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SUSTAINABLE DEVELOPMENT GOAL 9
INDUSTRY, INNOVATION AND INFRASTRUCTURE

Sustainable cement production and plastic recycling



Ocean Plastic Turned into an Opportunity in Circular Economy Inception meeting

Le Thanh Thao, Country Representative
UNIDO Office Hanoi

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Overview of the presentation

- **UNIDO's approach to the cement sector in Vietnam**
- **Eco-Industrial Parks in Vietnam**
- **BAT/BEP application in plastic recycling in Vietnam**
- **Possible areas of collaboration**





1. UNIDO and the cement sector in Vietnam 1/3

Background

- The cement clinker production sector is third highest mercury emission source in Vietnam excluding the Hg emission from coal combustion
- The sector is also accountable for almost 20% of total of CO₂ emission.
- Therefore the sector has high potential to address multiple challenges with one coordinated intervention

- **Project with Vietnam in the cement sector with possible funds from the GEF is under development**
- **Overall objective of our intervention is to reduce the risk of mercury to human being and environment and mitigate climate change.**



1. UNIDO and the cement sector in Vietnam 2/3

Working areas and expected outcomes of the cement project in Vietnam

Interventions areas:

- Capacity building , revision of regulation, policies and standards
- Demonstration and replication of BAT/BEP for emission control, co-processing waste and other alternative fuel in cement kilns, and evaluation of the production of alternative cement (LC3)
- Financing scheme for investment
- Promotion of knowledge, experience and lesson sharing

Expected outcomes

- Strengthened institutional, regulatory, enforcement, and monitoring capacities for control, minimization and management of mercury
- Control and reduction of mercury inputs and outputs from the cement production industry
- Reduce CO2 emission (directly and indirectly)
- Improve energy and resources efficiency
- Identify financial options for investment
- Promotion of knowledge, sharing experience, improve coordination and environmental awareness raising

1. UNIDO and the cement sector in Vietnam 3/3



Partners

- Relevant Ministries (MOIT, MOC, MONRE, MPI) and other governmental entities
- National cement associations, cement production facilities
- Donors (GEF, ...), financing institutions (national and regional)

Partners

- UN Organizations (UNDP, ...)
- Vietnam Cleaner Production Center
- Academia (TU Vienna, SINTEF, Ecole Polytechnique Fédérale de Lausanne,...)



2. Eco-Industrial Parks (EIPs) 1/3

- UNIDO has been working with the Government of Vietnam (chiefly MPI) on the development of EIPs since 2014
- Project “Eco-industrial park initiative for sustainable industrial zones in Vietnam” (2014-2019), co-funded by Switzerland and GEF, was successfully concluded in June 2019
- A detailed waste management assessment was done with ENTEC at three industrial zones in Ninh Binh, Can Tho and Da Nang, including statistics on the type and quantity of waste produced.
- “Waste” are often co-products that can be re-used by another industry, thus fostering industrial symbiosis
- **This assessment includes information of waste that can be co-processed in cement kilns**



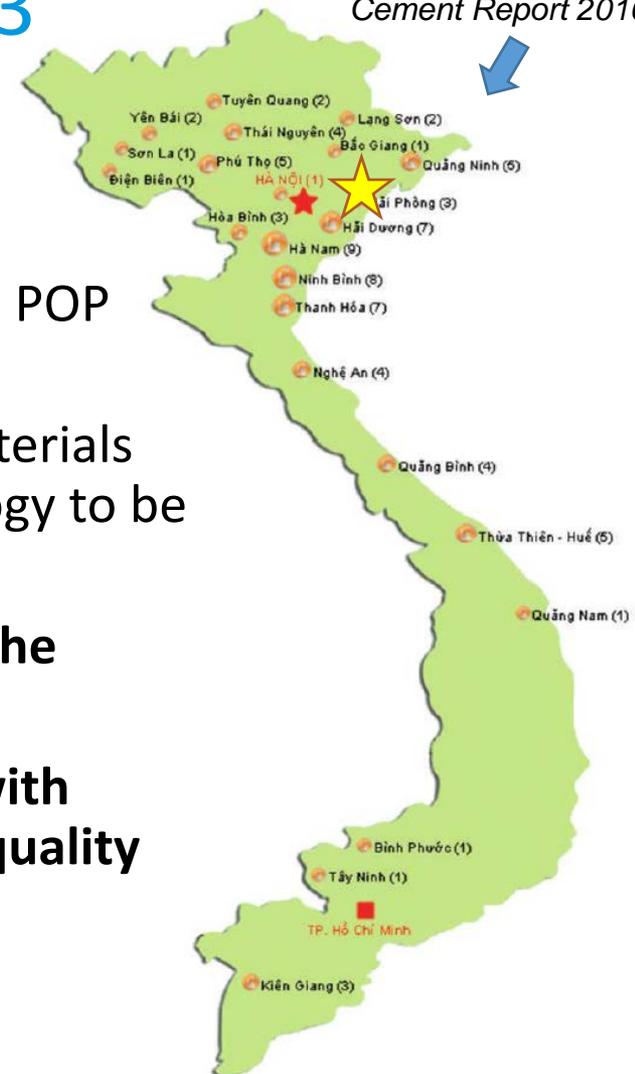
2. Eco-Industrial Parks (EIPs) 2/3

- A follow up UNIDO project, funded by Switzerland is in the pipeline (2019-2023).
 - It will investigate and possibly implement co-processing of waste from industrial zones.
 - This project, to be implemented together with MPI, will work in the following industrial parks/provinces:
 - Hiep Phuoc Industrial Park in Ho Chi Minh City
 - Amata industrial park in Dong Nai
 - Deep C industrial park in Hai Phong
- and will continue supporting industrial symbiosis in:
- Hoa Khanh in Da Nang city
 - Tra Noc 1&2 in Can Tho city

2. Eco-Industrial Parks (EIPs) 3/3

- A GEF7 project is also under development, possibly focusing on new provinces.
- The focus will be on energy efficiency, GHG and POP reduction.
- Co-processing of Alternative Fuels and Raw Materials (AFR) like plastics will be an important technology to be considered.
- **Some of the EIP we work with are located on the coast**
- **Ocean plastics can be co-processed together with specific industrial waste, to optimize the AFR quality requirements.**

*Rotary kiln cement lines in Vietnam
(Source: Vietnam Cement Report 2016)*





3. Project on Demonstration of BAT/BEP in open burning activities 1/3

- Project objective: Create resource efficient waste management system to reduce U-POPs emission through introduction BAT/BEP in open burning sources
- Expected outcomes:
 - Strengthened legislative capacity for introducing BAT/BEP in waste open burning source category
 - Enhanced institutional capacity to carry out BAT/BEP implementation
 - BAT/BEP implemented in open burning sources
 - Improved knowledge and understanding on BAT/BEP, risks of UPOPs and other contaminants released through open burning

3. Project on Demonstration of BAT/BEP in open burning activities 2/3



Demonstration sites are plastic recycling craft villages in Hung Yen province

3. Project on Demonstration of BAT/BEP in open burning activities 3/3

- The BAT/BEP interventions will be applied for plastic recycling activities, including installation of 3 production lines at household/SME level:
 - (i) new production line for recycling plastic scraps into plastic pellet, 10 tpd;
 - (ii) improved production line from current one, 2 tpd;
 - (iii) recycling line to produce plastic products (such as brick, roof tile) from plastic discards, 2tpd.
- Feasibility Study is under development
- Technical guidelines on segregation, preliminary processing of inputs materials and management of waste generated from the recycling of scrap plastic will be developed.



Possible areas of collaboration

- Coordination of our capacity building and revision of regulation, policies and standards activities in sector
- Collaboration in development of guidelines on cleaner production (BAT/BEP for co-processing of wastes)
- Joint approach to AFR co-processing (industrial waste + non-industrial plastics)
- Sharing of relevant studies and assessments





THANK YOU

t.t.le@unido.org



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