

# National Research Program for Environmental and Occupational Health

## 2016 Call for Research Proposals

**Deadline for submission of the letters of intent: December 4, 2015**

**Deadline for submission of the complete proposals: March 8, 2016**

**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 funded by Anses with funds from the ministries in charge of environment and of labour, and associates several co-founders: ADEME, TMOI Cancer of AVIESAN alliance under the “Cancer Plan”, the Ministry in charge of agriculture under the “Ecophyto Plan” (in relation with ONEMA). In addition, funding from a tax on radio transmitters is to be 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 launched in late 2015: the present call, which covers a wide area (excluding radiofrequencies), and a 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 as a medium in contact with man.

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 will be published late in 2015 or in 2016. These include:

- ANR calls (see the 2016 ANR action plan),
- “Knowledge, reduction at source and processing of emissions of air pollutants” (French acronym CORTEA) to be issued by ADEME in 2016.

- “Knowledge of the impacts of waste management” (French acronym CIDE) to be issued by ADEME in 2016.
- MODEVA-URBA, modeling and assessment for stakeholders of tomorrow’s cities and territories (health and environmental impact and comfort of urban features) to be issued by ADEME at the end of 2016 for a closing in 2017.
- Call for projects in the field “Cancer and environment” of the TMOI Cancer issued the 28 September 2015, closed the 5 November 2015.
- Call for projects in the field of air quality (PRIMEQUAL programme) issued in October 2015.

### 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, urbanism), human and social sciences (ergonomics, sociology, economics, demographics, analysis of public policies, law, health geography).
- 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 biological and/or health and/or environmental and socio-economic approaches.
- 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 2016 are listed in Annex 1. 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 in 2015:

### **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 scope 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.

### **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. This call for proposals is open to all research teams<sup>1</sup>, 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.
2. The proposal should involve at least one academic research team (higher education and research establishments, research organisations, other public establishments with a research mission).
3. The call for research proposals is open to foreign teams. 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).
  - a. Any proposal submitted by a French team can include a partnership with one or more foreign teams.

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<sup>1</sup> About the eligibility of Anses teams, Anses follows the recommendation of its deontology committee <https://www.anses.fr/fr/system/files/DEON-Ft-2013003.pdf>

- b. Any proposal submitted by a foreign team – or a team that belongs to an international organisation (even if it is based in France) – must include a French academic partner.
4. 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,
- 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 requesting parties, 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 results<sup>2</sup>.

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<sup>2</sup> 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 establishment<sup>3</sup> (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 its 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 4, 2015 midday**, French time. They shall be submitted using the **Research and Intelligence ("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 **end of October 2015**.

**The project coordinator should carefully read eligibility rules listed in the present call for letter of intent or project stages.**

The letters of intent will then be evaluated and the result (authorized to submit a full project 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 8<sup>th</sup> of March 2016 midday**, French time. Following electronic applications, an acknowledgment of receipt will be automatically sent to the scientific project managers.

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 signatures, must be sent by post to the following address no later than **April 22, 2016**:

Anses-DRV  
APR EST 2016  
ACI-COP-2-028  
14, rue Pierre et Marie Curie  
F-94701 MAISONS-ALFORT Cedex

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<sup>3</sup> Note that this agreement will be written in French

### Provisional key dates

<b>October 2015</b>	Opening of the call
<b>End of October 2015</b>	Opening of the platform for electronic submission
<b>December 4, 2015 midday</b>	Deadline for submission of letters of intent
<b>February 1, 2016</b>	The initial selection results, based on the letters of intent, are sent to the scientific project managers.
<b>March 8, 2016</b>	Deadline for submission of full projects
<b>April 22, 2016 midnight</b>	Deadline for submission of complete applications
<b>July 2016</b>	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

For projects not selected for funding, the records will be kept confidential. 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	Laetitia Dubois	<a href="mailto:recherche@anses.fr">recherche@anses.fr</a>
Administrative issues	Aur�lie Pajon	<a href="mailto:recherche@anses.fr">recherche@anses.fr</a>
	Delphine Lascar	<a href="mailto:recherche@anses.fr">recherche@anses.fr</a>

## ANNEX 1: 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.

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

### Noise pollution

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. 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) and document causal chain noise-annoyance-stress effect, in general population or at workplace.
3. Carry out epidemiological studies based on indicators of exposure and pathologies, relevant to determine the risk characteristics, particularly in terms of latency, risk levels, durations and time of exposure and exposure-relationships.
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. Impact on health at workplace of insulation of machines against noise.
6. Define measurement plan (number, duration and sample distribution) for noise exposure measurements at workplace with an approach based on activity.

### Non-ionizing radiation other than Radiofrequency emissions

1. Characterisation of occupational exposure to artificial and natural UV radiation (taking into account the latter's variability through space and time) and assessment of their health impacts.
2. Characterisation of exposure to low-frequency or intermediate-frequency electromagnetic fields (from static to 8 kHz), for general population or at workplace: evolution of sources, quantification of individual exposure, definition of appropriate indicators to represent exposure in individuals or in the population, exposure to multiple sources.
3. Relationship between exposure and health
  - Experimental studies aiming to detect possible links between exposure to low- or intermediate-frequency electromagnetic fields (from static to 8 kHz) and disease occurrence.
  - Studies of effects of long-term exposure of populations potentially most exposed to high voltage power lines at their place of residence.
4. *Impact of new technologies for energy, on general population exposure (local production of electricity, smart grid, electric vehicles, etc.)*

## Mineral fibres

1. Exposure and health effects of long "no asbestos" mineral particles.
2. Short asbestos fibres: Mechanisms of action, bio persistence, genotoxicity and studies of occupational exposure.
3. Mineral wools: ageing, release of fibres and exposure of workers and general population.

## Nanomaterials and nanoparticles

All places in life (professional, rural, domestic, leisure and urban space) and all conditions and exposure pathways are taken into consideration. An exception is the risks to food sensu stricto (including drinking water) except through comparison between different pathways, or when ingestion is following to inhalation. The projects are intended to provide knowledge for risk assessment for human health or ecosystems. Where appropriate, projects must provide specific details on the characterization of nanoparticles studied as well as the (or) (s) method (s) used (s) so that they are part of a process of consolidation / precision of scientific knowledge, using methods and reference materials. Impact studies on ecosystems are welcome, in particular the ones allowing anticipating emerging risks.

1. Detection, identification and characterization of nanomaterials, in particular manufactured ones (in biological fluids, tissues, environmental compartments). In particular metrology, reference methods, comparison of techniques.
2. Emission potential of nanoproducts under usage constraints in normal conditions of use.
3. Assessment of worker and general population exposure to manufactured nanomaterials (measurements, modelling) taking into account the whole lifecycle of products
4. Ecotoxicology and toxicology of nanoparticles and nanomaterials. Methodological research, reference methods, reference materials. Comparison studies.
5. Distribution and evolution, in environmental compartments, of nanomaterials to which the general population is exposed.

## Pesticides/Biocides

Projects funded by the Ecophyto plan (preferably applied research) are expected to meet priority needs identified in the scientific program described in the research section of the Ecophyto plan (<http://agriculture.gouv.fr/>).

Will be considered substances that are not subject to a ban. Otherwise, the choice of the molecule must be justified (persistence in the environment, a model system). Furthermore, for all these issues, the particularity of oversea territories is to be considered. This includes impacts on health and ecosystems of products used as biocides (including vector control).

*The ITEMS red italics are particularly important for the steering committee.*

### 1. Improve the understanding and prediction of exposures

- *Improve the exposure characterization of users and of people close to the treated areas.*
- Identify vulnerable populations and / or population with high exposure risk and determinants of their level of exposure.
- *Compare data on environmental exposure obtained with models used for regulatory assessment of products (ex ante evaluation) and the results of environmental measurements conducted as part of monitoring plans. Analyze the causes of divergence.*
- *Develop exposure indicators for humans to phytosanitary substances (including biomarkers), with simple implementation and monitoring and enabling to take into account multiple exposure and critical exposure windows. Propose strategies for their deployment and data exploitation. Propose strategies to connect these exposure indicators to actual environmental exposures based on pharmacokinetic models and their interpretation.*

- Use the obtained data to suggest revisions or changes of exposure models also taking into account the evolution of equipment and protection, as well as the type of preparations (liquid, solid, water-based, solvent organic, etc.).

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

- *Characterize the link between exposure and the impact of pesticides on human health, identify uncertainties in order to quantify them and to take them into account. Propose research on the techniques and practices allowing reducing the impact.*
- Through an approach by compartment (soil, water, consumption ...) deepen research on issues related to the persistence of substances and their degradation products, and on risks for health and ecosystems.
- Assess the health risks related with production systems, agricultural practices and conditions of pesticide use on the farm (application techniques, protective equipment, etc.).

## 3. Improve practices to reduce risk.

- Study the relationship between risk perception associated with pesticides and behavior of users (professionals and amateurs), in particular with respect to protection measures, and the impact on their exposure and associated health risks.
- *Investigate the means of protection for user and of exposure reduction for neighborhood*
- Investigate the production techniques aiming at reducing the presence of residues in agricultural produce.

# Chemical agents and emerging contaminants

All places in life (professional, rural, domestic, leisure and urban space) and all conditions and exposure pathways are taken into consideration. An exception is the risks to food *sensu stricto* (including drinking water) except through comparison between different pathways.

The impact of emerging pollutants on ecosystems is to be regarded as an early warning system.

Preference will be given the substances for which research projects have a strong impact, i.e. substances for which regulations are not being finalized. This is also the case of surrogate molecules whose use is or may be necking. Otherwise, the choice of the molecule must be justified (residual risk, model system).

*The ITEMS in red italics are of particular importance to the steering committee.*

1. Study, on man and on the environment, the low-dose effects of agents known to be carcinogenic at high doses (categories 1A and 1B of CLP regulation) or endocrine disruptors and/or in combined exposure.
2. Exposure level and risk assessment, for sensitive populations (children, pregnant women, persons suffering from diseases...) to toxic substances, in particular CMR product or endocrine disruptors (including below reference level).
3. *Endocrine disruptors*
  - *Study of the effects of endocrine disruptors on human health or on ecosystems*
  - *Develop specific biomarkers of effects of endocrine disruptors*
  - *Develop test methods to better understand the effects of endocrine disruptors.*
  - *Better consideration of the particular sensitivity of children in toxicity tests used for the evaluation of substances and products.*
  - *Better consideration the specificities of endocrine disruptors in terms of critical exposure window and trans / inter-generational effects.*
4. Studies of the impacts of exposures to chemical hazards in the workplace including the impacts of multi-exposures or cumulative exposures to both chemicals and other types of nuisance (pollution physical, biological, stress ...).

5. In vitro and in vivo models in animals and development of global indicators for "mixture effect" for the evaluation of the toxicity of mixtures of micro pollutants for the assessment of chronic exposure.
6. Development of measurement methods of population impregnation of exposed to chemicals and in particular to CMR.
7. *Exposure to contaminant and effect on ecosystems:*
  - Aquatic environments (marine and continental). Emphasis will be given on pharmaceuticals and care the residues. Projects are expected in the field of the interaction between pollutant and plastic microparticles.
  - Through an approach by compartment (soil, water, consumption ...), further research on issues related *to mixtures of substances and their degradation products and the health and environmental risks.*
  - Investigate emerging issues such as microplastics (chemical and biological risks for humans and ecosystems, characterization of exposure).
8. *Effects of chemical contaminants on ecosystems to anticipate risks to human health. Chemicals and natural aquatic environment*
9. *Evaluation of the effectiveness of management measures* to control the transfer to aquatic environments of contaminants with a risk to human health (secondary pollutants and metabolites)

## Vector control

The projects must have a relatively straightforward application.

*The ITEMS in red italics are of particular importance to the steering committee.*

1. *Strategies for control of vectors and of transmission that are more targeted and sustainable (identification of new active substances and appropriate biocidal products for vector control, methods and significance of control using alternative biocides, resistance management, biological control, genetic control, community efforts, identification and development of indicators for the effectiveness of control methods and impact on non-target organisms)*
2. Benefit-cost approaches for vector control

## Biological agents

The projects must have a relatively straightforward application.

1. Document exposure of workers to bio aerosols and to various biological agents (microorganisms, toxins, viruses, pathogenic bacteria).
2. Knowledge of the behaviour of pathogens in particular in various compartment of the environment and potential effects on human health

## Air

*The ITEMS in red italics are of particular importance to the steering committee.*

1. Assessment of exposure and risks related to hazardous substances, pathogenic agents and particles in the air in particular in still unstudied areas (shops, offices, care facilities, mean of transportation).
2. Studies or tools to identify the effect of airborne contaminants in the workplace, including allergenic airborne contaminants or chemicals.
3. *Identification of appropriate indicators for the assessment of chronic exposure and/or cumulated to air pollution (indoor / outdoor)*
4. Health effect and identification of appropriate indicators for the assessment of cumulative exposure to air pollution (indoor, atmospheric contaminants)
5. Identify the part of each exposure route (skin, digestive, respiratory) for indoor pollutants that may exist under different forms (gas, airborne particles sedimented particles).

## Waste

*The ITEMS in red italics are of particular importance to the steering committee.*

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. *Assessment of health and environmental risks in the course of waste life cycle.*

## Climate change and health

*The ITEMS in red italics are of particular importance to the steering committee.*

1. *Impacts of climate change on health: direct (immediate and long-term consequences for health of heat and extreme weather events, especially on vulnerable populations: heat waves, floods ...) and indirect through the quality of the environment (air: ozone, pollen ... - water ...) and of food (impact of drought on agricultural activity ...) and the development of emerging diseases (waterborne and vector-borne).*
2. *Estimated direct and indirect costs.*

## Cancers

*The ITEMS in red italics are particularly important reflect the priorities of the call.*

1. *Gene/environment interactions: health impact of environmental risks at workplace*
2. *Development of methods for quantification of cost/benefit applied to cancer prevention or treatment and the elimination and/or reduction of exposure to carcinogenic agents.*
3. *Identification and / or validation of biomarkers associated with an excess risk of cancer in environmental exposure at workplace, or in case of exposure to mixtures of pollutants or families of carcinogenic pollutants (known or suspected).*
4. *Risk of cancers related to environmental and or occupational exposures to carcinogens chemicals by promoting a "whole life" approach (cumulative exposure effects, low doses, multiple exposure) and by taking into account clinical, biological, behavioral and socio-economic factors.*
5. *Research on environmental and or occupational risk factors for specific 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.

*The ITEMS in red italics are particularly important reflect the priorities of the call.*

1. *Citizen contributions to expertise process and to knowledge production in the area of environmental-health: lay knowledge, warnings, scientific monitoring, and vigilance.*
2. *Lobbying and interest groups in the production of standards (in the areas of environment and labor).*
3. *Media, institutional and societal consequences of the expression of uncertainty in health risk assessments on: transparency and risk communication, denial and amplification of risks.*
4. *Influence of funding origin on the choice of research topics at European / international level, on the expression of the results and on their scientific valuation.*
5. *Effects of the economic crisis on inequalities of exposure to environmental and health risks.*
6. *Impacts of economic and organizational factors (intra or inter company) on the inclusion of health dimensions in production (occupational exposure) and product marketing (consumer).*

7. *Place of health issues (workers and consumers) in innovation strategies and social responsibility policies of companies.*
8. *Pluralistic management to minimize the occurrence of chronic risk or in crisis. A priority topic for this call for proposals will cover pluralistic management of health risks involving wildlife.*
9. *Law and risk.*

## **TRANSVERSE QUESTIONS**

1. *Quantification of benefits for health or environment of risk management (decrease of pollution, green areas in cities, biodiversity...).*

## ANNEX 2: 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 IN CHARGE OF THE ENVIRONMENT

The Ministry of the Environment 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 combined with other funding, gives the program a broad spectrum in the fields of environmental and occupational health. In addition to fulfilling Anses's 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.

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**<sup>4</sup> program on air quality, implemented by the Ministry of the Environment (Research Division of the Sustainable Development Commission) and

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<sup>4</sup> French acronym for *Inter-organisational research program for better local air quality*

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. In October 2011, a call for proposals was launched on interior environments and innovative approaches. It dealt more specifically with exposure to 'cocktails' of pollutants, the examination of semi-volatile pollutants and with investigations on the development of new buildings and materials, placing a special focus on human and social sciences. These projects were funded in 2012.

- The **PNRPE**, the National Research Program on Endocrine Disruptors, implemented by the Research Division of the Ministry of the Environment's 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. A call was launched at the end of 2010.
- The **Pesticides** 'Assessment and reduction of risks related to pesticide use' program, implemented by the Research Division of the Ministry of the Environment's Sustainable Development Commission. Its aim is to understand the routes by which pesticides disseminate, transform and accumulate in the environment, to assess risks related to pesticide use, to take measures to limit unintentional effects, and design tools and methods to reduce pesticide levels in various environments. In the framework of the *Grenelle* Environment Round Table, the programme is intended to contribute to the implementation of the Ecophyto 2018 plan. In 2011, a new call for projects was launched in conjunction with the work of the Group of Research Experts for the Ecophyto 2018 plan. The 2011 call therefore included two parts, one devoted to assessing the impacts of pesticides on ecosystems, and the other to changing practices with the goal of proposing governance tools that foster an accelerated transition to less pesticide-dependent practices. The projects will be funded in 2012.

### III. THE MINISTRY IN CHARGE OF OF LABOUR

In 2005, this ministry commissioned AFSSET with the scientific coordination of a call for proposals in the area of occupational health, with the goal of improving the public authorities' decision-support bases and tools related to the prevention of occupational risks. Now co-sponsor of the Anses research programme for environmental and occupational health, the Ministry of Labour addresses research issues related to the assessment of occupational health risks. Research into occupational health is one of the main themes Occupational Health Plan, whose goal is to mobilise the scientific community to deepen and broaden fundamental knowledge and thereby improve the prevention of occupational health risks.

This ministry is in charge of three programmes.

### IV. MINISTRY IN CHARGE OF OF AGRICULTURE, FOOD AND FORESTRY.

The Directorate General of the Ministry of Agriculture, Food and Forestry (DGAL) manages two national plans which are related to the present call.

- The Ecophyto Plan which aims at gradually reducing the use of plant protection products while maintaining a high level of agricultural production, both in quantity and quality. It involves the Ministries of Environment, overseas, health, consumer and research. The Ecophyto plan is funded in part by ONEMA, from the fraction of diffuse pollution tax perceived by the water agencies on the sale of plant protection products. The financial support from ONEMA to some projects selected in this call will be done within the resources allocated in 2016 for the “research” axis.

## 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).

In addition, the Agency is launching calls for proposals in relation to the health and environmental impacts of human activities. It manages research programs including CORTEA (knowledge, source reduction and treatment of emissions to air), CIDE (knowledge of the impacts of waste management), Modeval-Urba (modeling for players of tomorrow’s cities). ADEME also co-pilot with the “service de la recherche” of the “Commissariat general du developement durable” the Primequal program (inter-agency Programme Research for Better Air Quality at the Local level).

## VI. TMOI CANCER

The thematic Multi-organisation Cancer Institute (TMOI) is one of the institutes created within the French Alliance for health, which brings together nine major players in the field of life sciences and health. It helps to broaden knowledge on the pathophysiology of cancer and to drive the translational and clinical research in oncology, bringing together all the players in cancer research with the aim of achieving some of the actions listed in the 2014-2019 cancer plan.

In order to strengthen the competitiveness and visibility of the research teams in the field of cancer, ITMO, its director, deputy director and executive director are mandated to collaborate with various organizations, to define a common scientific strategy in the field of cancer. This

collaboration allows adapting research programming to the needs of society in accordance with the scientific forces in the field and enhancing the visibility of research actions.

From these broad guidelines and research priorities, ten short and medium-term actions were identified including:

- Development of a partnership policy with other agencies in charge of programming of research to support upstream research and promote the development of multidisciplinary integrated teams including mathematics, physics, chemistry, computer to progress in modeling complex systems biology or process.
- Support for major platforms of life sciences
- Coordination of French research teams to promote their active participation in European and international programs.
- Ensure the creativity and competitiveness of basic research to increase our knowledge of the determinants of cancer; Including better understanding of the links between cancer and environmental behavior by developing epidemiology, behavioral sciences and epigenetics (Action 12.4: Support epidemiological surveillance and research to improve knowledge on occupational cancers; Action 12.5: Developing the observation and monitoring and improving knowledge about cancers linked to environmental exposures in the general population).

# 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, ONEMA). ADEME has its own specific funding rules. These are available at <http://www.ademe.fr/recherche-innovation/financer-theses-recherche-linnovation/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

### **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.

## **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.