

# Comments on the proposal to introduce a chemical tax on certain electronic products

Brussels, 28 April 2016

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DIGITALEUROPE, the association representing the digital technology industry in Europe, wishes to thank the Swedish authorities for the opportunity to provide comments on the amended proposal to introduce a chemical tax on certain electronic products.

In general, our members support the goal of reducing the use of hazardous substances. However, we question the appropriateness of the proposal as the most effective and scientifically sound means of phasing out the use of certain chemicals in products. Indeed, the proposed tax is not based on science, contains a number of inaccurate statements and we believe will not lead to the desired goal. We're specifically concerned that the tax is based on the flame retardant technical property (if additive or reactive) and not on the environmental and health aspects of the substance which is the case in all chemical legislation. A serious consequence of this is that substances with documented good properties will be taxed and those with less desirable properties will get maximum tax reduction.

Flame retardants are used to comply with international product safety standards, i.e. to protect the user in case of an improper use of the product or in case of a product fault, thereby by either eliminating a potential fire or delaying its development. The flame retardants are an integral part in the materials they protect. Neither KEMI nor the investigator has provided any scientific references to support their emission concerns. In fact, exposure to certain flame retardants is extremely low, hardly detectable for new products and according to the studies referenced later in the document does not pose a risk to the user, adults or children.

The investigation states that the proposed tax can be implemented as it protects the environment and the health of the general public. However, the investigation fails to deliver a scientific risk assessment. The national tax would clearly constitute a barrier to trade. As such, we are concerned that the law could impede import and manufacture of goods in Sweden, in contrary to the intended requirements under REACH.

For the above-stated reasons as well as additional details presented in the attachment, we call on the Swedish authorities to discard the proposed chemical tax, and alternatively to resend it for further investigation where industry experts would be invited to participate.

While we support the work on chemicals and we are of the view that it should be given high priority, we don't believe that a national tax would be the most appropriate tool.

We look forward to a dialogue with the competent authorities and trust that our comments will be given the appropriate attention.

## ANNEX

### Identified problems with the suggested chemical tax

#### 1. Questionable motives

In our view, already the Governmental order to perform the investigation and deliver a tax proposal contains a number of questionable statements, e.g. “strong actions are needed to reduce the direct exposure and diffuse distribution of hazardous substances from articles.”

We would like to reemphasize that our industry puts safe products on the market. Indeed, flame retardants (FRs) are necessary to ensure compliance to international electrical safety standards, thereby meeting product liability rules that are strict.

#### 2. Arbitrary requirements and legal uncertainty

Despite frequent requests by all of the affected industry associations, the investigator still refuses to define the health and eco-toxicological properties that make the highlighted substances taxable. Without such a definition, there is an obvious risk that companies will promptly aim to remove the substances highlighted, where possible, in order to gain significant tax relief. In doing so they will be forced to use substances with potentially worsened environmental and toxicological properties. The proposal seems to already acknowledge this by introducing a generic 25% tax no matter what substance choices a company makes. This is as a contradiction of aims of the proposals and will not act as a catalyst for companies to search for favourable substitutions from those highlighted in the proposal. (See below)

#### 3. The tax construction contradicts its goal

Depending on the properties of the substance containing bromine, chlorine or phosphorus (additive or reactive), a 50% or 75% tax reduction can be given. However, a total tax reduction is not permitted with the argument that there are many other hazardous substances in these products. This demotivates companies to seek ‘safer’ alternatives which most likely is unique in environmental legislation history.

#### 4. Lack of scientific arguments

The investigator’s report does not make a clear difference between hazard and risk, thus creating confusion among non-specialist readers. It is correct that several of the discussed substances have hazardous properties, however, when used in polymers to comply with worldwide electrical safety standards, they do not pose a risk to the user.

The report frequently states that products containing additive FRs have substantial higher emissions than reactive substances. However, it fails to provide scientific references like performed product emission testing. In reality, while there might be some differences, these might be very small and insignificant

## 5. Tax proposal conflicts with KEMI's published guidance

KEMI is a highly regarded chemical agency which supports Swedish government in its working with sound scientific knowledge and judgment. In 2015, KEMI presented phosphorous flameretardants (PFRs) as a safe alternative to chlorinated flame retardants (CFRs). It is puzzling how Swedish authorities decided to tax PFRs via this tax proposal, along with halogenated flame retardants (HFRs), while stating they are safe alternatives to HFRs in other technical communications. Ref: <http://www.KEMI.se/en/global/pm/2015/pm-7-15.pdf>

KEMI has also published [Guidance in the assessment of diffuse emission from articles](#), which describes that the extent of emission varies depending on the chemical content and material properties as well as handling. The document goes on to assert that it is necessary to investigate chemicals on a case-by-case basis when assessing diffuse emissions. This tax proposal fails to follow KEMI's recommendation by defining such broad categories for taxation. Ref: <http://www.KEMI.se/en/global/pm/2004/pm-8-04.pdf>

## 6. PFRs are not on REACH candidate list

As a EU Member State, Sweden has been a leader in identifying and evaluating hazardous substances based on the ECHA candidate list in order to protect the welfare of their people and the environment. KEMI has routinely utilized scientific articles, chemical reports, and the research of industry and governmental agencies to make judicious evaluations of potentially hazardous chemicals stemmed from the candidate list. However, this standard practice appears to have been ignored while pursuing this tax proposal. Only a handful of the chemicals named in this proposal have been identified on the candidate list. There is not a single representative of the PFR category on the candidate list at all. This tax proposal lacks a credible foundation.

ECHA has established regulatory steps to assure risks associated with substances of concern are properly addressed. It has worked with the EU Commission and EU Member States to guide and align on the safety of human health and the environment. As one of EU members, Sweden is obligated to follow these guidelines if it were to propose a law concerning chemicals and their potential threat to humans and environment.

## 7. Reactive vs additive distinction has little relation to safety

Taxing flame retardants based on reactive and additive forms ignores the depth of technical detail that goes into selecting safe chemicals to include in products. There are many FRs, such as PFRs, that are considered safe substitutes to HFRs, which are being taxed 100% based only on the fact that they are added additively to polymers.

## 8. Unintended consequences and unsustainability

Alternatives to BFRs/CFRs/PFRs such as Metal oxides (not taxed by this proposal) fail to meet flame retardancy requirements (UL 94V0) and other technical performance requirements without the assistance of at least PFRs. Only halogens and PFRs meet international flame retardant performance requirements required for most electronics. PFRs are recommended to substitute HFRs. (Weil, Edward D., Levchik, Sergei V.; Flame Retardants for Plastics and Textiles-Practical Applications, Carl Hanser Verlag, Munich, 2009, p 85-99.)

Flame retardants added to plastics must be compatible with the host polymer to achieve optimal performance of the polymer and to meet numerous fire regulations and international standard requirements. The current tax proposal allows for the un-taxed blending of inorganic and nitrogen-based flame retardants which do not always meet technical requirements. In some cases higher quantities of these flame retardants are necessary to get the same level of fire protection. Furthermore, industries will unavoidably seek tax-free options regardless of whether a substance is safe to use. Taxing HFRs and PFRs does not take into consideration the longer term unintended consequences and will be unsustainable.

## 9. No alternatives & regrettable substitution

When a chemical is identified as hazardous, safer alternatives should be identified through frameworks such as the Interstate Chemicals Clearinghouse Alternatives Assessment Guide, or the Report of the National Academies of Science project “A Framework to Guide Selection of Chemical Alternatives”. Not only does the present tax proposal affect large families of flame retardants without proper scientific basis, the proposal also fails to provide alternatives. Industries are left with little choice and less time to make necessary changes. For example, there are cases in which only HFRs and PFRs meet flame killing properties, and most often PFRs are recommended as a safer alternative to HFRs. However, by proposing to tax HFRs and PFRs without providing suitable alternatives Swedish authority severely limit the capability of industries to stay compliant with FR requirements.

The proposal has highlighted a number of specific substances that are subject to the tax, but there remains no clear reasoning as to what the environmental and toxicological risks are. Crucially there is at present no assessment criteria or testing method for which companies can assign in-order to select replacement substances which do not pose the risks alleged. The proposal seems to account for this with a 25% tax applied generically to products, which leads to the conclusion that it is ok for companies to use substances with potentially environmental / human toxicological risks, provided a minimum fee is paid. Indeed, there is present no motivation, criteria or value for companies to make any assessment on the necessary substitutions and it therefore becomes hard to envisage the environmental and health benefits of the proposal.

The broad definition has nothing to do with substitution. As the investigator refuses to define the condition for ‘safe’ substitution, i.e. what makes a substance taxable or not, the risk for false substitution is very high. Therefore, we are concerned that the tax proposal wants to keep the door open for future arbitrary addition of new taxable substances. To base the tax on the average hazard properties of a group of substances is non-scientific and reveals lack of basic toxicological insights. It is very unfortunate that the tax is based on the flame retardant technical property (if additive or reactive) and not on the environmental and health aspects of the substance including a risk assessment which is the case in chemical legislation. A serious consequence is that substances with documented good properties will be taxed and those with less desirable properties will get maximum tax reduction, i.e. an obvious risk for regrettable substitution.

## 10. Just one scientific reference

The following two documents seem to form the basis for the proposed chemical taxes:

- 1) KEMI report 1/13: “When can economic policy instruments complement regulation within the chemical area?” (132 pages) and
- 2) “Chemical tax on certain consumer products containing chemicals” (322 pages).

Amongst these 450 pages, we were only able to identify one scientific reference from 2008, which is about measurement of certain FRs in home and office environments. The measured FRs were PBDE and HBCDD, the concentrations were extremely low, within the range of nano to picograms.

The investigation did not identify the sources of the FRs (which could have been done in chamber testing). There is only a list of items in the rooms: electric- and electronic products, foam furniture, PUF mattresses and synthetic pillows.

The absolute majority of IT companies had eliminated PBDs and PBDEs from their products already in the mid 90s, where these substances were later banned in 2006 via the EU RoHS Directive. Taking into account the average life of IT products (3-7 years) compared to certain white goods (10-15 years), fixed electrical installation and general lighting systems (15-30 years), it is not likely that the computers and displays in this investigation were the sources of PBDE. Also, HBCDD has never been used in ICT products.

## 11. Credible investigation shows extremely low FR emissions

In 2009, an extensive study was conducted in the US: “Indoor Pollutant Emissions from Electronic Office Equipment” by the University of California Berkeley, Lawrence Berkeley National Laboratory, Arizona State University and Berkeley Analytical Associates<sup>1</sup>.

Slide 20 of the presentation shows the maximum emissions, measured in test chamber to be 5-75 ng /m<sup>3</sup> of the following FRs: TBP =Tributylphosphate, TCEP = Tris(2-chloroethyl) phosphate, TPP = Tri-phenylphosphate, TBEP = Tris (2-butoxyethyl) phosphate, TEHP = Tris(2-ethylhexyl) phosphate with relatively large spread between the different computers, 50-320 ng/m<sup>3</sup> regarding TCEP. PBDE was measured to be 2-7 ng/m<sup>3</sup> (slide 21). Frequently found workplace concentrations limits are typically in the mg/m<sup>3</sup> range, i.e. 100.000 to 1 million times higher. Therefore, no health related effects can be expected at these extremely low concentrations.

Other and similar studies have been carried out showing the same order of emission levels:

### 2003

Federal Institute for Materials Research and Testing (BAM): ‘Emission of Flame Retardants from Consumer Products and Building Materials’ by Dr. Sabine Kemmlein, Dr. Oliver Hahn, Dr. Oliver Jann.

[www.umweltbundesamt.de/sites/default/files/medien/publikation/long/2386.pdf](http://www.umweltbundesamt.de/sites/default/files/medien/publikation/long/2386.pdf)

### 2007

Indoor pollutants emitted by office equipment: A review of reported data and information needs

[www.researchgate.net/publication/222511065\\_Indoor\\_pollutants\\_emitted\\_by\\_office\\_equipment\\_A\\_review\\_of\\_reported\\_data\\_and\\_information\\_needs](http://www.researchgate.net/publication/222511065_Indoor_pollutants_emitted_by_office_equipment_A_review_of_reported_data_and_information_needs)

### 2012

Non-halogenated Aromatic Phosphates

Materials for: March 16, 2012 Meeting of Scientific Guidance Panel (SGP) Biomonitoring California

<sup>1</sup> <http://o3.arb.ca.gov/research/seminars/mckone/mckone.pdf>

<sup>2</sup> More information about Green Screen (TM) is available at:

<http://oehha.ca.gov/multimedia/biomon/pdf/031612NhArPvers3.pdf>

## 12. Impossible to follow up if the tax will have the desired effect

For any tax to produce its desired effect, there should be a cost-benefit ratio. Will the collected tax result in meeting the goal, i.e. will it be possible to demonstrate lower exposure and diffuse emissions? As both of these emissions are extremely low, and as a baseline today is not available, we are of the view that it will not be possible to witness any improvement in a few years from now. Any comparison will be made on very small numbers with high uncertainty and large variations.

## 13. Incorrect statement of the report on missing data

In the report, the argument to cover all substances containing bromine, chlorine and phosphorous is the lack of reliable health and environmental data for the individual substances within these groups.

Over the past 3½ years, the US Environmental Protection Agency, EPA has thoroughly investigated 34 flame retardants as possible replacement for decaBDE. The 800-page report can be found at: [http://www.epa.gov/dfepubs/projects/decaBDE/deca\\_fullreport.pdf](http://www.epa.gov/dfepubs/projects/decaBDE/deca_fullreport.pdf). The summary findings are in pages 4-29 and page 87 of the pdf document.

All 18 non-halogenated flame retardants have undergone in-depth assessment using the Green Screen (TM) for Safer Chemicals methodology<sup>2</sup>. The following eight phosphor containing substances, which have been thoroughly investigated and confirmed to be good replacements for brominated and chlorinated flame retardants, will be taxed under the proposed Swedish tax regulation:

- Aluminum diethylphosphinate
- Melamine Polyphosphate
- Poly[phosphonate-co-carbonate] Resorcinol Bis-Diphenylphosphate
- Substituted Amine Phosphate mixture
- Triphenyl Phosphate
- Ammonium Polyphosphate
- Polyphosphonate

The study also shows that several substances that do not contain bromine, chlorine or phosphorous are not recommended alternatives to decaBDE which will not be taxed under the proposed Swedish regulation.

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<sup>2</sup> More information about Green Screen (TM) is available at:

<http://www.greenscreenchemicals.org/method/?/Greenscreen.php>.

Companies using Green Screen (TM) can be found here: [www.greenscreenchemicals.org/practice/greenscreen-users](http://www.greenscreenchemicals.org/practice/greenscreen-users)

## 14. Test methods for market control

The report states that “It is currently not clear if available test instruments will give reliable results regarding the substance content of the products in scope. Therefore, product controls in test laboratories will be necessary to ensure the substances content of a product. There seems to be no test methods available to differentiate between additive and reactive substances.”

In our view, international test methods delivering reproducible test results must be available at the date of re-regulation enforcement. If not, this will create a unacceptable competitive disadvantage for companies. Developing new International or European standard test methods can take 2-5 years.

In the amended regulation, the need for internationally agreed test methods for market surveillance has been replaced by a list of declarable flame retardant used in EE products. Besides the fact that the list is incomplete, the suggested solution is not acceptable as it must always be possible to check a declared substance for compliance. This requires test methods that deliver reliable and reproducible results.

## 15. SMEs will be severely affected

The governmental order underlines that special considerations must be made to ensure that SMEs are not affected by the proposed regulation.

The report contains some theoretical cost estimates for SMEs. However, as the investigator has neither consulted SMEs or their trade associations, these numbers are not relevant and may be higher than estimated.

## 16. Lack of dialogue with the affected industry

The necessary dialogue with affected companies and / or their trade associations has hardly taken place. A short meeting was held on November 7<sup>th</sup> in 2014. Industry expectation was to discuss a draft regulation proposal, however, this did not happen. Instead, the investigator asked a number of questions which were answered by the industry representatives. After the meeting, multiple industry letters were submitted with various questions, including a request for continued discussions. Unfortunately, no more meetings were held, and none of the industry concerns have been addressed in the 320+ page report by the investigator.

## 17. A shortcut to substance restrictions without scientific evidence

The report states that the reason for the tax proposal is that the EU work via REACH and RoHS to restrict substances is too slow and that Sweden does not have the resources to speed up the process.

We are concerned that Sweden is taking a shortcut for substance restrictions without scientific justification and proper industry consultation.

The report states that national taxes can be justified within the European Union only if they can be motivated as an example, to protect the environmental and the public health. Referred court case: C-213/96, Outokumpu (1998) pages. 30–31) and under the condition that national products / production is not favored.

As the investigator has not presented any scientific risk assessment, introducing this tax is questionable and must be evaluated by legal experts.

## 18. Cost for affected companies is underestimated

The investigation lists a number of cost items for affected companies. We believe these are highly underestimated. Better and well-tested substitutes are often 20-30% more expensive. At the same time, there is an obvious risk that selected alternatives will be taxed at a later stage as no principle for taxation / no taxation has been established.

## 19. July 1st 2017 - unreasonable date for enforcement

The amended date for implementation is still unreasonable. From the date of publication of a new tax regulation, notifying the EU according to EU Directive 98/34 including a minimum 3 month standstill, translation into several languages, training of people at KEMI and the Swedish Tax Authority, at least 2 more years are required before enforcement. For affected companies, especially SMEs, additional time is required to obtain documents from their suppliers to be able to claim any tax reduction.

## 20. Has the investigator followed the instructions given in the Governmental order 2013:127?

In summary, we believe that this is not the case. The investigation is non-scientific, draws incorrect conclusions, and is supported by poor arguments. The report incorrectly states that:

- the proposed tax is cost-effective
- the chemical tax will reduce the exposure of the substances
- the risk of false and regrettable substitution is small
- the impact on SMEs is insignificant
- the rules are simple to implement and manage.

There is considerable concern that the investigator, without justification, has expanded the governmental order:

- in the order, only brominated flame retardants are mentioned, the investigator has added both chlorinated and phosphorous based substances
- without justification or reference to quality scientific investigations, the investigator bases the tax on the fact as to whether a substance has been additively or reactively added to the material, not related to the health and environmental properties of the substance

- the order sets priority on consumer products, the investigator includes all product within the specified product categories, i.e. also products which are only sold to commercial customers where exposure scenarios similar to domestic environment do not exist.

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## ABOUT DIGITALEUROPE

**DIGITALEUROPE** represents the digital technology industry in Europe. Our members include some of the world's largest IT, telecoms and consumer electronics companies and national associations from every part of Europe. DIGITALEUROPE wants European businesses and citizens to benefit fully from digital technologies and for Europe to grow, attract and sustain the world's best digital technology companies.

**DIGITALEUROPE** ensures industry participation in the development and implementation of EU policies. DIGITALEUROPE's members include 58 corporate members and 37 national trade associations from across Europe. Our website provides further information on our recent news and activities: <http://www.digitaleurope.org>

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