Green Chemistry activities in the Asia-Pacific Region

Leveraging Green and Sustainable Chemistry for Sound Management of Chemicals and Waste beyond 2020
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Anderson Moreira do Vale Alves
Regional Technical Advisor, Asia-Pacific Region
Nature, Climate and Energy (NCE/GPN/BPPS)
United Nations Development Programme (UNDP)

The United Nations Development Programme

UNDP advocates for integrating chemicals management priorities into national environmental and poverty reduction planning frameworks;

- Supports countries access financial and technical resources,
- Provides technical assistance and oversight support to improve the holistic management of chemicals
- Tackle unsustainable consumption and production patterns, including poor design and material choices, which lead to resource depletion, waste generation and pollution.

UNDP's expertise covers:

- Persistent Organic Pollutants (POPs), Ozone Depleting Substances (ODS), Mercury, Lead, and other heavy metals, waste management systems, including waste prevention, reuse/recycling, treatment and disposal. Safe and effective treatment of hazardous medical waste through innovative technologies is also underway.

Chemicals & Waste: Roadmap to Green Chemistry

Green chemistry is the design of chemical products and processes that reduce or eliminate the use or generation of hazardous substances.

Green chemistry applies across the life cycle of a chemical product, including its design, manufacture, use, and ultimate disposal.

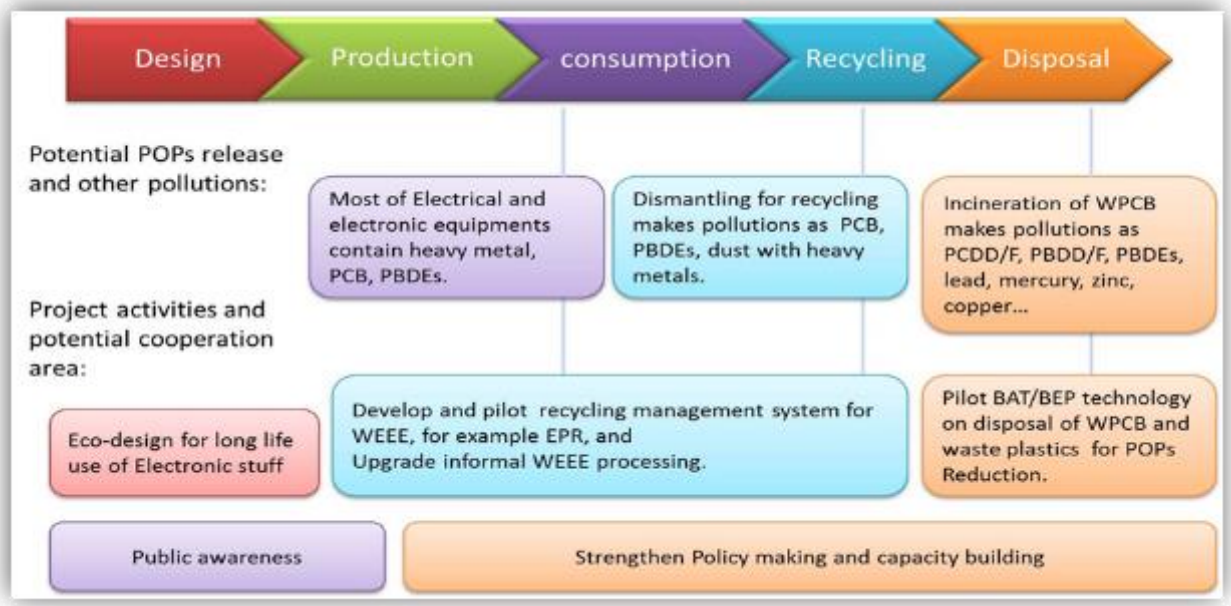
Green chemistry is also known as sustainable chemistry.

Source: https://www.epa.gov/greenchemistry/basics-green-chemistry

China: E-waste and Green Design

GEF ID: 4862
Status: Completed

Project´s Theory of Change:



Key Achievements:

- **6 EEE technical guidelines** on eco-design
- **One** Develop Eco-computer design launched in partnership with LENOVO
- **3 policy recommendations** on EPR subsidy funds
- **284,890 metric tons** of BFR containing plastic/resins performed/reused in this project
- **50% increase** in WEEE collected and processed

97.9% reduction in chemicals (SCCPs/HBCDD/PFOS/Flame retardants…)

Weight reduced: 446.6g (26.6% of the whole laptop;

Based on the 2018 sales, 3.9 metric tonnes of POPs flame retardants were reduced through the eco-design introduced.

Type: Zhaoyang K43c-80

Indonesia: “Electronic Plastics” free of PBDEs

GEF ID: 5052
Status: Completed

Baseline: PBDE was used as a mixture to make casings (Mobile Phones, Laptops, etc.) and PCBs (Printed Circuit Board). Casings and PCBs waste also imported to be processed by recycling industries, PBDEs would re-enter the circular process through cross-contamination or end up washed to rivers, ocean or open burned.

Project interventions:

Manufacturing Sector: Guidelines and by-laws to eliminate imports and use of PBDEs, create EPR System

Improve national capacities: replace PBDEs and implement QA programmes at manufacturers

Improve circularity: Introduce BAT/BEP for recycling sector

Sound Disposal: safely dispose contaminated plastics and improve recycling of other types of plastics

KM: collect experiences and support replications and scaling up

Key Achievements:

- **5 plastic processing units established**
- **1,000 metric tonnes of e-waste PBDEs contaminated plastics disposed of.**

Vietnam: “Greening” the Chemical Industry

GEF ID:
Status: Completed

Improved regulatory framework on chemicals control and roadmap to GC in selected sectors.

Green Chemistry Incentive Scheme designed and adopted

Demonstration in Electro-chrome Plating industry: Replacement of SCCP with non-POP chemicals

Key Achievements:

POP

Two plants accepted to phase out POPs

- Plato (Electroplating): 572 kg PFOS/năm
- Nishu (Paint): 2900 kg SCCP/năm

Hg

No plants use Hg.

Hg emits through electricity and fuel consumption.

Sai Gon Paper emits the most Hg at 5368 g Hg/year

U-POP

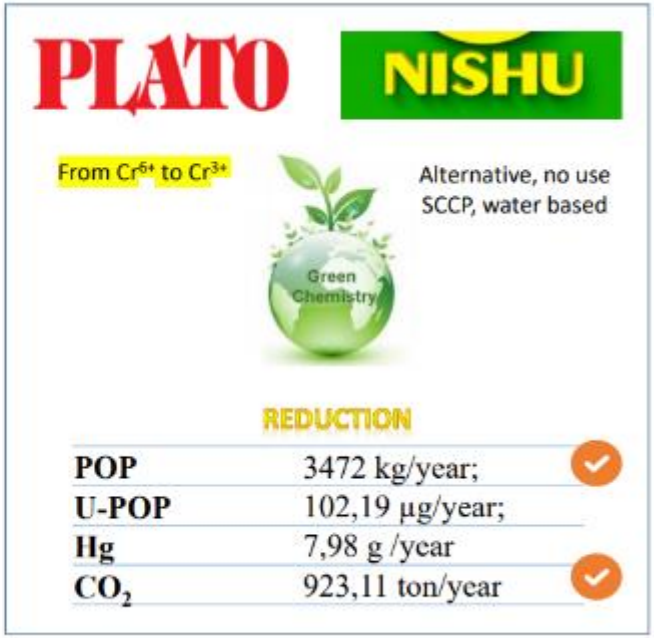
Mainly from the processing of recycled materials with insufficient pollution treatment

- Electroplating: recycled aluminum (0,26 – 2,32 gTEQ/year)
- Paper: recycled paper (0,13 – 3,08 gTEQ/year)
- Plastic: recycled plastic
- Others: electricity, Gas, Oil (<0,015 gTEQ/year)

CO_2

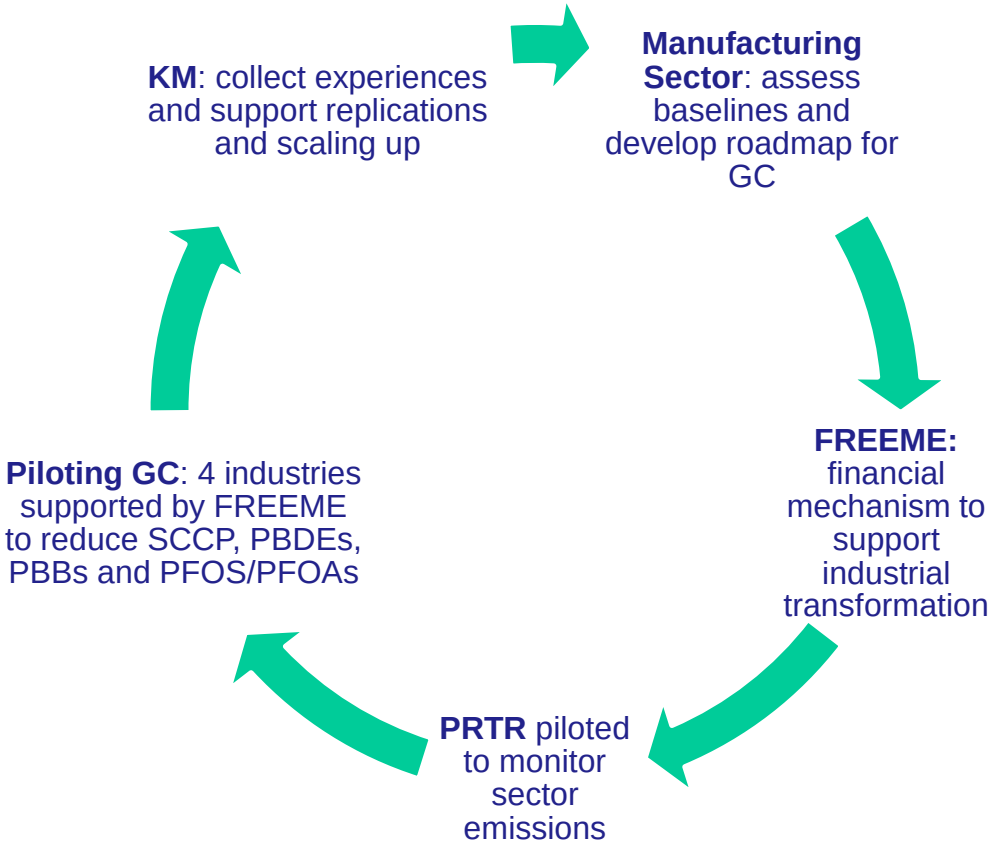
Emission from using electricity, fuel

Maximum in Alutec (Electroplating) 2,5 x 10^6 tons CO_2/year (due to use gas)



Philippines: Green Chemistry

GEF ID: 10686
Status: Under development (PPG)



Thank you!

Nature, Climate and Energy Group (NCE)
Global Policy Network (GPN)
Bureau of Programme and Policy Support (BPPS)
United Nations Development Programme (UNDP)

gef.registry@undp.org