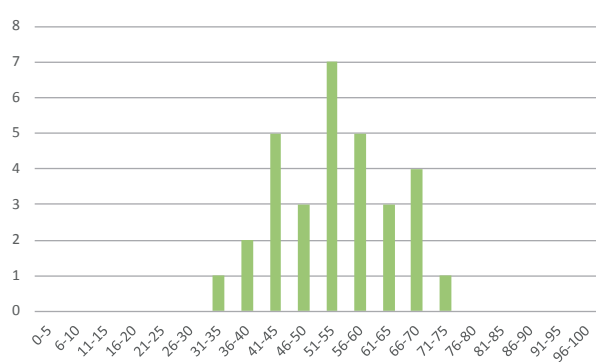
## 2016 ASEM Eco-Innovation Index



Overall 2016 ASEI score distribution (Asia and Europe)



Overall 2016 ASEI score distribution of Asian countries



Overall 2016 ASEI score distribution of European countries

## Time Series Analysis

ASEM member states' overall ASEI scores in 2014, 2015, and 2016 were compared using time series analysis. With the exception of Singapore, Japan, and Korea, all Asian member states had higher overall ASEI scores in 2016 than in 2015. In particular, Vietnam showed the biggest increase (except for Brunei, which had the highest score increase based on estimated data). Vietnam's ASEI scores increased across all categories and across all indicators except "1.1. Potential to improve national competitiveness." In Europe, Estonia had the largest increase from 2015 to 2016.

## Improvements to ASEI Measurement

2015-2016 ASEI evaluated 51 countries using 12 indicators that had available data. Eight ASEI indicators had limited data availability, of which seven were related to green technology or green industry. Green or eco-friendly technology encompasses waste treatment, water purification, waste incineration, gas-flow silencers, exhaust gas apparatuses, and sound absorption walls. To overcome the challenge of collecting data, ASEIC must build long-term strategies to gather information on green technology and industry through local networks of experts in ASEM member states.

## Joint Research through International Cooperation

To this end, in 2016 ASEIC published case studies on Singapore and Thailand in addition to the ASEI report for 51 ASEM member states. The case studies were produced through joint research with local experts in each country. These experts reviewed ASEI results and worked with ASEIC to write the case studies: ASEIC co-authored the Singapore case study with the National University of Singapore and GreenA Consultants, and the Thailand case study with the National Science and Technology Development Agency and Kasetsart University. Moreover, in June 2016, ASEIC co-hosted a workshop focusing on “Achieving and Monitoring Sustainable Consumption and Production through Eco-innovation in Vietnam” with the Vietnamese office of the Hanns Seidel Foundation (HSF), which is based in Germany. With funding from the HSF, ASEI researchers and Vietnamese experts published the “Country Case Report of Sustainable Consumption and Production in Vietnam.” Finally, ASEIC undertook joint research with the UCL Institute for Sustainable Resources’ Professor Raimund Bleischwitz, who developed the Eco-Innovation Scoreboard (Eco-IS) for the European Union. This joint research compared ASEI with Eco-IS and explored how the two indices can complement each other. ASEIC will continue to work with the international community in conducting more joint research on eco-innovation in the ASEM region, and improve ASEI in 2017 so that it can better benefit ASEM member states.



ASEIC-HSF workshop on sustainable consumption and production through eco-innovation in Vietnam





# External Projects



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ASEM SMEs Eco-Innovation Center



## KOICA-GIZ Joint Capacity Development Program in the Philippines – Green Economic Development 2016

For 10 days from July 20 to July 29, ASEIC coordinated the KOICA-GIZ Joint Capacity Development Program in the Philippines – Green Economic Development 2016, gathering 20 participants from the Philippine Department of Trade and Industry (DTI) and the country's private sector. This joint program by the Korea International Cooperation Agency (KOICA) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) supports the Philippines' green economic development and aims to build its public sector's capacity for green policy-making and to develop green businesses in the private sector. ASEIC's role was overall program planning and coordination.



Capacity development program in session

### Green Capacity Building for Public and Private Philippine Organizations Supporting SMEs

With a view to facilitate the Philippines' transition to a green economy, the program trains working-level Philippine officials in green economy policy-making by providing an overview of global trends on green economies and of major South Korean government departments and agencies' policy framework. Program participants traveled to Seoul, Daejeon, and Jeju from July 20 to 29 to conduct workshops with their Korean counterparts and visit the production sites of SMEs and other relevant organizations to better understand Korea's green growth experience. During the program, the participants applied their learnings to draft up support schemes for the Philippine agriculture and food, energy, and tourism industries, among others. They also presented implementation plans at the final program briefing.

All 20 participants successfully completed the program, including Division Chief Elvira Tan of DTI and President Gilbert Alberto of the Metro Naga Chamber of Commerce and Industry in the Philippines. On the last day, ASEIC held the Korea-Philippines Green Business Networking Day, where Philippine SMEs were able to discuss concrete green business opportunities with Korean business leaders and associations concerning SMEs.





Site visits to eco-innovative SMEs



Visit to "carbon-free island" Gapa-do



Korea-Philippines Green Business Networking Day

## Korea-Philippines Technology Cooperation Workshop toward Green Economy Development

ASEIC participated in STEPI's 2016 Asia Regular Network Building Project as a partner and helped establish a network of Asian governments and businesses to enhance technological cooperation between Korea and the rest of Asia. ASEIC also co-organized the Korea-Philippines Technology Cooperation Workshop toward Green Economy Development with STEPI and the Philippine government in order to set the agenda for international collaboration in science and technology.

### Creating an Agenda for Korea-Philippines Green Technology Cooperation

Hosted by STEPI, sponsored by the Philippine Council for Industry, Energy and Emerging Technology and Development (DOST-PCIEERD) and DTI, and organized by ASEIC, the Korea-Philippines Technology Cooperation Workshop toward Green Economy Development took place in Makati City, the Philippines, over three days from October 27 to 29. A total of 32 business, academic, and research experts from the Philippines attended.

The workshop, which was held at Best Western hotel in the Manila region, invited Korean and Philippine businesses, government agencies, and academics in the fields of agri-food, environmental technology, ICT and entrepreneurship, and renewable energy. For each field, participants drafted proposals for projects that would engage both private and public sectors. Prior to the workshop, ASEIC organized a meeting with Korean businesses and researchers to assess their demand for potential collaboration projects with the Philippines.



Korea-Philippines Technology Cooperation Workshop toward Green Economy Development





Breakout session for project brainstorming





Korea-Philippines Technology Cooperation Workshop toward Green Economy Development

The Korean and Philippine experts in the workshop proposed the following projects:

Area	Project Description
Agri-food	Strengthen science, technology, and information ecosystems of Philippine agricultural processing industry by creating ICT system to track supply chain for equipment and process design and development
	Develop decision support system for climate change adaptation and disaster management in Cagayan River basin
Environment	Deploy green technology to produce energy from sugar factory waste
	Run pilot project to test cost-effective water dispersion system in rural areas (villages, schools, town factories)
Renewable Energy	Introduce smart grid system in Mindoro, the Philippines
ICT and Entrepreneurship	Accelerate ICT startup ecosystem
	Speed up green economic development of SMEs

Proposed projects

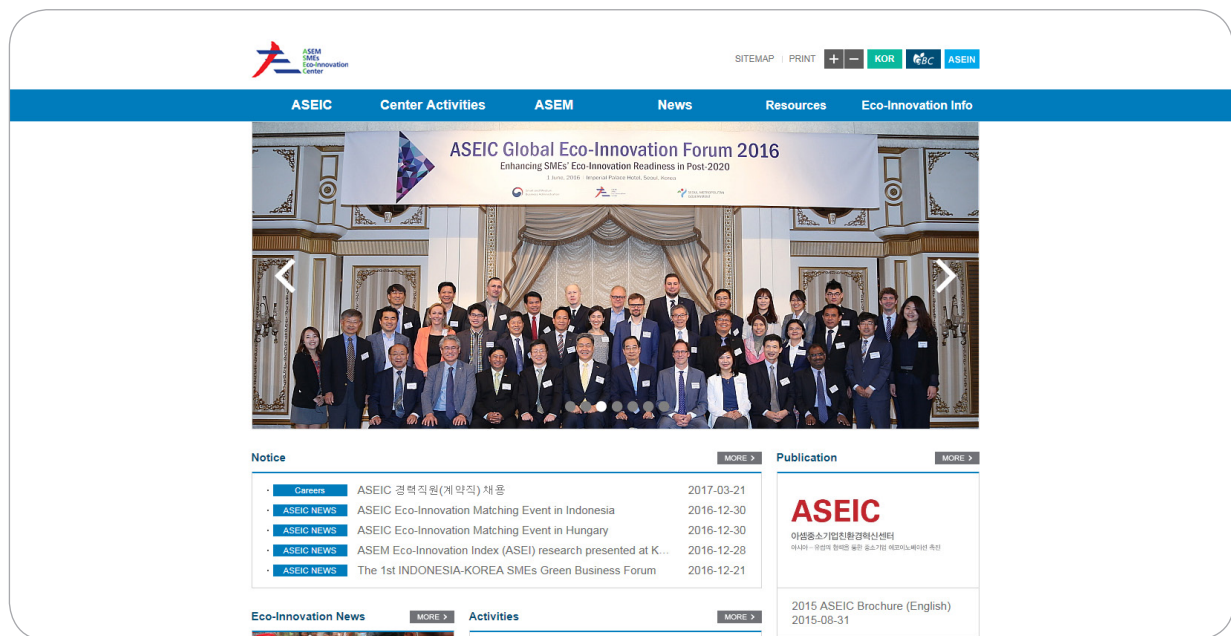


# Promotional Activities of ASEIC

ASEM SMEs Eco-Innovation Center



## Promotional Activities of ASEIC



Information sharing, communication, and promotion are becoming increasingly important in the age of new media. ASEIC is also doing its utmost to facilitate communication and the exchange of eco-friendly information among ASEM member states. In addition, ASEIC strives to increase its global presence by leveraging its website, social media channels, annual reports, and press releases, and to raise ASEM member states' awareness of eco-innovation and ASEIC's role.

To improve the effectiveness of such activities, ASEIC updated its website in 2016. It made the site available in Korean to reinforce its promotional activities within Korea. As for the English site, it reorganized the navigation menu and gave the website a fresh look and feel so that both Korean and overseas visitors can enjoy a better user experience and more easily access the information they need.

ASEIC promoted project successes by aggregating ASEIC event highlights and eco-innovation news every quarter and sending out six newsletters to around 200 relevant organizations.

In addition, ASEIC offered more in-depth information on its activities by uploading reports on each of its projects to the ASEIC website and publishing annual reports. In addition, it reaches a wide audience by distributing press releases on various media channels.

Recognizing the increasing importance of social media marketing, in 2017, ASEIC will improve its ability to promote projects in real time. At the same time, it will drive visits to the website by developing content in demand, thereby deepening the public's understanding of eco-friendliness and boosting its promotional efforts through online communication channels.







