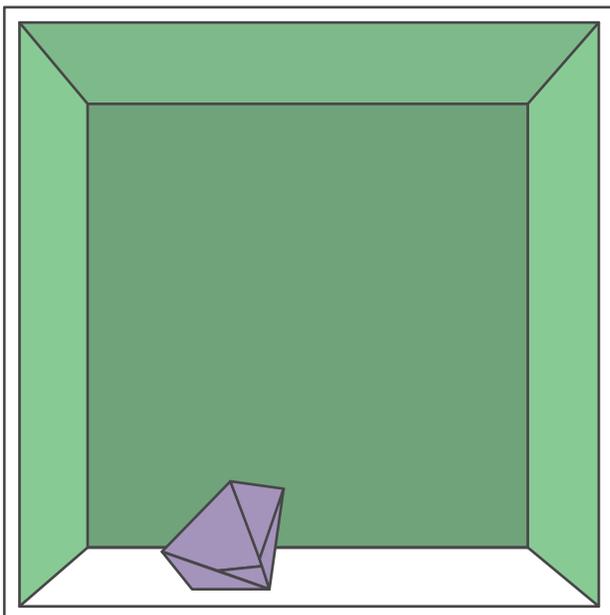
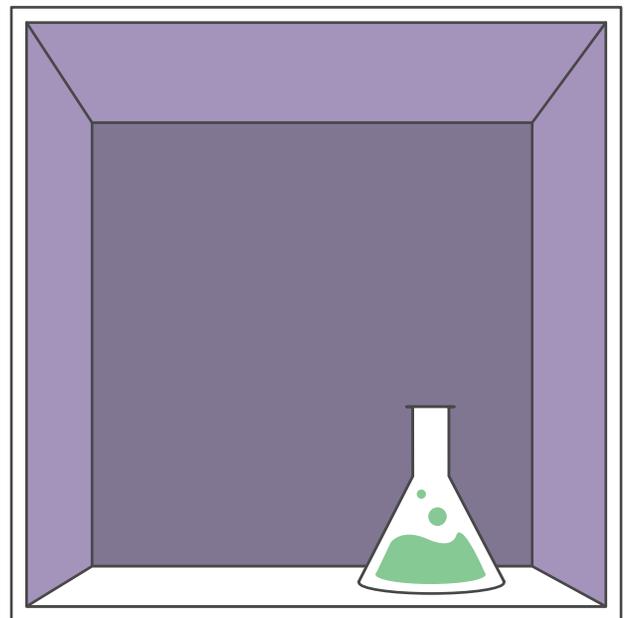


Impacts and Insights 2019

Effects of TCO Certified in the IT product supply chain



ABOUT TCO CERTIFIED

Make the sustainable choice easy with TCO Certified



Global sustainability certification for IT products

TCO Certified is the leading sustainability certification for IT products, driving social and environmental sustainability throughout the IT product life cycle.



Independent verification of compliance

Compliance is independently verified, both pre and post certification. TCO Certified also includes a system for dealing with identified instances of non-compliance.



Comprehensive, up to date criteria

A new generation of TCO Certified is launched every three years, to meet the most pressing sustainability challenges and drive faster change.

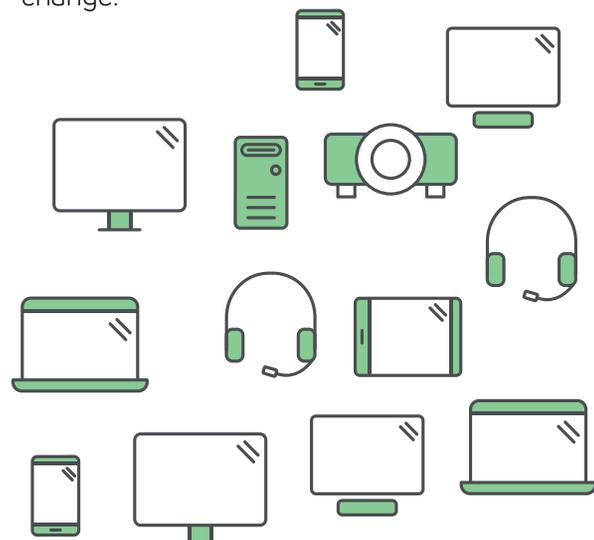


Table of contents

ABOUT THIS REPORT	4
REPORT SUMMARY	5
SUPPLY CHAIN RESPONSIBILITY IN TCO CERTIFIED	6
Factory conditions.....	7
THE ISSUE	8
OUR METHOD	9
RESULTS	11
COMMENT	18
Hazardous substances.....	19
THE ISSUE	20
OUR METHOD	21
RESULTS	23
Conflict minerals	25
THE ISSUE	26
OUR METHOD	27
RESULTS	28
Industry engagement and emerging hotspots.....	29
INTERVIEWS WITH BRAND OWNERS	30
Conclusions and next steps	32
FACTORY CONDITIONS	33
HAZARDOUS SUBSTANCES	34
CONFLICT MINERALS	35

ABOUT THIS REPORT

The impact of TCO Certified on supply chain responsibility in the IT industry

Impacts and Insights 2019 reports on the development of supply chain responsibility among brand owners with IT products certified according to TCO Certified, 2015-2018.

This is the validity period of the previous generation of TCO Certified. The current generation, generation 8, was launched in December 2018.

Many different factors impact supply chain conditions, and in this report, we specifically address progress in final assembly factories, safer substitution of hazardous substances and responsible mineral sourcing.

Not included in this report are three additional criteria areas covered in TCO Certified during 2015-2018. These include product performance, user health and safety, and environment.

The findings are based on reports from independent verifiers, interviews with brand owner senior management representatives and inde-

pendent factory audits at 20 final assembly factories manufacturing certified products. At these facilities, audits were carried out twice during the time period 2015-2018. Improvements affected the working conditions of approximately 46,600 workers.

TCO Certified is a product certification and is not designed for certification of a brand or a company. All data and information in this report are connected to certified product models and the manufacturing facilities where they are made. Brand owners are held responsible for ensuring that certified products and their supply chains comply with the criteria in TCO Certified. Certification of a particular model does not indicate that all product models from a brand are compliant.

This report focuses on



Factory conditions



Hazardous substances



Conflict minerals

TCO Certified also includes criteria for

- Product performance
- User health and safety
- Environment

Stakeholder demand drives deeper industry engagement

More than ever, sustainability is a priority for IT users and purchasers. As a result, industry engagement in social and environmental responsibility is deeper and more closely connected to core business strategy and outcomes. However, challenges remain throughout the supply chain, and brand owner maturity to deal with them varies.

FACTORY CONDITIONS (pages 7-18)

Social responsibility is increasingly included in core business strategy

- Industry awareness and maturity in social responsibility issues have grown, among both IT product brand owners and at the factory level.
- Final assembly factory management is working more actively to engage sub-suppliers in sustainability issues compared to three years ago.
- Significant improvements have been made in factory working conditions, but working hours and low wage levels are remaining challenges.
- Social responsibility is increasingly part of the brand owner's core business strategy, which means that improvements can be made quicker.

HAZARDOUS SUBSTANCES (pages 19-24)

Beyond the ban – developing pathways to safer alternatives

- In 2015, TCO Development made a shift from not only banning a number of hazardous substances but also requiring that all flame retardants used in certified products are assessed and benchmarked as safer alternatives.
- Our strategy drives chemical industry transparency around the content and potential hazard of their products.
- The list of safer alternatives is available to all and is therefore helpful beyond the IT products we certify.
- Flame retardant chemicals included in certified products must be independently assessed as safer alternatives.

CONFLICT MINERALS (pages 25-28)

Multi-stakeholder action is vital for improving life in conflict-affected mining communities

- Conflict minerals is a global challenge, but legislation varies between regions and is often inadequate. TCO Certified pushes collective action beyond legislation to drive improvements.
- In 2015, we launched the first generation of conflict mineral criteria in TCO Certified, with the purpose of driving more engagement among brand owners.
- The outcome exceeded expectations: the number of brands engaged in multi-stakeholder, in-region initiatives more than doubled by 2018. Several brand owners were, at the same time, also compliant with OECD due diligence guidelines even though the dual commitment was optional.

Accountability is key to driving progress in the IT product supply chain

Supply chain responsibility is a continuing challenge in the IT industry, and a cornerstone in TCO Certified. Our goal is to provide a systematic approach to driving safer, more responsible practices, from raw materials extraction through to final assembly.

“ The IT industry is increasingly engaged in and aware of sustainability issues. Brand owners often audit their manufacturing sites against a code of conduct, but one challenge is that non-conformities are not always corrected.

chain. At final assembly factories, there are fewer non-conformities, especially at shared supply sites. The paradigm around hazardous substances has changed, accelerating the shift to greater transparency and safer substitutions.



Sören Enholm, CEO, TCO Development.

With this in mind, in 2015, we implemented a new way of working with corrective actions to drive faster progress. We also introduced criteria for responsible sourcing of conflict minerals and designed a whole new way of managing hazardous substances, where flame retardants must be assessed and approved as safer alternatives before they are used in certified products. In all three areas, we can conclude that accountability and transparency are key to faster, more lasting change.

Looking back, we can clearly see that brand owners using TCO Certified have become more committed to sustainability issues and are more actively driving positive change, taking steps that directly benefit workers in all phases of the supply

“We can see that brand owners using TCO Certified have become more committed to sustainability issues”

Reaching into the IT product supply chain to trace a product’s origin or monitor the conditions under which it’s made demands unique access, resources, and experience. For most product purchasers, this simply isn’t possible. With TCO Certified, verification and follow up are included. We hold the brand owner accountable, both at the product level and in the supply chain — also for the steps in the process that they don’t own themselves. They have oversight and control, making them best positioned to affect working environments and conditions.

When an IT product brand owner applies for certification, they’re making a long term commitment to working toward a sustainable IT product life cycle. This effort requires continuous innovation and improvement over time on the part of brand owners and suppliers alike. Our mission is for TCO Certified to provide the systematic roadmap for getting there. So whether you use TCO Certified as an IT brand or as a buyer, making more responsible IT product choices lies with all of us.”

Factory conditions: pages 7-18

Hazardous substances: pages 19-24

Conflict minerals: pages 25-28



Factory conditions

Social responsibility is increasingly included in core business strategy

- Excessive working hours and low wage levels are continuing factory hotspots.
- Engagement in supply chain responsibility grows, but maturity levels vary.
- More than 77% of the non-conformities detected in initial audits were closed by the second audit.

Addressing working conditions in IT manufacturing

Ensuring factory conditions that are safe for workers and adhere to an established code of conduct is essential to a sustainable life cycle for electronics. As awareness of worker health, safety and human rights has grown, so has stakeholder engagement in these hotspots.

Much of IT product manufacturing is carried out in low-cost, low-wage countries, where workers are often less protected and employment less regulated. Shorter product cycles and growing demand for new technologies place added pressure on industry to deliver new devices faster and at a lower cost. The result can be poor working conditions throughout the supply chain, putting human health and worker safety at risk.

Continuing risk areas include health and safety protection, forced labor, working hours and worker exposure to hazardous chemicals. Several of these issues require continual monitoring and follow up in order to maintain compliance with the code of conduct. In particular with health and safety, there is a risk of recurrence, whereas

issues like forced labor and long working hours are more complex, persistent, and challenging to remediate.

More and more, IT purchasers are using their leverage to directly drive industry improvements in supply chain responsibility, supported by the socially responsible manufacturing criteria in TCO Certified. As more brand owners and suppliers commit to the systematic approach in TCO Certified, we see varying maturity levels in their experience and track record in solving key challenges. Progress in supply chain responsibility requires a long term commitment, where brand owners work actively with their suppliers towards continuous, systematic improvement.

OUR METHOD: FACTORY CONDITIONS

Systematic industry accountability and consequences that drive progress

A code of conduct and independent factory audits are helpful in structuring efforts to improve factory conditions and identify non-conformities. However, using these tools does not necessarily mean that problems in the factories are solved.

Lasting correction of non-conformities depends on brand owner engagement with their suppliers and the maturity of the factory's ability to implement improvements.

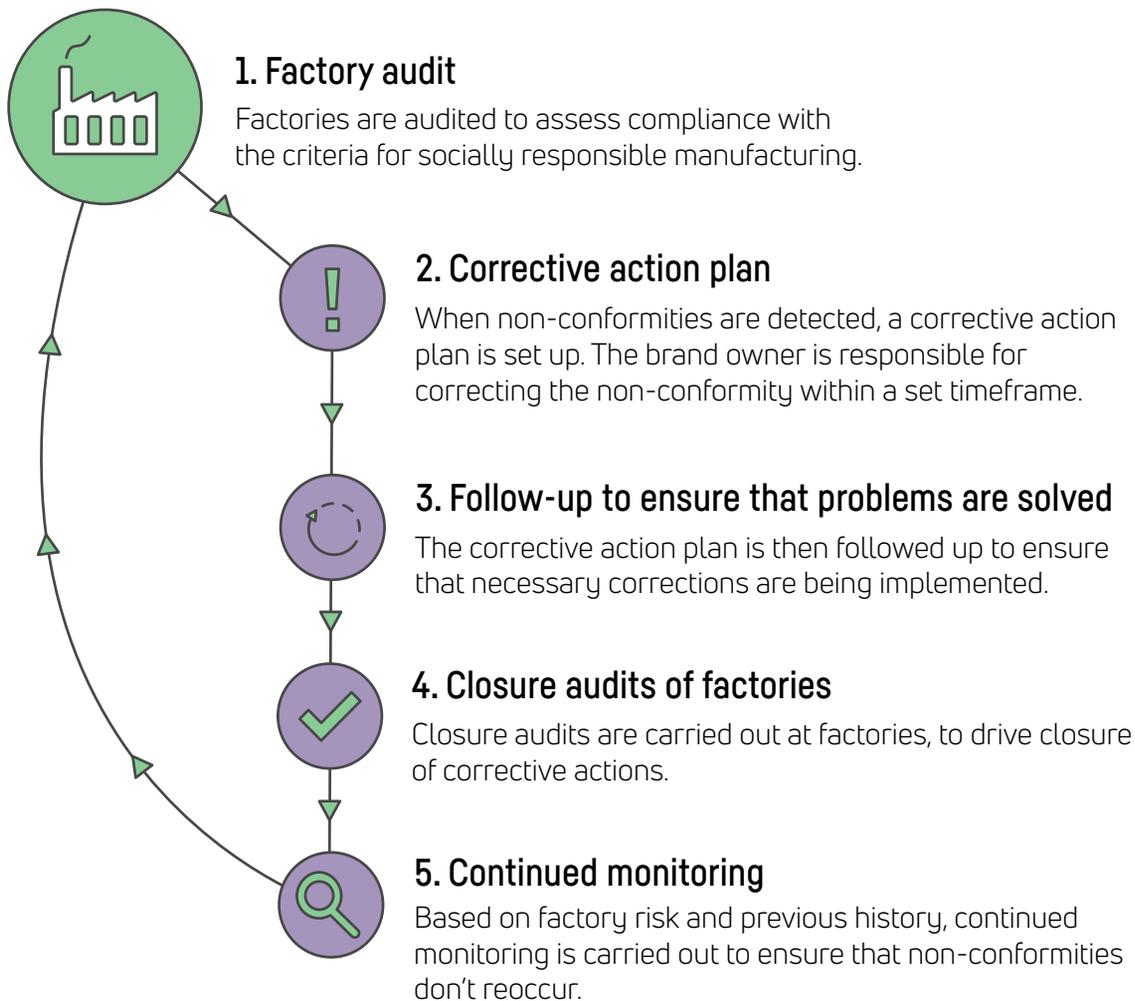
The code of conduct must be implemented and backed up by independent verification of compliance. TCO Certified is committed to offering a structured platform to guide industry progress, regardless of whether brand owners are at the beginning of the process or have well-developed systems in place. To correct non-conformities, systematic accountability and consequences are necessary. We see that when factories are required to make effective corrective action plans and have independent auditors do closure audits, these items are far more likely to be corrected. Continued monitoring is essential, even after closure, as some issues, particularly in the area of health and safety, have a tendency to return if not closely monitored.

We require audit procedures that at a minimum cover labor rights, health and safety and the management system used on-site. Accredited, independent auditors use a system of observations, document reviews and interviews in their assessments. If a non-conformity is detected through one of these sources, it needs to be confirmed with the other two sources. This allows the auditor to assess the facts, identify the cause and determine if the event is singular or part of a more systemic problem.

Overview of factory conditions criteria in TCO Certified (2015-2018)

- The brand owner must have a code of conduct requiring that the manufacturer follow the eight ILO core conventions, the UN Convention on the Rights of the Child, national laws for labor rights as well as worker health and safety, including minimum wage and social security in the country of manufacture.
- The brand owner must also commit to implementing its code of conduct in final assembly factories and communicate it to the supply chain.
- The brand owner must have an appointed senior management representative who has the authority to ensure that the social responsibility criteria in TCO Certified are being met.

Six steps to driving factory improvements



Consequences: withdrawn certificates, restricted factories

Most importantly, TCO Certified includes a system of consequences for continued non-conformities. Certificates can be withdrawn if non-conformities aren't corrected on time. If violations persist, factories can also be restricted from manufacturing certified products.

Change happens faster when brand owners join together

Sometimes a brand owner is a minor client at the manufacturing site, and lacks enough leverage or doesn't represent enough of the total supplier business to directly influence improvements. Our supply chain insight; the mapping of factories and their clients allows us to coordinate brand owners to put pressure on shared suppliers as a collective effort. The risk of losing the combined

business from several or a bigger client serves as a strong incentive for the factory owner to implement the desired changes. Also, when brand owners use the same set of criteria, factories can more efficiently make continual improvements that have a larger impact, instead of trying to meet individual requirements that may contradict each other.

Measurable reduction in findings but key challenges remain

The findings in this chapter are based on audit results from 20 final assembly factories where independent audits were carried out twice during 2015-2018. Findings are separated into three categories: health and safety, labor rights and code of conduct communication.

In total, 109 non-conformities with the criteria in TCO Certified were found in the initial audits. Corrective action plans were set up, and by the second audit, 84 of these, or 77%, were eliminated. Of the 25 remaining issues, seven were categorized as "minor", meaning that they were considered isolated or random incidents, 18 were major, and none were priority findings.

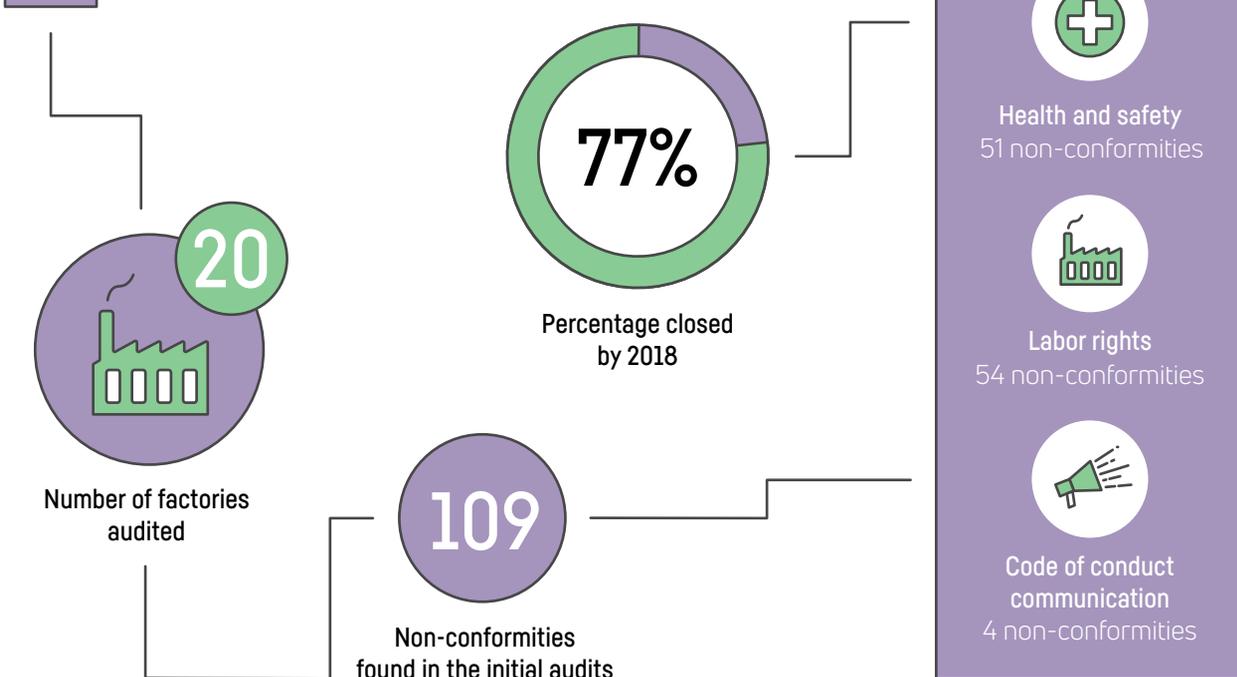
This report highlights nine selected areas within health and safety and labor rights, where a total of 76 non-conformities were found. By the second audit, 63 of these, or 83%, were closed.

Looking at brand owner compliance with the requirement to communicate its code of conduct to the supply chain, two major and two minor non-conformities were found in initial audits. By the second audit, all four were closed.

Categorization of non-conformities

- 
Priority non-conformity
 Significant, systemic issue with immediate impact on system functionalities.
- 
Major non-conformity
 Significant failure, affecting the system's ability to produce the desired results.
- 
Minor non-conformity
 An isolated or random incident that by itself does not indicate a systemic problem.

Key findings Factory conditions





Overview: health and safety

Systematic work needed to reduce the risk of work-related injury and illness

Health and safety issues are often easy to detect and straightforward to solve. The problem is recurrence, which unfortunately is common. To prevent future recurrence and worker exposure to the same hazard, auditors must identify their root causes, and improvements to employer policies and procedures must be made by factory management. Health and safety audits cover several different risk areas within factory operations, but all are focused on identifying potential worker exposure to a hazardous working environment.

Highlighted areas

In this report, we highlight three health and safety areas: occupational safety, emergency preparedness and food, sanitation and housing. The total number of non-conformities found in these categories in the initial audits was 38, out of which 34, or 89%, were corrected by the second audit. The remaining areas, occupational injury and illness, industrial hygiene, physically demanding work, machine safeguarding and health and safety provisions, had a total number of 16 non-conformities found in initial audits, and by the second audit 14, or 88%, were corrected.



Occupational safety:

Identifying root cause is essential in preventing recurrence

Background

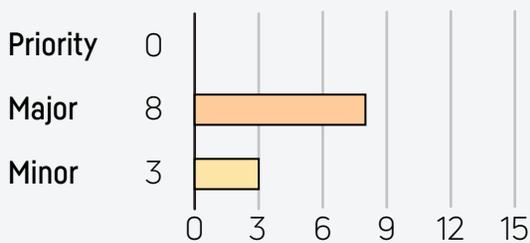
One of several health and safety checks included in an audit is risk of worker exposure to safety hazards. Policies and procedures must be in place to reduce these risks. However, without a systematic approach to identifying the root causes behind a hazardous situation, the risk is that immediate remedial action will not be enough to prevent the problem from recurring.

Findings

No priority non-conformities, and a measurable reduction in major and minor findings. The majority of non-conformities identified in the study were connected to operation permits, machine test reports, and safe work procedures, including correctly provided and used personal protective equipment (PPE).

Initial audit

Non-conformities found



Second audit

Remaining non-conformities

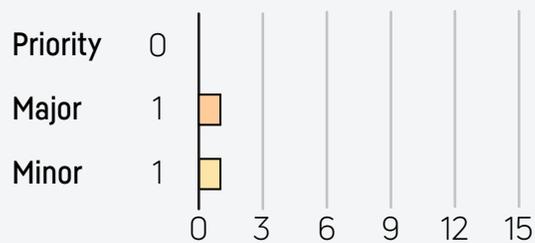


Figure 1: Workers are not exposed to safety hazards, such as chemical, electrical, fire, fall and vehicle hazards



Emergency preparedness: A more structured remedial approach to a safer working environment

Background

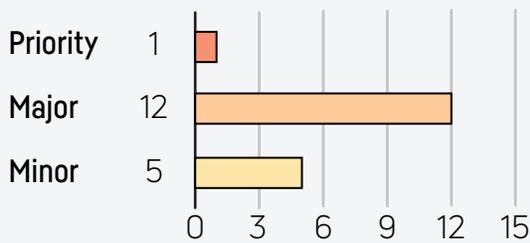
The actions taken immediately following an emergency are critical. Instructing employees to evacuate, seek shelter or shut down operations can save lives. Procedures must be in place to effectively manage an emergency in order to minimize potential harm to life, environment and property.

Findings

No priority non-conformities, and a significant reduction in major and minor findings. The priority and other major findings were issues of factories with too few and/or blocked emergency exits. Corrective action plans were set up, requiring employers to improve emergency exits and introduce emergency response training for workers at regular intervals. In the follow-up audit, the employer had made sufficient improvements that make it possible to evacuate the building quickly in the event of an emergency.

Initial audit

Non-conformities found



Second audit

Remaining non-conformities

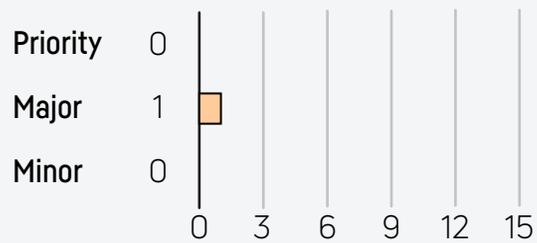


Figure 2: Potential emergency situations are identified and assessed, and workers are considered prepared to handle emergency situations such as fires through training, drills and clear and unobstructed routes of evacuation



Food, sanitation and housing: More employee involvement helps improve conditions

Background

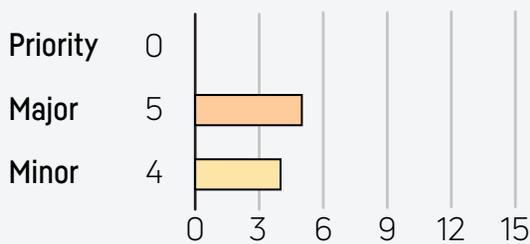
Clean, well maintained workplaces and employee housing are critical to worker wellbeing and safety. Worker committees are found to have an important role in identifying and driving improvements in these areas.

Findings

No priority non-conformities, and a measurable reduction in major and minor findings. In some cases of provided dormitories, employers had not provided workers with exits that were sufficient in case of an emergency (locked or obstructed fire exits).

Initial audit

Non-conformities found



Second audit

Remaining non-conformities

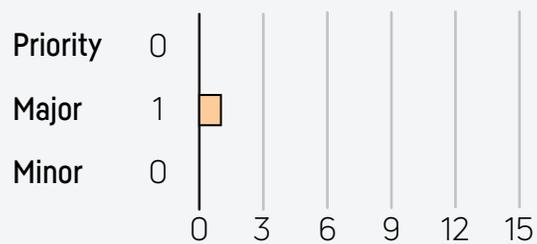


Figure 3: Workers are provided with ready access to clean toilet facilities, potable water and sanitary food preparation, and eating facilities. Provided worker dormitories are maintained clean and safe.



Overview: labor rights

Collective brand owner action drives improvements in labor rights issues

In contrast to health and safety, labor rights issues are often more complex, and require persistent, proactive work from both brand owners and factory management to correct. Influence by third party stakeholders, such as a certification scheme or purchaser, can also be important, since a focus on labor rights can present a conflict of interest for both the brand owners and suppliers that want to minimize cost and time-to-market.

Highlighted areas

In this report, we'll look into seven of nine audit areas connected to labor rights. These are: working hours, wages and benefits, discrimination, freedom of association and collective bargaining, forced labor and rights of the child. The total number of non-conformities found in these categories in the initial audits was 38, out of which 29, or 76%, were corrected by the second audit. The remaining areas: working weeks, working week routines and humane treatment had a total number of 13 non-conformities found in initial audits, and by the second audit 3, or 23%, were corrected.



Wages and benefits:

Payments not according to local legislation

Background

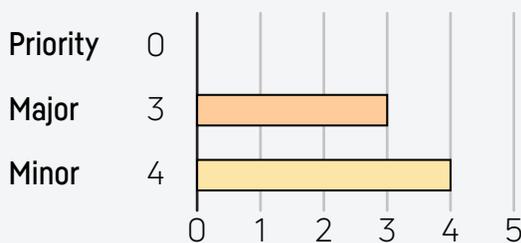
The requirement assesses that all workers (permanent or outsourced) receive wages payments and other benefits (such as overtime) at the correct levels and pay schedules and that deductions such as social insurance are correct.

Findings

Elimination of non-conformities detected in the first audit. Findings showed wages had been reduced as disciplinary actions and social insurance deductions had not been based on the actual number of hours worked.

Initial audit

Non-conformities found



Second audit

Remaining non-conformities



Figures 7: Wages, including deductions and overtime pay, are calculated correctly and submitted to the appropriate government agency within the local law time frame



Working hours: a persistent challenge to maintain a 60 hour maximum

Background

Health and safety research¹ shows a significant increase in health risk among people who work more than 60 hours per week. Still, the existence of working hours above this threshold continues to be an industry-wide issue in countries where IT products are manufactured.

There are several reasons behind this challenge. Brand owners place orders at the factories with short notice or factories can also oversell their production capacity, both of which lead to demand peaks. Employing temporary workers to manage these peaks would increase costs. Instead, factory workers are asked to do overtime to cover peak production demand. They agree, either for financial reasons or because they are under pressure from employers. Complicating the issue is the fact that while most developing countries have legislated limits on working weeks, these are often only treated as ambitious guideline levels by employers and are typically not enforced by local authorities. So, while workweek legislation is formally in place, our experience shows that the local enforcement of these limits is lacking, allowing for employers to take advantage of loopholes that permit excessive overtime.

Often the argument is put forward that workers actually want to work as many hours as possible, to earn the maximum amount. This is, however, linked to the living wage issue. With inadequate minimum wage levels, many workers don't receive enough salary to cover basic living costs, and they are driven to accept excessive overtime hours to make up the difference. Some brand owners have monitored

and investigated the issue of a living wage, but none have yet implemented any new living wage approaches, leaving wages at the local legislated minimum. During interviews, workers have commented that they would need to earn 1.5-2 times their basic wage to cover living costs, but in order to do so they need to work well above the maximum number of hours permitted by law.

We see a cap on excessive overtime as a way of driving up wages. To retain employees, management needs to compensate for the worker's loss of income due to fewer possible hours made available. This way, factories can avoid losing competent workers that would move to other factories with fewer overtime restrictions, and have healthier and more productive workers by giving them the opportunity of having more free time.

Findings

Factories included in our analysis could only manage to keep working weeks between stricter local legislated levels and 60-hour workweek. No factory was able to implement working hours in line with local legislated levels.

Measurable reduction in non-conformities. Our results show that over half of the 20 factories assessed had implemented a 60-hour working week for employees by the end of 2018. Other factories currently under evaluation show consistent improvement and are also close to reaching the same level. Our results also show progress in countries where a 60-hour week is not regulated or where local enforcement is lacking.

Initial audit

Non-conformities found



Second audit

Remaining non-conformities



Figure 6: Hours worked in a workweek over the last 12 months do not exceed 60 hours

¹ Dembe AE, Delbos R, Erickson JB. The effect of occupation and industry on the injury risks from demanding work schedules. *J Occup Environ Med* 2008; 50(10): 1185-94.



Discrimination:

Assessing and correcting workplace inequality, rights and opportunities

Background

Discriminating practices such as harassment, intimidation or retaliation by management can be difficult for an auditor to identify and confirm. Auditors discuss complaints gathered during worker interviews with management, but unless they can be validated through additional sources, they may not be included in the audit report. Typically, these concern findings related to equal benefits and work opportunities, for example, when promotion appears to be based on factors other than skill level or qualifications. To prevent discrimination, workers must be educated on their rights and man-

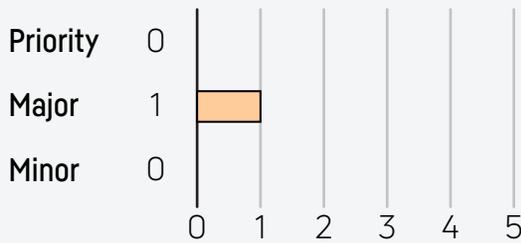
agers and supervisors must be trained in following anti-discrimination policies and effective remedial actions.

Findings

Elimination of non-conformities detected in the first audit. One factory had set an age limit as part of the recruitment criteria, that excluded people not aged between 15 and 40 from applying. A follow-up audit verified that management had removed this limit and made the recruitment process open to all legally eligible applicants.

Initial audit

Non-conformities found



Second audit

Remaining non-conformities

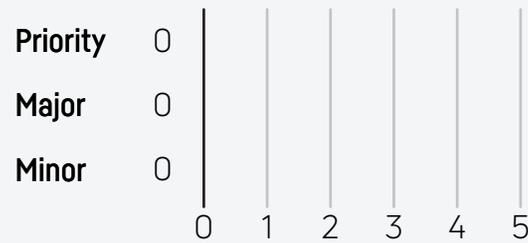


Figure 8: Any evidence of discrimination on the basis of race, colour, sex, religion, political opinion, national extraction or social origin, which has the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation



Freedom of association and collective bargaining:

Ensuring workers are free to exercise their rights

Background

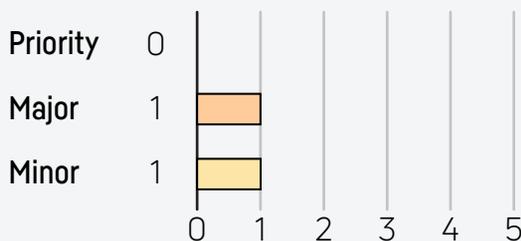
All workers must have the right to form, join and organize trade unions of their choice and to have them negotiate collectively on their behalf with employers. In some countries, this freedom is restricted under law. To comply with the criteria in TCO Certified, employers must allow workers to freely and democratically elect their own representatives. Cases where management harasses and intimidates workers who demand these rights are difficult for auditors to identify and confirm.

Findings

Elimination of non-conformities detected in the first audit. Audit findings and their closure are mostly related to policies or procedures that restrict workers from freedom of association and collective bargaining rights, and cases where worker representatives are not democratically elected. This correlates with findings from self-assessment questionnaires and interviews with brand owners, showing that brand owners are becoming more engaged in promoting these rights at the supplier level.

Initial audit

Non-conformities found



Second audit

Remaining non-conformities

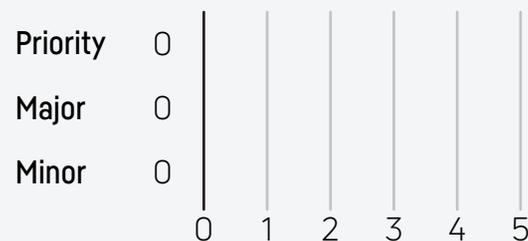


Figure 9: Workers have the right to associate freely and to bargain collectively



Forced labor: Focus on eliminating worker and recruitment fees

Background

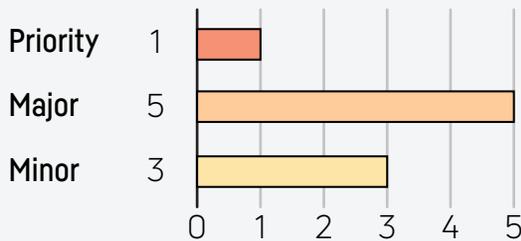
Work that has not been voluntarily agreed to is considered forced labor. This includes work carried out to avoid punishment, physical or sexual violence, or confiscation of belongings such as ID papers or passports. Among the most vulnerable groups for exploitation are migrant workers, who may be subject to repaying recruitment fees, temporary workers who may be granted fewer rights in the workplace and student workers who are required to work in factories as a condition of their university enrollment.

Findings

Elimination of non-conformities detected in the first audit. The priority finding was an issue of a medical fee paid by all workers as an employment pre-requirement without repayment. Other non-conformities that were corrected were mainly connected to forced worker payment of recruitment fees. As a corrective action, the employer was required to reimburse the fee within 90 days. When a follow-up audit was carried out 180 days after the discovery, the non-conformity was closed.

Initial audit

Non-conformities found



Second audit

Remaining non-conformities

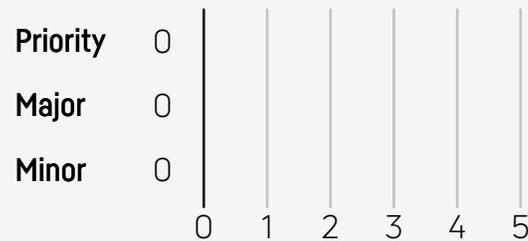


Figure 10: All work is voluntarily agreed to by the worker



Rights of the child: Student workers exploited by schools and factories

Background

Work that can be legally carried out by children must not interfere with their healthy development and education. With examples of child labor, including students, underage workers typically receive lower wages and fewer benefits than an adult, are often forced to work night-shifts, and involuntary overtime. Typically, a high risk group for this kind of exploitation is student workers who are forced by their schools to work in IT factories, often during peak periods,

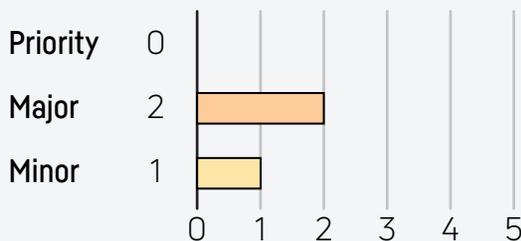
to help cover high production demands. Policies and procedures must be in place to protect the rights of the child.

Findings

Elimination of detected non-conformities. In 2015, young workers and students were identified as doing required overtime by employers and one employer didn't have a correct procedure to detect falsified ID papers.

Initial audit

Non-conformities found



Second audit

Remaining non-conformities

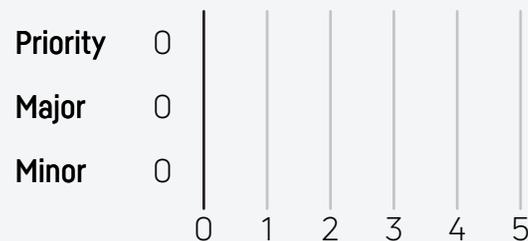


Figure 11: Workers under the age of 18 are not doing night work, overtime or anything that can jeopardize their health or safety

COMMENT: FACTORY CONDITIONS

77% closure rate – verified corrective action plans are one success factor

Out of the detected non-conformities in our study, 77% could be confirmed as closed by the second audit. One reason for this progress is the requirement that corrective action plans were put in place and verified as effective by an independent social reviewer.

Another success factor is that brand owners were required to be involved in implementing the corrective actions and driving closure of identified non-conformities within agreed time frames. To retain business with the certifying brand owners, suppliers are incentivized to implement the necessary improvements in their operations.

We can see that faster progress is made at manufacturing sites where certifying brand owners share the same factory, use the same criteria and put joint pressure on the factory owner. The most noticeable improvement was achieved with non-conformities that are usually considered to be persistent and difficult to close, such as working hours, wages and benefits, and forced labor (labor rights). Emergency preparedness and occupational safety (health and safety) are very serious non-conformities but are a result of poor routines rather than situations where employers deny workers the basic labor rights that they are entitled to by law.

Strong incentives and support are key to solving remaining issues

The purpose of independent factory audits is to identify non-conformities against the code of conduct. Fixing non-conformities then becomes the responsibility of brand owners and factory management. The ability to correct non-conformities quickly and systematically will depend on several factors:

- The maturity of the factory management system in identifying root causes of non-conformities and developing effective corrective actions.
- How prepared the brand owner is to drive closure of all non-conformities.

- How invested the brand owner is in a long term business relationship between themselves and the factory.

- The degree of leverage a brand owner has on the factory management to drive closure of all non-conformities.

When a non-conformity is discovered, work starts immediately to close it. During this process, many of the above parameters are discovered. Some of them may be simple to improve and others require more time.

One main purpose of TCO Certified is to improve working conditions in the factories. To advance maturity, proactivity and commitment among brands and suppliers to comply with the code of conduct is key.

Getting to full compliance is a process and can take longer for those brand owners or factories new to TCO Certified, while for other, more mature companies, the process is faster. TCO Certified is designed to incentivize brand owners and factories to go through this learning process and provides structured support along the way.

In TCO Certified, we have decided to let brand owners and factories continue their learning process and work with the improvements as long as independent experts believe that there is a good pace of work and enough progress is made. This means that unexplained or lingering delays are not acceptable. In cases where progress has stopped or even in some areas returned to the original level of bad practice, the certificate can be withdrawn or the factory can be restricted from producing certified products for a period of time.



Hazardous substances

Beyond the ban – developing pathways to safer alternatives

- Hazardous substances used in IT products is a risk to human health and the environment.
- Legislation is lagging and focuses on banning substances but the substitutions can be just as hazardous.
- TCO Certified drives transparency and knowledge-sharing, developing pathways to safer alternatives.

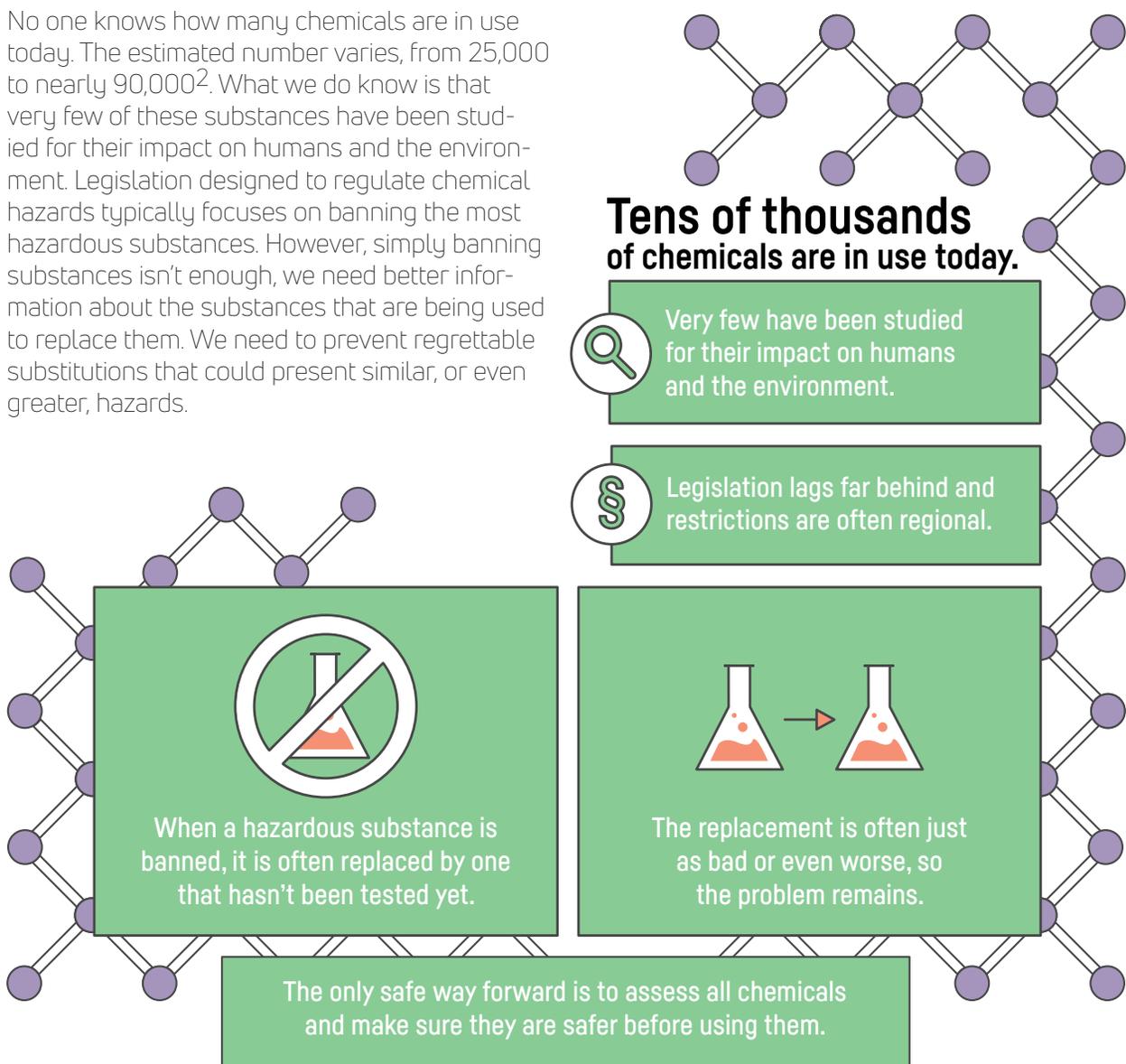
Thousands of untested chemicals on the market – legislation lags behind

Hazardous substances used in IT products present a wide variety of human health and environmental risks. Throughout the life cycle, products may release dioxins, halogens and other toxicants, which can persist in the natural environment and the human body.

Workers may be exposed during manufacturing and substances risk leaking out into the natural environment when products are incinerated, placed in landfill or recycled in an unsafe way. Also, from a circularity perspective, contaminated materials cannot responsibly be re-used in future products, and therefore risk being incinerated or discarded directly into the waste stream.

In addition, the introduction of new chemicals far outpaces the development of legislation to regulate them. There is an urgent need to assess chemicals used in IT products and close data gaps around their potential hazards. This important shift requires greater industry transparency and the design of pathways to safer chemical substitution.

No one knows how many chemicals are in use today. The estimated number varies, from 25,000 to nearly 90,000². What we do know is that very few of these substances have been studied for their impact on humans and the environment. Legislation designed to regulate chemical hazards typically focuses on banning the most hazardous substances. However, simply banning substances isn't enough, we need better information about the substances that are being used to replace them. We need to prevent regrettable substitutions that could present similar, or even greater, hazards.



² Global Chemicals Outlook II, United Nations Environment Programme, 2019 and Identifying and Reducing Environmental Health Risks of Chemicals in Our Society, Institute of Medicine, Washington, United States, 2014.

OUR METHOD: HAZARDOUS SUBSTANCES

An accepted list strategy that drives chemical transparency

To reduce potential risk connected to hazardous substances in IT products, better transparency and knowledge is needed. Instead of just restricting the use of certain substances, we've adopted an accepted list strategy, guiding the IT industry towards safer alternatives.

With this strategy, TCO Development requires that information about substances is gathered, including both public information and confidential information from the chemical manufacturer. An independent toxicologist uses the information to assess the potential effect the substance may have on human health and the environment. Approved substances are added to the public TCO Certified Accepted Substance List, and can be used in certified products. The list is dynamic and the substance may be reassessed in light of new scientific findings.

We use GreenScreen® for Safer Chemicals to assess hazards in an objective, scientific way, and find safer alternatives to the most hazardous substances. Developed by US-based non-profit Clean Production Action, GreenScreen provides a structured approach to evaluating human health and environmental safety data for a variety of chemical substances.

GreenScreen® for Safer Chemicals Benchmarks

Benchmark 4	Few concerns	Preferable
Benchmark 3	Slight concern	Improvement possible
Benchmark 2	Moderate concern	Use but search for substitutes
Benchmark 1	High concern	Avoid
Unspecified	Insufficient data to assign a benchmark	

Once a substance is assessed in accordance with these risks, the GreenScreen methodology assigns it to one of five possible benchmarks, based on the level of concern. Benchmark 1 is a chemical of high concern and should be avoided. Benchmark U means the minimum data requirements aren't fulfilled in order to make an assess-

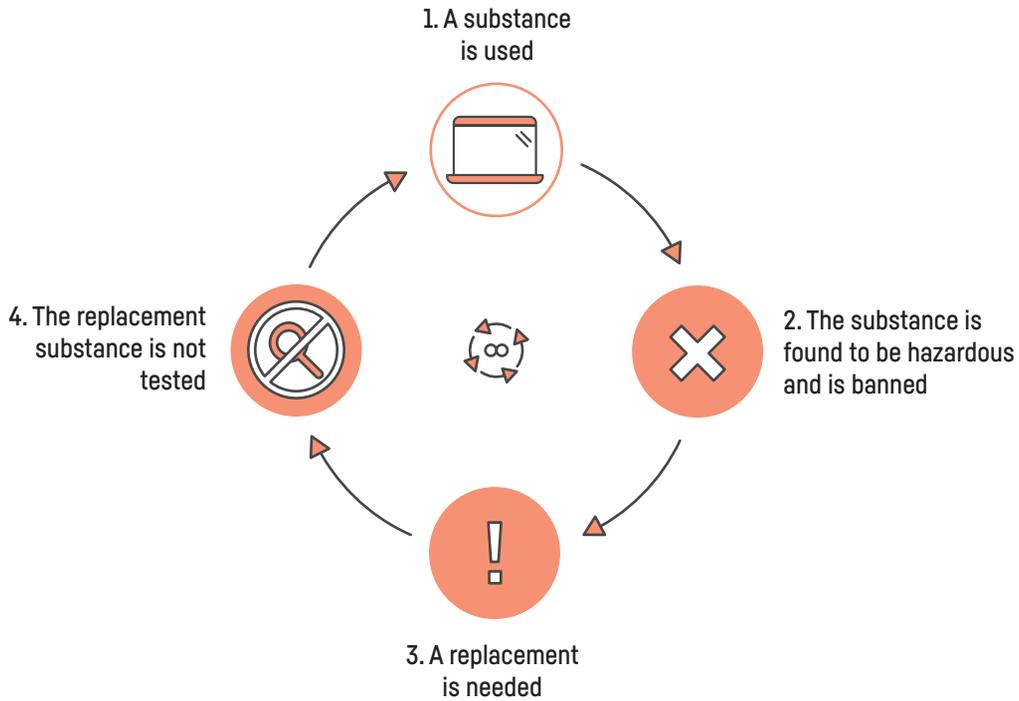
ment. Our decision to set benchmark 2 as the minimum level of acceptance is based on current knowledge on available alternatives. Restricting substances that show a benchmark score 1 gives industry enough options for safer alternatives.

Overview of hazardous substances criteria in TCO Certified (2015-2018)

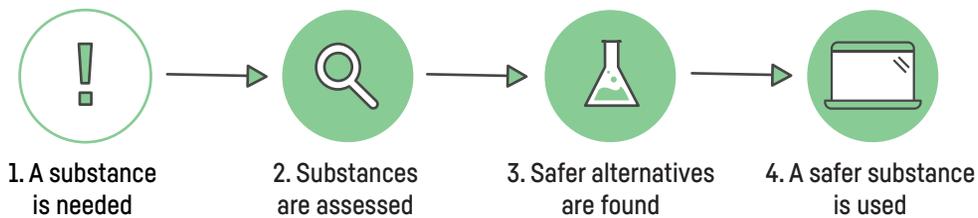
- Criteria in TCO Certified aim to reduce or eliminate the use of hazardous substances in IT products, covering heavy metals, halogens, non-halogenated flame retardants and plasticizers.
- Non-halogenated flame retardants can only be used if they have been independently verified by approved toxicologists as safer alternatives, following a review of their effects on health and the environment. This process is carried out in line with GreenScreen® for Safer Chemicals.
- Accepted substances and their CAS numbers are published on TCO Certified Accepted Substance List, leading to many sustainability benefits, such as increased transparency, closed data gaps and a faster shift to safer alternatives.

As our list of preferred chemicals is filled we will see when there are enough alternatives with benchmark 3 or 4 for us to also progressively limit the use of benchmark 2 chemicals.

Replacing hazardous substances with untested alternatives lead to new hazards



Assessing substances before using them is the only safe way forward



TCO Certified Accepted Substance List is public and safer alternatives are made available to all.

Sustainability benefits of TCO Certified Accepted Substance List

- Substances are assessed and approved before they can be used.
- Hazardous substances are deselected already at the design phase.
- Reduces risk of toxic exposure throughout the product life cycle. Closure of data gaps al-

lows more informed judgements on the use of a chemical.

- Increases transparency and makes safer alternatives available to all.
- Makes materials more reusable and recyclable — saves resources and reduces e-waste.

RESULTS: HAZARDOUS SUBSTANCES

A shift from banning chemicals to identifying safer substitutions

TCO Certified Accepted Substance List has challenged the IT industry and its chemical suppliers to be more transparent about the content in their products. Stephen Fuller, TCO Development's expert on hazardous substances, explains why this is a significant step forward, accelerating the shift toward using safer alternatives.

“ We have worked with the IT industry and gathered information on flame retardants, risks and which alternatives they used for more than 15 years. Our conclusion is that lack of transparency is an industry-wide problem when it comes to chemical hazard. While some hazardous substances have been phased out through legislation or voluntary initiatives, too little is known about what's being used to replace them. The only safe way forward is to assess the alternatives and make sure they are safer before using them.

With TCO Certified Accepted Substance List, substances are considered a high hazard until proven otherwise”

Clearly, if we are to move toward a sustainable life cycle for IT products, we have to know what they contain. As an independent organization, our ambition is to drive faster progress toward chemical transparency, better data and therefore also provide a pathway toward safer substitutions. With TCO Certified Accepted Substance List, safer alternatives are now being identified and this information is made available to all. Any non-assessed or non-approved chemical is considered a high risk until it is proven to be otherwise. TCO Certified Accepted Substance List is our contribution to both industry and society at large, as the list is public and available to everyone, regardless of industry or product area.

Before a substance is added to the list, an independent toxicologist gathers and evaluates all the available information — not just public information but also information owned by the chemical manufacturer. The amount of public information is often very limited, which makes it difficult for toxicologists to make an informed judgement on the environmental and human health risks. With TCO Certified Accepted Substance List, chemical

suppliers are required to share the information they have. Failing to do so leads to a business disadvantage when the chemical is excluded from TCO Certified Accepted Substance List and cannot be used in certified products.



Stephen Fuller, Criteria Development & Compliance Manager, TCO Development.

With this approach, our idea is to incentivize transparency by connecting information sharing with business opportunity.

At first, our push for greater transparency was a somewhat confronting challenge and required a new mindset from industry. We met with some resistance from chemical companies, as information on ingredients and hazards was typically treated as confidential. What caused the shift with major chemical suppliers was when their clients, the IT brand owners, used the criteria in TCO Certified as leverage to bring about a new level of transparency around the chemicals used in certified products. Industry began to see the benefits of a shared list that helps them make more informed

judgements on chemical use. The transparent approach lowers the brand owner's risk of expensive product recalls or costly transitions to another chemical supplier, should a substance become restricted by legislation.

We knew that safer alternatives were available. The issue was they weren't being used widely enough. TCO Certified Accepted Substance List is our way of speeding up the shift toward using safer alternatives by making them the mainstream choice. We introduced TCO Certified Accepted Substance List for flame retardants in 2015 and now everyone can see that it is possible to turn the table on the standard way that businesses and governments only restrict chemicals.

Now perhaps for the first time, the brand owners can not only be transparent on which chemicals they restrict but also better informed about the ones they use as substitutes. This allows the IT industry to take larger steps faster.

During 2015 to 2018, the number of accepted flame retardants on the list grew to 15. Recently, four flame retardants on the list were reassessed. Three of these achieved an improved benchmark score and one remained the same — once again showing how important it is to have chemical suppliers share research information on a continuing basis. Allowing everyone the chance to challenge benchmark scores with new data is another strength of the dynamic, accepted list approach.

“We're now speeding up the shift toward using safer alternatives by making them the mainstream choice”

Three years ago all brand owners worked with restricted substance lists and only a small few had a very short list of preferred alternatives. Today, all brand owners that use TCO Certified have access to a list of 15 preferred flame retardant safer alternatives.”



Conflict minerals

Multi-stakeholder action is vital for improving life in conflict-affected mining communities

- Minerals in IT products fuel conflicts and human rights abuses in vulnerable areas.
- TCO Certified drives more responsible practices, also in regions not covered by legislation.
- Between 2015 and 2018, brand owner engagement in multi-stakeholder initiatives more than doubled.

THE ISSUE: CONFLICT MINERALS

Minerals used in IT products fund conflict and drive human rights abuses

Minerals such as tin, tantalum, tungsten, gold and cobalt are known to fuel conflicts and human rights abuses. Unsafe mining methods also lead to severe health problems for workers and environmental degradation in the communities where they live.

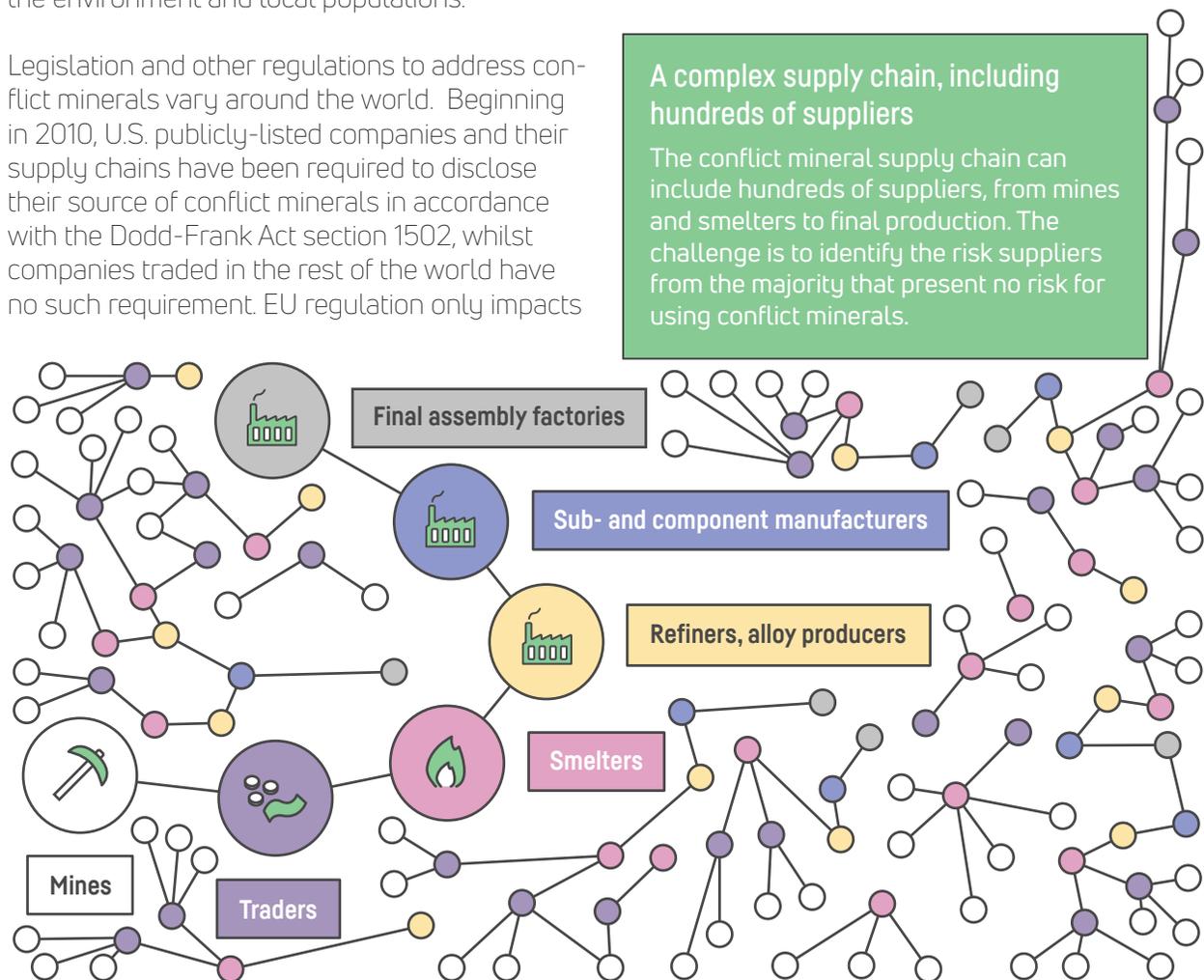
Forced labor, child labor, violence and corruption are continuing challenges for many communities, where militias and other armed groups control the oversight and output of largely artisanal mining operations. Working conditions are typically unsafe and unregulated, while proceeds from mining operations are used to fund further conflict.

These minerals are often traded illegally, and ruling militias frequently undermine peace efforts in order to maintain their dominance. The absence of strong civil society and a democratic, stable government leaves a void where these illegal organizations continue to operate, threatening both the environment and local populations.

Legislation and other regulations to address conflict minerals vary around the world. Beginning in 2010, U.S. publicly-listed companies and their supply chains have been required to disclose their source of conflict minerals in accordance with the Dodd-Frank Act section 1502, whilst companies traded in the rest of the world have no such requirement. EU regulation only impacts

direct importers of ores and metals into the EU, leaving out the minerals found in manufactured products. Clearly this lack of consistent regulation is problematic and indicates a need for a global, systematic approach to responsible mineral sourcing.

The challenge for the IT industry is to make more informed choices about mineral sourcing, from extraction to finished product. Initiatives aimed at confirming the country of origin, along with traceability to responsible smelters and refiners are vital aspects of a commitment toward building a responsible minerals supply chain.



A global approach to responsible mineral sourcing

TCO Certified drives more responsible mineral sourcing in all countries where the mining industry and trade are present. Suppliers must adopt a responsible approach to mineral sourcing, irrespective of where in the world they operate.

Membership in multi-stakeholder initiatives is an opportunity to join a collaborative effort of governments, industry and civil society, aiming to establish a legitimate mining industry. These kinds of initiatives support local mining communities, improving working standards and protections at the mines. Large-scale participation in an in-region initiative also helps multiply its influence, thereby helping smelters and refiners meet due diligence needs. Through these initiatives, the private sector goes beyond legislation, complementing their progressive due diligence efforts with sharing expertise and giving financial support to in-region programs.

Industry-wide, long-term commitment engagement through standardized due diligence and risk reporting

Carrying out due diligence for minerals used in IT products is significantly more complex compared with importer due diligence that connects the raw material to the smelters. Effective due diligence that connects a product with the source of its mineral content can take years, and would mean the assessment of potentially hundreds of suppliers that are involved between mineral extraction and final assembly.

Our view is that due diligence is best approached from the perspective of shared, industry-wide commitment over the longer term. As with most supply chain responsibility efforts, the focus should be approached as a continuous improvement. A coordinated, standardized approach is essential for driving widespread, positive impacts at a faster rate.

Overview of conflict mineral criteria in TCO Certified (2015-2018)

- Brand owners must have a public policy for the responsible sourcing of conflict minerals (tantalum, tin, tungsten and gold). The policy must be communicated to the supply chain.
- Brand owners have the option of either supporting a multi-stakeholder program that works to support legitimate mining and local communities, or independently verify that their conflict mineral due diligence program is considered in line with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected or High-risk Areas.

RESULTS: CONFLICT MINERALS

Engagement in in-region initiatives doubles in three years

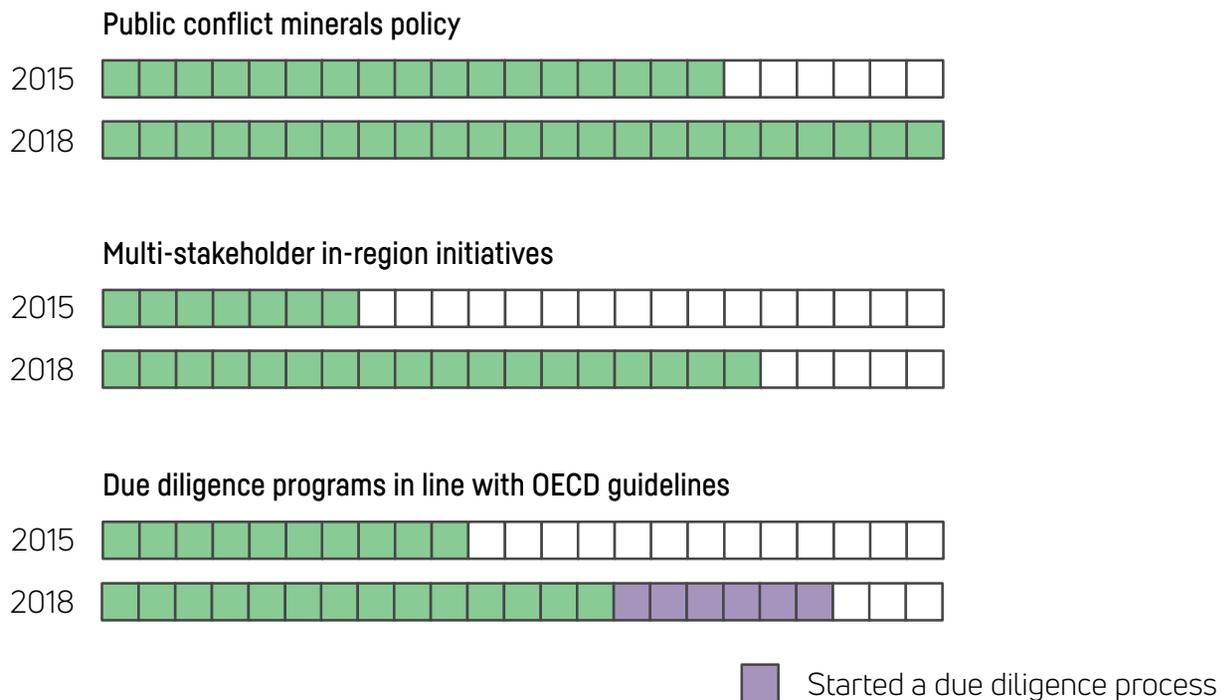
2015 marked the first set of conflict minerals criteria in TCO Certified. Our goal was to establish a baseline requirement for industry engagement in conflict minerals initiatives, and also to independently assess the status of due diligence processes declared by brand owners.

During the three year period, there was a clear increase in involvement among IT product brand owners with IT products certified according to TCO Certified. Independent verifiers confirmed that, by the end of 2018, all of the 23 brand owners had a public conflict minerals policy and the number of brands engaged in multi-stakeholder, in-region initiatives had more than doubled from 2015. During this period, four brand owners that had initially engaged with in-region initiatives whilst improving their due diligence programs to be compliant to the OECD due diligence guide-

lines, remained engaged in both processes even though a dual commitment was optional. Set in a larger context, what we see is that TCO Certified has expanded global industry engagement in responsible mining practices.

Real impacts such as this often require a collective effort. In this way, TCO Certified goes where national legislation can not, by engaging companies globally and influencing local governments and authorities to do more to protect human rights in mineral supply chains.

Brand owners' engagement in conflict minerals management and initiatives





Industry engagement and emerging hotspots

Reports from annual interviews
with IT product brand owners

Going deeper – shaping the future of sustainable IT through industry dialog

To comply with the criteria in TCO Certified, brand owners need to have an efficient management system in place. We carry out annual, structured interviews with brand owner senior management representatives to measure maturity levels and identify risks early on.

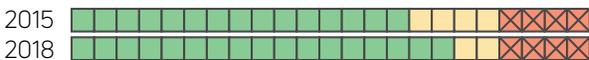
This process helps brand owners understand and anticipate emerging hotspots, along with how to support their suppliers in addressing them. The interviews are an important aspect of ensuring an open relationship with brand owner senior management and gathering insights into what challenges they face. These conversations are also a way of identifying emerging issues and areas where more engagement or systematic approaches are needed, which is valuable in our ongoing criteria development within TCO Certified.

Findings from our dialogs with brand owners during 2015-2018

1. Brands are responding to the demand for supply chain transparency

Our interviews show that an increasing number of brands are making information about their supply chains public. However, only some brands were able to provide proof that they had visibility into their supply chains beyond tier two. These brands have been working with supply chain due diligence longer. The increase in transparency is partly linked to that more brand owners improve their conflict minerals due diligence programs to identify mineral smelters and refiners, but also that purchasing organizations demand better information about which suppliers brand owners work with.

Is information about any part of the supply chain made public on the brand owner’s web site or by other public means?



Does the brand owner maintain information and the location of both suppliers, beyond second tier?



2. More brands are actively pursuing supplier due diligence based on social risk assessments

Some brand owners have identified the need to improve and close the gaps between their risk assessments and the established OECD Guidelines for Multinational Enterprises, and the adopted principles of the UN Human Rights Council. Following these guidelines helps the brand owner assess risk in a structured way, as well as identify opportunities for business improvements and efficiencies.

When contracting with a manufacturer, does the brand owner first undertake due diligence of the supplier, in accordance with established guidelines?



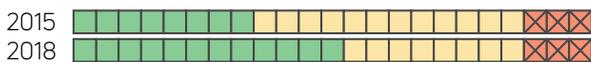
- Best practice, proof and clear description
- Good practice or no proof of best practice made available
- No practice

3. Engagement with unions and NGOs to drive labor rights issues remains low

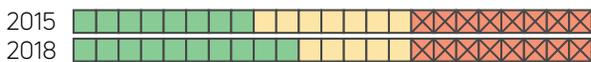
Results show an increased willingness by a number of brand owners to cooperate with local NGOs, other independent parties or worker representatives in order to help monitor worker rights, and provide support for grievance mechanisms and established worker capability building programs.

Brand owners state that they more often collect the contact information of trade union and worker representatives at final assembly factories and include representatives in their audit process as far as being interviewed by the auditor. However, the number of brand owners that continue to include the representatives as part of the corrective action and monitoring process remains low. It is our opinion that more engagement is needed in this area.

Does the brand owner actively promote workers right to collective bargaining and freedom of association?



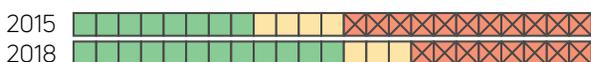
Are trade unions represented at final assembly factories manufacturing certified products, and can the contact person's information be provided?



4. More brands promote the importance of worker representatives to factory management where free unions are restricted by law

An increasing number of worker representatives have been educated on their rights to freedom of association and collective bargaining. This important step has resulted in measurable positive effects on the working environment. Examples include the increase in a number of worker committees in place and growing worker engagement in capability building programs.

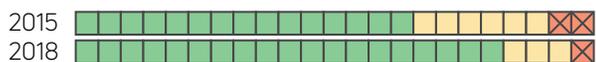
Is the brand owner in contact with local NGOs, local trade unions, worker representatives or multi-stakeholder initiatives in order to help monitor manufacturing facilities?



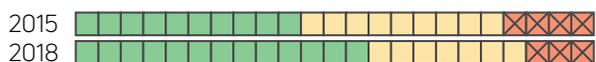
5. Growing reliance on whistleblowing programs is not an effective approach to protecting workers

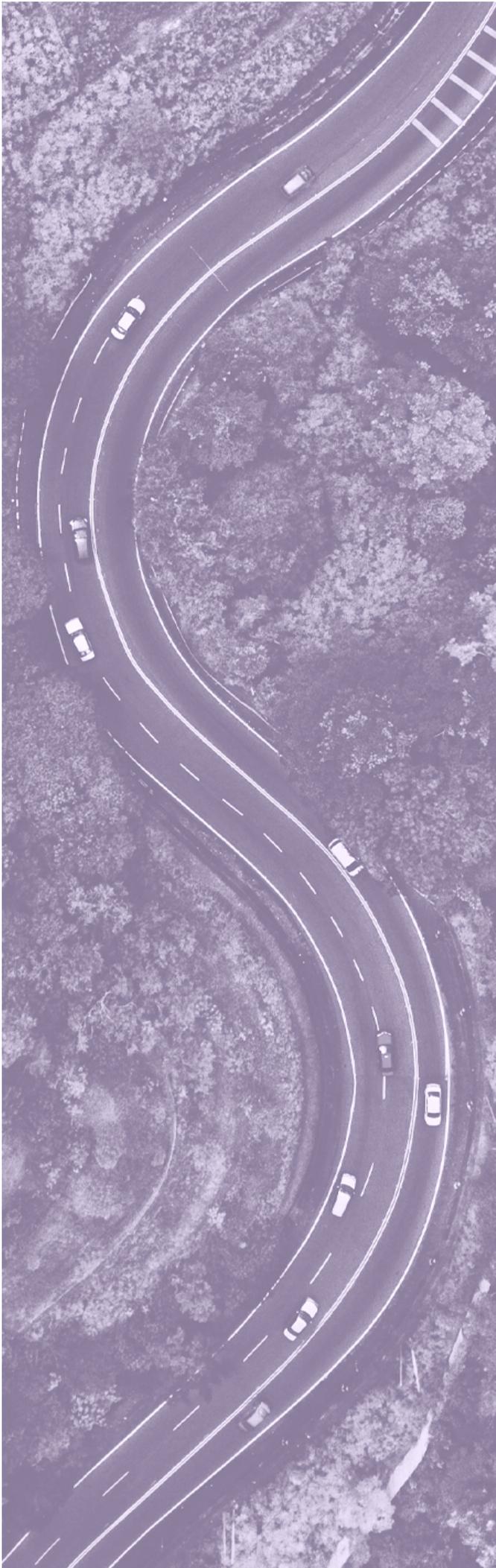
We see that brands continue to rely on whistleblowing programs for gaining insight into worker grievances, even though the number of workers that trust and use them as a channel to register a grievance is generally low. A more effective way to monitor and secure the rights of workers at the factory level would be to engage more indirect, ongoing collaborations with unions or civil society organizations.

Has the brand owner a whistleblowing program that allows its own and supplier employees to inform confidentially about code of conduct, legal and ethical concerns?



Does the brand owner provide workers with information about how to confidentially report grievances, and feedback on the progress of a grievance investigation and conclusion?





Conclusions and next steps

**Challenges and new solutions
– criteria in TCO Certified,
generation 8**

Social responsibility becoming part of core business strategy

As we have seen, industry engagement and maturity around social responsibility is increasing. Backed up by the criteria and independent verification in TCO Certified, purchasing organizations also influence faster industry progress by leveraging their demand for certified products.

Ongoing dialog between TCO Development and brand owners has increased awareness of social responsibility issues among brand owner senior management. They have more insight into factory operations and are more actively involved in implementing the management systems required in TCO Certified at the factory level. Compared to 2015, social responsibility is now more often a part of the brand owner's core business strategy. Also, final assembly factory management is working more actively to engage suppliers in sustainability issues.

Next step: Factory categorization and a cap on working hours

Progress made during the last few years has made it possible to take another ambitious step forward, and as a result, TCO Certified, generation 8 includes several new and stricter criteria.

As more factories commit to the TCO Certified system and criteria, the span of maturity levels widens. To recognize the progress and varying maturity levels of final assembly factories, we now start categorizing factories based on risk, allowing brand owners to choose factories that work proactively with sustainability issues. The benefits are threefold. Firstly, more ambitious factories get more business, which is an incentive for factory management to prioritize sustainability issues. Secondly, brand owners get more leverage to drive change when they share the same factory and use the same set of sustainability criteria. Instead of trying to meet individual customer requirements that may contradict each other, industry can then focus on making continual improvements that matter. Thirdly, this approach frees up our verification resources, allowing us to introduce stricter monitoring at high-risk factories and drive faster progress, while reducing audit fatigue at more mature facilities.

Working hours is a continual challenge in the IT industry, and for many workers, the average

work week can be long enough to pose a risk to both their physical and mental health. Among the main reasons behind this continuing problem is a lack of local law enforcement around maximum working hours and seasonal peaks in production

Factory conditions criteria in TCO Certified, generation 8 (2018-2021)

- We're categorizing factories according to risk and requiring more frequent audits in high-risk factories than in low-risk factories.
- Each factory must have a certified health and safety management system to ensure in-house capabilities to protect workers from various hazards.
- Working weeks must not exceed 60 hours, including overtime, irrespective of local laws. Employees must have one day off for every seven consecutive days worked.
- Brand owners must have processes and routines in place to prevent and respond to all forms of corruption, which must be independently verified to align with the International Chamber of Commerce rules on Combating Corruption and Guidelines on Whistleblowing.

demand. To protect these workers, we believe it is necessary to independently set — and enforce — a limit on working hours as part of our criteria. In TCO Certified, generation 8, working weeks can not exceed 60 hours per week, including overtime.

Increased transparency drives the shift toward safer substitutions

In 2015, TCO Development made a shift from not only banning hazardous chemicals but also requiring that substances in a problematic category — flame retardants — are assessed and identified as safer alternatives before being used in certified products.

The resulting TCO Certified Accepted Substance List is promoting a more sustainable future in chemical management and increases the availability of hazard information that can have wider societal benefits.

This new approach demands greater transparency from the chemical industry regarding the contents of their products. At the same time, IT and other manufacturing industries gain access to safer flame retardant alternatives. Our approach to hazardous substances also allows purchasing organizations to choose products that are independently verified to include safer flame retardant substances.

Next step: Focus on safer plasticizers and process chemicals

The success of the TCO Certified Accepted Substance List has made it possible to expand the list to include another category of substances commonly used in IT products: plasticizers. Plasticizers are used in cables for example, to add flexibility. We chose to include plasticizers at this time due to the EU decision to add four commonly used plasticizers to RoHs, and we wanted to reduce the high risk of these banned substances being replaced by equally hazardous and unregulated alternatives. The IT industry widely supported this approach.

We are also expanding our work to process chemicals used in manufacturing. Factory workers often come in contact with hazardous substances, sometimes without having the appropriate protective equipment. As a first step toward identifying safer process chemicals, in generation 8, we're gathering data on what chemicals are being used in the factories. Workers must also be educated on the potential risks involved and be provided with the appropriate protective equipment.

The work with closing data gaps and driving higher safety benchmarks for chemicals already on TCO Certified Accepted Substance List continues. We expect the list to grow as new technologies and designs require innovative chemical performance solutions. However, the best way

Hazardous substances criteria in TCO Certified, generation 8 (2018-2021)

- The TCO Certified Accepted Substance List is expanded also to include plasticizers.
- We're gathering information to find out what process chemicals are being used in the factories, as a first step to identifying safer alternatives.
- Workers exposed to hazardous substances at work must be provided with the recommended personal protective equipment (PPE) and educated on the potential risks of hazardous chemical exposure.
- Each factory must have a certified health and safety management system to ensure in-house capabilities in preventing exposure and protecting workers.

to remove the risk of exposure to chemicals is to eliminate the hazard. We can see that our criteria have led to growing interest from manufacturers to remove the need for using flame retardants and plasticizers altogether, by innovating product design and using alternative materials.

Multi-stakeholder initiatives support more responsible mining practices

The first generation of conflict mineral criteria in TCO Certified was introduced in 2015. The purpose was to drive a minimum level of engagement among brand owners and support the establishment of a legitimate mining industry.

Brand owners were required to have a public policy for the responsible sourcing of conflict minerals and communicate it to the supply chain. In addition, they had the option of either supporting a multi-stakeholder program that works to support legitimate mining and local communities, or independently verify that their conflict mineral due diligence program is in line with OECD guidelines.

The outcome exceeded expectations: the number of brands engaged in multi-stakeholder, in-region initiatives has more than doubled. Several brand owners were at the same time compliant with OECD due diligence guidelines even though the dual commitment was optional.

Next step: Cobalt comes into focus

Demand for cobalt is rising quickly, and for some years there has been a growing awareness of the situation in cobalt mines, with human rights abuses uncovered in the Democratic Republic of Congo. However, it is not yet included in the definition of conflict minerals, and therefore not covered by existing legislation.

In the absence of relevant regulations, we have revised our criteria on conflict minerals to go beyond the current definition and require brand owners also to take responsibility for cobalt, irrespective of where in the world they source the mineral.

Criteria in the previous generation were set to establish a minimum level of conflict mineral engagement among brand owners, and also to independently verify their declared due diligence processes compared to established guidelines.

Now that baseline brand owner engagement is more widespread, we have been able to tighten our criteria in this area. Every brand owner is now required to start structuring a due diligence process based on the OECD due diligence guidelines

toward conflict minerals and cobalt, even though not required by law. They must also engage in global multi-stakeholder initiatives that work for the responsible sourcing of these minerals.

Conflict mineral criteria in TCO Certified, generation 8 (2018-2021)

- The definition of conflict minerals is expanded to include cobalt.
- The brand owner public responsibly sourced minerals policy is not limited by geographical location or current government regulations – it must be global.
- The requirement for multi-stakeholder initiative engagement is no longer optional. All brand owners must be part of an established, multi-stakeholder, in-region program that works to support legitimate mining and local communities.
- The requirement for supply chain due diligence is no longer optional. For conflict minerals and cobalt, all brand owners must develop a supply chain due diligence program that is in line with OECD due diligence guidelines. This includes mapping supply chains, information verification, and the transparency of findings.

Toward sustainable IT products

TCO Certified drives the development of IT products that are more sustainable. Looking back at 2015-2018 we can clearly see that the certification has led to substantial progress, directly benefiting people working in the supply chain and the environment.

We could not have done this work alone and want to thank all of you who have been involved. Brand owners have worked hard to meet the criteria in TCO Certified. Purchasing organizations have used TCO Certified to make more responsible choices for IT products. Other stakeholders have kept us on our toes about emerging hot spots and contributed to the evolution of new criteria.

Many challenges remain before IT products have a sustainable life cycle. TCO Certified, generation 8 is our way of addressing these issues. Do you want to be part of the journey? Learn more and keep in touch at tccertified.com.

With over 25 years of experience, TCO Certified is the world-leading sustainability certification for IT products. Our comprehensive criteria are designed to drive social and environmental responsibility throughout the product life cycle. Covering eight product categories including displays, computers and mobile devices, compliance is independently verified, both pre and post certification.