



Source: NanoRESP

# Responsible nanotechnology R&I – Societal engagement practices

## NanoRESP

### Introduction

**NANO2ALL** is an initiative funded by the European Union's Horizon 2020 Research and Innovation programme under the Grant Agreement Number 685931. It supports the establishment of Responsible Research and Innovation (RRI) policy and governance on nanotechnologies. NANO2ALL also aims to identify RRI practices, with a focus on societal engagement in nanotechnology research and innovation (R&I) across Europe and beyond, with the purpose to share knowledge, experience and recommendations with other nanotechnology stakeholders and motivate a wider application of such mechanisms in our region.

RRI is an approach that anticipates and assesses potential implications and societal expectations with regard to R&I, with the aim to foster the design of inclusive and sustainable R&I<sup>1</sup>. As a dimension of RRI, societal engagement implies interactions between relevant stakeholders (companies, research organisations, policymakers, civil society organisations (CSOs), consumers, affected citizens and others) in order to align research, development and innovation with the values, expectations and needs of the society. Such interactions can take various shapes, such as brainstorming, scenario workshops, user committees, online forums, dialogues, informal / formal meetings, or other formats.

**This short report provides brief insights into the NanoRESP Forum**, a multi-actor dialogue forum fostering practices of responsible innovation. Data for this report was gathered via desk research and a structured interview with Dorothée Browaeys, founder and coordinator of NanoRESP.

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<sup>1</sup> European Commission website: <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation>



## The NanoRESP Forum

The NanoRESP Forum<sup>2</sup> is a **multi-actor dialogue forum fostering practices of responsible** (relevant and sustainable) **innovation**, designed to explore responsible innovation for nanotechnology-based industries. It was created in France in 2013 inspired by the CNAM Nanoforum initiative<sup>3</sup>. Right from the start, the NanoRESP Forum was aimed at contributing to a shared social vigilance and an exchange of experience, being less of a public debate and more of a stakeholders' dialogue to foster RRI in the field of nanotechnologies.

NanoRESP's top objective is to **promote an open, non-confrontational albeit critical stakeholder dialogue on nanotechnologies and nanomaterials**. The idea behind such initiative is that discussing the uses, risks and benefits of nanoproducts and their alternatives will **empower participants in the exercise of their respective responsibilities**.

Four times a year, producers, distributors, users and consumers of nanoproducts are invited to share knowledge, initiatives, concerns and expectations at NanoRESP Forums. **Since 2013, 16 forums have attracted more than 500 participants** from industry, citizen's associations, academia and policy-making circles. **Topics addressed** spanned the properties of commercial nanoproducts, their release in the environment, lifecycles, ecotoxicology, definition of nanoparticles, regulations etc.



**NanoRESP Forum is sponsored by the NanoRESP alliance<sup>4</sup>**, which includes the Chemistry Company BASF (French subsidiary), French electricity company EDF, car manufacturer Renault Group, tire and mobility company MICHELIN Group, French Hydraulic Binders Industry Technical Association (ATILH), Public Works Insurance Group (SMA BTP), the national metrology laboratory of France (LNE), AgroMousquetaires (food producer and distributor) and the French Occupational Hygienists Society (SOFHYT). The NanoRESP alliance delegates the organization and coordination of the Forum to the company TEK4life<sup>5</sup>. The latter is supervised by a Steering Committee<sup>6</sup> composed of academics, citizens, industry managers, journalists and NGOs. The NanoForum initiative receives no public funding. However, it is supported by EpE<sup>7</sup>, the association hosting the Alliance and the Steering Committee's meetings.

## How does it work?

**Since 2013, twelve topics<sup>8</sup>, spanning the value chain, were successively addressed**. For each of them a number (3 to 5) of different speakers were solicited to share their expertise and shed light onto the different issues while 40 to 50 participants – researchers, consultants, industrial federations' representatives, associations, journalists etc - were brought together.

<sup>2</sup> [www.nanoresp.fr](http://www.nanoresp.fr)

<sup>3</sup> A forum initiated by the National Conservatory of Arts and Crafts (CNAM) which, during 2006 and 2007, hosted a series of 11 stakeholder dialogues on nanotechnologies. It

<sup>4</sup> The full alliance at <http://www.nanoresp.fr/lalliance-des-financeurs/>

<sup>5</sup> Company found by Dorothee Browaeys with a mission to align innovation strategies to the socioeconomic transition and to develop several platforms for stakeholders' dialogues. Dorothee Browaeys and Jean-Jacques Perrier are coordinating the NanoRESP forum.

<sup>6</sup> The full Steering Committee at <http://www.nanoresp.fr/le-comite-de-pilotage/>

<sup>7</sup> 'Entreprises pour l'Environnement', created in 1992, is an association of around forty French and international large companies from all sectors of the economy, who want to make environmental considerations more a part of both their long-term planning and their day-to-day management. EpE gives its members a forum for discussion, within the business world itself, but also with NGOs, ministers, politicians, scientists and academics.

<sup>8</sup> Traceability, habitat, users' awareness, quality assurance of nanoproducts, nanosilver, food, water, self-cleaning & purification, automobile industry, energy transition, toxicity evaluation, nanomedicine



**Each four-hour meeting is meticulously prepared** by addressing all issues to be examined thus creating a common thread which is announced at the beginning of the meeting. This common thread is usually coupled with a factsheet destined to update participants on the state of play of the issues addressed, the positions, needs, expectations and concerns of the actors involved. Detailed reports of all meetings are uploaded on the website<sup>9</sup>.

The Forum mainly addresses the national level although the participants come from all over Europe. The **low turnout of the civil society** reported is allegedly **due to the complexity of the topics addressed**: There are issues of general interest gathering representatives of the wider public while there are others (i.e. graphene) the specificity of which does not favour the public's engagement. **The Government is also moderately represented in the Forum procedures** with the participation of agencies such as the Directorate General for Enterprise of the Ministry for the Economy and Finance Affairs or the Ministry for the ecological and inclusive transition and the French Agency for Food, Environmental and Occupational Health & Safety (Anses).

Up to date, the stakeholder's interaction and exchange of experience during the different sessions produced the development of **four main axes to be further deliberated**:

1. Nanoparticles characterisation – what are the challenges?
2. Nanomaterials use – how to prioritize their utility and address the risks at the same time?
3. Life cycle analysis to achieve “safety by design” and
4. How to use the existing information databases in order to raise awareness?



Source: NanoRESP

## Keys to success

The initiative's success is partly due to the **multitude of different stakeholders brought together in mutual respect, in a transparent, democratic and socially inclusive framework**. From the steering committee to the participants of each session, this multi-stakeholder initiative embraces a diversity of partners: industry, academia, civil society organisations, producers and consumers. All the above participants do not share the same goals and interests. However, they find out that there are lessons to be learned through the exchange of experience with stakeholders they would hardly get in touch with, without the forum's platform.

In this context, **different competences, skills and expertise create the dynamics for constructive dialogue** which gradually turns into a learning process where participants learn from each other in a spirit of long-term commitment, helping to create trust.

In the spirit of RRI policy of the EC, NanoRESP forum encourages innovation practices that take into account a developed product's full life-cycle, its potential uses/misuses and the social utility/futility of the product. It seeks to promote anticipation, reflexivity, inclusion and responsibility. In this respect, **controversies are viewed as opportunities to foster new innovation strategies and increase the robustness of industrial projects, rather than as obstacles**.

<sup>9</sup> <http://www.nanoresp.fr/comptes-rendus/>



The forum evolves through continuous re-evaluation of the practices applied and the approaches taken. It may also be regarded as a platform for policy-making since it brings together different stakeholders embracing their diverse perspectives and goals, promoting thus a public space of openness and social responsibility.

As a result, a parliamentary structure participated, for the first time in NanoRESP latest meeting (June 2018): the Parliamentary Office for Scientific and Technological Assessment (OPECST)<sup>10</sup> which acts as an intermediary between the political world and the world of research. NanoRESP is originally a citizen initiative (by having been launched by an NGO<sup>11</sup>) encouraged by public authorities and being such, it creates the right dynamics to foster a democratic dialogue and at the same time, to empower participants to exercise their respective responsibilities.

Stakeholders from the industry world such as the Italian cement producer Italcementi, chemistry company BASF or tires company Michelin have capitalised on the NanoRESP experience either by launching a local dialogue process or by further exploring the Forum results in their company's framework, including research processes.



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## Steps towards the future

Emerging technologies are problematic because of the persistent uncertainty that surrounds potential risks. This uncertainty—about whether, in what form and to what extent risks exist—makes it difficult, and often impossible, to apply routine decision-making procedures for risk assessment and management<sup>12</sup>.

The effort to regulate nanotechnologies has created a learning ground to observe the way we operate within that uncertainty and thus to re-evaluate our methods: for example broad public debates usually have a rather polarizing effect and thus, may no be longer suitable for addressing this kind of issues; bilateral arrangements – such as a consultancy firm appointed by a company of the industrial sector to provide answers to questionings/issues on nano – are not pertinent either. A more functional way to address RRI is to **engage multiple stakeholders in a discussion on**



<sup>10</sup> OPECST aims to inform the French Parliament of scientific and technological options in order, specifically, to make its decisions clear." Regarding this, OPECST "collects information, launches study programmes and carries out assessments.". OPECST acts as an intermediary between the political world and the world of research.

<sup>11</sup> Vivagora: Paris-based French NGO founded in 2003. Until 2013 Vivagora organized large public debates on social issues related to scientific and technological developments.

<sup>12</sup> R. Falkner and N. Jaspers, 2012: "Regulating Nanotechnologies: Risk, Uncertainty and the Global Governance Gap", Published in: Global Environmental Politics, 12(1), pp. 30-55



**concrete situations** regarding nanotechnologies (or any emerging technology). Stakeholders should be guided to substantially consider their practices regarding nano and to examine different alternatives by focusing on real, existing cases derived from industry or the society. Those cases should be introduced, taking in consideration the stakeholders involved and the challenges faced, in a way to motivate solution-finding via collective thinking. For this reason, **platforms fostering awareness and dialogue should be created in national but also in international level**. In this framework, the NanoRESP team expresses a **strong will to reach out to other national or EU initiatives and share this very particular experience** of a forum financed by the industry but steered by a pluralistic scheme of stakeholders, with a vision to **create a European network for RRI**.

At the same time, **NanoRESP concept is already evolving to address future needs towards the development of converging technologies** in four core fields: Nanotechnology, Biotechnology, Information technology, and Cognitive science (NBIC). The idea is **to create a multi-stakeholder dialogue forum as a facilitator of the transition in all production patterns**. NanoRESP has born its fruit: BioRESP<sup>13</sup>, which is already in place and running to guide us through bio-economic transition and DigiRESP, planned to address responsible research and innovation in the digital industry.

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<sup>13</sup> <http://bioresp.eu/>

