



## PROCEEDINGS OF THE SECOND EXPERT GROUP MEETING:



Ho Chi Minh City, Viet Nam 8-9 November 2018



Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra





## Background

On 8 and 9 November 2018, the Vietnamese Ministry of Planning and Investments (MPI) and UNIDO co-organized the second expert group meeting (EGM) "Implementation of Eco Industrial Parks in Vietnam: Opportunities, Challenges and Barriers" in the context of the UNIDO project "Implementation of eco-industrial park initiative for sustainable industrial zones in Vietnam", supported by the Government of Switzerland through the State Secretariat for Economic Affairs (SECO) and the Global Environmental Facility (GEF). More than 140 participants attended the EGM.

Vietnam has undergone rapid economic growth over the last ten years driven mainly by the processing and manufacturing sectors. To facilitate the emergence of new industries, the government has established industrial zones (IZs) with the provision of common environmental infrastructure. However, this industrial growth has also brought about adverse change in human health of neighboring communities and environmental quality. To tackle these issues, MPI and UNIDO are working together with the objective to introduce and implement an eco-industrial park<sup>1</sup> (EIP) management system to reduce and/or eliminate greenhouse gas emissions, water consumption, water pollution, persistent organic pollutants and other chemicals of global concern and to demonstrate innovative clean and low-carbon practices in industries. To achieve this objective, the project focuses on the following components:

- Policy and guidelines to facilitate the transformation of IZ into EIP;
- Capacity building on EIP strategy and measures;
- Identification of EIP pilot projects; and,
- Pilot projects in IZs and communities, including information dissemination.

Substantial progress could be achieved in the first 3 years of project implementation. The most relevant achievements till now can be summarized as follows:

- Decree 82/2018/NĐ-CP formally released by the Government of Vietnam. The Decree describes the requirements for transforming IZ into Eco-Industrial Parks and defines criteria;
- Intensive capacity building and awareness raising at all levels;
- Improvement of waste water treatment and waste management in the
   4 pilot parks, including data collection and data cross checking;
- Capacity building in chemicals management in industrial parks and their companies
- Implementation of resource efficiency measures in selected industrial processes; and,
- Identification of industrial symbiosis in selected parks.

The EGM has been selected as a tool to periodically discuss the EIP development among selected stakeholders. The first EGM was successfully held in Hoi An on 29-30 September 2016.

1 An ecoindustrial park is a community of manufacturing and service businesses located on common property. Members seek enhanced environmental. economic and social performance through collaboration in managing environmental and resource issues and thus engaging into an industrial symbiosis.

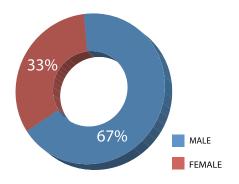


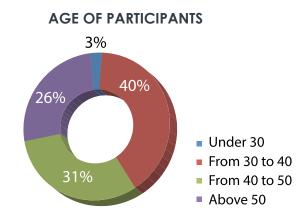
### Objectives

The overall objective of the 2<sup>nd</sup> EGM was to reach a common understanding of EIP developments in the Vietnamese context. The expected outcomes were to:

- Raise awareness on **EIPs opportunities and challenges** among Vietnamese decision makers;
- Reach a common understanding of the next steps in the EIP implementation;
- Identify gaps and needs in policy and legislation;
- Identify relevant, motivated and engaged **stakeholders**;
- Discuss next concrete steps in the implementation of the current EIP Project and the future of EIP in Vietnam; and
- Share new **opportunities** and **international experiences**.

#### **GENDER BALANCE OF PARTICIPANTS**







# Summary of the discussion

The  $2^{nd}$  EGM gathered together representatives from the national government, local authorities, research and academia, international development organizations and banks, as well park managers and private companies operating in industrial parks.

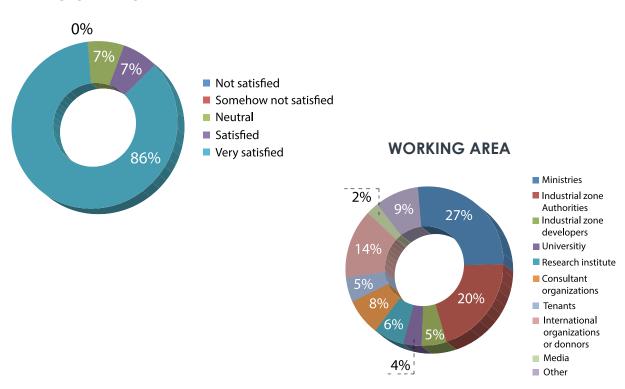
The meeting was opened by the Director General of the Department for Local and Regional Economy of MPI, the Swiss Ambassador to Vietnam, the Country Representative of UNIDO in Vietnam and the Head of the Ho Chi Minh Processing Zones Authority. **Tran Duy Dong**, Director General of MPI, underlined the importance of the development of Decree 82 on industrial parks, which sets an important milestone towards Vietnam sustainable industrialization, while

**HE Beatrice Maser-Mallor**, Swiss Ambassador to Vietnam, highlighted that Switzerland is proud to support Vietnam greening its industry and the Vietnamese Green Growth Strategy through UNIDO, and appreciated the country's effort to transform the EIP concept into a reality.

In the same opening session, Mr Smail Al Hilali, Chief of the Emerging Compliance Regime Division of UNIDO, Ms Le Thi Thanh Thao, UNIDO Representative to Vietnam and Mr Heinz Levenberger, highlighted how eco-industrial park development is one of UNIDO's flagship programmes and paramount to meet the SDGs, and that since 2012 UNIDO has been supporting the development of 15 eco-industrial parks in 7 countries around the world, providing significant environmental, economic and social benefits to more than 200 companies. This work will be scaled up over the next years through the Global EIP Programme, also thank to the kind support of Switzerland, and the cooperation with international organizations such as GIZ and the World Bank.

The programme was followed by plenary presentations and discussions, by four separate session discussions on specific topics as illustrated below. All sessions were made interactive as all participants were able to pose questions, vote in polls and fill questionnaires through an online platform (Slido).

#### RATING OF THE OVERALL EVENT





#### **OPENING SESSION**

- Welcoming speeches
  - Mr. Tran Duy Dong, Director General of the Department for Local and Regional Economy, MPI Ms. Beatrice Maser Mallor, Swiss Ambassador to Vietnam
  - Ms. Le Thanh Thao, Country Representative of UNIDO in Vietnam
  - Mr. Nguyen Hoang Nang, Head of the Ho Chi Minh Processing Zones Authority
- Recap of EGM 1 and Concept of EGM 2
- Key note presentation: Eco-Industrial Parks in the context of circular economy

#### SESSION 1 - POLICY AND GUIDELINES FOR ECO-INDUSTRIAL PARKS IN VIETNAM

- EIPs in the Decree 82
- EIP realization (environmental aspect) and recommendation for ministerial coordination
- EIP realization (technology and sciences aspect) and recommendation for ministerial coordination
- EIP Minimum requirement (environment, economic and social aspect)

#### SESSION 2 — PRIVATE SECTOR AND ECO-INDUSTRIAL PARK INITIATIVES

- Financing solutions for EIP projects with private sector participation
- Private sector and Green Industry Park Development Initiatives
- Private sector and investment on EIP initiatives at company level

#### SESSION 3 – ECO-INDUSTRIAL PARK PLANNING AND MANAGEMENT

- EIP International Frame Work and EIP Toolkit
- IZ management for EIP: International perspectives
- Role of IZ Authority in EIP implementation in Vietnam
- Case of Sonadezi: good Planning and Management in place

#### **SESSION 4 – INDUSTRIAL SYMBIOSIS AND SUSTAINABLE CITIES**

- Industrial symbiosis and sustainable cities
- Co-processing industrial waste in cement plants: A practical application of industrial symbiosis
- Wastewater Reuse: An EIP initiative
- Kitakyushu's plan to develop Eco-city in Vietnam

#### SESSION 5 — RESOURCE EFFCIENCY AND SUSTAINABLE ENERGY FOR ECO-INDUSTRIAL PARKS

- Energy and EIP
- Business models for renewable energy (solar and wind) in EIP
- Resource efficient and clean production (RECP) in EIP
- RECP at companies level: saving money and protecting the environment

#### SECTION 6 - EIP-RELATED TOPICS INTERACTION AND CLOSING

- Brief recap of day 1 and introduction of the agenda
- EIP Green Field Planning
- Waste management, recycling and resource efficiency at EIP
- Energy at EIP
- Wastewater at EIP
- EIP and capacity building
- INTERACTIVE DISCUSSION WORLD CAFÉ. Discussion topics:
  - Policy and guidelines for EIP Planning and Management
  - EIP Industrial symbiosis, waste management and resource efficiency
  - EIP Energy
  - Capacity Building and knowledge sharing
- Group presentations
- Conclusions and closing of the EGM



#### Decree 82 and the urgent process towards its implementation

During the discussion, it was highlighted that the 2<sup>nd</sup> EGM was very timely in the national process towards the definition of clear policy and regulations for eco-industrial parks since Decree 82, approved in 2018, already provides a good legal baseline for their implementation in Vietnam. The practical implementation of EIPs must now be supported by relevant circulars of the different Ministries, which will regulate in details technical aspects. The implementation offers a lot of opportunities, but faces also barriers and challenges/constraints in the Vietnamese legislation, since concrete opportunities to develop industrial symbiosis are still limited by the regulation. For example, it is still cumbersome for an industrial park manager to install renewable energy facilities in the park area or to be able to provide water services from treated wastewater to resident companies due to poor regulation. Without addressing these problems and constraints in the first place, scaling up of the EIP implementation will be difficult and slow. This will involve seeking inputs from different stakeholders, including from private sector, and will require a coordinated efforts of different ministries, under the overall lead of MPI.

#### **Setting standards**

Without clear standards for EIPs, a common understanding and a practical implementation is not feasible, MPI and the World Bank presented a first concept, including a dynamic development path for existing IPs towards a EIPs. Setting and assessing compliance with standards (e.g. quality standards of by-products, definition of waste/by-product, etc.) is fundamental to enable industrial synergies among companies. Setting the right quality and right price is expected to facilitate waste exchange and could turn waste into a resource to be traded among companies and in the market.

#### EIP and sustainable cities

Several parallel exist also between sustainable cities and eco-industrial parks as both seek to maximize resource efficiency as well as other social and economic performance to address environmental problems and resource scarcity. It was highlighted that both cities and IPs are part of the problem and must be also part of the solution. A sustainable city will be not possible without a sustainable industry. A harmonized spatial planning and coordinated infrastructure development incorporating basic requirements of cities and industries is required.

#### Drivers for companies and park managers

At company level, increased competitiveness, capacity to meet international demand as well as increased environmental standards of global trade and willingness to enter new

markets, improvements in terms of productivity and sustainability were mentioned as key drivers for EIPs. At the park management level, cost reduction and capacity to attract investments seem to be the main reasons. On the other side, important risks and challenges remain in ensuring a common understanding of EIP requirements at all levels of government down to park managers.

#### **Industrial symbiosis**

Several ideas were discussed, including the establishment of a trading platform for industrial waste, but the fact that companies usually don't keep track of waste generated and the lack of standards and data by different ministries were mentioned as important limiting factors. The Ministry of finance (MOF) could play an important role to incentivize waste reuse at company level and national trade markets.

During the discussion several solutions to exchange and reuse resources between industries were presented, that are already economically attractive, and several are already practiced in Vietnam (e.g. co-firing, wastewater reuse, etc). However, scaling up such measures is still often hampered by the existing legislation and it will need a special permission in each case. If companies have to pay more in an EIP to produce the same products, it is not attractive. And EIPs should be also economically attractive.

#### Energy and water use efficiency

Untapped opportunities exist for energy and water efficiency gains in industrial parks, but this would need a reflection of the real price of energy in the energy bill, improved regulation to facilitate generation of electricity and development of smart grids in the parks, as well as co-generation, heat recovering, biogas production. On this, it was suggested that MOIT give more responsibility and freedom for action to municipalities and park management.





## Lessons and Recommendations

#### Knowledge and capacity building

It was mentioned that EIP touches upon several themes, there is still a low understanding of EIP and the knowledge is still fragmented as it does not exist a reference institution that deals specifically with EIP. It was discussed whether it would make more sense to add EIP topics in existing curricula or to develop new curricula.

The main lessons and recommendations stemming from the discussion can be summarized as follow:

- The audience appreciated the issuance of decree 82/2018/NĐ-CP as a new policy increasing the transparency of EIP development in the country and defining EIP in the Vietnam context. However, legal barriers to implement EIPs in reality still exist, and these mainly relates to lack of available and reliable data, guidelines on waste and wastewater reuse and recycling and minimum standards to reuse it. The responsibilities between ministries should be clarified, notwithstanding that MPI has been tasked to act as focal point to draft the relevant circulars for the implementation of the decree. Collaboration between ministries (including MPI, MOIC, MOIT, MONRE, MOST) is necessary for the future of the development and approval of these circulars. The circulars are of outmost importance for the practical and wider EIP implementation in Vietnam.
- The final adoption of minimum EIP requirements and standards in Vietnam for social, economic and environmental aspects is a key issue for a scaling up implementation.
- Private companies play a vital role for the success of EIPs and they are seeking for information on the measures they should adopt and existing incentives. Banks have funds specifically designed to support green production projects. New financing models are encouraged to take into account externalities using cost effectiveness analysis.
- It is important to align information and provide implementation guidelines and EIP minimum requirements to companies, EIP managers, local authorities and agencies, based on International Framework for EIP developed by UNIDO, World Bank and GIZ and adjusted to Vietnam.
- Industrial symbiosis is one important measure for companies to be successful (two interesting case studies were presented by INSEE Ecocycle and PVTex). Industrial symbiosis is possible only if clear standards, including quality standards, for the reuse of materials and water are in place. It is more effective to define standards for materials and not to define the technology needed (i.e. better to define the goal, since technologies are multiple, difficult to categorize and evolving fast over time).
- It is important to assess EIPs together with sustainable cities, since these are two coins
  of the same medal and many EIP good practices can be applied to sustainable
  cities and vice versa.
- Resource and energy efficiency as well as sustainable production are all important objectives of EIPs but they need to integrate renewable energies (e.g. biomass, solar and wind energy).
- Significant capacity enhancement was done by the MPI-UNIDO project over the last 4 years and EIP concepts have been disseminated across the 3 provinces of the projects and technical support provided. However, industrial parks are widespread in Vietnam and info dissemination should be enhanced to cover all industrial parks.
- Specific and more in-depth training for policy makers and those who should draft policy documents (circulars) for the implementation of decree 82 is needed.

#### Final agenda of 2<sup>nd</sup> EGM

#### DAY 1, Thursday, 8<sup>th</sup> November 2018

7:30 – 8:00	Registration of participants		
		OPENING SECTION	
8:00 8:15	Opening Speech	Mr. Tran Duy Dong, Director General of the Department for Local and Regional Economy cum National Project Director, Ministry of Planning and Investment	
8:15 8:55	Welcoming Speeches	HE Beatrice Maser Mallor, Swiss Ambassador to Vietnam  Ms. Le Thanh Thao, Country Representative of UNIDO Vietnam Office  Mr. Nguyen Hoang Nang, City Council member, Head, Hochiminh Industrial and Processing Zones Authority	
8:55 9:10	Recap of 1st EGM and Concept of 2nd EGM	Mr. Heinz Leuenberger, University of Applied Sciences and Arts Northwestern Switzerland	
9:10 9:30	Key note presentation: Eco-Industrial Parks in the context of circular economy	Mr. Smail Alhilali, Chief, Emerging Compliance Regimes Division, UNIDO	
9:30 9:45	Introduction to the EGM agenda, the e-discussion and the material sharing tool (via SLIDO)		

	SESSION 1 — POLICY AND GUIDELINES FOR ECO-INDUSTRIAL PARKS IN VIETNAM					
10:15 10:35	EIPs in the Decree 82	Mr. Vu Quoc Huy, Deputy Director General, Department for Economic Zones Management, Ministry of Planning and Investment				
10:35 10:50	EIP realization (environmental aspect) and recommendation for ministerial coordination	Ms. Nguyen Thi Hong Lieu, Department for Waste Management and Environment Improvement, National Environmental Agency, Ministry of Natural Resources and Environment				
10:50 11:00	EIP realization (technology and sciences aspect) and recommendation for ministerial coordination	Mr. Dinh Nam Vinh, Department of Technology Appraisal, Examination and Assessment, Ministry of Technology and Sciences				
11:00 11:30	EIP Minimum requirement (environment, economic and social aspect)	Mr. Nguyen Dinh Chuc, CENSUD, Vietnam Academy of Social Sciences Mr Ajeya Bandyopadhyay, KPMG India				
11:30 12:00						
12:00 12:15	Morning Summary and introduction of afternoon section	Mr. Heinz Leuenberger, University of Applied Sciences and Arts Northwestern Switzerland				

SESSION 2 – PRIVATE SECTOR AND ECO-INDUSTRIAL PARK INITIATIVES					
13:30 13:35	Introduction of the session	Moderator			
13:35 14:00	Financing solutions for EIP projects with private sector participation	Ms. Vu Tuong Anh, IFC-WBG Vietnam			
14:00 14:20	Private sector and Green Industry Park Development Initiatives	Mr. Do Quang Hung, First Deputy General Director, Dinh Vu Industrial Zone Joint Stock Company			
14:20 14:40	Private sector and investment on EIP initiatives at company level	Ms. Nguyen Thi Thu Ha, Deputy Director, A-Chau Commerce and Architect Ltd. Company (Tan Long paper mill)			
14:40 15:15	Discussion (via SLIDO)				

SESSIO	N 3 – ECO-INDUSTRIAL PARK	PLANNING AND MANAGEMENT
13:30 13:35	Introduction of the session	Moderator
13:35 13:55	EIP International Framework and EIP Toolkit	Mr. Alessandro FLAMMINI, Project Coordinator, Department of Environment, UNIDO
13:55 14:10	IZ management for EIP: International perspectives	Mr. Ernst Grigat, CEO, Chemiepark-Consult e.K.
14:10 14:25	Role of IZ Authority in EIP implementation in Vietnam	Mr. Le Hoang Duc, Da Nang High Tech Park and Industrial Park Authority
14:25 14:40	Case of Sonadezi: good Planning and Management in place	Mr. Chu Thanh Son, Deputy General Director, Sonadezi
14:40 15:15	Discussion (via SLIDO)	

SESSION 4 – INDUSTRIAL SYMBIOSIS AND SUSTAINABLE CITY		SESSION 5 - RESOURCE EFFCIENCY AND SUSTAINABLE ENERGY FOR ECO- INDUSTRIAL PARKS				
15:40 15:45	Introduction of the session	Moderator			Moderator	
15:45 16:05	Industrial symbiosis and sustainable cities	Mr. Ralph Sims, Massey University and member of the GEF Scientific and Technical Advisory Panel	15:45 15:45 16:05	Energy and EIP	Mr. Tobias Cossen, Principal Technical Advisor, GIZ Vietnam	
16:05 16:25	Co-processing industrial waste in cement plants: A practical application of industrial symbiosis	Mr. Bruno Fux, Director EcoCycle	16:05 16:25	Business models for renewable energy (solar and wind) in EIP	Mr. Timon Herzog, COO, GRIPS Energy AG	
16:25 16:45	Waste Water Reuse: An EIP initiative	Mr. Trieu Xuan Viet, Deputy General Director, PVTEX	16:25 16:45	Resource efficient and clean production (RECP) in EIP	Mr. Van Nhan Tran, VNVPC	
16:45 17:05	Kitakyushu's plan to develop Eco-city in Vietnam	Mr. Junichi SONO, Director of Kitakyushu Asian Center for low Carbon Society, City of Kitakyushu, Japan	16:45 17:05	RECP at companies level: saving money and protecting the environment	Mr. Le Ba Toan, Deputy Chief of Techical Division, Can Tho Chemical and Fertilizer company	
17:05 17:30	Discussion (via SLIDO)		17:05 17:30	Discussion (via SLIDO)	Company	

#### DAY 2, Friday, 9th November 2018

	SECTION 6 – EIP-RELATED TOPICS INTERACTION AND CLOSING					
8:00 8:15	Brief recap of day 1 and introduction of the agenda	Mr. Heinz Leuenberger, University of Applied Sciences and Arts Northwestern Switzerland				
8:15 8:20	Introduction how the WORLD CAFE section works	Mr. Dieter Mutz, Chief Technical Adviser of the Vietnam EIP project				
8:20 8:35	EIP Green Field Planning	Mr. Ernst Grigat, Owner & CEO, Chemiepark-Consult e.K.				
8:35 8:50	Waste management, recycling and resource efficiency at EIP	Mr. Dieter Mutz, Chief Technical Advisor of the Vietnam EIP project, UNIDO-MPI				
8:50 9:05	Energy at EIP	Mr. Timon Herzog, COO, GRIPS Energy AG				
9:05 9:20	Waste Water at EIP	Mr. Nguyen Viet Anh, University of Construction in Vietnam				
9:20 9:35	EIP and capacity building	Mr. Tran Minh Tuan, Acting Vice Director, Graduate Academy of Social Sciences, VASS				
9:35 11:00	INTERACTIVE DISCUSSION - WORLD CAFÉ Discussion topics: Policy and guidelines for EIP Planning and Management EIP Industrial symbiosis, waste management and resource efficiency EIP Energy Capacity Building and knowledge sharing					
11:00 11:30	Group presentation					
11:30 12:00	Discussion (via SLIDO)					
12:00 12:10	Conclusions and closing of the EGM	Mr. Tran Duy Dong, Director General of the Department for Local and Regional Economy cum National Project Director, Ministry of Planning and Investment				

#### List of participants

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