

National Research Program for Environmental and Occupational Health

2014 Call for Research Proposals

Deadline for submission of the letters of intent: January 8, 2014
Deadline for submission of the complete proposals: March 20, 2014

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 of environment and labor, and associates several co-funders: ADEME, ITMO Cancer of AVIESAN alliance under the "Cancer Plan", the Ministry in charge of agriculture under the "Ecophyto Plan" (in relation with ONEMA) and under the "Ecoantibio 2017 Plan". 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 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 2013: 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 environmental health and occupational health to develop new methods and tools at all stages of health risk assessments, 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 human health, in the general population and in the workplace. Research proposals are selected based on their originality and scientific quality and should strengthen knowledge in particular on critical points related to the assessment or management of health risks.

At the French national level, this call for research proposals complements other calls that will be published late in 2013 or in 2014. These include:

- ANR calls (see the 2014 ANR action plan),
- "Knowledge of the impacts of waste management" (French acronym CIDE) issued by ADEME on the 25 October 2013, closed on the 28 February 2014.
- Call for research projects about "integrated management of polluted sites" (French acronym GESIPOL), which should be issued by ADEME on the first quarter of 2014.

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 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, microchemistry), engineering sciences (various types of radiation, noise, metrology), environmental sciences (biodiversity, human ecology, 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 socio-economic approaches.
- The scope of the APR covers a wide range of health risks from emerging risks to the known risks, including complex risks that still raise scientific controversies. The themes covered by the CRP in 2014 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 2014:

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. 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. This is why 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 each funder¹. 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.

¹ As defined in annex II

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 III.
3. The project must not contain actions that have already been funded once 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, 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.
 - 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 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,
- 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,
- 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 results².

VIII. AGREEMENTS

The funding terms for the selected proposals shall be specified in the agreement between the sponsor and the coordinator's establishment (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.),
- Supply, at the end of the project, a complete 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 **January 8, 2014 midday**, French time. They shall be submitted using the **Research and Intelligence ("Recherche et Veille") platform**, available via the websites of Anses and the

² For example, any information that could be used to reproduce experiments or reanalyse data, inter-partner trials, multiple points of view held by partners, etc.

co-sponsors of the call for proposals. The platform will be operational around the **beginning of December 2013**.

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 **march 20, 2014 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 **May 30, 2014**:

Anses-DRV
 APR EST 2013
 27-31 avenue du Général Leclerc
 F-94701 MAISONS-ALFORT Cedex

Key dates

End of November 2013	Opening of the call
Beginning of December 2013	Opening of the platform for electronic submission
January 8, 2014 midday	Deadline for submission of letters of intent
February 17, 2014	The initial selection results, based on the letters of intent, are sent to the scientific project managers.
March 20, 2014	Deadline for submission of full projects
May 30, 2014 midnight	Deadline for submission of complete applications
September 2014	Publication of the final selection results

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 APR unit:

Scientific issues
Administrative issues

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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. Those indicated in *red italic* (topic or specific question) are of particular importance for the committee or are related to priorities of co-founders.

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 and for workers 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. Understanding the mechanisms involved in the discomfort associated with noise pollution and impacts (in particular associated to multi exposures) of these nuisances. Finally, one will study the noise as a stressor agent having an impact on health in general population or at workplace.
3. 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.
4. Impact on health at workplace of insulation of machines against noise.

Non-ionising 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), particularly in occupational environments: 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
 - o Experimental studies aiming to detect possible links between exposure to low- or intermediate-frequency electromagnetic fields (from static to 8 kHz) and disease occurrence.
 - o 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 ...)

Mineral fibres

1. Analytical methods and studies on the health effects in order 1) to differentiate asbestiform fibers and non asbestiform ones and 2) for a better understanding of the effect of the latters.
2. Short asbestos fibres: Mechanisms of action, biopersistence, genotoxicity and studies of occupational exposure.
3. Mineral wools: ageing, release of fibres and exposure of workers and general population.

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 designed to provide knowledge for risk assessment. 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.

1. Detection, identification and characterization of nanoparticles, including manufactured ones, (in biological fluids, tissues, environmental compartments). In particular metrology , reference methods, comparison of techniques .
2. Emission potential of nanoproducts under usage constraints and at end of life.
3. Assessment of worker and general population exposure to manufactured nanoparticles (measurements, modelling) taking into account the whole lifecycle of products
4. Toxicology of nanoparticles and nanomaterials. Methodological research, reference methods, reference materials. Comparison studies.

Pesticides/Biocides

1. Improve the understanding and prediction of exposures
 - *Characterize the exposure 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.*
 - Use the obtained data to revise/complete exposure models also incorporating the evolution of equipment and protection, as well as evolution of the spectrum of utilized chemical substances.
2. Improve knowledge of the impacts on environment and health
 - *Characterize the causal 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 health and environmental risks.
 - 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.

For all these questions, the particularity of overseas should be taken into account as well as the environmental and health impacts of products used as biocides (including vector control).

Chemical agents

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. Regarding the question "chemicals and aquatic environments" exhibition is to be understood as "measure of concentration in the environment"

1. Study of the low-dose effects of agents known to be carcinogenic at high doses (categories 1A and 1B of CLP regulation) 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. Effects of endocrine disruptors
 - Study of the effects of endocrine disruptors
 - 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.
4. Studies of the impacts of exposure to chemical hazards in the workplace on reproduction and development, including the impact of multiple exposures. 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 micropollutants for the assessment of chronic exposure.
 5. Chemicals and natural aquatic environment
 - Characterization of exposure and chronic risk assessment in humans associated with water contamination by drug residues, drug personal care products, metals, hydrocarbons, chlorinated compounds, polymers, crop spraying) and biocides.
 - 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)

Agents of natural origin

No specific question in the present call.

Vector control (in particular in a context of climate change)

1. Transmission control strategies 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

1. Characterization of hazards (detection techniques, quantitative approaches, molecular tools, indicators) related to biological agents that are pathogenic for humans.
2. Document exposure of workers to bio aerosols and to various biological agents (microorganisms, toxins, viruses, pathogenic bacteria).
3. Knowledge of the behaviour of pathogens in particular in aquatic environment and potential effects on human health
4. Dissemination of antibiotic resistance: mechanisms of induction of factors governing its transmission factors in the environment. Transmission from animals to humans.

Contaminated soil

1. Consolidation of approaches to characterize human population exposure on or close to a site polluted by chemical substances: modelling, measurement, indicators / biomarkers of exposure
2. Research on methods and tools for the implementation of collective vigilance of constrained spaces (hazard identification particularly those related to residual risks related to reuse of brown fields.

AQUATIC ENVIRONMENT

Questions related to aquatic environment are related to chemicals and are at the end of "chemical agents" section.

Air

1. Assessment of exposure and risks related to hazardous substances, pathogenic agents and particles (e.g. VOCs) 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, noise, waves)
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).
6. Knowing the impact on indoor air (in watertight buildings in particular) of biobased materials (construction materials and decoration) versus petrochemicals. Identify pathogenic substances and associated gaseous pollutants).

Waste and emissions from industrial facilities

1. *Development of tools to monitor the health of populations living near industrial or waste management facilities (early diagnoses): exposure indicators, sentinel animals in line with veterinary surveillance.*
2. Occupational health impacts of emissions from processes used in the recovery of waste and by-products (polymers waste from electrical or electronically equipments, end-of-life vehicles, composting, methanization and conversion of biogas, public works, etc.)

Cancers

1. *Gene/environment interactions: health impact of environmental, occupational and behavioural risk factors according to genetic predispositions*
2. *Development of methods for quantification of cost/benefit applied to cancer treatment and the elimination and/or reduction of exposure to carcinogenic agents.*
3. *Development of DALYs or QALYs studies related to the consequences of cancers attributed to environmental factors*
4. *Models for the quantitative assessment of excess risk of respiratory tract cancer for occupational and environmental exposure to certain carcinogenic agents, particularly at low doses*
5. *Development of indicators, applicable to humans, associated with excess cancer risk in situations of environmental and occupational exposure (particularly early biomarkers of transformation and susceptibility, animal models, etc.).*
6. *Multiple exposure to carcinogens*
7. *Risk of cancers related to environmental or occupational exposures incurred all along life*
8. *Research on biomarkers of early effects to be applied to humans and specific of carcinogenic environmental exposure (established or suspected).*
9. *Research on environmental risk factors of childhood cancer*

Humanities and Social sciences in relation to health risks

1. Environmental inequalities related to health social inequalities, risk distribution in populations and territories. For example:
 - Developing models of geographical analysis of social and health data and / or exposure data, statistical studies.
 - Cumulation of environmental inequalities, effects of insalubrity and over-occupation of housing on physical and mental health, and on living conditions of populations,
2. Dynamics of mobilization, processes for alerts and set up risks on public agenda (various approaches

- including statistical methods)
3. Lay persons and expert knowledge, co-production of knowledge about health risks
 4. Characterization, expression and processing of different levels of uncertainty or ignorance, of scientific or social order (e.g concerning the conditions of production, distribution, use, control of risk factors) in the assessment and management of health risks
 5. Socio-economic assessment of health risks and processes for public decisions. For example :
 - Mechanisms for compensation (not necessarily financial) in response to situations of risk
 - Insurance mechanisms.
 - Consideration of economic and social factors
 - Development of methods to measure economical impact
 - Development of methods for quantification applied to the treatment of diseases, and or to the reduction of exposures.
 6. Analysis of economic, social and organizational conditions for the creation, maintenance and / or dissemination of health risks. For example
 - Industry management and organization of networks for the substitution of the most dangerous chemicals in industry (particularly small or very small ones companies). Nature and variability of obstacles, strategies and deployed resources.
 - Criteria for insurability of health risks by insurance companies and credit agencies.
 7. Lobbying and interest groups in the production of standards (in the fields of environment and labour)
 8. Media coverage and social amplification of risk
 9. Effectiveness of different modes of governance of environmental databases.
 10. Research methodologies benefit-risk assessment, models of decision making under uncertainty and the analysis of the impact of sets of actors.

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 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**³ program on air quality, implemented by the Ministry of the Environment (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

³ French acronym for Inter-organisational research program for better local air quality

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 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 of the 2010-2014 Occupational Health Plan (PST2), 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 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: This plan aims to gradually reduce 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 2014 for the 3 axis (axis dedicated to research), led by the Directorate-General for Education and research. "Innovation in the design and development of innovative cropping systems efficient pesticides / Component" Research on the health and environmental impacts of pesticide use. "

- The Ecoantibio 2017 plan on risk reduction of antimicrobial resistance in veterinary medicine. The national plan is twofold: i) reduction of the contribution to antimicrobial resistance of antibiotics used in veterinary medicine ii) sustainable preservation of the therapeutic arsenal for veterinary medicine, the prospect of new drug development being limited. The plan encompasses 40 actions, including one dedicated to research (<http://agriculture.gouv.fr/Les-40-mesures-du-plan>)

The DGAL will fund projects in the line of the Ecoantibio2017 plan, especially the ones related to 1) mechanisms for antimicrobial resistance, 2) transmission factors to environment and from animal to man.

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 five areas (waste management, soil conservation, energy efficiency and renewable energies, air quality and noise control) 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), Titec (pre-transfer and industrial testing in real conditions- Hydrogen and fuel cells) and CO2-STOCK (geological storage of CO2). ADEME also co-pilot with the ministry of ecology the PRIMEQUAL program (inter-agency Programme Research for Better Air Quality at the Local level) presented in Section II.

VI. ITMO CANCER

ITMO Cancer (Institut thématique multi-organismes Cancer) is one of the multi-entity institutes created in the framework of the Aviesan health alliance, a group of nine major

players⁴ in the areas of health and life sciences. It coordinates stakeholders in the field of cancer research around strategies defined by the National Cancer Institute (INCa) and its scientific council.

In the framework of the French Cancer Plan and the management of the additional 'Research' budget by INSERM, ITMO Cancer, in partnership with INCa, is in charge of:

- developing a partnership policy with other research programming agencies,
- supporting large institutional structures for the life sciences,
- coordinating the biological scientific work supported by Aviesan,
- coordinating French research teams in order to promote their active contribution to European and international programmes.

⁴ CEA, CHRU (Conference of Directors General), CNRS, CPU (Conference of University Presidents), INRA, INRIA, INSERM, Institut Pasteur, IRD

ANNEX 3: Chargeable expenses

I. CONTEXT

Most selected applications are managed directly by Anses (when funding comes from Anses or ITMO 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. ADEME's general rules for the allocation and payment of financial assistance (2013 edition⁵) can be downloaded from <http://www2.ademe.fr/> in the "Offre de l'ADEME" section.

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

VII. 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,

⁵ These rules are presented for illustrative purposes, the support of ADEME research and innovation system is under review and may be modified for 2014.

- 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.

VIII. 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.