Full report

Regional Dialogue to promote the uptake of Eco-design approaches to green the SMEs in Asia

Date: 30 November 2021 I 13.30-16.30 (Thailand Time)

Venue: Online via Zoom

Disclaimer

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List of Acronyms:

AI	Artificial Intelligence
AIT	Asian Institute of Technology
ASEAN	Association of Southeast Asian Nations
COP26	26th United Nations Climate Change Conference of the Parties
DASTA	Designated Area for Sustainable Tourism Administration
DEDE	Department of Alternative Energy Development and Efficiency
EU	European Union
EV	Electric Vehicle
GDP	Gross Domestic Product
PCM	Phase Change Material
RPAC	Regional Policy Advocacy Component
SCP	Sustainable Consumption and Production
SDGs	Sustainable Development Goals
SERD	School of Environment, Resources and Development
SMEs	Small and Medium Enterprises
TBCSD	Thailand Business Council for Sustainable Development
TEI	Thailand Environment Institute

Background:

SMEs in Asia play an important role in driving economy, employment and innovation and therefore are the core engines of transition to green growth. In the Asia-Pacific region, the SMEs account for approximately 97% of all enterprises, two-thirds of employment and around 30 to 60% of the GDP. Reducing the aggregate environmental impact of SMEs through achieving and going beyond environmental compliance in both manufacturing and services is therefore a key success factor in greening the economy. To move towards a green and circular economy, attention should be given to pioneer SMEs who have developed circular business models, contributing to the increased use of renewable energy, improved recycling, and waste management. Green SMEs would therefore, not only be an essential element of the economy but could also drive innovation and competition and thereby help to address economic, environmental, and social challenges in Asia.

Eco-design is a proactive approach in designing products and services that use minimum resources and energy and have minimum negative environmental and social impacts throughout their life cycles while meeting the users' needs of functionality and quality. The practices are considered interventions from conception to development or from use to end-of-life, starting from design materials' extraction, production, distribution, use, and end-of-life. An example includes selection of low-impact resources and processes, extending the lifespan of the material, system design for eco-efficiency, life cycle design, minimizing resource consumption, production lifetime optimization, etc.

In 2020, the EU SWITCH-Asia's Regional Policy Advocacy Component (RPAC) in partnership with the Thailand Environment Institute (TEI) successfully organized a regional dialogue to enhance awareness and knowledge on eco-design as an efficient path to achieve sustainable development. The dialogue highlighted that supporting facilities for the Asian SMEs could be one of the major thrusts in promoting eco-design and Sustainable Consumption and Production (SCP) patterns in Asia. As the region is today, a fast-growing base for the manufacture of various kinds of products for the world, there is a clear need to enhance capacities of the Asian SMEs in dealing with increasingly stringent environmental legislation and certification requirements. The willingness and capability of SMEs to adopt sustainable practices and seize green business opportunities, however are generally faced size-related resource constraints, skill deficit and knowledge limitations. There would be specific challenges for SMEs in making the transition towards green and circular economy approaches and thereby different supporting measures are needed to enhance this uptake.

Objectives of the event:

- To continue the discussion on how to increase the understating of the eco-design approaches for their promotion and uptake by the SMEs in Asia.
- To facilitate exchange of knowledge and good practices in the region that will deep dive on implementation challenges and benefits of adopting/instilling the eco-design thinking for the key sectors in Asia.
- To further gather perspectives on enabling factors/solutions that influence/support SMEs to incorporate eco-design approaches in their businesses.

Logistical information about the event:

The organization of the Regional Dialogue aiming to promote the uptake of Eco-design approaches to green the SMEs in Asia was organized as an online event (via Zoom) and through live broadcasting in social media.

Summary of key messages:

Eco-design approach is a crucial tool in reducing the environmental impacts from production and consumption. SMEs, as an essential drivers of Asia economy, are encouraged to apply the eco-design approach to enhance 3 pillars of sustainability: economic development, social development, and environmental protection. The eco-design does not only solve the environmental issues, but also helping the SMEs to reduce the operating cost as well as leading to better business operations in each industrial.

Key success of Eco-design implemented in each sector were shared by experts in the first panel session. Local available renewable energy along with energy-saving innovations were introduced, helping to save cost and generate extra income to local communities and farmers. The service sector was able to attract more tourists and reduce carbon emission and energy used through ecotourism promotion. Packaging manufacturers gained more market share from developing environmentally friendly products to meet the consumer's new preference. Moreover, the Eco-friendly cleaning product was developed with an aim to create sustainable living with the green life-cycle cleaning products.

Apart from high production cost and low consumer awareness, the barriers for eco-design implementation also mainly came from limitations of productive resources such as financial access, efficient technology, and labor skills. Solutions to overcome the barriers suggested by the experts includes (1) Promote sustainable production since the early of supply chain to encourage environmentally friendly management from the beginning of the production process, (2) Raise green products awareness to increase the market demand, (3) Partner with various stakeholders to access insight information of consumer needs, environmental impacts and potential supplier, and (4) Cooperate with academic agencies for technology and knowledge transfer support.

The first five important factors that could support SMEs to successfully applied eco-design in their business were shared by participants and experts during the last part of the panel discussion, including Government policy and regulation, Financial support measures, Education and skill development, Source of technologies, and Behavior change for both producer and consumer. To start moving towards shaping the green market products, the government should establish incentives and provide knowledge support for SMEs in order to implement the eco-design in their business as well as promoting environmentally conscious behavior.

Welcome and Opening remarks:

Remarks by RPAC

Dr. Mushtaq Ahmed Memon
Project Manager, EU SWITCH-Asia Regional Policy Advocacy Component (RPAC)

Dr. Memon thanked the EU for supporting the transformation to sustainable consumption and production in Asia since 2007 through SWITCH-Asia Programme, and to all partners especially TEI and AIT for co-organizing this event. He said that currently 90% of SMEs are driving the economy, therefore, SMEs are the driving force of the green development. Similarly, Eco-design can help SMEs achieve eco-friendly production and services starting from product and service design, energy saving, and waste reduction. He wished that this webinar to be successful by sharing knowledge and experiences from the participants and achieving the objectives of environmentally friendly actions.

Remarks by TEI

Dr. Wijarn Simachaya
President, Thailand Environment Institute
Secretary-General, Thailand Business Council for Sustainable Development

Dr. Simachaya emphasized that SMEs have an important role in spurring various economic activities in Asia and the Pacific region, as SMEs business are generating jobs and income. Eco-design is a very important way to reduce the environmental impact from the beginning of production, transportation, usage until disposal of the product for sustainable resources and reducing costs. Adopting Eco-design principle into business is also an important enabling factor for trade and export of the SMEs. Dr. Simachaya hopes that the experience sharing and information exchanged today will help SMEs to develop or adjust their strategies and work plans towards the sustainable business.

Remarks by AIT

Prof. Dieter Trau
Dean, AIT School of Engineering and Technology
Director, AIT Entrepreneurship Center

Prof. Trau referred that the 26th UN Climate Change Conference of the Parties (COP26) aims to reduce the carbon dioxide emissions to zero. Additionally, most industries are adopting strategies aimed at promoting social responsibilities and maintaining sustainable practices. He highlighted that SMEs should become an important part contributing to the achievement of the goal of net zero emission. He stressed that sustainability should be a priority for businesses and Eco-design principles would help the businesses to lower impacts on the environment by using less resources and energy at designing stage.

Opening Remarks

Thibaut Portevin
Head of Cooperation, Delegation of EU to ASEAN

Mr. Portevin presented about the projects on SMEs, the main target group for approximately 97% of all enterprises to settle employment and around 60% of the GDP in Asia. These projects have provided significant technical support and finance to promote the adoption of Eco-design approaches. He also discussed about key factors to implementation of Eco-design. He said Eco-design is a tool for reducing environmental impacts during the whole life cycle of products and service. He mentioned that Eco-design minimizes environmentally adverse impacts by integrating itself with living processes.

Circular Design-An Intervention from the Ellen MacArthur Foundation

Chuan Fan
Project Manager for Learning and Design, Ellen MacArthur Foundation

Miss Fan presented about the definition and principle of Eco-design, which is prominently the heart of circular economy. This learning path covered the role of design in creating a circular economy, examining the four-stages of the circular design process, and highlighting six strategies for incorporating the principles of the circular economy into the user's designs. She highlighted that the main concept of circular economy is a shift from ownership to access, as the customers often only require access to a product for a short period of time after which they can return it to the service providers or pass it on to a new user.

Panel Sessions:

Session 1: Potential Sectors for Greening SMEs in Asia

Eco-design Approaches in Asia

Dr. Nithiwadee Buawat
Researcher, TEI

Dr. Buawat presented the importance of SMEs in Asia, where it is essential for SMEs to operate in an environmentally friendly way, especially the adoption of Eco-design in their production processes. She outlined the objectives of the webinar, and emphasized that the webinar focuses on the implementation of Eco-design in SMEs covering 8 sectors: Electronics, Construction, Alternative Energy/Development (EV), Agriculture (resource efficient use), Service (tourism and logistics), Textile, Packaging and Household/personal use.

She explained briefly the structure, scope and expectations of the two panel sessions:

Session 1: Potential Sectors for Greening SMEs in Asia with aims to understand how eco-design can be implemented in each industrial sector of SMEs in Asia

Session 2: Enabling Factors to Enhance the Eco-design Approaches with aims to deepen discussions on enabling factors to enhance the application of the Eco-design concept and to explore the way forward to shape up market for green products.

Breakout room 1

Moderator: Assoc. Prof. Naragain Phumchusri

<u>Electronic sector</u>

Dr. Supachai Sampao
Chief, Energy Efficiency Standard and Conservation Group, Department of Alternative Energy Development and Efficiency (DEDE), Ministry of Energy, Thailand

Eco-design approaches by policy support in Thailand

Dr. Sampao presented about the Ministry of Energy's policies for comprising 4D1E: Digitalization, Decarbonization, Decentralization, De-Regulation and Electrification. The policies promote renewable energy which has less carbon dioxide emission, generate and consume power from solar energy, biomass, and biogas. Moreover, the policies also promote the energy sector which is surplus from agricultural products in order to reduce carbon. In addition, the policies support Eco-design by encouraging energy-saving label certification. He emphasized that the electronics and energy sectors are interrelated in terms of policy and practice, resulting entrepreneur having to implement these policies. He pointed out that driving Eco-design, besides policy, financial factors are important to the performance of SMEs.

Construction sector

Mr. Dhanarasu Kaliyaperumal
Associate Counsellor, CII Sohrabji Godrej Green Business Centre, Confederation of Indian Industry

Eco-design in India's Construction Sector

Mr. Dhanarasu presented about the construction industry. In India, more than 40% of the Indian population will be residing in cities. Construction with an eco-friendly house design is one of the most significant ways to lower impacts on the environment. Eco-building design can be a real and practical way to reduce India's carbon footprint, but green design has not yet gained widespread acceptance for affordable homes in India. He highlighted that misconceptions regarding the cost of building green, increased complexities, and lack of perceived demand seem to be holding back many affordable housing developers from adopting green designs.

Alternative energy sector

Mr. Samit Jain
Managing Director, Pluss Advanced Technologies

Energy Efficiency in PLUSS

Mr. Jain talked about the solar-powered micro cold room & phase change material (PCM) using reefer truck produced by his organization. The operation of the equipment will not use battery, instead use solar cell. The operation uses a 100% grid free system and renewable base which also reduces cost of refrigeration for the farmers. In addition, electric vehicle energy saving is also achieved by using PCM. He pointed out the motivation for Eco-design implementation is to reduce environmental pollution, and encouraged SMEs to apply this concept to reduce operational costs. He highlighted that the key success results of applying Eco-design principles to his business are the use of locally available alternative energy coupled with energy-saving innovations that generate income for communities and farmers.

Agriculture sector

Mr. Oudom Thay
National Sales Manager, ATEC Biodigester Cambodia

ATEC by CAMBODIA

Mr. Thay started his presentation by explaining his organization which works on cooking technology, and he described the operation based on ecological design. His company created the renewable biogas for all cooking based on Australian design. The smoke discharged from the fermentation process provides a free cooking environment. The fermentation process is a fertilizer for agriculture per year which reduces the use of chemical fertilizers. He said the principle of biogas system is Eco-design, such as low materials, easy recycling, use of biomaterials, long-term, multipurpose, and recyclability. He thinks the motivation for the implementation of the Eco-design principle are the concerns to the environment and health.

Finally, he encouraged SMEs in all sectors to go through various problems and turn to environmentally friendly actions.

Breakout room 2

Moderator: Prof. Vilas Nitivattananon
Dean of the School of Environment, Resources and Development (SERD), AIT

Service Sector (tourism and logistic)

Prof. Vilas Nitivattananon

Prof. Vilas presented about the "Don't Burn The Heritage", a low-carbon tourism program in a world heritage city of Sukhothai**,** Thailand implemented by Designated Area for Sustainable Tourism Administration (DASTA). The aims of the program are to encourage tourists to spend more time outdoors, reduce motorized use, and minimize indoor energy consumption at hotels by providing incentive as discount coupons for targeted activities. He pointed that the primary barrier is the lack of cooperation with multi-stakeholder network. He suggested that enhancing communication among different stakeholder groups is necessary for effective implementation of such programs.

Textile Sector

Prince Jimdel Ventura
Founder and CEO, Wear Forward, Philippines

AI-powered Circular Fashion Marketplace and Virtual Wardrobe was presented, which aims to revolutionize fashion and mindsets, and build a proactive, progressive and purpose driven community that embraces circular fashion. The initiative of *Wear Forward Platform* encourages collaborative consumption through clothing as a service that provides AI-powered circular fashion marketplace and virtual wardrobe while making profit and improving the planet and lives of the people. The main barriers and difficulties to promote and scale up the initiative were summarized as follows:

1. Meeting a high demand: The business has limited resources in terms of storage and warehouse, funding, and low product/service turnover due to a small human resource/team.
2. Connecting to and screening informal workers and the implementation of the Circular Fashion Training Program during the pandemic: The operation takes time and cannot immediately rely on the workers for the production since they do in-house production. However, the business is now collaborating with local, small-scale subcontractors.
3. Recycling worn out textiles with blended fibers which cannot be upcycled yet: There is currently no suitable technology to recycle a garment with different materials (blend or natural and/or synthetic fibers) yet, but the business have signed a project with the Philippine Textile Research Institute on a garment-to-garment recycling and will be launched by 2023.

Packaging Sector

Dr. Curie Park
Research Associate Industrial Sustainability, University of Cambridge, United Kingdom

Dr. Park presented the four areas or challenges and opportunities as the following:

(1) **Consumer insight**: Double edged swords; The top enabler or the second most important barrier for sustainable design depends on the consumer's levels of environmental awareness (Ma, Park and Moultrie, 2020)
(2) **Authenticity vs Greenwashing:** The threat for product because of lack of transparent information, publicly available standard and life-cycle base.
(3) **Think Big with 3 ideas:** Green Design covering a single environment impact issue e.g., recyclability, material replacement, pollution prevention; Eco-design adopting the product lifecycle perspective i.e., circular economy e.g., waste upcycling, design for disassembly; Sustainable Design addressing three pillars of sustainability (i.e., people, planet and profits) beyond only material or packaging e.g., product process or business model that involves local communities
(4) **Makeathon** is an effective platform to generate business ideas through open innovation competition with rapid prototyping inviting participants from various disciplines (design, business, engineering, and science) within a short period.

Household/personal Sector

Ms. Patnaree Royruangpanich
Co-Founder, S&P Bioenergy Co., Ltd

Ms. Patnaree presented the Eco-friendly cleaning products under SUPP brand. S&P Bioenergy Co., Ltd. was established in 2015 with the goal of encouraging social responsibility and sustainability by adopting a 3P Triple Bottom Line as a business model. The purpose is creating sustainable living with the green life-cycle cleaning products. She said the SUPP brand has been developed using the Circular Economy approach and that the main principle to address the challenges to improve in their business.

The barriers of implementation were shared as follows:

- High Cost / low margin;
- Small market potential of Green products because of low consumer awareness; Few green factories to produce their products;
- Unable to access the source of investment funds.

Session 2: Enabling Factor to Enhance the Eco-design Approaches

Breakout room 1 moderator: **Dr. Chaiyod Bunyagidj**
Breakout room 2 moderator: **Prof. Dieter Trau**

The objective of Session 2 was to deepen the discussions on enabling factors to enhance the application of the Eco-design concept and to explore the way forward to shape up market for green products. The ideas, suggestions and information were received from the participants through two breakout rooms as below.

1. Analyze the enabling factors that enhance the application of Eco-design concept in SMEs that consider in the following parameters.

I. Financial Mechanisms

- Higher profit and market share in international level
- Improvement of MSMEs financing mechanisms, such as climate finance, loan accessibility, or low-interest loan with longer payback period
- Financial incentives such as tax exemption and reduction, easier procedure for SMEs to get small-size loan, and Low and stable interest plan.
- Government institutions mandated to train and financially support startups and social enterprises
- Wide dissemination on financial incentives for SMEs to access to.

II. Policy and Regulation

- Incentives for promotion and redressing inherent disadvantage of SMEs, including easier legal registration of businesses for startups.
- Technical support for energy and environmental conservation, and hygiene
- Uphold and improve existing legislation based on science, related to SMEs and environmental sustainability
- Development of policy linking the 3 pillars of economic, social and environment
- Government procurement of SMEs Eco-friendly products
- Knowledge transfer among the innovative countries

III. Technology and Innovation

- Investment in new and efficient equipment
- Research topics related to green product, high-cost technology and innovation
- Technological shared facilities
- Encouragement for young people's technology innovation
- Knowledge training/transfer of new technology or innovation
- Balance between technology application and human skills
- Software license and laboratory support
- Increase in availability of open-source technologies

IV. Education and Skills

- Market promotion and support at domestic and international levels
- Integration of green production and eco-design approaches in the academic curriculum of programs related to design, engineering, etc.
- Educate consumers to switch their decision
- Training course for green production or eco-design approach
- Sharing of knowledge and technologies appropriate for SMEs, including adaptation to local / traditional now-how

V. Gender and Vulnerable group

- Increased representation of and opportunities to female leadership, youth activities, indigenous communities, and fashion supply chain workers in COP and other platforms
- Empowerment of women by improved engagement of women and vulnerable group in business

VI. Others

- Prioritize market readiness
- Set up material flow and take back mechanisms for recyclable

2. From the enabling factors, what is the first five important factors that could support SMEs to successfully applied eco-design in their business.

- Government policies and financial institutions support such as easier legal registration and loan access
- Support on education and training of designing skills
- Open-source technology
- Market readiness for eco products
- Increased of representation and opportunities to vulnerable sectors

3. From the priority factors, even if SMEs successfully implement Eco-design in their business, but there are some limitations of the market such as having a small international market, low investment, lack of knowledge of international market and standards, and the import good is also a threat to the competition of SMEs entrepreneurs. To motivate SMEs entrepreneurs who implement eco-design in the business, how should we start moving towards shaping the market for green products?

- Standardized food labels
- Support financial at all level
- Encourage SMEs to work hand-in-hand to elevate standards and positions to negotiate with policy makers and consumers
- Focus on target customer and setting up the product price based on customer group i.e., Eco-tourism/low carbon hotel and target amount.
- Share knowledge about green products

- Lower tax responsibilities
- Improve product quality to meet international requirements or standards (both quality and environmental properties)
- Develop marketing promotion to stimulate Eco-friendly production and consumption
- Provide information for consumer about environmental properties through product labeling
- Promote business model adjustment to create SME Eco-design startup.

Highlights of discussions:

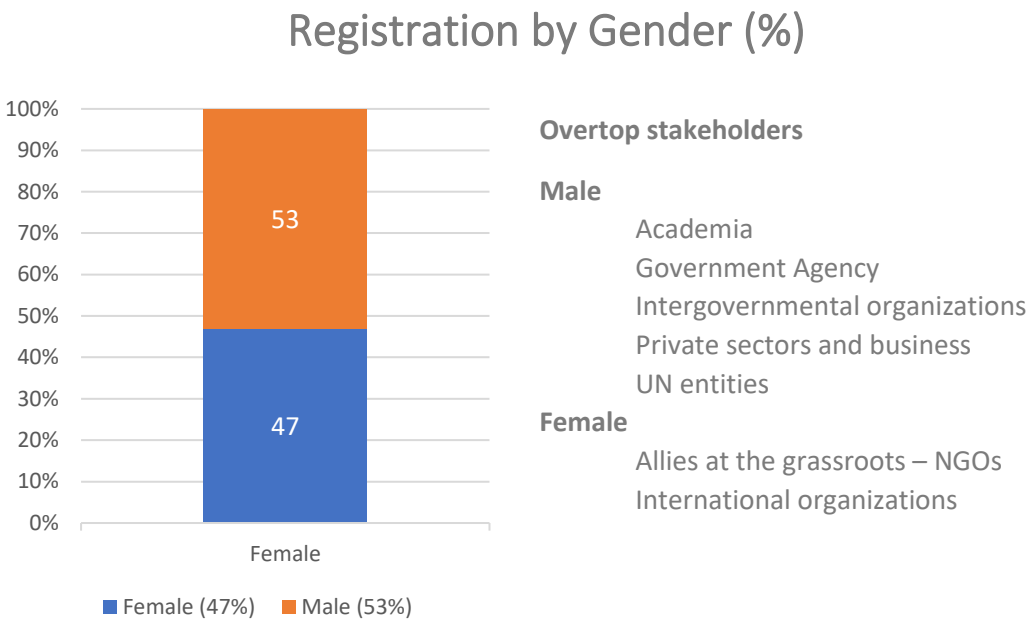
After knowledge and experiences sharing from experts in 8 sectors, the participants were actively discussed and provided comments together with feedbacks of the enabling factors to enhance Eco-design approach in SMEs. The experts and participants both agree that government policies and financial mechanism supports are the priority factors as well as support on education and technology. However, the SMEs are still facing some limitations such as having small market or pricing threat from import goods. Therefore, we should start moving towards shaping the market for green products by taking a step from small actions. For example, work hand-in-hand to elevate standards and positions to negotiate with policy makers and consumers, improve product quality, and raise awareness on environmental impacts and green products.

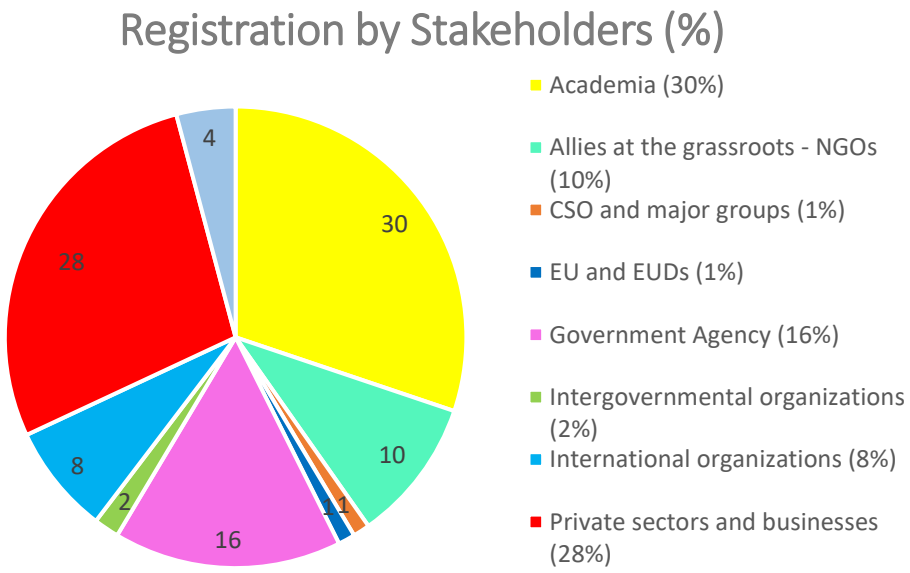
Evaluation/Assessment results:

The regional dialogue was organized as an online event with the purpose of promoting and discussing the uptake of eco-design approaches to green the SMEs in Asia. The participants were encouraged to provide comments and feedbacks both virtually and through chat box and google form during the sessions. A feedback survey was delivered after the event indicating interests in future webinars with more deepen discussion of the 8 sectors.

Review on Participants:

More than 160 participants registered prior to the events. The regional dialogue was attended by more than 980 participants belonging to different stakeholder groups on Zoom and Facebook livestreaming. Figures below present the distribution of participants who registered prior to the event by stakeholders. Based on the registrations, 53% of the participants were male and 47% were female. Both of them represented mainly by Private sectors and businesses and Academia sector.





Annex:

Annex 1: The Final agenda

Time (ICT)	Theme
1330-1335	**Remarks by RPAC** **Dr. Mushtaq Memon** Project Manager, EU SWITCH-Asia RPAC
1335-1340	**Remarks by TEI** **Dr. Wijarn Simachaya** President of Thai Environment Institute (TEI) and the Secretary-General of Thailand Business Council for Sustainable Development (TBCSD)
1340-1345	**Remarks by AIT** **Prof. Dieter Trau** Dean, AIT School of Engineering and Technology Director, AIT Entrepreneurship Center
1345-1350	**Opening Remarks** **Mr. Thibaut Portevin** Head of Cooperation, Delegation of European Union to ASEAN
1350-1400	**Circular Design-An Intervention from the Ellen MacArthur Foundation** **Ms. Chuan Fan** Project Manager for Learning and Design Ellen MacArthur Foundation
Session 1: Potential Sectors for Greening SMEs in Asia	
1400-1410	**Eco-design Approaches in Asia** **Dr. Nithiwadee Buawat** Researcher, TEI
1410-1510	**Breakout room 1** Moderator: **Assoc. Prof. Naragain Phumchusri** • Electronics • Construction • Alternative Energy/Development (e-Vehicle) • Agriculture (resource efficient use) **Breakout room 2** Moderator: **Prof. Vilas Nitivattananon** • Service (tourism and logistic) • Textile • Packaging • Household/personal use
1510-1520	**Plenary Discussion**** **Ms. Tunnie Srisakulchairak** UNEP Programme Management Officer, EU SWITCH-Asia RPAC

Session 2: Enabling Factors to Enhance the Eco-design Approaches

1520-1530 **The Green Startup Toolkit**
Dr. Lakeesha Ransom
Faculty, AIT School of Management

1530-1540 **Enabling Factors to Green SMEs**
Pavitra Mohanraj
Technical Expert, FICCI and Founder Infinitive

1540-1621 **Breakout rooms to deep dive into the identified factors***

- Financial mechanisms
- Policy and Regulation
- Technology and Innovation
- Education & Skills
- Gender and Vulnerable groups

Breakout room 1 moderator: **Dr. Chaiyod Bunyagidj**
Breakout room 2 moderator: **Prof. Dieter Trau**

1620-1625 **Plenary Discussion****
Tunnie Srisakulchairak
UNEP Programme Management Officer, EU SWITCH-Asia RPAC

1628-1630 **Conclusion and Closing**
Dr. Mushtaq Memon
Project Manager, EU SWITCH-Asia RPAC

*Participants are requested to join their chosen breakout room
**Participants are requested to come back to main room

For more information

SWITCH-Asia event page:

https://www.switch-asia.eu/event/regional-dialogue-to-promote-the-uptake-of-eco-design-approaches-to-green-smes-in-asia/

Contact SWITCH-Asia Regional Policy Advocacy Funded by European Union

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