Thailand's Journey in POPs Inventory and NIP Development: Challenges Faced, Lessons Learned, and Future Needs

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Thailand's Second NIP:

A 3-Year Journey Toward Strategic POPs Management

GOVERNMENT OF THE KINGDOM OF THAILAND

CABINET'S RESOLUTION

of 14th March 2023

NATIONAL ENVIRONMENT BOARD'S RESOLUTION

of 23th December 2022

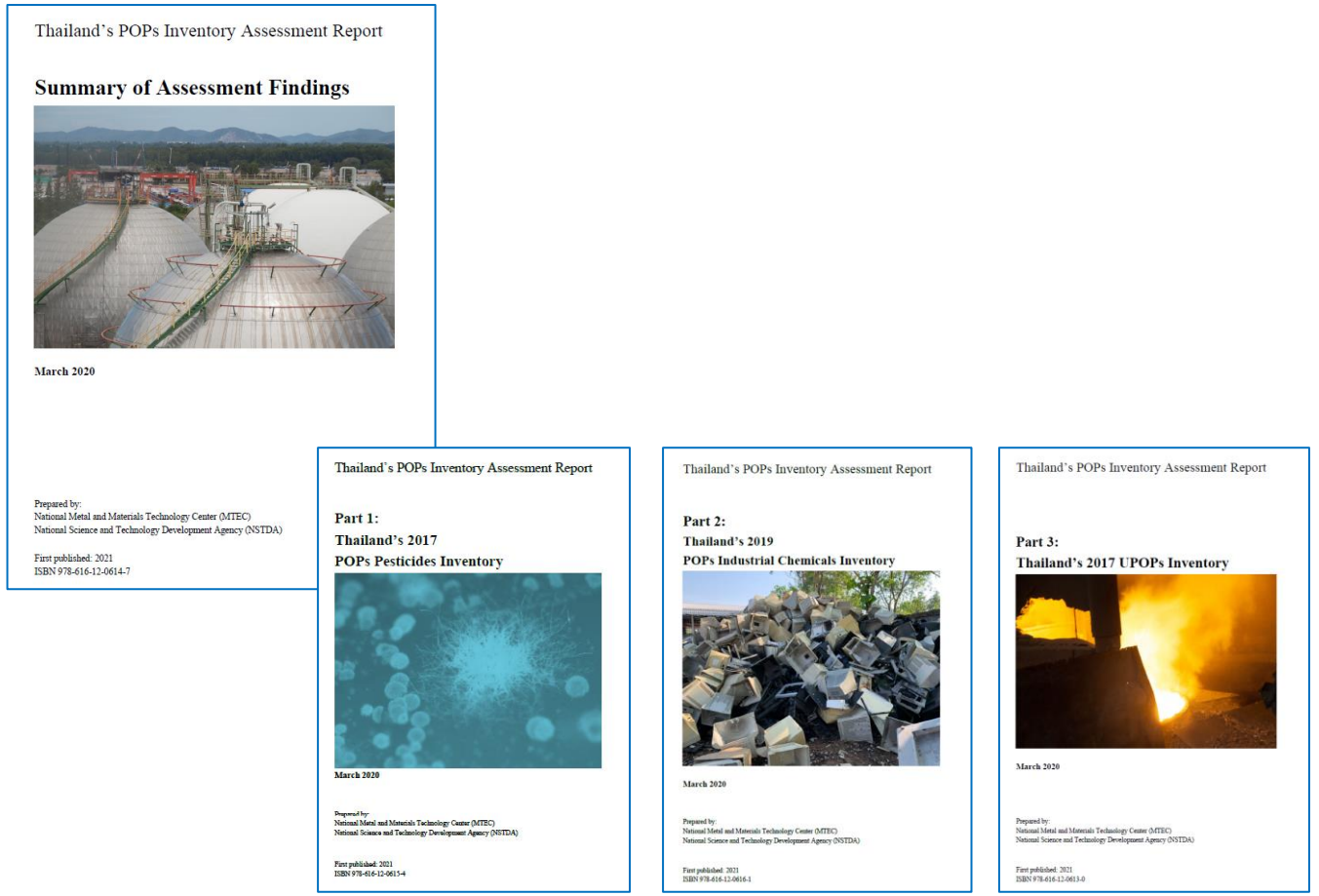
on the Approval of the Second National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants

In according with Article 7 of the Stockholm Convention (SC), each Party is required to develop its National Implementation Plan (NIP) under the SC, to transmit it to the Conference of the Parties (COP) within two years of the date on which the SC enters into force for such Party, and to review and update it as appropriate on a periodic basis.

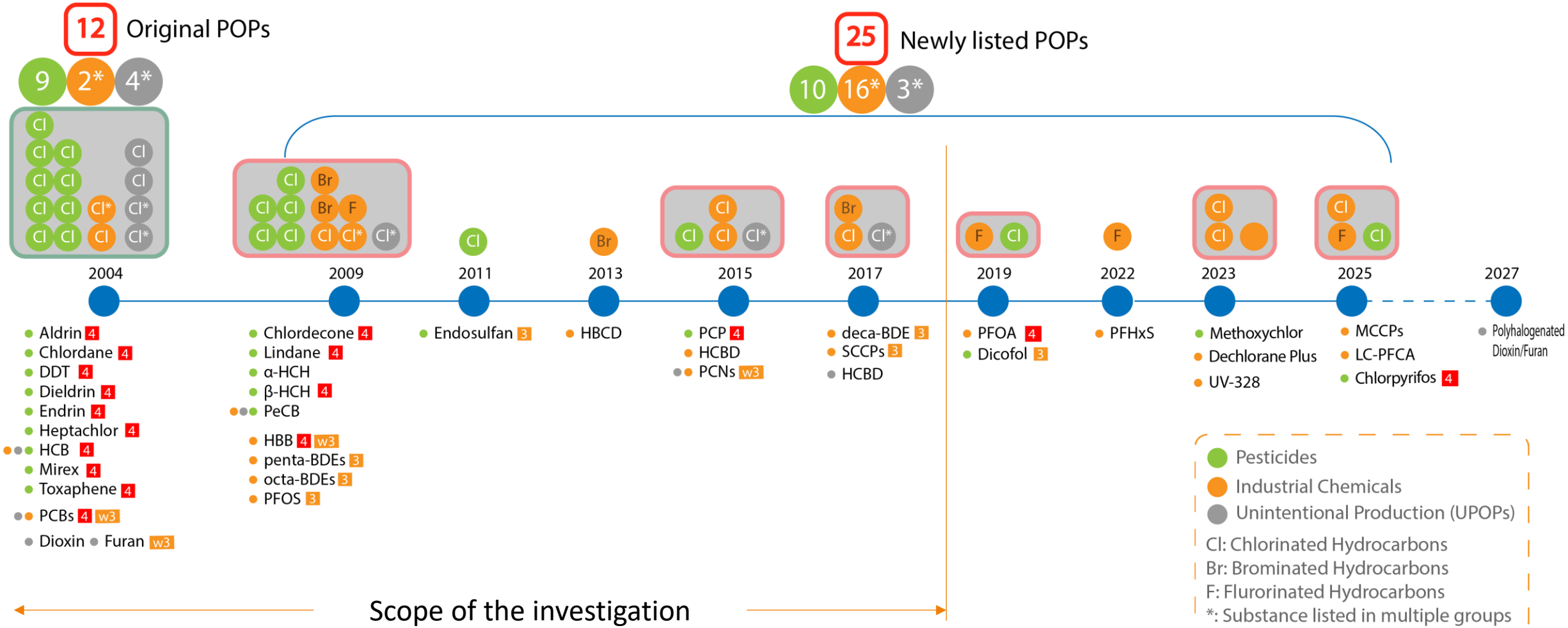
In this regard, Thailand has developed the Second National Implementation Plan (NIP) 2023 - 2027 by reviewing and updating the NIP during 2018 – 2022. The scope of this 2nd NIP covers 31 POPs and includes 16 plans of action. Then, it has been approved by the National Environment Board at its meeting on 23rd December 2022 and by the Cabinet at its meeting on 14th March 2023 decides:

1. Approval of the Second National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (2023 – 2027).

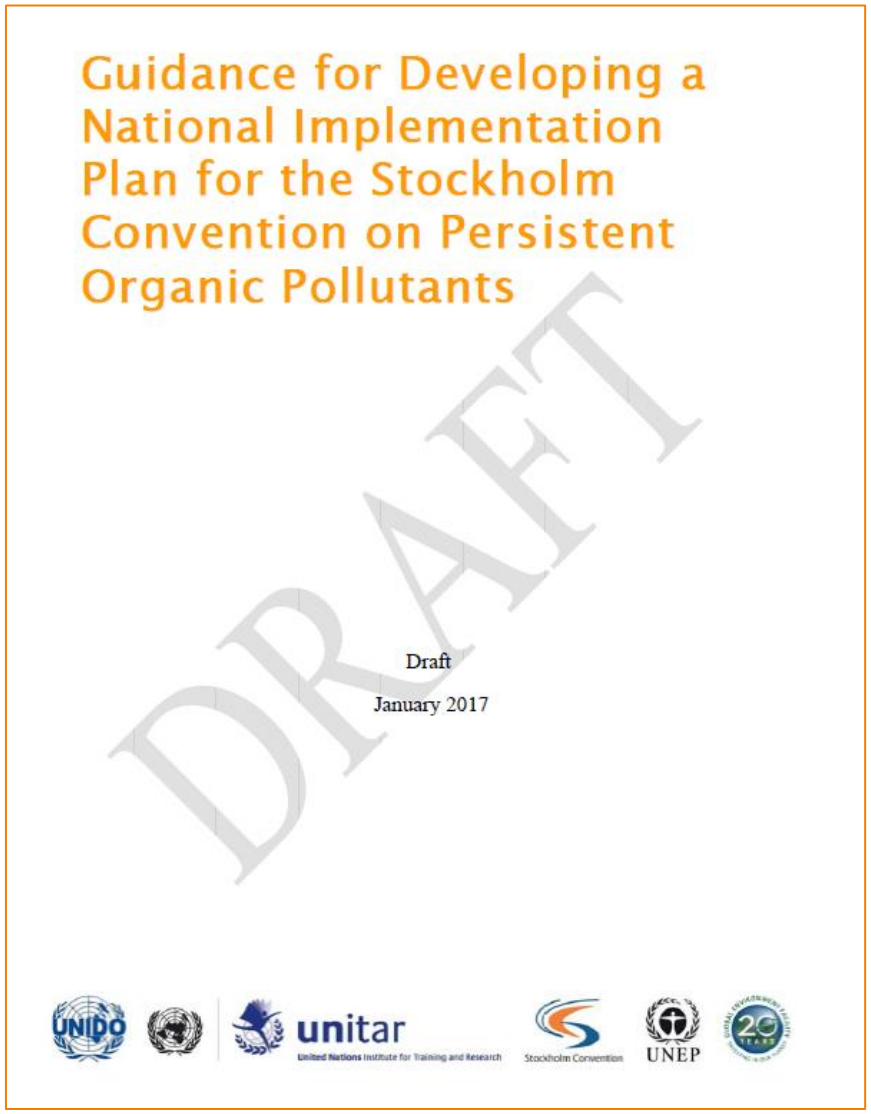
2. Assigned the related ministries and departments as well as all involved organizations to achieve the implementation of the plan in accordance with the obligations of a Party of the Stockholm Convention.



POPs Under the Stockholm Convention



Our approach: Follow UNEP guidance



1 Coordination mechanism and awareness raising

- 5 WGs (Supervision, POPs Pesticides, POPs Industrial Chemicals, UPOPs, Socio-Economic Impacts)
- Lots of awareness raising seminars

2 Inventory of new POPs and review of 12 original POPs

- Inventory of POPs Pesticides
- Inventory of POPs Industrial Chemicals
- Update on the releases of uPOPs

3 National capacities assessment and priority setting for management of POPs

- National capacity assessment
  (Legal frameworks, monitoring, analytical and enforce capacities, etc)
- Basic risk assessment
- Prioritization of new POPs risk reduction options
  - Criteria for prioritization

4 NIP formulation, endorsement and submission

- Formulate action plans
- Endorsement workshop

Key challenges

Inventory — Finding What's Hidden

1. **Invisibility of 'modern' POPs in products and materials**
   - ➢ low awareness across stakeholders
2. **Lack of upstream and lifecycle data**
   - ➢ especially for imported or recycled goods
3. **Fragmented responsibility & limited access to samples**
   - ➢ fear of consequences slows cooperation

Impact:

Extremely difficult to build a complete and reliable inventory. We had to rely on estimates, selective sampling, and screening methods just to pinpoint major sources and understand the scale of the problem.

Prioity Setting — Choose Where to Act

1. **No long-term systemic monitoring data**
   - ➢ data gaps across media and time
2. **Lack practical tools or systems to track POPs across their lifecycle**
   - ➢ Hard to justify/ target interventions
3. **Limited knowledge on management options**
   - ➢ slows regulatory and policy response

Impact:

Lack of data and risk communication tools made it hard to prioritize, slowed consensus, and weakened the case for urgent action.

Key challenges (2)

Action Plan **Turning Data into Action**

1. **System lock-in**
   - ➢ institutions are not designed to manage emerging POPs throughout their lifecycles
2. **Policy frameworks are not keeping up with emerging POPs**
   - ➢ regulations and tools needed for action often don't exist when risks are identified
3. **Weak operational capacity**
   - ➢ local agencies lack manpower, tools, or mandates

Impact on NIP Development:

- ❖ Difficult to design practical action plans due to the absence of a coherent system to manage emerging POPs across their entire lifecycle, including use, recycling, and disposal
- ❖ Insufficient capacity at national and local levels made it hard to propose actions that were both realistic and strategic
- ❖ Without systemic or institutional change, the increasing number and complexity of POPs will continue to burden local authorities
- ❖ This will make sustainable implementation even more challenging in the future

Our Solutions

Raising Awareness to Build Momentum

- Explain risks and opportunities to policy makers and stakeholders
- Provide examples of products that might contain POPs
- Positioned POPs management as **preventive action**, not just compliance

Developing and Using Screening Methods for POPs in Products

- Developed low-cost, rapid screening methods for PBDEs, HBCD, and S/MCCPs
- Enabled initial identification of contaminated products and materials
- Provided practical evidence to engage industry and inform policymakers

Forecasting Future Waste Burden Using Models

- Applied dynamic substance flow analysis to estimate future EoL flows
- Helped anticipate volumes of POPs in e-waste, foams, and recyclables
- Supported long-term planning for **waste management infrastructure**

R&D Needs for Future NIPs & POPs Management

1 Data Generation for Informed Decision-Making

- ❑ **Develop screening and identification methods** for both listed and emerging POPs (e.g., PFAS, UV-328, DP)
- ❑ **Advance non-targeted and group-based analysis approaches** (e.g., suspect screening for flame retardants, plasticizers, surfactants)
- ❑ **Improve decision-support tools** for identifying POPs in waste to authorize safe treatment and disposal options

2 Intelligence and Substance Group Monitoring

- ❑ **Study POPs by functional group** to anticipate future listings and streamline inventory efforts
- ❑ **Establish regional knowledge-sharing networks** to avoid duplicated testing and fill data gaps collaboratively
- ❑ **Promote global systems** for requesting/communicating substance content data from brand owners or producers

R&D Needs for Future NIPs & POPs Management

3 Lifecycle Management and Risk Reduction Solutions

- ❑ **Develop tracking systems** for monitoring POPs across product lifecycles (e.g., digital product passports, CiP platforms)
- ❑ **Improve predictive models** to estimate future POPs in stock and their end-of-life flows
- ❑ **Advance research on safe alternatives and disposal technologies**, particularly for contaminated foams, plastics, and electronics

4 Capacity Building and System Support

- ❑ **Strengthen national and regional lab capacity** for POPs testing, including training on new methods
- ❑ **Promote multi-stakeholder engagement** early in the POPs identification and NIP planning process
- ❑ **Build institutional mechanisms** that connect research, regulation, and real implementation—from national to local level

5 Enabling Data Use for Policy and Action

- ❑ **Strengthen capacity of regulators and policymakers** to interpret and apply scientific data in planning and enforcement
- ❑ **Develop policy-relevant formats and risk communication tools** to make data more actionable and persuasive
- ❑ **Foster evidence-based culture** through training, guidance documents, and decision-support systems

Thank you for your attention

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