

**CREATING ONTARIO'S
TOXICS REDUCTION STRATEGY**

**SUBMISSION
TO THE
MINISTRY OF ENVIRONMENT**

EBR Registry number 010-4374

**BY THE
ONTARIO FEDERATION
OF LABOUR**

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The Ontario Federation of Labour (OFL) is the central labour organization in the province of Ontario. It has an affiliated union membership of over 700,000 members from all regions of the province. With most unions in Ontario affiliated, membership includes nearly every job category and occupations in every segment of the Ontario economy. This includes manufacturing, mining and other resource sectors, petro-chemical, health care, education, firefighters, public services and others.

As a province-wide central labour body, the OFL works to develop and coordinate policies as passed at our conventions and by our executive bodies. One of the key roles of the OFL is to try to influence public policies that affect all working people, their families and communities.

We welcome the opportunity to comment on the Ministry of Environment's discussion paper on a Toxics Reduction Strategy for Ontario.

INTRODUCTION

If we are to prevent future disease from occupational and environmental causes, we must aim now, to reduce the use of existing toxic substances or processes and provide the framework for development of new, non-toxic substances and processes in production. The successful reduction of toxic substances and processes in the workplace will also play a key role in diminishing environmental pollutants. If we are to reduce to burden of toxins human activity is placing in the air we breathe, the water we drink and the foods we eat, substantive action needs to be taken now. If there is to be any hope that we can reduce the threat from climate change which is pushing our civilization and our society closer to a series of catastrophic events substantive action needs to be taken now. The human and financial costs of not doing so are far too great.

The labour movement has a vision of a healthy environment. It is a vision founded on sustainability – a sustainable economy, sustainable employment, sustainable production and the public services that support it. It is a vision of a just and sustainable society.

At the 1999 Canadian Labour Congress Convention, the delegates strongly supported the first resolution put forward by the Convention Committee on Health, Safety and Environment. This resolution called for the creation of thousands of “green jobs” throughout the Canadian economy.

The origin of the resolution was not simply due to threats to the livelihood of the working class in Canada. The problem is bigger, deeper and wider. The global economy is not *sustainable*. We are exceeding the capacity of the earth to sustain all forms of living things, including human life and health. As a result, we are causing the extinction of plant and animal species and destruction of *ecosystems*; shrinking *cropland*; falling water tables; destruction of the protective ozone layer above the earth, disruption of climate, increased storms, flooding, drought and *global warming*; shrinking *natural resources* such as fish and forests, some minerals and fossil fuels; *pollution* and chemical contamination of air, water, soil and food (the “toxic economy”) and huge *population growth*. The status quo is working for neither nature nor humanity.

The OFL is prepared to support government initiatives which we feel will promote job creation in “green industries” and help existing industry transition to “greener production”. We know that some industries and the jobs that exist in those industries are not sustainable. When, we as a society create Green Jobs, there will be an industrial transition – this means that workers in traditional industries must be protected with meaningful Just Transition programs. Just Transition must be an integral part of any government strategy to create green jobs or drive toxic use reduction.

PRECAUTIONARY PRINCIPLE

The precautionary principle is an approach to eliminating hazards before they cause harm. Simply put, the philosophy behind precautionary principle reads, “*when an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.*”

The precautionary principle has been used internationally, primarily around issues of environmental concerns. One of the most important times the principle was used was at the 1992 United Nations Conference on Environment and Development.

The precautionary principle was incorporated into a declaration passed at the conference which stated:

“In order to protect the environment, the precautionary approach shall be widely applied by states according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation.”

The principle of precautionary action has four parts:

- People have a duty to take action to prevent harm before it happens. If there is a reasonable suspicion that something bad may happen, then there is an obligation to try to prevent it.
- The burden of proof of harmlessness of a new technology, process, activity, or chemical lies with those who wish to use or introduce it, not with the general public.
- Before using a new technology, process, or chemical, or starting a new activity, people have an obligation to examine a full range of alternatives including the alternative of doing nothing.
- Decisions applying the precautionary principle must be opened, informed, and democratic and must also include affected parties.

The precautionary principle is not really new. The essence of the principle is captured in common sense aphorisms such as “*an ounce of prevention is worth a pound of cure*”, “*better safe than sorry*”, and “*look before you leap*”. These were the thoughts of public health officials in the 1920s when the petrochemical and automobile corporations announced they were going to start putting lead into gasoline. Public health officials argued that this should be delayed and possible repercussions studied. The corporations argued that, in the absence of convincing evidence of widespread harm, they had the right to proceed. In the end, the corporations won out and this set the standard for corporate behaviour for the next 50 plus years. Industrial chemicals were given the equivalent of civil rights where they were treated as innocent until proven guilty. In the face of scientific uncertainty, corporations have been allowed to proceed with dangerous activities until sufficient evidence has been gathered requiring those corporations to implement control measures. Millions of people and our environment have suffered as a result.

In conducting general research, scientists have defined scientific certainty as being 95% sure that cause and effect have been correctly identified. Corporations have taken this research principle and demanded scientific certainty before controls should be implemented. Even when the evidence has become clear, they try to roadblock implementation of controls by arguing economic or technical feasibility. The corporations have even committed job blackmail by threatening job loss if protective requirements are made mandatory. They have twisted a research principle and use it as a weapon when health and safety or community activists are arguing that a chemical or process being used may be dangerous and are demanding that precautions be taken.

Parents do not need to know with 95% certainty that their child is going to be hit by a car when they tell the child do not play in the street. They just need to know there is a reasonable danger to that child. We, as a society, need to take precautionary action for prevention to keep people out of harm's way.

While this principle has primarily been used internationally around environmental health issues, other groups are adopting this philosophy to protect the health of workers. In 1996, the American Public Health Association passed a resolution entitled, "*The Precautionary Principle and Chemical Exposure Standards for the Workplace.*" This resolution recognized the need for implementing the precautionary approach, including the shifting of burdens of proof of every chemical considered potentially dangerous until the extent of its toxicity is sufficiently known, and the establishment of strict, preventive chemical exposure limits.

Then in 1999 the Canadian Public Health Association, also, passed a resolution at their AGM supporting the precautionary principle and called on the federal and provincial departments and ministries of health and of environment to make this principle mandatory in their consideration of policy development.

The labour movement has for decades struggled to convince the Ontario government to take preventive action on toxics, we have lobbied for requirements that substances be tested for their safety and that employers and producers demonstrate that substances are safe to use before being introduced into the workplace. We have lobbied for health based exposure limits and mandatory substitution of toxics. It was entirely in keeping with our philosophy that prevention comes first and that the Ontario labour movement adopted the precautionary principle at our bi-annual convention in November of 1999.

In January of 2007 the SARS Commission issued its final report, *The Spring of Fear*. The commission was led by Ontario Superior Court Justice Archie Campbell to investigate the circumstances that led to the SARS outbreak. The first four recommendations dealt with the precautionary principle. Justice Campbell recommended to both the Ministry of Health and the Ministry of Labour that the precautionary principle be included in the Health Protection and Promotion Act, the Occupational Health and Safety Act and their regulations. He also, recommended both ministries reference the principle in all operational standards and directions.

One of the most substantive developments in this area is new legislation entitled Recognition, Evaluation, and Authorization of Chemicals (REACH), which has been proposed by the European Union. This initiative, launched thanks to an agreement made in 2006 by the European Union, attempts to remedy the prevailing policy failure that has allowed thousands of substances to be introduced into workplaces without adequate knowledge about their environmental or health effects.

The legislation uses the precautionary principle and shifted the burden of proof to the businesses that wish to use them. REACH explicitly restricts the use of carcinogens and mutagens, and forces consideration of alternatives as part of the chemical licensing process.

The lack of a precautionary principle approach was identified as another gap in legislation and government policy in the previously discussed report prepared for the Canadian Strategy for Cancer Control.

The Ontario Ministry of the Environment now references the precautionary principle in the Statement of Environmental Values (SEV). This principle is presented as one of its guiding principles in its decision making process. It is appropriate that this be included in the ministry's efforts in toxics reduction.

In the discussion paper the MOE asks the question,

“Should the legislation include authority for the Province to take precautionary action when, with limited scientific evidence, it suspects that a toxic substance poses a serious risk of harm to human health or the environment?”

To this the OFL answers yes and that the MOE should go further and ensure that the precautionary principle becomes the guiding principle in any legislation, operational standards, guidelines and directions related not only to the Toxics Reduction Strategy but to all the work of the ministry. It is clear that not only is there increasing broad public support for this but organizations representing workers, health care professionals, public health officials and environmentalists have been actively calling on governments to do this in Canada and internationally.

MANDATORY IMPLEMENTATION

We feel very strongly that the implementation of the plans prepared under this initiative be mandatory. This is needed to drive real toxic use reductions to protect the health of the environment, the workers and improve public health. Several years ago KPMG conducted a survey, the results of which have been widely reported. Interestingly enough the results support our position. The KPMG Canadian Environmental Management Survey of Canadian Corporate Executives reported:

- 16% were motivated to take action on environmental issues when government programs were voluntary and
- 95% were motivated to take action on environmental issues to ensure compliance with government regulations.

Labour has been on the front line where the impact of toxic exposures are first seen, the workplace. Throughout our history, we have seen how far corporations will go to protect their interests. They have been and continue to be fully prepared to poison workers, their families and their community for the sake of making a dollar.¹ They will lie about the hazards. They will try to baffle the medical community, media and government regulators as to the risks. They will buy off or intimidate researchers to support their product or at least keep silent.²³ Even though while developing strategies to minimize their liability while maximizing their market. For years investigative reporters, researchers, medical professionals and public health professionals have exposed all this to the public.⁴⁵⁶⁷⁸⁹ Time and again internal corporate documents have revealed a strategy of delay, deny and outright deceit.¹⁰¹¹

When corporations have been forced to address environmental issues, their cost estimates and job loss threats have been found to be exaggerated.¹²

By any calculation the human toll in Ontario alone has been far greater than any inflated estimates by industry. In this year alone there are an estimated 63,000 new cancer cases and 27,400 deaths from cancer.¹³ There is no agreed percentage of the environmental and occupational relatedness of these cancers. Nor are there accurate statistics on the amount of minor and major birth defects caused by environmental toxins. It should be enough that there is evidence that they are occurring. Environmental exposures are not voluntary, nor should it be voluntary for those corporations who produce and use these toxins in the course of earning a profit to implement a toxic reduction strategy.

1 A Job to Die For? Ontario Federation of Labour, 2000

2 The Politics of Cancer Revisited, Dr. Samuel Epstein 1998

3 Hardell L, Walker MJ, Walhjalt B, et al. Secret ties to industry and conflicting interests in cancer research. *Am J Ind Med.* 2006 Nov 3.

4 The Politics of Cancer, Dr Samuel Epstein, 1978

5 The Secret History of Lead by Jamie Kitman, The Nation March 2000

<http://www.thenation.com/doc/20000320/kitman>

6 Television documentary, "Trade Secrets" by Bill Moyer original air date March 26, 2001

<http://www.pbs.org/tradesecrets/>

7 When Smoke Ran Like Water Tales of Environmental Deception and the Battle Against Pollution, Devra Davis, PhD, MPH 2002

8 Deceit and Denial The Deadly Politics of Industrial Pollution, Gerald Markowitz and David Rosner, 2002

9 The Secret History on the War on Cancer, Devra Davis, 2007

10 Tobacco industry papers <http://www.library.ucsf.edu/tobacco/>

11 Asbestos and chemical industry papers <http://www.chemicalindustryarchives.org/>

12 Prospering with Precaution: Employment, Economics, and the Precautionary Principle by Frank Ackerman and Rachel Massey Global Development and Environment Institute Tufts University August, 2002

13 "Canadian Cancer Society/National Cancer Institute of Canada: **Canadian Cancer Statistics 2008**, Toronto, Canada, 2008." April 2008, ISSN 0835-2976

SUBSTITUTION CRITERIA

To be enforceable, mandatory substitution regulations need to include the following:

i) Criteria for deciding which substances are less toxic

Many of the same considerations that go into a decision about whether to approve a pre-tested substance or whether to ban a substance currently integrated into the workplace must also be made in comparing the relative toxicity of substances which may be substituted one for another. In some cases, this comparison is easy. For example, vegetable oil may be used instead of VM&P Naphtha as a print roller cleaner. Naphtha is not a highly toxic substance but vegetable oil is not at all toxic and should be substituted for the solvent in this application.

But the comparison may be more complicated than this example if the potential substitutes have quite different toxicological or safety properties, which make them difficult to compare. A substance with unpleasant, acute effects may not be successfully substituted for a chemical with serious, long-term, chronic effects. For example, unions in B.C. pressed the forest industry to find a substitute for chlorophenol wood preservatives known to cause cancer. Early substitutes caused such extreme, acute effects in workers that they refused to work with them. (Only after a European ban on B.C. treated lumber, were satisfactory substitutes for chlorophenol found.)

ii) A requirement that employers survey highly toxic substances present in the workplace and look for alternatives

A mandatory substitution regulation should, as a minimum, target potent carcinogen, reproductive toxins, neurological toxins and those toxic substances which are bio-accumulative and persistent for review and potential substitution. Employers should be required to document, in writing, their efforts to search for substitutes and to justify choices made.

iii) Promotion of Innovation in Development of Non-toxic Inputs, Safe Processes, and Healthy Products

The above sections represent, to a certain extent, negative regulatory approaches to the use of toxic substances. A comprehensive approach to this issue should also incorporate some means of stimulating the search for non-toxic inputs and safe processes which provide the goods and services we need. This constitutes a vital element in weaning industry from its dependence on toxic substances and processes.

This government must set the example and initiate a program to look for non-toxic alternatives for use by its ministries and set policy which requires any firm contracting with the government to do the same.

SECONDARY VICTIMS

For decades, one of the most important areas of public policy that the OFL has tried to influence is the prevention of work related injuries and illnesses, including occupational cancers. It has been our experience that far too often workers exposed to toxic substances bring home more than a paycheque. Toxic substances are often unknowingly brought home, exposing members of the worker's family. There are known cases where spouses and children of asbestos workers have died as a result of contracting mesothelioma. The only known cause of mesothelioma, a cancer of the lining around the lungs, is inhalation of asbestos fibres. Some of these women never worked outside the home. They received their exposures by shaking off their husband's work clothes before doing the laundry.

In addition, many substances affect the reproductive outcomes of workers and their spouses. These outcomes include visible birth defects, learning disabilities, or problems with social integration.¹⁴ For women workers, even after delivering a healthy baby, there is the issue of breast milk contamination. Some toxic substances are stored by the body in the tissues of a woman that are used to produce milk. These contaminate then concentrate in the breast milk.

A mandatory requirement to seek out and use safer substitutes will result in reduced exposures to the environment, to workers and to their families.

¹⁴ Research on the impact of industrial chemicals on prenatal development is limited. The MotherRisk program at the Hospital for Sick Children has been working to close this knowledge gap.
<http://www.motherisk.org/women/occupationalExposures.jsp>

Toxics Use Reduction Institute

In the U.S.A., Massachusetts established the Toxic Use Reduction Act (TURA) in 1989. This law encourages a reduction in the amount of toxins used and generated as a result of an industrial process or operation. It is reportedly the preferred mechanism for complying with all legislation governing workers and environmental health and applies to companies with ten or more full-time workers manufacturing 25,000 pounds or more of a “reportable” toxic substance. TURA requires companies to report on toxin use, not toxin release. Central to TURA is a facility based plan to reduce toxins.

Massachusetts also, provides support for these facilities or companies in the form of training and research into alternative substances. The information accumulated over an eight year period and reported in 1997 demonstrated that companies generated 41 per cent less toxic waste and reduced use of toxic chemicals by 24 per cent.

Ontario would not be breaking new ground by bringing in substitution requirements. Clearly, the MOE would need to work with other ministries in Ontario, to introduce what has been working in Massachusetts for many years.

Massachusetts also established the Toxics Use Reduction Institute (TURI) to aid employers in reducing their reliance on toxic materials.

Substances that should be made a priority include carcinogens, mutagens and teratogens. In fact the report *Prevention of Occupational and Environmental Cancers in Canada: Best Practices Review and Recommendations*¹⁵ published in May 2005 identifies substitution as one of the best practices for preventing exposures to carcinogens.

The Massachusetts experience was used as an example of best practice in the previously discussed report prepared for the Canadian Strategy for Cancer Control. The lack of mandatory substitution requirement was identified as a gap in legislation and government policy in that same report.

¹⁵ This Report was prepared by the members of the **National Committee on Environmental and Occupational Exposures**, a tripartite and multi stakeholder sub-committee of the Primary Prevention Action Group of the Canadian Strategy for Cancer Control.

This Canadian strategy is being developed by the Public Health Agency of Canada working in partnership with the Canadian Association of Provincial Cancer Agencies, the Canadian Cancer Society and the National Cancer Institute of Canada and other stakeholders.

According to a report prepared by the Cancer and the Environment Stakeholder Group,¹⁶ Ontario would benefit from the establishment of an institute similar to the TURI. This report was released in August of 2007 and is entitled *Cancer and the Environment in Ontario: Gap Analysis on the Reduction of Environmental Carcinogens*.

This institute should include in its governance model representation from public health and occupational health as well as organizations representing the environmental movement and the labour movement.

This institute should also be responsible for overseeing the development of community education material and workshops. It is labour's experience that it is not enough to make information available, some community based training will need to take place if community members are to and interpret the information correctly and make informed decisions.

Citizens also have a responsibility for sustainable consumption to do this. They will need good reliable information to make informed choices and have sustainable goods and services to choose.

BRIDGING SILOS

According to the Ministry of Labour (MOL) Statement of Environmental Values (SEV) one of the ways that the MOL contributes to the environmental well-being of the province is "**encouraging the substitution of hazardous substances with those that are less hazardous.**"

In addition to this, the MOL has responsibility for regulating and enforcing the standards dealing with more than 700 hazardous substances. These regulations are intended to protect workers from over exposure to toxic substances and prevent work related diseases.

The MOE claims that it is shifting from its "end of pipe" focus to one of pollution prevention by reducing the use of toxic substances.

It appears that both Ministries are now working on the same issue but for different reasons. The MOE and the MOL need to work to bridge the silos that the two ministries are currently working in.

¹⁶ As a result of the action plan described in the *Cancer 2020 report*, the **Cancer and the Environment Stakeholder Group** was created by Cancer Care Ontario with support from the Canadian Cancer Society with the objective of developing and supporting the implementation of an environmental cancer prevention strategy in Ontario. Members of the group include health, professional and environmental organizations, charities, and labour groups.

AS LOW AS REASONABLY ACHIEVABLE

The As Low As Reasonably Achievable (ALARA) principle is widely used in the nuclear industry to reduce exposure to levels much lower than the legal limit. The inclusion of an ALARA principle could help to drive employers in continuous improvement in toxics use reduction.

The absence of the use of the ALARA principle was identified as a gap in legislation and government policy in the previously discussed report prepared for the Canadian Strategy for Cancer Control.

JUST TRANSITION

As a result of the ban (on grounds of environmental health) of tetraethyl lead, over 2,000 Canadian workers lost their jobs. A decade after the ban, 36% of the production workforce was still unemployed; 8% held only part-time jobs; 23% had lower paying jobs and only 25% held jobs of equal or higher salaries. All workers lost their seniority as well as suffering other losses, such as future pension value and stress-related damage to their health.¹⁷

Eliminating tetraethyl lead from gasoline was the right thing for the government to do. Abandoning the workers was not. Ontario needs a Just Transition program for workers and communities who will be impacted by this shift in government policy.

Society must share the burden of transition with the workers and communities most directly affected by the changes. Governments should create funds for Just Transition programs and impose a levy on unsustainable industrial activities, dedicated to a transition fund. Businesses, also, have a responsibility towards the community in which it invests. Businesses should not be able to move elsewhere without aiding communities in their transition to new sustainable economic activities. They have a responsibility to co-operate with workers in moves to sustainable production and to ensure that Just Transition programs are properly implemented.

¹⁷ Canadian Labour Congress Policy on Just Transition For Workers During Environmental Change, April 1999

The Canadian Labour Congress has defined Just Transition with 5 key elements:

THE MEANING OF JUST TRANSITION

Just Transition is:

Fairness:

Just Transition is the fair treatment of workers and their communities when employers close facilities for whatever reason. It is a moral and political imperative.

Re-employment or alternative employment:

The prime aim of Just Transition is the continuation of employment without loss of pay, benefits or seniority. Job equity is at least as deserving of preservation as the equity of corporations.

Compensation:

Where continuation of employment is not possible, just compensation is the next alternative.

Sustainable Production:

Just Transition is essential to the move to more sustainable production methods and the service sector which supports it.

Programs:

Just Transition will express itself in a variety of ways, according to the issue, but there must always be a *program*, suitable to address the environmental change that is about to take place.

Just Transition implies change – above all, change in employment. Change in jobs can have negative impacts, for individuals, families and communities. In a modern state, we aim to share the gains and we, also, aim to share the burdens of change, so that no individuals, families or communities carry an inordinate share of the burden.

Public policy makers should be aware of change before it happens and, particularly when change is the direct result of public policy, to ensure that the burdens of change are equitably shared. Change does not simply involve property rights, to be sorted out by markets. Rather, public policy must reflect the impact of change on individuals, families and communities.

When industrial change takes place as a deliberate act or effect of public policy and has an impact on both workers and employers, it is known as *economic conversion*. Within this broader context, environmental change is a particular case and its equivalent in terms of economic conversion is Just Transition. It is similar to economic conversion generally in that it assumes a *planning role in public policy*.

The program elements, funding and planning for an Ontario Just Transition go beyond the scope of the Ministry of Environment. The Ministry, however, should be promoting this program with the Ontario government and be a partner in the planning.

BANNING/LICENSING TOXIC SUBSTANCES

Prohibiting or restricting the use of highly toxic substances is an effective method to protect workers and the environment from the unnecessary use of highly toxic substances. Implementing a licensing system for these substances when there is a demonstrated need for their use with requirements to protect workers and the environment can be a very effective control strategy. Employers using such substances will be registered and this can be used as part of an enforcement strategy. Employers who do not maintain proper measures and procedures would stand to lose their right to use the substance.

The use of bans and restrictions was another best practice identified in the previously discussed report prepared for the Canadian Strategy for Cancer Control.

The Right to Know

More than twenty-five years ago labour fought to have the right of workers to know about the hazards they are working with to become law. This right became one of three key rights in Ontario's Occupational Health and Safety Act. The other rights dealt with the right to participate in issues that affected their health and safety and the right to refuse to do work they believe to be hazardous.

Employers chose not to respect the worker right to know and responded by claiming information about the hazards as proprietary and a trade secret. In some cases the first hint that workers had that a substance might be hazardous was when it melted their personal protective equipment. The first hint that it may be explosive was when it blew up in their face.

A few years after the right to know was passed into law, labour found we had to go back and fight for a regulation that would provide explicit details of what information employers would have to provide to workers. Employers were up front with labour, if it was not required by law they were simply not going to do it.

It took four years of consultation and negotiations with provincial and federal governments and industry representatives for labour to see the right to know about hazardous substances spelled out in a regulation. Similar regulations were passed in other provinces and at the Federal level. It became a pan-Canadian system known as the Workplace Hazardous Materials Information System (WHMIS). This regulation spelled out the right to know the three main requirements

- Basic details on warning labels on containers of hazardous materials
- Detailed information on separate material safety data sheets (MSDS)
- Worker training on how to use and understand this information

It, also, has a process where employers can protect legitimate trade secrets without endangering worker health and safety.

It is labour's position that what we have fought and gained for workers we also wish for their neighbours. It is our experience that provisions for community right to know will need to be provided in detail.

EXTENDED PRODUCER RESPONSIBILITY

Extended Producer Responsibility (EPR) shifts the burden for recycling products discarded by consumers from the public sector back to the private sector, or rather the original manufacturer. This way, manufacturers are inspired to implement design changes that incorporate effective material and product recycling and reuse. To realize this level of effectiveness manufacturers would in turn look to reduce or eliminate toxins that would potentially contaminate reusable material.

Two prominent examples of EPR legislation are European Union (EU) directives for automobiles and electronic and electrical equipment waste. Under the Directive on End-of-Life Vehicles, vehicles on the European market after July 2003 may not contain lead, cadmium, or hexavalent chromium. Accompanying, the Waste Electrical and Electronic Equipment Directive (WEEE Directive) which was adopted in February 2003, is another entitled the Directive on the Restriction of the use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS Directive). This directive prohibits the use of lead, mercury, cadmium, and hexavalent chromium in any new electrical and electronic equipment on the market. Countries within the EU are introducing legislation to make the directive national law.

Environment Canada has been promoting EPR primarily as a method of waste diversion. There is an opportunity for the MOE to take a leadership role in a provincial EPR initiative as a means to drive toxic use reduction. This would lead to better protection for the health of workers and communities. EPR and specifically the WEEE and RoHS Directives have been identified as examples of best practices for preventing exposures to carcinogens in the previously discussed report prepared for the Canadian Strategy for Cancer Control.

NANO-MATERIALS

Nanotechnology is advancing faster than our understanding of the long term health consequences.¹⁸ Researchers are manipulating substances and engineering them into hollow spheres or tubes using interconnecting hexagons or pentagons at sizes less than 100 nanometres. These engineered nano-materials have chemical, mechanical, electrical and biological properties which are unique and very different from the bulk properties of the individual substances and compounds. These unique properties give them their own molecular identity which distinguishes them from the existing substances which share the same molecular structure. This uniqueness has created a great deal of interest in the commercial and medical potential of these new materials. This uniqueness also means that much of the legislation currently in place to deal with toxic substances is practically meaningless for these nano-materials.

18 The potential risks of nano-materials: a review carried out for ECETOC *Particle and Fibre Toxicology* 2006, 3:11 (Aug. 14, 2006) <http://www.particleandfibretoxicology.com/content/3/1/11>

While research has shown great promise for the potential usefulness of these materials, we know from experience that just because a substance is useful does not mean it is safe for human health or the environment. Examples such as asbestos, CFCs, DDT, tetraethyl lead and others remind us of this fact. We are also, reminded of the consequences of poor regulation and control before these substances were widely used in commerce. We have an opportunity to learn from the mistakes of the past and ensure that workers and the environment are protected. The consequences of not doing so may lead to tragic consequences for workers, their families and their communities as well as costly clean up efforts, legal and political battles.

Researchers are already raising alerts with initial studies showing that some engineered nano-materials can cross a variety of protective barriers of living organisms, barriers such as intestinal, placental and even the blood-brain barrier as well as individual cellular barriers. This will allow these nano-materials to interact with living cells in ways we can't even anticipate. Different shapes of these materials result in different reactions as does the various coatings that these materials can be covered with. All of which can make them more or less toxic to varying degrees.

Research on animals and aquatic organisms has shown a wide range of effects from short term exposures. One study published in *Environmental Health Perspectives* in 2004¹⁹ showed damage to the brain cell membranes of large mouth bass after just 48 hours of exposure in an aquarium. The impact on filter feeders in the aquatic environment is unknown. Nor do we know if these nano-materials will concentrate in the tissues of other species as they move up the food chain.

These nano-materials are already in use in commercial products but are still being produced on a small scale although pundits expect the rate of production to increase exponentially over the next few years. As with other substances that were later found to be a public health or environmental disaster, these materials are being treated as innocent until proven guilty.

The IRSST in Quebec has recently published two reports on the issue of nano-materials and health. Both of these are available in English and can be downloaded from their website.

Nanoparticles: Actual Knowledge about Occupational Health and Safety Risks and Preventive Measures R-470

<http://www.irsst.qc.ca/files/documents/PubIRSST/R-470.pdf>

In this report the researchers concluded in part "...that current protection methods might not be as effective as previously thought."

19 Manufactured Nano-materials (Fullerenes, C60) Induce Oxidative Stress in the Brain of Juvenile Largemouth Bass *Environmental Health Perspectives* Volume 112, Number 10, July 2004
<http://www.ehponline.org/members/2004/7021/7021.html>

One of the recommendations is as follows:

“To prevent an increase in occupational disease, the introduction of strict preventive measures should be promoted.”

Health Effects and Nanoparticles R-469

<http://www.irsst.qc.ca/files/documents/PubIRSST/R-469.pdf>

In this report the researchers concluded, “The documented toxic effects on animals and the physicochemical characteristics of nanoparticles justify immediate application of all useful measures, based on the precautionary principle, to limit exposure and protect the health of potentially exposed individuals.”

Regulators have an opportunity to learn from the past and take precautionary measures today to prevent another tragedy in the future. Much more research is needed before these engineered nanomaterials should be allowed to be released on a massive scale on an unsuspecting public and an unprotected environment.

BUILDING CAPACITY

The Toxic Reduction Strategy has the potential to make Ontario a world leader in toxic use reduction, substitution initiatives and research. Green Chemistry is a sector of the economy which could create sustainable jobs if this strategy is implemented in a meaningful way.

To do this, we will need to both build capacity and look to organizations that are already established and at least doing related work. This could maximize access to resources and shorten the start up time for this strategy to become established in Ontario. One example is the work of the Occupational Health Clinics for Ontario Workers (OHCOW).²⁰ This organization is funded through the WSIB and has occupational health professionals who could play a leadership role in building capacity and providing technical assistance if the MOE were to partner with them.

Great Lakes United (GLU)²¹ is another organization the MOE should consider partnerships with. GLU has been working in both the U.S. and Canada on clean production, toxic reduction and EPR issues. They have worked to provide education and training programs on the issues and the work being done in other jurisdictions.

²⁰ <http://www.ohcow.on.ca/>

²¹ http://www.glu.org/english/clean_production/index.htm

APPLICATION

The application of this strategy is too limiting. The list of substances should go beyond that cover by NPRI and include carcinogens, reproductive toxins, neurological toxins and those toxic substances which are bio-accumulative and persistent. There should be clear authority for the government to act or add to the list when evidence suggests that new substances or newly engineered substances are a hazard or when new problems are discovered with substances already in use. The requirements should cover all industries in the provincial jurisdiction including the provincial government and scheduled agencies.

THRESHOLDS and PHASE-IN

Simply put, the thresholds are too high and the phase-in too leisurely.

In Ontario, employment relationships are changing. More employers are relying on permanent part-time workers. There is also an increasing shift to the use of temporary workers hired through employment agencies. Employment agencies are a growth industry with increasingly more employers using temporary workers on a permanent basis to carry out the work of the company. Still other companies classify those doing the work as “independent operators”.

The number of employees is no longer a valid measure of the size of a company.

Workers faced with no other options but to accept this precarious work are vulnerable to the whims of the management of the employment agency. Abuse and exploitation is rampant.

In Toronto, the Parkdale Community Legal Clinic has provided the MOL Employment Standards Branch with a long list of employment agencies and the complaints connected with each. The complaints range from cash payments below minimum wage to non-payment of vacation and statutory holiday pay to mis-classification of workers as independent operators or franchisee owners.

Employers willing to disregard employment legislation are often just as willing to ignore other provincial statutes such as the Occupational Health and Safety Act or environmental legislation. A report,²² funded in part by the WSIB, found that "...most precarious workers in our study had not received health and safety training in any of their jobs and a few had been in dangerous situations where the lack of safety equipment and lack of proper supervision at work greatly increased their risk of injury." In interviewing these precarious workers, researchers found examples of workers afraid to raise health and safety issues or report injuries or illnesses they thought were a result of the work they did. They felt it would jeopardize their jobs or their chances of getting full-time work.

Many of these agencies have a satisfaction guarantee for the employer. If for any reason the employer is unhappy with the temporary worker sent to the workplace, the agency will replace them at no extra charge. This means that should a worker ask questions about workplace health and safety, environmental concerns, object to working without the proper training, equipment, etc. They can find themselves without work the following day. They won't be fired they just won't be called and assigned work by the agency.

The ministry will need to ensure that full-time equivalent is included as a measure and that this is defined to include part-time and employment agency workers.

Even where all considered the full-time equivalent is 10 workers, this is still too high a threshold and will not capture a large percentage of employers using toxic substances.

In the case of NPRI thresholds these are, also, too high and should be lower. This is particularly important for substances which are potent carcinogens, reproductive toxins, neurological toxins and those toxic substances which are bioaccumulative and persistent in the environment.

Canada, also, has a Great Lakes Water Quality Agreement which calls for the virtual elimination of persistent toxic substances. Since Ontario is the only province in the Great Lakes basin, Ontario must continue to take a leadership role in working to reduce and where possible eliminate persistent toxic substances.

Respectfully submitted by:

THE ONTARIO FEDERATION OF LABOUR

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22 Marlea Clarke et. al. "This just isn't sustainable," Precarious Employment, Stress and Workers' Health, April 2007.