**Solidarity Center and**

**Asian Network for the Rights of Occupational and Environmental Victims (ANROEV)**

**Comments to UN Special Rapporteur on Toxics and Human Rights**

**Response to Call for Input on Gender and Toxics**

**Sent via email to** [hrc-sr-toxicshr@un.org](mailto:hrc-sr-toxicshr@un.org)

**Introduction**

The inputs in this document target the impact of hazardous substances (toxics) used in the Electronics industry and their impact on the health of workers and the different ways they impact men, women, and young children. It also discusses the predisposition of a certain gender to exploitation even gender-based violence and harassment[[1]](#footnote-2), based on their status in society that is reflected at the factory level and they are also more likely to face increased exposure to the toxic substances.

The inputs are based on the Solidarity Center’s work on occupational health and safety as well as on Gender-Based Violence and Harassment (GBVH). It is also based on the work of our partner network – the Asian Network for the Rights of Occupational and Environmental Victims ([ANROEV](https://anroev.org/victim-story/)), which is a victim led network an has members in more than 15 Asian countries.

After decades of harm to workers and their unborn children caused by the electronics industry’s negligent use of harmful chemicals, States and businesses must acknowledge that they neglected to protect their workers from exposure to toxic chemicals. Further, they must compensate the employees made sick, and invest far more in preventing future harm than was spent in the past, up and down the supply chain.

**The scale of the Problem**

There is a long history of identifying, documenting, and addressing the toxic impacts on women’s and children’s health in electronics workers in Silicon Valley and around the world. The gendered nature of the electronic assembly means that a majority of the global electronics production workforce consists primarily of women of childbearing age. An estimated 18 million workers produce and create a $1.7 trillion trade in electronics products, according to the global union [IndustriALL](https://www.industriall-union.org/sites/default/files/uploads/documents/Global-Worker/2015-1/en_electronics.pdf) and [Electronics Watch](https://electronicswatch.org/how-to-protect-workers-from-chemical-hazards-in-electronics-supply-chains-guidance-for-public-buyers-v-1-0-november-2020_2582525.pdf). This figure is also in line with the estimate of the [International Labor Organization](https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/projectdocumentation/wcms_865462.pdf) (ILO) with women workers making the bulk of the employment.

The manufacture and use of electrical and electronic products have increased dramatically over the past several decades, and contract manufacturing for the global supply chain takes place through a complicated web of subcontractors, often located in Asia with the bulk of production taking place in countries like China, Taiwan, Thailand, Malaysia, Vietnam, Philippines, Indonesia and increasingly in India. The manufacture of electrical and electronic products relies on and [uses more than a thousand chemicals](https://chemicalsinourlife.echa.europa.eu/know-your-electronics#:~:text=Devices%20in%20your%20home%2C%20like,components%20and%20thousands%20of%20chemicals.&text=Some%20of%20the%20chemicals%20in,or%20plastic%20softeners%2C%20for%20example.) and other materials, many of which are known to be hazardous and lack comprehensive toxicological health and safety information due to weak regulatory policies. These substances include solvents, metals, persistent organic pollutants, such as certain flame retardants, and known carcinogens, mutagens, reproductive and developmental toxicants, and endocrine-disrupting compounds.

**Recognition of the problem**

In 2012, the [American Public Health Association endorsed a comprehensive resolution](https://apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2014/07/21/08/43/improving-occupational-and-environmental-health-in-the-global-electronics-industry) addressing the many health impacts of the global electronics industry. It highlighted that the Chemicals used in the electronics industry are linked to numerous detrimental health effects, such as cancer, respiratory issues, reproductive disorders, and birth defects observed in manufacturing sites across China, Korea, Malaysia, and other regions. Women employed in semiconductor and electronics sectors might face heightened risks of miscarriage and reduced fertility. Moreover, there's indication that exposure to these chemicals in the workplace could potentially result in health problems spanning generations.

The ANROEV members from South Korea who are victims of the semiconductor industry led years of [struggle](https://www.theguardian.com/world/2014/feb/05/south-korean-film-claims-sickness-samsung) in South Korea by Supporters for the Health and Rights of People in the Semiconductor Industry (SHARPS). This also prompted deeper research[[2]](#footnote-3) on the health impact on workers in Korea and experts in South Korea have also [documented](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4090871/) the many health impacts suffered by female workers in Korean electronics factories:

Concerns regarding reproductive health in the semiconductor industry arose in the early 1980s following reports of abnormal pregnancy outcomes linked to toxic solvent contamination from a San Jose semiconductor factory. Although subsequent studies failed to consistently replicate these findings, they did highlight elevated risks of miscarriages during the contamination period. Given that a significant portion of the semiconductor industry's workforce comprises women of childbearing age, reproductive toxicity poses a substantial concern, with miscarriage acting as a well-documented outcome. Various studies, including the Semiconductor Health Study, have consistently reported increased risks of miscarriages among workers, particularly those involved in fabrication processes like masking and photolithography, attributed to exposure to specific chemicals like ethylene glycol ether (EGE) and fluoride-containing compounds. Despite variations in study methodologies and sample sizes, the consistent findings strongly suggest a causal association between workplace exposures and adverse reproductive effects, emphasizing the need for continued monitoring and mitigation efforts in the semiconductor industry.

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**Lack of workplace monitoring**

The extent of the problem is also not visible since most of the countries do not report data on occupational diseases at workplace in general and gendered data is not available at all. Indonesia for example reports a few or almost none occupational diseases at the workplace, making it statistically much safer workplace than Finland.

A recently published [biomonitoring report from Indonesia](https://pubmed.ncbi.nlm.nih.gov/38112404/) with ANROEV members, documents that electronics manufacturing workers in 4 factories in Batam were found to have 5 solvents (acetone, methyl ethyl ketone, toluene, benzene and xylene) and 7 metals (arsenic, cadmium, cobalt, tin, antimony, lead, and vanadium) in the urine of most of the workers.

**Lack of Workers Agency and Unions**

The electronic industry has been historically difficult to organize. Unionized workplaces are safe workplaces as workers can meaningfully organize and bargain for better working conditions. Women workers find it even more harder to organize due to their marginalized status, oppressive tactics by the employers as well as lack of democratic spaces to organize.

**Migrant Workers**

Migrant workers especially the migrant women workers face increased vulnerabilities due to their precarious status and lack of protection. The [European Working Condition Survey](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9367908/#:~:text=The%20European%20Working%20Condition%20Survey,of%20time%2C%20or%20faster%20work) recently revealed a more frequent exposure to occupational risks among migrants compared to native workers: during their work, they are often affected by high temperatures, loud noises and vibrations, the maintenance of an upright position for a long period of time, or faster work rates. Moreover, migrants suffer from inadequate care and unstructured health surveillance services; they struggle to access the health system and are excluded from community and insurance protections, which are essential elements for social, economic, and political development and preconditions for achieving global health goals.

**What are some of the most important global initiatives to address these critical health issues?**

Strategic Approach to International Chemicals Management (SAICM) on electronics - 2011

[In March, 2011 more than 100 representatives](https://www.saicm.org/Portals/12/Documents/EPI/report%20e-waste%20workshop_vienna.pdf) of governments, NGOs and the electronics industry met in Vienna, Austria as an expert group to consider means to advance the Sound Management of Chemicals within the electrical and electronic products industry.

It urged steps that manufacturers must prioritize reducing exposure to hazardous chemicals in electrical and electronic products. This involves eliminating or substituting the most dangerous substances and processes, especially those impacting workers and communities. This includes addressing persistent, bioaccumulative, and toxic substances, as well as carcinogens, mutagens, reproductive toxins, and endocrine disruptors.

**Occupational Safety and Health as a Core Labor Right**

The [recent decision by the International Labour Organization](https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_848132/lang--en/index.htm) to add safety and health as a fundamental right will provide new emphasis for the importance of protecting men, women of child bearing age and their families who work in electronics manufacturing.

This landmark decision means that all ILO Member States commit to respect and promote the fundamental right to a safe and healthy working environment, whether or not they have ratified the relevant Conventions.

The ILO has [key conventions/standards](https://www.ilo.org/global/standards/subjects-covered-by-international-labour-standards/occupational-safety-and-health/lang--en/index.htm)  on Occupational Safety and Health that include:

**Key instruments on occupational safety and health**

* [**Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)**](http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:::NO:12100:P12100_ILO_CODE:C187:NO) - [[ratifications](http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11300:::NO:11300:P11300_INSTRUMENT_ID:312332:NO)]  
  As an instrument setting out a promotional framework, this Convention is designed to provide for coherent and systematic treatment of occupational safety and health issues and to promote recognition of existing Conventions on occupational safety and health. The Convention is aimed at establishing and implementing coherent national policies on occupational safety and health through dialogue between government, workers’ and employers’ organizations and to promote a national preventive safety and health culture.
* [**Occupational Safety and Health Convention, 1981 (No. 155)**](http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:::NO:12100:P12100_ILO_CODE:C155:NO) - [[ratifications](http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11300:::NO:11300:P11300_INSTRUMENT_ID:312300:NO)] and its [**Protocol of 2002**](http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:::NO:12100:P12100_ILO_CODE:P155:NO) - [[ratifications](http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11300:::NO:11300:P11300_INSTRUMENT_ID:312338:NO)]  
  The convention provides for the adoption of a coherent national occupational safety and health policy, as well as action to be taken by governments and within enterprises to promote occupational safety and health and to improve working conditions. This policy shall be developed by taking into consideration national conditions and practice. The Protocol calls for the establishment and the periodic review of requirements and procedures for the recording and notification of occupational accidents and diseases, and for the publication of related annual statistics.
* [**Occupational Health Services Convention, 1985 (No. 161)**](http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:::NO:12100:P12100_ILO_CODE:C161:NO) - [[ratifications](http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11300:::NO:11300:P11300_INSTRUMENT_ID:312306:NO)]  
  This convention provides for the establishment of enterprise-level occupational health services which are entrusted with essentially preventive functions and which are responsible for advising the employer, the workers and their representatives in the enterprise on maintaining a safe and healthy working environment.

**Eliminating Violence and Harassment in the World of Work**

The ILO has established new global standards aimed at ending violence and harassment in the world of work.

[**ILO Convention No. 190**](https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C190) (or C190 for short) is the first international treaty to recognize the right of everyone to a world of work free from violence and harassment, including gender-based violence and harassmentThe Convention was adopted in June 2019, by the International Labour Conference of the International Labour Organization (ILO), and came into force on 25 June 2021.  
Governments that ratify C190 will be required to put in place the necessary laws and policy measures to prevent and address violence and harassment in the world of work. The Convention represents an historic opportunity to shape a future of work based on dignity and respect for all.

**Multilateral Partnership for Organizing, Worker Empowerment, and Rights (M-POWER)- Recognizes OSH and GBVH as core campaign areas.**

[M-POWER](https://www.dol.gov/agencies/ilab/multilateral-partnership-for-organizing-worker-empowerment-and-rights-m-power-initiative) is a historic global initiative focused on ensuring working families thrive in the global economy and elevating the role of trade unions and organized workers as essential to advancing democracy.

Introduced in December 2021 as a component of the Biden-Harris Administration’s Presidential Initiative for Democratic Renewal, M-POWER is now a partnership of governments, global and national labor organizations, philanthropic institutions, and civil society stakeholders committed to working together to uphold workers’ rights, strengthen the capacity of democratic unions to organize and represent all workers, and facilitate conditions for unions to be active participants in a vibrant civil society.

The goals of M-POWER are to ensure that:

* Worker organizing, unionization and collective bargaining are promoted;
* Workers shape public policy; and
* Workers access ILO Fundamental Principles and Rights at Work.

The M-POWER Action Plan includes four pillars:

* Global issue campaigns supporting local action on worker priorities;
* Country-level coordination to advance worker rights;
* Urgent action to protect labor activists and organizations facing threats; and
* Strategic communications to elevate worker voice and priorities.

Occupational safety and health in the Electronics Industry and GBVH were identified as key issue campaigns during the initial phase and Solidarity Center is actively engaged in both of them.

1. International Labor Organisation (ILO) in its convention [C 190](https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C190)  defines GBVH as violence and harassment directed at persons because of their sex or gender, or affecting persons of a particular sex or gender disproportionately, and includes sexual harassment. [↑](#footnote-ref-2)
2. Kim MH, Kim H, Paek D. The health impacts of semiconductor production: an epidemiologic review. Int J Occup Environ Health. 2014 Apr-Jun;20(2):95-114. doi: 10.1179/2049396713Y.0000000050. Epub 2013 Dec 19. PMID: 24999845; PMCID: PMC4090871 [↑](#footnote-ref-3)