



# Ethiopia PCB Elimination Experiences UNITAR Webinar



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**August 28/2024**



## Presentation Outline

- **Background**
- **Project Profile**
- **Accomplishments**
- **Challenges**
- **Lesson Learned**



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## Background

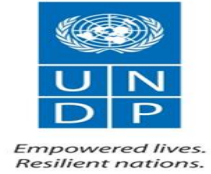


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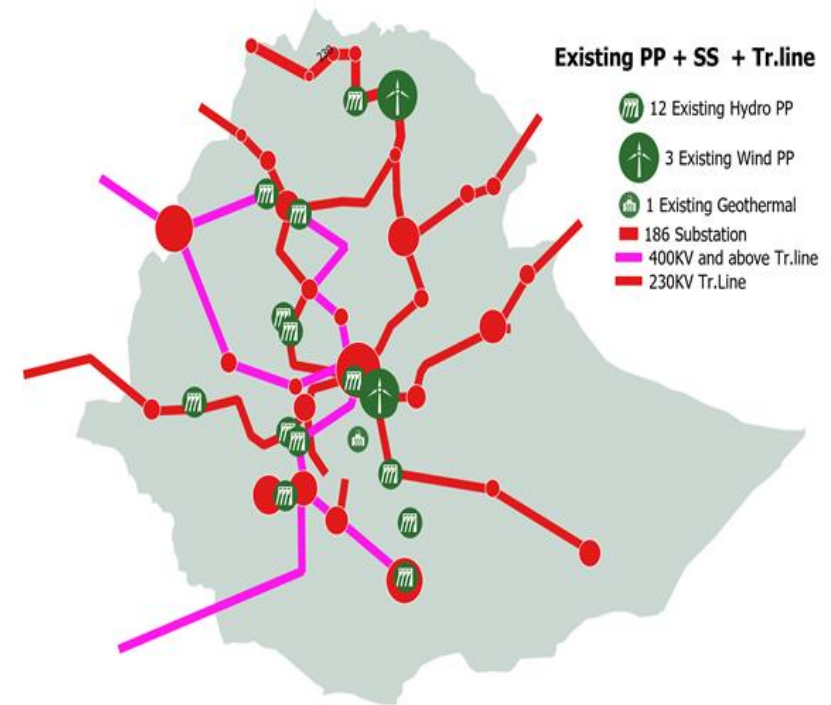
- **Ethiopia is a country located in the Horn of Africa**
- **Capital: Addis Ababa**
- **Population: Approximately 120 million (as of 2023)**
- **Area: 1.1 million square kilometers (426,400 square miles)**



## Historical Background of Electrical Companies



- **Ethiopian Electric Light and Power Authority (EELPA), established in 1956.**
- **Three major electrical Companies**
- **Ethiopian Electric Utility (EEU)-**
- **42,797 distribution transformers and 20,000 employees**
- **Ethiopian Electric Power (EEP)- 22 power generating stations**
- **Ethio-Engineering group major transformer manufacturer**





## Project Overview



- **GEF -6 Chemical window**
- **Medium size project with total budget ~USD 2 million plus USD 150K UNDP- core funding**
- **EFCCC, UNDP and UNITAR joint project**
- **EEU, EEP & EEG - with key roles as owners of PCB**
- **4 year project, starting from August 2019 - 2023**
- **It is a Phase-I project , next step/ phase-II TBD**  
**Manpower one**



## Project Objective – General



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- **Overall** : strengthening capacity of national stakeholders to manage PCB as well as to achieve its elimination.
- **Specific** : identification and disposal of 150 t of PCB-contaminated equipment and waste.







# Project Background – Rationale

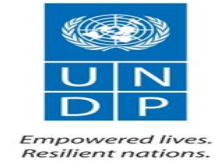


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## Project components



- **Strengthening of legal frameworks, administrative processes and technical preparedness for the sound management of PCBs in Ethiopia**
- **Strengthening national capacity for PCB management throughout the lifecycle**
- **ESM of PCBs liquids and equipment in use or out of service**
- **Monitoring, evaluation and replication**





## What has been accomplished so far



- **Directive “A DIRECTIVE ISSUED TO PHASE-OUT THE USE OF POLYCHLORINATED BIPHENYLS MATERIALS AND POLYCHLORINATED BIPHENYL CONTAMINATED MATERIALS” both in English and Amharic is prepared and came in to effect**
- **Inventory data of all transformers owned by Ethiopian Electric Utility (EEU) with all necessary information collected**
- **Data base created**
- **Theoretical and practical training in collaboration with UNITAR was given on Inventories, Sampling and Screening of PCB transformers on basis of Training of Trainers (TOT) approach.**



## Treatment characterization



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**We employ the following category for treatment**

- **Low-concentration PCBs ( $\geq 50-500$  ppm): Refilling**
- **Medium-concentration PCBs  $\geq (500-5000$  ppm):  
Dichlorination**
- **High-concentration PCBs ( $>5000$  ppm): Incineration is  
generally the most suitable method for disposal.**



# Data Collection



Names of the utilities and industries	Number of equipment Inventoried		Number of Samples collected
Ethiopian Electric Utility (EEU)	5617		1842
Ethio-Engineering Group (EEG)	168		168
Ethiopian Electric Power (EEP)	226		226
<b>Total</b>	<b>6011</b>		<b>2236</b>





## Data Collection



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- chromatography analysis was carried out on the samples,
- with findings of PCBs for **(273)** pieces **(160.5 tm)** of equipment, amounting to PCB-containing or PCB-contaminated equipment and waste, was found



## Laboratory analysis under process



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## Data base



- **PMU With the assistance of UNITAR has supported the country to establish **National Chemicals Registers System** by establishing chemical management software.**
- **It will be operation by MoI**
- **The national PCB tracking system will be part of the ongoing chemical registry database system.**
- **PCB management database was developed and went operational**



Cont . . .



- **Strengthening the Institutional capacity of ECAE laboratory – supplied Chemical reagents and other inputs**
- **Communication Strategy for the Control and Management of Polychlorinated Biphenyls (PCBs) and other Hazardous Chemicals in Ethiopia, (2020-2025) prepared**
- **Company to dispose of PCB was to has been hired**
- **ESIA for the project is under process- report submitted.**



Cont . . .



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## Challenges



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- **No national capacity of PCB management**
- **Lengthy Procurement of Chemical reagents and other input**
- **And unavailability of supplier for chemical reagents and other input for the laboratory- re-advertised**
- **Expiry of chemicals before the screening was conducted**
- **Lack of capacity to conduct the GC in the national lab**
- **Lack of expertise in procurement of PCB treatment service (TOR preparation and advert)**
- **Delay in construction of PCB store facility**
- **None–response for export notification –BC**
- **Unitability of shipping companies due to the geo political landscape in the red sea**



## Lesson Learned



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- **National Capacity built- laboratory capacity strengthen**
- **Partnership with UNITAR**
- **National Chemical registry system developed**
- **Early export notification letter**
- **Awareness developed**
- **Complete national PCB data**





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- **Thank you for your attention**