

National Research Program for Environmental and Occupational Health

2018 Call for Research Proposals

Deadline for submission of the letters of intent: December 12, 2017

Deadline for submission of the complete proposals: March 13, 2018

Note that in case of difference between English and French version, the latter is the correct one

I. OVERVIEW OF THE PROGRAM

The French National Research Program for Environmental and Occupational Health (PNR EST) is operated by Anses with funds from the ministries in charge of environment and of labour, and associates several co-founders¹: ADEME, TMOI Cancer of AVIESAN alliance under the "Cancer Plan". It also benefits credits of the ECOPHYTO II plan of the ministries in charge of agriculture and environment (in relation with the French Agency for Biodiversity). For this 2018 call for research projects, the ministry in charge of environment allocated additional funds dedicated to projects on endocrine disruptors. In addition, funding from a tax on radio transmitters is added to other funds for projects on health effects of radio frequencies.

The French National Research Program for Environmental and Occupational Health (PNR EST) promotes the production of knowledge in support to public policies for environment, environmental and occupational health and safety and disseminates this knowledge to stakeholders. This gives the program a leading role to promote interactions within the scientific community, which helps Anses to mobilise researchers for the collective expert assessment of health risks.

This program results in the launch of calls for research proposals. In this context, two calls are planned in late 2017: the present call, which covers a wide area (excluding radiofrequencies) and the second one dedicated to the theme "radiofrequency and health".

II. OVERVIEW OF THE CALL FOR PROPOSALS

The call for research proposals (CRP) is launched yearly to motivate scientific communities in the fields of environment-health-occupational health to develop new methods and tools at all stages of risk assessments for health or ecosystems, particularly in order to document research issues raised by the relevant ministries and government agencies. Particular interest is granted to research topics whose results will lead to significant progress in the area of human health, in the general population and in the workplace or in the area of ecosystems.

¹ This funding scheme plays a significant role to determine the way projects are selected, in what concerns the criterion "impact on public policies". It is recommended to consult appendix I.

Research proposals are selected based on their originality and scientific quality and should strengthen knowledge in the thematic area of health risks in general population or at workplace or of risks for ecosystems.

At the national level, this call for research proposals complements other calls that are/will be published in 2017 or in 2018. These include:

- ANR calls (see the 2018 ANR action plan),
- ADEME call for research projects :
 - IMPACT, impact of interaction between pollutants on man and on environment, launched in October 2017.
 - GRAINE, manage, produce valorise biomass, with a section on health effects
 - CORTEA, reduction at source and processing of emissions of air pollutants” to be launched mid-2018.
 - MODEVA-URBA, modeling, urban cooling, and assessment for stakeholder.
 - TEES, ecological, economical and social transitions to be issued at the end of 2018.

III. SCOPE OF THE CALL FOR PROPOSALS

The program deals with the assessment and analysis of environmental risks to human health, in the general population and in the workplace. It will also support projects on risks for ecosystems and quality of environmental media.

- It encourages researchers to include concepts, methods and tools from various disciplines, within the same approach: biological and health sciences (genetics, cellular biology, physiology, immunology, epidemiology, neurosciences, etc.), physical and chemical sciences (biochemistry, materials science, industrial chemistry, agrochemistry, biophysics, microchemistry, physico-chemistry of atmosphere), engineering sciences (various types of radiation, noise, metrology), environmental sciences (biodiversity, ecology, ecotoxicology), human and social sciences (ergonomics, sociology, economics, demographics, analysis of public policies, law, health geography), urbanism.
- Social phenomena related to health, whether in the professional environment (organisation of work) or the general environment, are also a significant part of the Environmental and Occupational Health program. The call strongly encourages proposals that establish links between various approaches: biological, environmental, socio-economic, urbanistic, political sciences.
- The scope of the CRP covers a wide range of risks from emerging risks to the known risks, including complex risks that still raise scientific controversies. The themes covered by the CRP in 2018 are listed in Annex 2. For each of them, a list of research questions is associated with, which are identified as priorities for potential users of the research work during the risk assessment or the development of risk management measures.

IV. PROPOSAL CHARACTERISTICS

Proposals will be designed as research projects with a clearly identified goal. This excludes projects that look like contributions to larger projects.

These research projects will be conducted by a single team or a consortium involving several partners. Each team will have a well identified scientific leader. The project will be presented as a single proposal, the carrier being the scientist in charge of one of the teams. Funding is requested to complete the study or project. The rules are set out in Annex 3.

Two types of research proposals are expected :

Feasibility studies :

Their purpose is to explore an innovative approach whose feasibility has not been established.

- Funding shall not exceed €50,000
- The maximum implementation period shall be 2 years.

Complete projects:

These are research projects which rely on an established methodological approach so that there is a good level of assurance that the objectives will be achieved.

- Financial support will lie between € 40 000 and € 200 000. It can exceed € 200,000 if this is required by the project's nature and provided the request is strongly defended.
- The implementation period will lie between 2 and 3 years.

V. SELECTION PROCEDURE

The selection procedure relies on two committees:

- The research program's scientific committee (RPSC). It is made up of renowned researchers. The RPSC will assess the scientific value of the submitted proposals and of the progress reports from the funded projects.
- The program's steering committee (SC). It is made up of sponsors and ministries involved in the scope² covered by the call for proposals and of a representative of the French national research agency. The SC chooses the projects to be funded from the proposals selected by the RPSC.

The selection process will be divided into two stages as defined below:

- An initial selection on the basis of letters of intent,
- A second selection based on complete applications, subsequent to shortlisted letters of intent.

The submission timetable and procedures are set forth in Section IX

Stage 1: Letter of intent shortlisting

Letters of intent that do not meet the eligibility criteria defined in Section VI will not be evaluated. The evaluation of the letters of intent will be made by the RPSC. This committee will take into account the selection criteria defined in Section VII. Members of the steering committee can be also consulted with respect with criterion 3 and the closeness of the letter of intent with their priorities. Special attention should be granted to the quality of the letters of intent, which need to contain enough information, in a small amount of space, to allow the RPSC to evaluate the relevance of the proposal. Only proposals whose letters of intent are shortlisted will be eligible to submit a complete application.

² See annex 1

Stage 2 : Complete application selection

To be eligible, complete proposals must meet all of the eligibility criteria described in Section VI. Applications that do not meet all of these criteria will not be evaluated. The proposals will then go through the following selection processes :

- 1) Collective scientific assessment of the proposals by the RPSC: Each proposal will be evaluated by two independent experts according to the criteria described in Section VII, and their conclusions submitted to the RPSC.
- 2) Collective opinion of the SC, according to the criteria described in Section VII. This collective opinion takes also into account the available funds and priorities for involved funders. The SC can also give advice on adequation of requested funds with regards to planned tasks. Exceptionally it may recommend project modifications or even projects gathering to incorporate several approaches or disciplines likely to improve the project's overall quality and relevance in relation to the programme's objectives.
- 3) The final decision to support a proposal falls upon the funding entities. The list of selected proposals and the sponsor identity is published at the end of the selection process on the sponsors' websites.

VI. ELIGIBILITY CRITERIA

A proposal's eligibility will be examined at both selection stages, first through a letter of intent and second through a complete application, on the basis of the information that is available at each stage. Research proposals must meet the same conditions at both stages :

Proposal characteristics

1. The projects must lie within the research domain covered by the call for proposal as defined in section III.
2. The proposals' characteristics must be compatible with those listed in Section IV.
3. The project must not contain actions that have already been funded under another call for projects. If there is any ambiguity, holders should describe the interactions of the project with other sources of funding.

Conditions regarding the participating teams

1. The partnership must be clearly identified at the early stage
2. This call for proposals is open to all research teams³, irrespective of the institution they belong to (higher education and research establishments, research organisations, other public establishments with a research mission, technical centers and private establishments with R&D activity, etc.). Partners other than research teams are authorised insofar as their added value in the project has clearly been established.
3. The proposal must involve one French academic establishment (higher education and research establishments, research organisations, other public establishments with a research mission).

³ About the eligibility of Anses teams, see the recommendation of its deontology committee <https://www.anses.fr/fr/system/files/DEON-Ft-2013003.pdf>

4. The call for research proposals is open to foreign teams or to teams from international organizations. To facilitate foreign partnerships and project review, the CRP's text is available in English on the Anses website (same address as the French version).
5. A RPSC member cannot be the scientific leader of any team involved in the research proposal.

Administrative conditions

1. Letters of intent and complete applications must be submitted in accordance with the procedures listed in Section IX. They must contain all of the requested information and be submitted by the deadline.
2. The proposal shall be authorised by the institutional leader of the coordinating research team and signed by the manager of each partner team.

VII. CRITERIA FOR THE SCIENTIFIC ASSESSMENT OF PROPOSALS

A proposal will be examined at both selection stages, through a letter of intent and then a complete application, on the basis of the information that is available at each stage. The selection criteria are as follows:

Letter of intent stage

Letters of intent are examined based on criteria 1 to 4 on the list under the 'Complete application stage' heading.

Complete application stage

Proposals are assessed based on the following criteria:

- 1) The subject's scientific significance for the research area in environmental health and/or occupational health and/or risks for ecosystems, impact on French public policies.
- 2) Scientific novelty : proposals shall be justified with regard to research undertaken at French, European and international levels,
- 3) Connection to research items. The considerations mentioned in the "Research items" Annex will play an important role in the prioritisation of proposals, particularly by the steering committee,
- 4) Methodological quality and scientific feasibility.
- 5) Organisational and partnership excellence (the proposal must include a provisional project timetable),
- 6) Consortium excellence. Scientific output of the members of the consortium in particular of the of the project leader, distribution of activities among teams,
- 7) Appropriateness of the project length and allocated resources (financial request, human investments). Quality of the supervision of non-permanent staff.
- 8) Confidence with respect to project results. For projects that may be the subject of controversy, any measures taken to ensure confidence in the quality of results⁴.

⁴ For example, any information that could be used to reproduce experiments or analyse data, inter-partner trials, multiple points of view held by partners, etc.

VIII. AGREEMENTS

The funding terms for the selected proposals shall be specified in the agreement between the sponsor and the coordinator's establishment⁵ (or the establishments involved in the project in case of funding by ADEME). The main rules are listed in annex 3.

For all funders, in exchange for financial support, the research teams shall:

- Commit themselves to participate in actions to promote the results obtained during and/or at the end of the project (publications in peer-reviewed journals, presentations in conferences organised by the sponsor, contribution to summary reports, etc.),
- For complete projects, supply a mid-term report and, in all cases, at the end of the project, a final report and a popular scientific report which can be used by Anses and the sponsor in their missions,
- Mention the National Research Program for Environmental and Occupational Health and the sponsor's support on appropriate occasions, in particular in publications.

Considerable importance is granted to the rigour with which the scientific project manager leads the project, which means that the contractual commitments for the timing of deliverables should be fully respected, as these determine the grant's staged payments which in turn affect the sponsors' budgetary management.

IX. PROPOSAL SUBMISSION TERMS

Letters of intent must be submitted online by the scientific project managers no later than **December 12, 2017 midday**, French time. They shall be submitted using the **Research and Scientific watch ("Recherche et Veille") platform**, available via the websites of Anses and the co-sponsors of the call for proposals. The platform will be operational at the **beginning of November 2017**.

The project coordinator should carefully read eligibility rules listed in the present call for letter of intent or project stages. All compulsory items must be filled before the closing of the platform. An incomplete application will not be considered.

The letters of intent will then be evaluated and the result (authorized to submit a full application or not) will be transmitted to the project manager. For those whose letters of intent which are shortlisted, complete applications must be submitted by the scientific project managers:

1) Online, on the same platform, no later than Tuesday the 13th of March 2018 midday, French time. Following electronic applications, an acknowledgment of receipt will be automatically sent to the scientific project managers. All compulsory items must be filled before the closing of the platform. An incomplete application will not be considered.

2) By sending Anses a certificate which is published by the platform after the application is submitted. One printed copy of this certificate, with all required signatures⁶, must be sent by post to the following address no later than **April 25, 2018:**

Anses-DRV
APR EST 2018
ACI-COP-2-028
14 rue Pierre et Marie Curie
F-94701 MAISONS-ALFORT Cedex

⁵ Note that this agreement will be written in French

⁶ It is recommended to gather all signatures on a single certificate. Nevertheless several certificates are accepted. Scanned signatures are not accepted.

Provisional key dates

November 2017	Opening of the call
Beginning of November 2017	Opening of the platform for electronic submission
December 12, 2017 midday	Deadline for submission of letters of intent
Beginning of february, 2018	The initial selection results, based on the letters of intent, are sent to the scientific project managers.
13 March, 2018 midday	Deadline for submission of full projects
April 25, 2018 midnight	Deadline for submission of complete applications
July 2018	Transmission of results to the scientific project manager

X. CONFIDENTIALITY

Members of the Scientific Committee of the research program, as well as experts called in the scientific evaluation of projects are subject to strict confidentiality on the content of the projects submitted to the call.

Funders and state agencies serving the program steering committee are bound to strict confidentiality on the content of submitted projects. For cartography purposes, or to manage multiple funding request however, they may share information on the laboratories or bodies, active in research topics covered by this call for proposals

In case of projects which could be funded by ECOPHYTO, the scientific committee "Research and innovation" of the ECOPHYTO plan will be consulted for a final funding decision (see section V – selection procedure).

For projects selected for funding, the research content will be kept confidential. However, Anses publish the summary of the project as submitted to the present call. On the other hand, each funder may use this work for its internal needs in the terms he will define in agreement with the carrier. Finally, scientific reports issued at the end of the work will be submitted to the reviewers who therefore have access to their content.

For all administrative or scientific information requests or questions, please contact the CRP unit:

Scientific issues
Administrative issues

Laetitia Dubois recherche@anses.fr
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ANNEX 1: Sponsors

Anses and its co-sponsors for the call for proposals are seeking to implement their research priorities in a common framework, thereby improving this program's visibility and transparency to the relevant scientific communities.

I. ANSES

The French Agency for Food, Environmental and Occupational Health & Safety (Anses) is a public administrative establishment under the authority of the Ministries of Health, Agriculture, the Environment, Labour and Consumer Affairs.

Its principal mission is **to contribute to the protection of human health with respect to the environment, the workplace and food**. It also contributes to :

- the protection of animal health and welfare;
- the protection of plant health;
- the assessment of the nutritional and functional properties of food.

Furthermore, it fulfils missions related to veterinary medicinal products.

Anses undertakes **independent and pluralistic scientific expert appraisals**. In its area of expertise, the agency defines, implements and funds scientific and technical **research programs**, particularly through the National Research Program for Environmental and Occupational Health.

Since 2011, the agency receives funds from a tax on radio transmitters. These funds are used to finance research projects on the topic radiofrequency and health.

II. THE MINISTRY FOR THE ECOLOGICAL AND INCLUSIVE TRANSITION

The Ministry for the Ecological and Inclusive Transition allocates part of its research budget to the research program managed by Anses. The PNR EST is the descendant of the Environment & Health program that was launched by the Ministry of the Environment and delegated to AFSSE when it was created in 2002. This budget gives the program a broad spectrum in the fields of environmental health. In addition to fulfilling Anses missions, the Ministry of the Environment also aims to address emerging issues in the field of research, to anticipate and act in support of the ministry's public policies. The PNSE (National Health and Environment Plan) and contributions to the Grenelle Environment Round Table are two major factors for granting support through the research budget. Anses program and activities for the coordination and application of the research it undertakes contribute to this objective.

The Ministry of Ecological and Inclusive Transition is a major contributor to the funding of this call projects on many issues. Its choices are determined by its scope of action. The ministry's responsibilities include health risks related to chemical and physical agents, as well as risks to ecosystems. On the other hand, it does not deal with contaminations through food and drinking water.

Furthermore, this ministry manages other programs that are subject to regular calls for projects in the environment on more targeted themes, to densify work on these issues and allow structuring the scientific community health field.

- The **PRIMEQUAL**⁷ program on air quality, implemented by the Ministry for the Ecological and Inclusive Transition (Research Division of the Sustainable Development Commission) and ADEME. It aims to provide decision-makers and environmental managers with the necessary scientific background and tools to monitor and improve interior and exterior air quality in order to reduce health and environmental risks.
- The **PNRPE**, the National Research Program on Endocrine Disruptors, implemented by the Ministry for the Ecological and Inclusive Transition (Research Division of the Sustainable Development Commission). This program aims to support fundamental and finalis multi-disciplinary research on screening methodologies, mechanisms of action, the detection of biomarkers of exposure and effects, fate in the body and the environment (water, soil, air and food), the health effects of endocrine disruptors, hazard identification, risk assessment and biological monitoring.

III. THE MINISTRY OF LABOUR

The Ministry of Labour has made research in occupational health, one of its priority areas, through its Work Health Plan 2016-2020. It aims to mobilize the scientific community on research questions related to occupational risk assessment for workers' health. As a sponsor of the health-environment and health-work research program led by ANSES since 2005, the Ministry of Labor aims, through the research questions it proposes, to deepen and extend knowledge about factors that alter the physical or mental health of workers and better prevent health risks in the workplace. The priority themes that can be financed in response to questions in search of the 2018 call for projects are studies that aim:

- to identify / evaluate toxicological mechanisms that are still little known but have a high probability of occurrence in a professional context (example: multi-exposure);
- to identify / evaluate known occupational risks but in sectors of activity that are still not well documented (for example: extra-auditory effects of noise for workers exposed to their workplaces, a chemical agent that has not yet been studied in the context of occupational hazards);
- to develop innovative analysis techniques to facilitate / clarify the monitoring of occupational exposures (eg new biomarkers for medical monitoring);
- to develop innovative techniques to facilitate / specify the prevention of occupational risks (examples: substitution of chemical agents, new capture systems, etc.)

IV. MINISTRY FOR AGRICULTURE AND FOOD

The Directorate General for Food of the Ministry for Agriculture and food, and the Department of Water and Biodiversity of the Ministry for Ecological Transition are jointly running the Ecophyto II plan, which aims to reduce the use of plant protection products, and the risks and the resulting impacts, consistent with production requirements in terms of quality and quantity, economical and technical. It mobilizes the ministries responsible for oversea, health, consumption and research.

The Ecophyto II plan is funded in part by the French Agency for Biodiversity on the fraction of the fee for diffuse pollution perceived by water agencies on the sale of plant protection products. The financial support of the AFB for certain projects selected in this call will be part

⁷ French acronym for Inter-organisational research program for better local air quality

of the resources programmed in 2018 for axis 2 dedicated to the research and innovation of this plan.

As part of the National Research and Innovation Strategy (SNRI), developed at the end of 2016, for the implementation of this axis 2, priority research needs have been identified, aimed at producing knowledge on plant protection products, to allow the reduction of their use and to prevent their impacts (see national strategy of research and innovation Ecophyto II http://www.ecophytopic.fr/sites/default/files/10-10_SNRI_VF.pdf) .

Research project dealing with peculiarities of the overseas are welcome.

In the case of substances withdrawn from the market, the choice of the molecule (s) must be justified (persistence in the environment, public health benefits, etc.).

V. ADEME

ADEME (the French Environment and Energy Management Agency) is a public establishment under the joint authority of the Ministries of Ecology, Higher Education and Research. It implements public policies related to the environment, energy and sustainable development. ADEME makes its expert assessment and consulting capacities available to businesses, local authorities, state authorities and the general public and helps them fund projects in various areas (waste management, soil conservation, energy efficiency and renewable energies and air quality) and progress with regard to sustainable development. ADEME's activities aim to offer prioritised responses to offset the impact of environmental nuisances. They promote new practices and new economically and socially feasible processes. The social acceptance of projects largely depends on the safety to health and the environment of the solutions that are recommended or implemented.

ADEME's mission therefore includes assessing the environmental and health risks related to new technologies and development projects in its areas of expertise. For this year's call for research proposals, knowledge requirements concern health issues related to new energy technologies and electricity production from renewable resources (photovoltaics and biomass), waste management and transportation

In addition, the Agency launches calls for projects related to the social and environmental health impacts of human activities. It notably manages the research programs CORTEA (Knowledge, Reduction at the Source and Treatment of Emissions in Air), IMPACT (Impact of the interactions between pollutants on Man and its environment), GRAINE (Manage, produce and valorize biomasses), Modeval-Urba (Modeling, Urban Refreshment and Evaluation Serving the Actors of the Cities of Tomorrow) and TEES (Ecological, Economic and Social Transitions).

ADEME also co-pilot with the "service de la recherche" of the "Commissariat general du développement durable" the Primequal program (inter-agency Programme Research for Better Air Quality at the Local level).

VI. TMOI CANCER

The Alliance for Life Sciences and Health, AVIESAN, has entrusted Thematic Institutes Multi-Organisms with a mission of coordinating the national operators of research. Nine Thematic Multi-Organisms Institutes (TMOI) are currently operational, including the "Multi-Organisms Cancer Institute" (TMOI Cancer).

The goal of the TMOI Cancer is to bring together all the research teams working on cancer pathologies, whatever their affiliation. Its purpose is to propose concrete actions to improve the performance and competitiveness of French research, to ensure good coordination between all the organizations and institutions involved in cancer research, to stimulate reflection and facilitate interdisciplinary exchanges in the cancer community. He is responsible or co-responsible for the implementation of 16 actions of the Cancer Plan III (2014-2019) including action 12.5: "Develop observation and monitoring and improve knowledge about cancers related to environmental exposures in the general population".

The TMOI Cancer works in collaboration with the actors of the various research organizations in the field of cancer in order to:

- bring out a national strategic vision in the field of Cancer
- bring out innovative and ambitious projects meeting a real scientific or medical need
- organize transversalities between thematic areas
- Coordinate the action of public research actors, in particular research organizations, universities, university hospitals and medium-sized agencies
- Work to improve the value of research by facilitating interactions and partnerships with industry and patient organizations
- Make French research more visible and attractive on the European and international scene

The TMOI Cancer is therefore a facilitator of reflections and transversal actions.

As a sponsor of the PNREST call for projects, the TMOI Cancer is likely to fund studies that deal with the identification, the mechanisms of action, the effects and the ways to protect against the risk factors of cancers (chemical, physical, biological or behavioural) in the private or professional sphere.

ANNEX 2: Research Items

This appendix is a list of research items in relation which research projects should be defined. These research items should be understood as relevant to the domain covered by the call as defined in section III. Their order does not reflect any priority.

For each theme, the list of the most involved funders is given. It is strongly recommended to refer to Appendix 1.

Some of these questions deal with cancer. Projects leaders are invited to contact “cancéropôles”.

Physical agents
<p>Noise pollution</p> <p>Potential funders :</p> <ul style="list-style-type: none"> ✓ Ministry for the Ecological and Inclusive Transition ✓ Ministry for labour
<ol style="list-style-type: none"> 1. Assessment of extra-auditory effects of noise for the general population due to terrestrial transport (including rail transport), air transport, local facilities (shooting stands, sports grounds) and workplaces (particularly the tertiary sector) and installations classified for environmental protection (in particular windmills). 2. Assessment of the extra-auditory effects of noise for workers exposed to noise. 3. Investigation of action mechanisms of noise for long-term effects, associated with prolonged exposure, taking into account the identified modifying factors (noise characteristics, environmental, territorial and human contexts, individual contexts). Document the causal chain noise-annoyance-stress effect. 4. Assessment of health benefit of control measures against noise, of technological improvements in road, rail vehicles and buildings insulation against noise from the outside environment. 5. Assessment of auditory effects due to exposure at workplace at low frequency and high intensity noise.
<p>Mechanical vibrations</p> <p>Potential funder :</p> <ul style="list-style-type: none"> ✓ Ministry for labour
<ol style="list-style-type: none"> 1. Study, in the context of occupational exposures to the vibrations of the hand-arm system, physiopathological effects, in particular those induced by impulsive vibrations. Dose-effect relationship, role of factors such as vibratory frequency, level, duration and periodicity of exposure, temperature.

Non-ionizing radiation

Potential funders :

- ✓ Ministry for the Ecological and Inclusive Transition
- ✓ Ministry for labour
- ✓ ADEME
- ✓ TMOI for projects dealing with cancer (point 3)

1. Characterisation of occupational exposure to artificial optical radiation (wavelength in the range 100 nanometres – 1 millimetre): identification of sources, quantification of individual exposure and assessment of their health impacts.
2. Characterisation of exposure to electromagnetic fields (from static to 8 kHz): quantification of individual exposure, relevant indicators to represent collective or individual exposures, exposure to multiple sources.
3. Experimental studies aiming at the detection of possible associations between exposure to electromagnetic fields (from static to 8 kHz) and disease occurrence.
4. Investigate the impact of new technologies for energy, on general population exposure (local production of electricity in particular windmills, smart grid, electric vehicles, etc.)

Light pollution

Potential funders :

- ✓ Ministry for the Ecological and Inclusive Transition

1. Characterization of exposures and impacts of light pollution for the general population and the environment.

Mineral fibres and nanomaterials

Mineral fibers

Potential funders :

- ✓ Ministry for the Ecological and Inclusive Transition
- ✓ Ministry for labour
- ✓ TMOI for projects dealing with cancer

1. Exposure and health effects of elongated mineral particles of interest (actinolite-asbestos / actinolite, anthophyllite-asbestos / anthophyllite, tremolite-asbestos / tremolite, amosite / grunerite, crocidolite / riebeckite, erionite, fluoro-enebite, winchite and richterite).
2. Short asbestos fibres: Mechanisms of action, bio persistency, genotoxicity and studies of occupational exposure.
3. Characterization of workers' exposure to asbestos fibers in the case of underground workings (tunneling) passing through veins of asbestos ores or in the case of mines and quarries potentially bearing asbestos.
4. Mineral wools: ageing, release of fibres and exposure of workers and general population.
5. Comparison of emissivity between chrysotyl-containing materials and amphibole-containing materials, particularly of amosite type.

Nanomaterials and nanoparticles

Potential funders :

- ✓ Ministry for the Ecological and Inclusive Transition
- ✓ Ministry for labour
- ✓ TMOI for projects dealing with cancer (point 3 only)

1. Emission potential of nanoproducts under usage constraints in normal conditions of use.
2. Assessment of exposure to manufactured nanomaterials (including oral contamination) taking into account the whole lifecycle of products
3. Ecotoxicology and toxicology of nanoparticles and nanomaterials. Methodological research, reference methods, reference materials. Comparison studies.
4. Distribution and evolution, in environmental compartments, of nanomaterials to which the general population and living organisms are exposed.

Exposure to plant protection products⁸

Potential funders :

- ✓ Ministry for Agriculture and Food (with credit allocated for the French Agency for Biodiversity)
- ✓ Ministry for labour
- ✓ TMOI for projects dealing with cancer (points 2 and 3.2 only)

1. Improve the understanding and prediction of exposures

- Improve the characterization of the exposure of professional users (direct and indirect one) and of residents close to treated areas, by providing knowledge on exposure levels and exposure their determinants.
- Characterize the exposure of vulnerable populations (children, the elderly, pregnant women, sick people) taking into account their physiological or pathological specificities.
- Develop methods and tools to measure the exposure to plant protection products in humans, in particular by taking into account multi-exposure and / or exposure windows.
- Compare the exposure levels predicted by the models used for regulatory product assessment and field measurement results. Analyze the causes of discrepancies, and propose revisions or changes to existing models.

2. Improve knowledge of the impacts on environment related to health

- Analyze the link between the exposure to plant protection products and human health effects, taking into account production systems, farming practices and actual conditions of use of the substances.
- Study health effects in vulnerable populations (children, the elderly, pregnant women, sick people), taking into account the notions of low dose, chronic exposure and combination of substances.
- Deepen, through compartmental approach (soil, water, air, consumption ...) knowledge on the persistence of substances and on their degradation products and on health risks and for ecosystems.

3. Improve practices to reduce risk.

- Propose evaluative research on preventive measures to reduce the impact of plant protection exposures on phytopharmaceuticals.
- Study the link between the perception of the risks associated with pesticides and the behavior of users (professionals and amateurs), especially with regard to protective measures, and the consequences on their exposure and the associated health risks.
- Study production techniques to reduce the presence of residues in agricultural products or the use of plant protection products.

⁸ Definition according to EU regulation n° 1107/2009.

Chemical agents and emerging contaminants

Potential funders :

- ✓ Ministry for the Ecological and Inclusive Transition
- ✓ Ministry for labour
- ✓ TMOI for projects dealing with cancer (points 1,2,4,5,6,7)

1. Studies of the impacts of exposure to chemical risks in the workplace, particularly the impacts of multi-exposure or cumulative exposures to both chemicals and other types of nuisance (physical, biological, stress, etc.).
2. Studies on substituents for dangerous chemical agents, with a view to improving health and safety at work.
3. Better consideration of the specificities of endocrine disruptors to which workers are exposed, in terms of critical exposure window, trans / inter-generational effects.
4. Study of the effects on humans and the environment of low doses of CMR agents (categories 1A and 1B of the CLP Regulation) or endocrine disruptors and / or cumulative exposure.
5. Studies on exposure levels and risk assessment in the general population for vulnerable or susceptible populations (children, pregnant women, people with pathologies, etc.) to toxic substances, in particular carcinogens, reproductive mutagens (including when they are present at concentrations below the classification threshold), endocrine disruptors (only in the workplace).
6. In vitro and in vivo animal models and development of global "cocktail effect" indicators for assessing the toxicity of micro pollutant mixtures for chronic exposure assessment.
7. Development of methods for measuring the biological impregnation of populations exposed to chemicals and in particular to CMRs.
8. Exposure to contaminants and effects on ecosystems:
 - Aquatic (marine and continental) media: residues of pharmaceuticals and skincare products; interactions between pollutants and nanoparticles,
 - Deepen, through a compartment approach (soil, water, consumption ...), knowledge on the effects of mixtures of substances and their degradation products on human health and ecosystems.
 - Effects of chemical contaminants on ecosystems to anticipate risks to human health
9. Assessment of the effectiveness of management measures for contaminants posing a risk to human health: control of transfer to environments (especially aquatic), reduction of exposures and risks.
10. Research on endocrine disruptors:
 - Development and testing of methods for investigating mechanisms of action, with a view to characterizing endocrine disruptive modes of action,
 - Study of the modes of action with a view to identifying a possible endocrine disruption related to the development of certain pathologies. Study of "cocktail effects".
 - Development of biomarkers of exposure and / or effects to known or suspected endocrine disrupting substances

Biological agents

Potential funders :

- ✓ Ministry for the Ecological and Inclusive Transition
- ✓ Ministry for labour
- ✓ TMOI for projects dealing with cancer (point 3 only)

1. Document exposure of workers to bio aerosols and to various biological agents (microorganisms, toxins, viruses, pathogenic bacteria). Improve knowledge about exposure situation.
2. Knowledge of the behaviour of pathogens in particular in various compartments of the environment and potential effects on human health.
3. Investigation of association between biological risks and the development of cancer or respiratory or skin sensitization.

Media and contaminations

Emerging contaminations

Potential funders :

- ✓ Ministry in charge of the environment

1. Emerging issues: chemical, physical and biological risks to humans and the environment, exposure characterization.
2. Case of microplastics. Diffusion in the food chain and the water cycle.

Air

Potential funders :

- ✓ Ministry for the Ecological and Inclusive Transition
- ✓ Ministry for labour
- ✓ ADEME
- ✓ TMOI for projects dealing with cancer (point 5 only)

1. Assessment of the exposure and risks associated with hazardous substances, pathogens and particles in the air:
 - on poorly studied places (shops, offices, means of transport),
 - near major highways, ports, airports.
2. Fate and health impacts of particles emitted by transport and air pollution models: braking systems, tires and wear of post-treatment systems.
3. Studies or development of tools to identify the effect of airborne contaminants in the workplace, including allergenic ones in the workplace.
4. Identification of relevant indicators for assessing chronic and / or cumulative exposures to air pollution (indoor / outdoor).
5. Study of the effects of cumulative exposure and development of corresponding indicators (indoor air, atmospheric pollutants,...).
6. Identify the part of the exposure routes (dermal, digestive, respiratory) for indoor pollutants that may exist in different forms (gas, suspended particles, sedimented particles).

Waste

Potential funders :

- ✓ Ministry for the Ecological and Inclusive Transition
- ✓ Ministry for labour
- ✓ ADEME

1. Assessment of exposure to waste and of its effects on ecosystems and human health in the general population and at work, regardless of the study medium (marine litter, soil, fresh water ...).
2. Health and environmental risks during the waste life cycle:
 - related to the practice of local composting,
 - associated with the presence of contaminants in recycled waste.

Risk management, climate change, biodiversity and health

Vector control

Potential funders :

- ✓ Ministry for the Ecological and Inclusive Transition

1. Vector control and more targeted and sustainable strategies: identification of new active substances and relevant biocidal products, methods and benefits of alternative biocides control, resistance management, biological control, genetic control, community control, identification and development of indicators of effectiveness of control methods and impact on non-target organisms.

Climate change and risk management

Potential funders :

- ✓ Ministry for the Ecological and Inclusive Transition

1. Impacts of climate change on health:
 - Direct impacts (immediate and long-term health consequences of heat and exceptional climatic events, especially on vulnerable populations: heat waves, floods ...)
 - Indirect impacts via the quality of the environment (air, water, soil ...) and of food (consequences of drought on agricultural activity ...) and the development of emerging diseases (with water or vector transmission).
2. Epidemiological studies on "health and adaptation" overseas
3. Quantification of the health and environmental benefits of management measures (reduction of environmental pollution, green spaces in the city and revegetation of the public space, stopping the artificialisation of the soil, biodiversity, etc ...) .

Cancers

Potential funders :

- ✓ Ministry for labour
- ✓ TMOI (in addition to cancer related projects in other sections)

1. Gene / environment interactions: impact of environmental or occupational risk factors (including atypical work schedules).
2. Development of cost / benefit quantification methods applied to the prevention and / or management of cancers, the suppression and / or reduction of carcinogenic agent exposures
3. Identification and / or validation of biomarkers associated with an excess risk of cancer in environmental or occupational exposure situations, exposure to mixtures of pollutants or families of carcinogenic pollutants (known or suspected).
4. Risk of cancer related to environmental and / or occupational exposures to carcinogens by promoting a "whole life" approach (cumulative, low dose, multiple exposure effects) and integrating clinical, biological, behavioral and social data –economic
5. Research on environmental or occupational cancer risk factors for targeted populations of men and women of childbearing age, young children, adolescents and young adults (including transgenerational effects if relevant).

Humanities and social sciences in relation to risks for health or environment.

Potential funders :

- ✓ Ministry for the Ecological and Inclusive Transition
- ✓ Ministry for labour

1. Citizen contributions (secular knowledge, launches of alert, scientific watch, devices of vigilance ..):
 - To expertise processes and to the production of health-environment knowledge
 - To health and environmental crisis management processes
2. Lobbying and interest groups in the production of standards (in the fields of environment and labor).
3. Dialogue and communication on risks (health and environmental): transparency, denial and amplification of risks.
4. Factors of unequal exposure to environmental and health risks.
5. Impacts of economic and organizational factors (intra and inter-company, such as the "safe by design" approach) on the consideration of health dimensions in production (exposure of workers) and the marketing of products (exposure of consumers).
6. Place health (workers and consumers) and environmental issues in innovation strategies and in corporate social responsibility policies.
7. Evaluation of the cost of environmental pollution.
8. Law and risks (including focus on the protection of whistleblowers).

ANNEX 3: Chargeable expenses

I. CONTEXT

Most selected applications are managed directly by Anses (when funding comes from Anses or TMOI Cancer, which has delegated management to Anses). The financial rules that will be applied by Anses are presented in this Annex. They can be used to define expenses which may be covered in the submitted proposals.

However, some applications will be directly managed by other co-sponsors (ADEME, French Agency for biodiversity). ADEME has its own specific funding rules. These are available at <http://www.ademe.fr/recherche-innovation/financer-theses-recherche-innovation/systeme-daide-rdi>

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To simplify the process, **the rules applicable at Anses are taken into account on the CRP submission site**. If a project is managed by a co-sponsor, the latter may need to negotiate modifications with the project's managers.

II. ELIGIBLE EXPENSES

Chargeable expenses should correspond to actual expenditure and should be strictly linked to the project's execution, exclusive of any profit margin. In particular, only expenses made between the start and the end of the project, as stipulated in the agreement, will be taken into account. It should be possible to prove the genuine nature of expenses incurred at any time. The recipients shall keep for four years all documents that justify the expenditure incurred under the project and shall submit them if requested by Anses.

Personnel expenses

The only expenses accepted are: wages of fixed-term contract personnel, and professional fees, including social contributions and taxes on wages.

With the exception of public industrial and commercial entities, the personnel expenses taken into account in the amount of the financial contribution made by Anses cannot, under any circumstances, involve the permanent personnel of public entities.

Overhead expenses and small-equipment expenses

The following expenses are accepted, including non-recoverable VAT:

- laboratory costs (procurement of products or consumables),
- office supplies,
- purchasing of patents or licenses,
- publication costs,
- travel expenses of permanent or temporary personnel assigned to the project, particularly for participation in Anses communication and dissemination events,
- conference registration fees related to the project,
- outsourced work (photos, etc.),

- maintenance of equipment purchased for the project,
- procurement of small equipment whose unit cost is less than €1,600 excl. tax
- allowances for trainees

Equipment expenses

Equipment expenses are expenses incurred for equipment whose unit value is greater than €1,600 excl. tax. Anses will take into account :

- All or part of the cost of this equipment, if it is not reusable after the project's completion, (non reusability should generally be the case).
- The share of depreciation calculated pro rata to the period of use if the equipment is reusable after the project's completion, unless an exception is made by Anses.

General management fees

Part of the general administrative fees linked to the project can count as expenses. These fees are limited to 4% of total expenses, unless an exception is made by Anses on the express request of the recipient with justification.

Service delivery

Regardless of their legal status, recipients can contract work to or lease equipment from entities outside of the project. The cost of this work shall remain marginal in relation to the programme's total cost (less than 30% of this total cost), unless an exception is made by Anses on the express request of the recipient with justification). The costs of these services appear individually as overhead expenses.

Anses does not enter into commitments with service providers who therefore have no grounds upon which to make any claim on it if the recipient of a grant fails to respect its obligations. Services are provided exclusively for and under the supervision of the grant's recipient. In accordance with the rules in force, the recipient must pay for services as they are delivered irrespective of the date of the payment expected from Anses.

Internal invoicing case:

These expenses must be related to services traceable in accounting, carried out by another entity (department department) of the beneficiary of the grant (coordinator or partner of the Project). The costs of these services must be identified analytically. In addition, these services must be proportionate to their actual use for the purposes of the project and must not have been taken into account in the structural costs and / or management fees. They must be invoiced to the exclusion of any profit margin. These expenses must comply with the eligibility rules described in this Annex.

III. NON-ELIGIBLE EXPENSES

The following expenses cannot be covered by Anses :

- Financial fixed assets and routine expenses to replace equipment;
- Expenses related to marketing, sales and distribution fees;
- Expenses related to land and buildings.