



ETUC 2nd resolution on nanotechnologies and nanomaterials

Adopted at the Executive Committee on 1-2 December 2010

At its meeting in Brussels on 1 December 2010, the Executive Committee of the European Trade Union Confederation (ETUC) adopted a Second Resolution on Nanosciences and Nanotechnologies.

Introduction

Recalling the previous ETUC Resolution on Nanosciences and Nanotechnologies of 25 June 2008, the ETUC confirms its previous analysis, namely that nanotechnologies might be the 'driver of the next industrial revolution' and a paradigm shift. Nanotechnologies have been considered a priority for the European Commission as a key emerging technology in Europe.

In its first contribution to the debate, the ETUC pointed out elements of the European policy that it sees as essential to responsible development of this emerging technology. However, from the first ETUC resolution up to the present time, there have been a number of changes. On the matter of the technology itself, for example, the development of nanotechnologies in a number of areas has taken considerably longer than initially claimed by its proponents.

In relation to the issue of potential employment, the scenario of the multiplication of new jobs has changed. Now the concerns are to deal with a shift of employment and to cope with the introduction of the new technology and any significant changes in work processes and working conditions that could disrupt the working environment.

The ETUC stated unequivocally that changes resulting from the introduction of nanotechnologies in the workplace should not create further inequalities between workers. The development of nanotechnologies will depend on the skills of people with different backgrounds who will require an interdisciplinary perspective. It has already been recognised that there is a need to upgrade a range of skills, and that it will also be necessary to create new ones, and to educate and train workers in a wide range of sectors.

The number of products on the market containing nanomaterials has been growing substantially¹ and yet there are no updated figures on the risks to human health and the environment. The ETUC called for transparency and traceability of nano-articles placed on the market, which in effect means that there is a need to know whether nanoparticles are contained in products and materials, and if so, what type.

¹ PEN Inventory (2010) <http://www.nanotech>

In the area of regulation, international bodies are taking action in different areas and bringing about positive changes. In addition, the new Cosmetic Products Regulation² is the first EU legislative instrument which incorporates a definition and rules concerning the use of nanomaterials in cosmetic products.

In the food sector, the Council has approved a political agreement on a draft regulation concerning novel foods. The proposal includes a definition of engineered nanomaterials and provisions on food containing or consisting of them.

It is important to note that the European Parliament Report³ of 2009 clearly calls on the Commission to review within two years all relevant legislation concerning nanotechnology in particular with respect to chemicals, food, waste, and protection of workers, in order to implement the 'no data, no market' principle, which the ETUC fully supports.

Considering that the Commission should also 'promote the adoption of a harmonised definition of nanomaterials at the international level and adapt the relevant European legislative framework accordingly', and if needed, propose regulatory changes, the ETUC wants to make sure such definition and regulatory arrangements will serve to protect workers' health and safety and the environment.

Since the need for a definition is a major concern for regulatory purposes, scientific bodies within the European Commission, namely the Scientific Committee on Emerging and Newly Identified Risks (SCENIHR) and the Joint Research Centre⁴ (JRC), published reports with their contributions. The ETUC has reviewed and commented on these reports.

This ETUC resolution is part of the continuing debate and a contribution to reaffirm the principles set out in the first ETUC resolution. In view of major technical and regulatory developments related to the definition of nanomaterials and the need to adjust the legislative framework to incorporate the principles of hygiene and traceability, the role of standardisation and the need to address the social and ethical issues are given limited priority only for the time being.

Taking into account the above, the ETUC, with its member federations and confederations, endorses this second Resolution with the following recommendations.

² COM (2009) EU Regulation 123/2009 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:342:0059:0209:en:PDF>

³ EP (2009) Report on regulatory aspects of nanomaterials. A6-0255-2009.

⁴ JRC (2010) Considerations on a definition of nanomaterial for regulatory purposes.

RESOLUTION

1. – Inclusion of the societal dimension of nanotechnologies

The ETUC is concerned that little emphasis is being placed on the social and ethical issues related to nanotechnologies and how they should be used to contribute to human well-being and the development of socially just societies. Despite the novel properties of nanomaterials and the substantial advantages they offer, they might change the structure of society in the face of challenges such as personal and collective liberties, equity between citizens, social rights, as well as acute, short and long-term health and environmental effects.

For instance, since certain nanomaterials could be introduced in the human body, this could cause unwanted changes to health, for which no healing processes would be available, resulting in a substantial change to human nature, life expectancy and humanity itself. The ETUC calls for the protection and respect of each person and their fundamental rights and human dignity and caution when it comes to interfering with the living body.

The ETUC finds that it is crucial not to undermine or transform social rights and is extremely reserved with regard to developments such as human enhancement and artificial intelligence, for present and future generations.

The ETUC emphasises that to achieve sustainable growth, the innovation resulting from nanotechnologies should include social equity, environmental protection and economic efficiency, while ensuring full protection of health and safety and the environment.

Past European programmes have provided funding for research and development in nanotechnology, at levels which have increased significantly over the years. The ETUC has criticised the failure to fund research on health and safety, ethical, social and environmental issues at the same level as research and development of nanotechnologies.⁵

The ETUC therefore requests the Commission to set a percentage commitment to allocate sufficient funding for societal and ethical concerns, in particular those relating to social justice, privacy, human dignity, environment, and responsibility towards future generations.

At the same time, the ETUC encourages Member States to allocate portions of their national nanotechnology budgets to ethical and social implications in order to address specific national concerns.

Furthermore, the ETUC strongly recommends that countries with different levels of development in the field of nanotechnologies should be involved and their voice included in the European dialogue.

⁵ ELSA (2008) p. 10
ftp://ftp.cordis.europa.eu/pub/nanotechnology/docs/elsa_governance_nano.pdf

“Although the FP6-NMP Programme focused on scientific and technological research, it explicitly included topics related to ELSA of nanotechnology, mostly in form of specific support actions aiming at communicating with the public and networking between stakeholders”

The development and application of nanotechnology requires a long-term vision. Predicting its consequences is uncertain. The ETUC therefore considers that it will take a long time to discover the full potential of this emerging technology and its impact on society. The results tend to be highly unpredictable and extremely complex.

2.- Implementation of the precautionary principle

The precautionary principle serves to guide risk assessment and decision- making to deal with issues presenting an uncertain level of risk in an attentive, careful, reasonable and transparent manner⁶. The ETUC recommends application of the precautionary principle which can take the form of a number of proactive initiatives including risk reduction measures, early warning actions with specific attention to health monitoring, and the registration of workers exposed.

Where technological developments are certain to cause harm, there is a duty to prevent or mitigate such harm and avoid risks. In case of uncertainty, precautionary measures must be applied, meaning there is the duty to apply additional measures at an early stage, aiming to avoid all occupational exposure to nanomaterials.

This imposes an obligation on trade unions to include nanomaterials as an issue in their occupational health and safety strategies and continue to demand scientific evidence on potential adverse effects and a high level of protection for workers involved in manufacturing or use of nanomaterials in articles until uncertainties are resolved.

The ETUC supports application of the 'no data, no exposure' principle, meaning that where no data on risks are available, workers must not be exposed and processes have to be performed in closed systems.

3.- The applicability and revision of existing regulations

Nanotechnologies confront society with policy issues and open a unique governance challenge for the European Union, namely the adequacy of existing legal instruments for regulating nanotechnologies.

It is the ETUC's position that existing directives and regulations are not addressing nanotechnologies adequately. The current legislative framework should therefore be updated and must be effectively implemented in each Member State. Legislation in at least the following areas should be addressed: chemicals (REACH, biocides), food (foodstuffs, food additives, food and feed products from genetically modified organisms), relevant legislation on worker protection (i.e. the Chemical Agents Directive) and on air quality, water quality and waste.

In line with the European Commission's recommendation for a 'safe, integrated and responsible' approach to nanotechnology⁷, the ETUC demands transparent regulation on

⁶ - Health Council of the Netherlands (2008) Prudent precaution, The Hague.
- The Social and Economic Council of the Netherlands (2009). Nanoparticles in the workplace: Health and safety precautions. Advisory report. Working Conditions Committee. The Hague.

⁷ COM (2004) 338 final "European Strategy for Nanotechnology"
COM (2005) 243 final "Towards" and the "N&N Action Plan for Europe 2005-2009"
COM (2009)607 final; SEC(2009)1468

protection against potential risks related to nanomaterials. This provides an opportunity for society to participate in key decisions on development of the uses of nanotechnologies, which will move them forward but also provide certainty and predictability to economic operators as well as public confidence.

The ETUC welcomes the Strategic Nanotechnology Action Plan (SNAP) for 2010-2015, as a mean to establish a permanent and effective dialogue with stakeholders. In particular, the ETUC welcomes the proposal for a definition of the term 'nanomaterial' that the European Commission intends to use as an overarching, broadly applicable reference term for any European Union communication and legislation addressing nanomaterials⁸.

4.- REACH and its use of the term 'nanomaterial'

REACH, the new EU regulation on chemical substances, puts the onus of proof on manufacturers. The ETUC finds it unacceptable that substances in nanoform should now be manufactured, placed on the market or used without requiring manufacturers to demonstrate that their products (alternatively: those substances) do not adversely affect human health, in particular the health and safety of workers, or the environment at all stages of their life cycle.

The ETUC therefore demands full compliance with the 'no data, no market' principle laid down in REACH. It calls on the European Chemicals Agency (ECHA) to ensure that all registration applications for substances in nanoform are identified and prioritised for both dossier and substance evaluation.

As the scope of REACH is to be reviewed in 2012, the ETUC calls on the Commission to amend the regulation so as to introduce provisions referring specifically to nanomaterials.

The definition of nanomaterials recently recommended by the Commission⁹ should be adapted for REACH to allow for a clear distinction between a substance in the nanoform and a substance in the bulk form.

The use of the decision tree proposed by the ETUC¹⁰ in the framework of the REACH Implementation Project is highly recommended both for drawing such a distinction and for deciding in which respect a nanomaterial consisting of layers of different chemicals should be considered as a substance or a mixture.

The ETUC recommends that all engineered substances in the nanoform be considered as new substances¹¹ and registered accordingly under REACH regardless of the volume in which they are manufactured or imported. The information requirements for substances at the nanoscale must be sufficient¹² to allow registrants to perform a meaningful chemical safety assessment (CSA) and to provide a chemical safety report (CSR) in each registration application.

⁸ <http://ec.europa.eu/environment/consultations/nanomaterials.htm>

⁹ COM (2010) Proposal for a definition of the term 'nanomaterial' that the European Commission intends to use as an overarching, broadly applicable reference term for any European Union communication or legislation addressing nanomaterials.
<http://ec.europa.eu/environment/consultations/nanomaterials.htm>

¹⁰ ETUC (2010) <http://www.etuc.org/a/7817>

¹¹ Non phase-in substances to be registered under REACH before manufacturing or importing.

¹² As a minimum the current Annex VIII of REACH.

Data from existing test methods proven to be inadequate for nanomaterials should be regarded as missing, and the ECHA should consider the related registration application as non-compliant. Strict application of this principle must be used to oblige manufacturers to fill the gaps in scientific knowledge about the safety of engineered nanomaterials, especially the fate and persistence of nanoparticles in human beings and the environment.

The ETUC considers that the definition of nanomaterials and the way it is used should enable and support the generation of information and its dissemination in the supply chain in such a way that workers and consumers are informed when nanomaterials constitute an integral part of a substance or a mixture and whether nanomaterials can be released from related products (e.g. articles). Information on the physico-chemical characteristics and hazards of nanomaterials provided to users must be sufficient for relevant risk assessment under the Chemical Agents Directive and the REACH regulation.

5.-Transparency and traceability of nanomaterials

Acknowledging that competitiveness and innovation need the support of workers and employers, the ETUC is convinced that there cannot be successful innovations and development of emerging technologies without the full acceptance of those using them. Accordingly, civil society must have access to information on both the benefits and the potential health, environmental and safety aspects related to their uses.

The ETUC transparency and traceability of nanomaterials to help anticipate possible problems. Society cannot afford to wait for a disaster, a failure or the unforeseen effects of nanomaterials. Nanotechnology products and processes are already interacting with society and with workers in particular, in the absence of sufficient knowledge of the detrimental effects to people. Further, history has shown that the misuse of technology can escape all control.

Taking into consideration the implementation of the Grenelle I and II legislations in France and the initiative of the Belgian Presidency of the EU Council on a regulatory framework for the traceability of nanomaterials, the ETUC considers that Member States must develop harmonised mandatory registers of articles containing nanomaterials, including a life-cycle assessment of the articles. Those registers should be the base for traceability, market surveillance and securing knowledge for better risk prevention and for improvement of the legislative framework.

The ETUC acknowledges the role of standardisation to support and harmonize the implementation of European policy. The impact of standards is influential for the regulatory process on nanotechnology, mainly in the absence of specific regulation, bearing in mind that standardisation is not a substitute for regulation.

In view of the Mandate from the Commission addressed to the European standardisation bodies with respect to activities relating to nanotechnologies and nanomaterials¹³, the ETUC points out that standardisation should only be reserved for technical specifications and should not extend to health and safety, risk assessment methodology, risk management or any other societal issues.

¹³ COM (2010) M/461. Brussels 2nd February 2010.

6.- Occupational health and safety issues

Workers might be exposed to dispersive nanomaterials throughout the life cycle of nanomaterials (manufacture, production, use, maintenance and disposal). In the coming years millions of employees might be impacted. The ETUC demands the development of concrete measures at the workplace in order to know who is exposed, to what extent and to what type of nanomaterials, and which prevention measures to install to avoid exposure.

The ETUC invites Member States to set up a register of workers' exposure to nanoparticles in association with health surveillance programmes. The register should list which workers have been exposed, the circumstances, duration and levels of the exposure, the personal protective measures applied, and the concentration of nanoparticles. The ETUC invites Member States to draw up strategies to ensure that the authorities provide nano guidelines on collective and individual prevention measures.

At the national level, the ETUC expresses its appreciation for the actions put in place by some Member States to control occupational exposure to manufactured nanomaterials throughout the life cycle, and insists that the States harmonise and upgrade their national activities towards a high level of protection in a European perspective which is based on the precautionary principle.

This is essential information that would be useful for future epidemiological studies and for the prevention of occupational diseases, since chronic effects of engineered nanomaterials in the human body might become visible only in the long term.