



**TOWARD
ZERO EXPOSURE**
Clean Electronics Production Network



2022/23
Second
Annual Report

**A COMMITMENT PROGRAM TO PROTECT WORKERS
FROM CHEMICAL HAZARDS IN THE ELECTRONICS SUPPLY CHAIN**

Contents

- 1 Welcome**
- 2 Our Signatories**
- 3**
- 4**
- 5 Collaborating To Move the Industry Forward**
- 6 Building Momentum and Expanding Reach**
- 7**
- 8 Setting the Stage for Future Progress**
- 9**
- 10 Signatory Leadership Beyond Program Goals**

Welcome

The Toward Zero Exposure program launched in 2021 with an ambitious goal — to protect workers from exposure to chemical hazards in the electronics supply chain. We made significant progress in the first year, creating a strong, lasting foundation upon which to build momentum for this work.

This second year has focused on gathering feedback and refining the program. We have continued to communicate closely with CEPN members, our NGO Advisors and other stakeholders. With their feedback and support, we have launched a streamlined and strengthened TZE V2.0. We also now have a 2nd Round of Priority Chemicals released by CEPN and welcomed a new Signatory. Meanwhile, our Signatory and program influence extends to at least 30 countries around the world!

With these advancements, we are well-positioned to continue expanding our reach in the form of new partnerships, additional Signatories, and even more tools and resources. We welcome companies who share TZE's goals to join us in paving the way for a safer, more tenable future for our industry. Together, we are working to protect workers from exposure to hazardous process chemicals in the electronics supply chain.

A New Signatory Has Joined TZE

Fairphone has joined Signatories Apple, Dell, and HP Inc. as a Toward Zero Exposure program Founding Signatory.

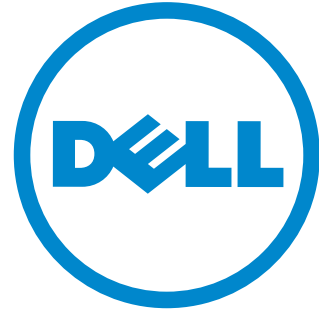
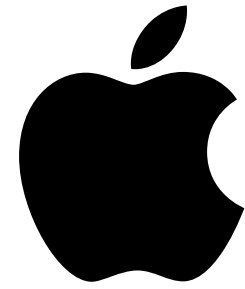
2.0

Introducing TZE V2.0

TZE undertook a major revision process in 2023 to streamline and refine the program. With these changes, TZE V2.0 can better support current and future Signatories.

Expanding Priority Chemicals List

CEPN launched the 2nd Round of Priority Chemicals — 16 additional process chemicals to be prioritized for elimination or substitution in electronics manufacturing.



Our Signatories

TZE Signatories commit to coordinated efforts to reduce workers' exposure to hazardous chemicals. These companies are leaders in the field who regularly work to improve chemical management practices across the global electronics industry.

The TZE program supports Signatories in this work by helping to align practices, tools, and priorities.

Participation in this program increases opportunities for collaboration, helps boost efficiency, and strengthens the credibility of progress being made to protect workers.



Welcoming New Signatory Fairphone

Fairphone has joined the TZE program as its newest Founding Signatory. Based in Amsterdam, Fairphone produces smartphones designed with a focus on sustainability and equity. They minimize the environmental impact of their phones by prioritizing longevity, easy repairs, and modular upgrades. With their business practices, they aim to build a fairer electronics industry, one that is focused on responsible sourcing and worker welfare.

In their first year with TZE, they have shown a remarkable investment in worker safety.

"We strongly feel the Towards Zero Exposure program will help Fairphone identify chemical risks at the industrial workplace better, actively building an even stronger culture of safety at our suppliers' factories. Our existing outreach programs to amplify the workers' voice can be leveraged to empower workers to identify potential hazards and implement solutions. We are hoping that together, we will be able to develop scalable solutions for the electronics industry, ensuring a safe workplace for everyone."

— Remco Kouwenhoven, Social Innovation Lead, Fairphone

Second-Year Signatories

Three of our Founding Signatories have concluded their second year of the TZE program. They have been invaluable partners in helping to support the growth and development of TZE.

Apple

Apple is committed to creating the best products in the world in a way that protects the environment, and safeguards the rights, safety, and dignity of the people working across our supply chain. Advancing smarter chemistry is integral to upholding this commitment.

— Apple

Dell

Dell Technologies prioritizes its social and environmental responsibility assurance and engagement programs. Our program is among the largest in the industry, with a global supply chain to match. We work tirelessly to ensure responsible manufacturing processes in our operations and supply chain. By collaborating with CEPN and participating in the Toward Zero Exposure program, Dell can scale support for industry-wide efforts to ensure the safe use of process chemicals.

— Macani Toungara, Director, Social and Environmental Responsibility, Dell Technologies

HP

As a Founding Signatory of Toward Zero Exposure, HP Inc. has committed to aligned, structured, long-term practices that will protect workers throughout the manufacturing process from exposure to potentially hazardous chemicals. Our company aspires to a world where its products and operations use materials and chemicals that cause no harm. Working with CEPN has helped affirm and reinforce HP's commitment to this effort.

— Kirsty Stevenson, Senior Director Sustainable Impact and Compliance, HP Inc.

Collaborating To Move the Industry Forward

A safe, healthy work environment is a basic human right.

Protecting workers from exposure to toxic chemicals is the right thing to do.

The Toward Zero Exposure program unites companies and supports making this goal a reality.

By aligning practices, tools, and priorities, we can make actionable progress in the effort to protect workers on a global scale. Working in collaboration, the Toward Zero Exposure program provides tools that optimize and streamline the effort to monitor, document, and communicate around process chemicals data. Together we can build upon each company's individual efforts, to make a bigger, more lasting impact than would be possible alone.

TZE Signatories pledge to uphold six commitments to protect workers from harmful process chemicals in manufacturing.



ELIMINATE EXPOSURES TO PRIORITY CHEMICALS



COLLECT PROCESS CHEMICAL DATA



FOSTER WORKER ENGAGEMENT AND PARTICIPATION



REACH INTO DEEPER TIERS



VERIFY AND REPORT

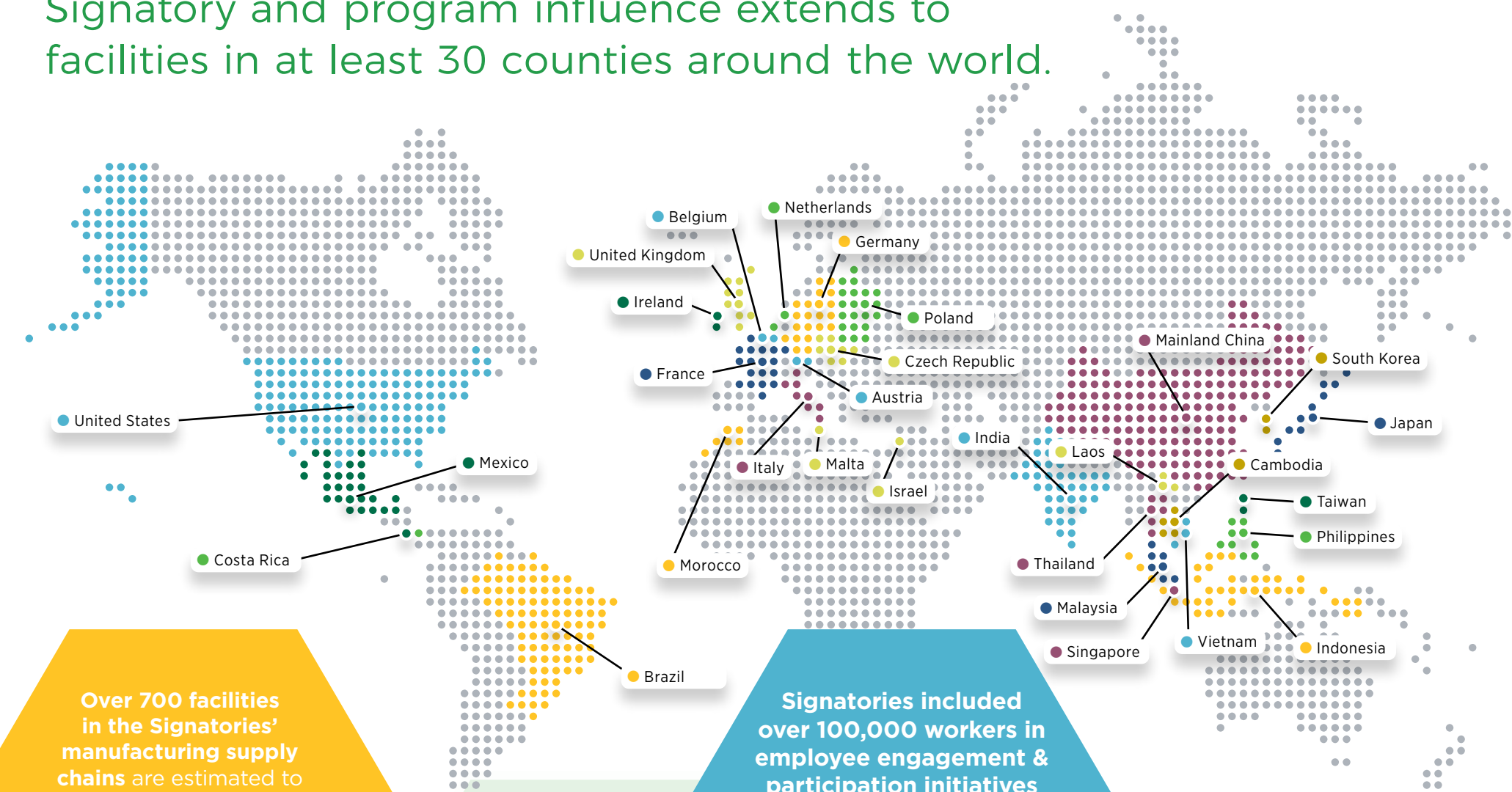


CONTINUOUSLY IMPROVE

Building Momentum and Expanding Reach

Over the past twelve months, Toward Zero Exposure has welcomed new partners into the fold and built upon a growing momentum in the movement to improve worker chemical safety within the electronics supply chain.

Signatory and program influence extends to facilities in at least 30 countries around the world.



Over 700 facilities in the Signatories' manufacturing supply chains are estimated to have already substituted the 1st Round of Priority Chemicals. Many thousands of employees work in production in those facilities.

Over 200 distinct supplier companies have been influenced to improve worker chemical safety by TZE Signatories

Signatories included over 100,000 workers in employee engagement & participation initiatives such as Joint Chemical Safety Committees, surveys about working conditions, or grievance hotline awareness.

Over 1,000 facilities in the Signatories' manufacturing supply chains have collected data on process chemical use with the Process Chemical Data Collection Tool (or equivalent).

Setting the Stage for Future Progress

This year has been one of evolution. With the launch of a second round of priority chemicals and TZE V2.0, the program is well positioned to grow in strength and influence through 2024 and beyond.

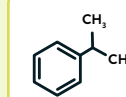
Launching TZE V2.0

Toward Zero Exposure is a true collaborative effort. As the program develops, the perspectives and insights of Signatories, CEPN members, CEPN's NGO Advisors, and other key stakeholders are essential.

During the second year of the program, TZE made key revisions based on stakeholder feedback, strengthening the program to increase its value and encourage participation. TZE V2.0 is published and will be implemented by all TZE Signatories by July 2024. TZE V2.0 features simplified program requirements and greater flexibility. Notable revisions include:

- **Phased implementation of Chemical Priority rounds.** With this update, Signatories will know the priority chemicals prior to committing to eliminate them, and are able to choose when to initiate each round.
- **Improved harmonization with other programs** by aligning with:
 - ◻ The Global Electronics Council's EPEAT Draft Reduction of Chemicals of Concern Criteria.
 - ◻ The Responsible Business Alliance's Specialty Validated Assessment Program (SVAP) on Chemical Management as well as available training resources.
- **Reduced complexity.** Requirements in several areas have been clarified and streamlined to make the program more accessible.

Announcing the 2nd Round of CEPN Priority Chemicals



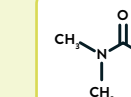
Cumene
CAS #98-82-8



1,2-Dichloroethane
CAS #107-06-2



Diethylene glycol dimethyl ether
CAS #111-96-6



Dimethylformamide
CAS #68-12-2



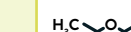
2-Ethoxyethanol (ethylene glycol monoethyl ether)
CAS #110-80-5



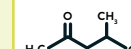
2-Ethoxyethyl acetate (ethylene glycol monoethyl ether acetate)
CAS #111-15-9



Ethylbenzene
CAS #100-41-4



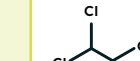
2-Methoxyethanol (ethylene glycol monomethyl ether)
CAS #109-86-4



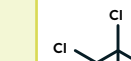
Methyl isobutyl ketone
CAS #108-10-1



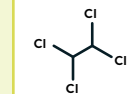
Nitromethane
CAS #75-52-5



Pentachloroethane
CAS #76-01-7



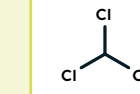
1,1,1,2-Tetrachloroethane
CAS #630-20-6



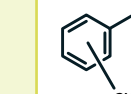
1,1,2,2-Tetrachloroethane
CAS #79-34-5



Tetrahydrofurfuryl alcohol
CAS #97-99-4



Trichloromethane (Chloroform)
CAS #67-66-3



Xylenes
CAS #1330-20-7

CEPN has identified and published a 2nd Round of Priority Chemicals.

This round includes 16 solvents used in electronics manufacturing. As TZE Signatories implement this round, they will focus on eliminating and substituting the usage of these chemicals in cleaning applications. Each priority chemical is selected by a thorough and rigorous analysis. These lists of priority chemicals help equip TZE Signatories, as well as the broader electronics manufacturing industry, with the knowledge and coordinated focus necessary to continue improving the safety of their workers.

Signatory Leadership Beyond Program Goals

The electronics industry operates on a complex and global scale. Factory workers across the world have benefitted from improved health and safety practices as a result of TZE Signatory leadership and influence.



Apple Environmental Progress Report, 2023

Apple Annual Supply Chain Progress Report, 2023.



Dell Technologies ESG Report, FY23



Fairphone Impact Report, 2022



HP Inc. Sustainable Impact Report, 2022

Supporting Industry-Leading Progress

The Toward Zero Exposure program is designed to complement Signatories other projects and priorities, with TZE specific goals and requirements representing only one part of the ongoing efforts that Signatories have undertaken to improve worker safety. Over the past year, Signatories have demonstrated far-reaching commitments to progress beyond the requirements of the program.

Apple

Apple performed toxicological assessments on over 1,300 materials and approved 58 safer cleaners for use in their supply chain in 2022.

Dell

In FY23, Dell provided over 120,000 hours of social and environmental training to supply chain team members, with expanded mobile training programs to improve workers' health and safety.

Fairphone

In the past year, Fairphone benefited more than 54,000 people through their improvement programs and interventions in the supply chain.

HP

In 2022 HP reached 396,000 workers through worker empowerment programs.

HP has worked with suppliers to assess hazards using the GreenScreen® for Safer Chemicals and to switch to safer alternatives where necessary.

Scaling Efforts Through Collaboration

Toward Zero Exposure is a collaborative effort. This year's growth and program enhancements are only possible because of the hard work of many individuals and organizations working towards a collective goal.

Beyond the work TZE Signatories have accomplished in their own companies, they have contributed a number of suggestions for clarifying the requirements for TZE version 2.0, serving as essential thought partners as the program continues to develop.

In addition to TZE Signatories, essential support has come from the following:

- CEPN members and other stakeholders provided comments on TZE Program revisions as well as developed and piloted the worker survey.
- CEPN's Technical Review board spearheaded the work to recommend priority chemicals during the selection process.
- Peer organizations continued expanding efforts to certify safer alternatives.
- TZE's verification partner TÜV Rheinland (Guangdong) Ltd. provided helpful feedback to clarify program requirements.

Several organizations have advanced the tools and resources that have come out of the TZE program. These are highlighted in the 2022 Annual Report.

The Power of Alignment

Through group effort, companies have the power to affect substantial change across the supply chain. Participating in the TZE program provides a forum and a structure to communicate and receive recognition for the work companies do to protect workers from hazardous process chemicals.

Company actions are guided in a structured program with researched tools and actions backed by the credibility of industry leaders and NGOs.

The Toward Zero Exposure program provides clear documentation, benchmarks, and information resources to guide Signatories through the program's three-year commitment milestones and annual commitment requirements.

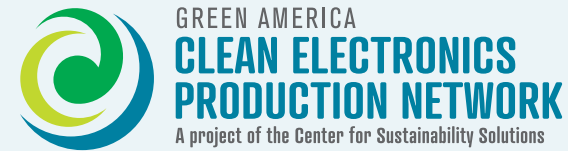
Companies interested in joining the effort to improve worker safety by becoming a TZE Signatory should contact info@towardzeroexposure.org.

BY MAKING THE COMMITMENT TO JOIN TZE,

companies publicly indicate that
they value worker safety.

BY FOLLOWING THE TZE PROGRAM GUIDELINES,

they demonstrate it.



ABOUT THE CLEAN ELECTRONICS PRODUCTION NETWORK (CEPN)

[The Clean Electronics Production Network](#) unites diverse stakeholders to understand, address, and eliminate workers' exposure to toxic chemicals in the electronics supply chain. The collaborative multi-stakeholder innovation network launched in 2016 as part of the Center for Sustainability Solutions at Green America. The Network addresses complex workplace health and safety challenges in the electronics supply chain, and developed the Toward Zero Exposure program to integrate and accelerate their work.

[More than 20 member organizations make up the network](#), including electronics brands and suppliers, environmental NGOs, labor and worker representatives, ecolabels and representatives from academia and government agencies.

CEPN members commit to working together in the service of a shared goal of moving toward zero exposure of workers to toxic process chemicals in electronics manufacturing.



ABOUT GREEN AMERICA'S CENTER FOR SUSTAINABILITY SOLUTIONS

[Green America's Center for Sustainability Solutions](#), CEPN's parent organization, brings together diverse groups of stakeholders to solve the complex sustainability problems that no individual business, organization, or leader can solve alone. The Center's goal is to shift whole industries and sectors toward social, environmental and economic sustainability.



towardzeroexposure.org



TOWARD ZERO EXPOSURE
Clean Electronics Production Network

Clean Electronics Production Network
1612 K Street NW, Suite 1000
Washington, DC 20006
info@cleanelectronicsproduction.org