STIMULATING INDUSTRIAL INNOVATION FOR SUSTAINABILITY: 
AN INTERNATIONAL SURVEY FOCUSED ON TECHNOLOGY

FRANCE

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TABLE OF CONTENTS

1. INSTITUTIONAL CONTEXT/BACKGROUND ................................................................. 1
   1.1. Introduction .............................................................................................................. 1
   1.2. National Innovation System factors related to sustainability ................................. 1
   1.3. Policy framework ................................................................................................. 3
   1.4. Interaction of government with industry .............................................................. 3
   1.5. Industrial profile ................................................................................................ 3

2. CLASSIFICATION OF POLICY INSTRUMENTS .......................................................... 6
   2.1. Role of government ............................................................................................... 6
   2.2. Instruments in stimulating sustainability ............................................................. 6
   2.3. Modalities ........................................................................................................... 10
   2.4. Organization ....................................................................................................... 11
   2.5. Methods to assess effectiveness ......................................................................... 11

3. SPECIFIC EXAMPLE PROGRAM DESIGN CHARACTERISTICS ............................... 12
   3.1. Special focus: ADEME ......................................................................................... 12
       3.1.1. Background and Objectives ......................................................................... 12
       3.1.2. Policy Instruments ....................................................................................... 13

4. APPENDIX: POINTS OF CONTACTS ......................................................................... 15
   4.1. General Information ............................................................................................ 15
   4.2. Contacts ............................................................................................................... 17
1. INSTITUTIONAL CONTEXT/BACKGROUND

1.1. INTRODUCTION

Sustainable development is a relatively new concept in France. The concept signifies the determination of measures that go beyond traditional measures supporting nature protection and is thus broadening the mission of the Ministry of Environment. It reflects the international initiatives developed at the summits of Kyoto, Rio and Seattle. As its Minister Madame Dominique Voynet mentioned: “sustainable development should be the paradigm of our society in this coming new century”. These developments have been incorporated by the preparation of the plan 2000-2006 of the Ministry of Environment. The Ministry has expressed its perception on this new concept through the following figure.

Government policy in sustainable development is oriented around four major axes:
- Sustainable development of the territory through local collective goods:
- Water legislation
- Waste legislation
- Air legislation

1.2. NATIONAL INNOVATION SYSTEM FACTORS RELATED TO SUSTAINABILITY

The main ministries in making the related legislation and regulation, distributing R&D money, and promoting sustainable development and technology innovation are:
- The Ministry of Territorial Planning and Environment
- The Ministry of Economics, Finance and Industry
- The Ministry of National Education, Research and Technology

Other ministries like the Ministry of Agriculture and the Ministry of Transport have a limited role in the sustainability discussion.
This figure presents an overview of government players related (but not uniquely related) to sustainable development and innovation. At the upper political level, there are three committees that influence sustainable development policies:

“CIADT” (Comité Interministériel de l’Aménagement et du Développement du Territoire)
The Inter-ministerial Committees for Territorial Planning and Development are prepared by the DATAR with the participation of appropriate ministries. These Committees are defining government policy and priorities in terms of Territorial Planning. They are organised under the supervision of the Prime Minister or the Minister in charge of Territorial Planning. They should become major actors in promoting sustainable development in territorial planning. Budget: € 0,4Bn.

“CIES” (Commission Interministérielle de l'Effet de Serre)
The Inter-ministerial Committee on Global Warming Effect has been launched in November 1998 further to the Kyoto Summit where France committed to achieve substantial improvement in terms of reducing its emissions. CIES is composed of experts, officials, business and social representatives set up at the demand of the Prime Minister. It has recently established a program to meet the challenge of climate change.

“CAE” (Conseil d’Analyse Economique)
The Council on Economic Analysis is composed of experts set up at the demand of the Prime Minister on specific subjects (not only sustainability). A report on “Environment and Development” has just been completed by the Committee which involved co-ordination with several ministries including the Ministry of Foreign Affairs, Department of Co-operation, the
1.3. POLICY FRAMEWORK

Since sustainable development is a relatively new concept in France, there is not yet a clear link between sustainable development and innovation.

Innovation and Technology constitutes a significant program in France but does not specifically relate to sustainable development. The law on Innovation and Technology has been initiated by the Ministry of Economics, Finance and Industry and the Ministry of National Education, Research and Technology. There is not as such a political rationale and agenda to introduce environmental technologies.

Meanwhile, there are some programs promoting innovation which have some environmental elements as we will develop in the second chapter of this country report.

Return on environment investment still needs to be justified in France. Technology- not environmental technology as such- is accepted as a way to progress economically and socially. According to a survey in the region Rhône-Alpes, 95% of the population do not know what sustainable development is. Moreover, 60% of the mayors, who constitute major actors in environment protection, do confess that they have no idea about sustainable development. This shows the level of citizens’ consciousness on the subject.

1.4. INTERACTION OF GOVERNMENT WITH INDUSTRY

There has traditionally been some rivalries and sometimes conflicts of interests between public and private interests as well as between ministries and administrative bodies in France. Efforts and investments in promoting environment made by private companies can be sometimes perceived as suspects by public servants. There is also a debate as where innovation comes from.

Despite this trend, there is interaction between administrative authorities and the industry due to the established network of the French “elite”. The unions are involved and seem to have a more constructive approach towards the formulation of the laws and of government policy than before.

Interaction of the industry and administrative authorities mainly occurs at the local and regional levels with, for example, the DRIRE which control and regulate pollution of industrial sites and any investments which should be made in line with environmental norms. Part of the relationship between the Industry and the Government is conducted by the French Enterprises Association (MEDEF, Mouvement des Entreprises de France).

1.5. INDUSTRIAL PROFILE

Industrial sectors principally involved and sensitive to sustainable development are chemical, refinery and construction materials. Some of the companies have developed innovative policies towards environment.

Spending in R&D represented USD 30,7 Euro Bn in 1997 which place France as a relatively low spender in R&D in terms of value.
In terms of R&D spending as percentage of GDP, France is relatively well placed compared to other European countries such as the UK and Germany but is beyond the part allocated in the USA and Japan. R&D spending as percentage of GDP represented 2.45% in 1994, 2.24% in 1997 and 2.1% in 2000. It is thus continuing to decrease.

France differs from other industrialised countries as R&D is equally spread between public and private spending. In most of other countries listed above, the share of private spending represents around two third of total spending. It is interesting to notice that the UK is also characterised by an important share of the public spending which represented more than 50% in 1997.

<table>
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<th>Medium Sized Enterprises</th>
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Source: Eurostat

Figure 4: Innovation Spending over Turnover (1998)
France, with 43% of enterprises which declare themselves innovative, is under the European average. In terms of spending in innovation as shown in figure 4, France is above European average in total, close to the Netherlands. Most of the spending in innovation is made by large enterprises. Financing SMEs is at one of the lowest level of the European Union. Despite the good overall economic situation and growth, unemployment continues to be a problem in France. This position explains the focus of the French Government in promoting innovation to SME and deliberately trying to be as much as complementary with the policies of large sized companies. The main issues in the agenda has been to find solutions for unemployment. SME have been considered to be essential in resolving the unemployment problems. Public R&D support to SME as well as regional development support have therefore been special focus areas.
2. CLASSIFICATION OF POLICY INSTRUMENTS

2.1. ROLE OF GOVERNMENT

Public governance in France is traditionally characterised by *initiative* and especially *interventionism*.

Sustainability development is now being promoted by the Ministry of Territorial Planning and Environment but to succeed in its implementation getting commitment of the Ministry of Economics, Finance and Industry and other ministries such as Agriculture and Transport is essential. So far we have not noticed any specific initiative in sustainable development from the Ministry of Economics.

The French administration is now trying to evolve towards more of a *facilitator* and *co-operator* role. It is only recently that sustainable development policy is promoted by the Ministry of Environment and supported by the Prime Minister. To be truly implemented in its all spheres (social, environment and economic), it will have to be endorsed by the Ministry of Economics, Finance and Industry.

2.2. INSTRUMENTS IN STIMULATING SUSTAINABILITY

As already mentioned, there is no yet and *per se* any specific instrument dedicated to sustainable development in France at the time when our enquiry was made. Meanwhile, France is not inactive in promoting innovation and technology.

The list of programs mentioned below is not exhaustive and is not intended to be. We have listed the programs that are the most directly relevant to our study. We have placed particular attention to those combining technology innovation and environment protection.

We have also favoured the listing around major Ministries as this probably reflects the best French public policy.

A. Ministry of Territorial Planning and Environment

As mentioned in the previous chapter, the Ministry of the Environment’s current missions are to monitor the quality of the environment, protect nature, prevent, reduce or totally eliminate pollution, and enhance the quality of life.

To perform these missions, the Ministry has a number of specific powers:

- regulating and managing freshwater fishing, hunting, water resources and classified installations, as well as the management of waste disposal and the control of noisy activities or devices etc.
- proposing and instilling an environmental dynamic in the economic and social field.

Since the environment is a cross-sectoral issue, the Minister for the Environment shares a number of responsibilities with other ministers: the inclusion of environmental factors in decisions regarding planning and development, the management of water resources, energy, nuclear safety, health, and transportation.

To specifically address sustainable development issues, it relies upon two distinct bodies:

“CDD” (Commission du Développement Durable)
The Commission on Sustainable Development is an independent and consulting body directly referring to the Minister of Environment. This body participates to the design and
implementation of the Minister strategies. It has a major role in gathering key actors in the field (municipalities, associations, etc.).

“D4E” (Direction des Etudes Economiques et de l’Evaluation Environnementale)
An internal think tank – Prospective and Strategy Department – is responsible for providing the Minister with analysis on environmental issues. This department is about to grow in size and funds (+1.5 Euro M). Under his new name, D4E (Directorate of Economic Studies and Environmental Evaluations), it will more specifically be in charge of:

- Decision-making and negotiation advice in the field of public policies impacting the environment;
- Expertise in the fields of global warming, air pollution, long term economic and tax policy;
- Partnership with main field actors with a view to better achieving co-operation.

A specific budget of 12 Euro M is dedicated to Research and Environmental Knowledge:
- Research to monitor technological development as well as dissemination of results are carried out by the National Institute for Industrial Environment and Risks (“INERIS”) and D4E directly reporting to the Ministry.
- Environmental Knowledge is under the responsibility of French Environment Institute (“IFEN”) which collects data from all of the bodies involved in the field and produces analyses on relevant topics. For instance, IFEN is currently designing a set of sustainable development indicators. Moreover, with the French Environment Institute, a focal point of the European Environment Agency (EEA), the Ministry implements the means required for a proper understanding of the state of the environment.

To prevent risks and pollution, the Ministry’s spending totalled Euro 350 million in 2000, compared to Euro 59 million in 1998, due to the implementation of a new tax: the General Tax on Polluting Activities (cf. infra).

Programs concerning technology and environment are developed jointly with “ADEME” and the National Institute for Industrial Environment and Risks (“INERIS”), or at the European level under the Eureka Program (cf. infra).

Tax Policy
Since 1999, an environmental fiscal policy has been initiated through the introduction of:

- VAT decrease, from 20.6% to 5.5%, on selective waste collection;
- the implementation of a new tax: the General Tax on Polluting Activities (“TGAP”).

In 2000, TGAP will be extended to agricultural and water pollution. It aims at achieving the second dividend via creating jobs.

In 2001, TGAP should be spread to energy. The ambition here is to prevent gas emissions increasing global warming effect and, therefore, to become a true “pollutax”.

B. Ministry of Economics, Finance and Industry
The Ministry of Industry has a significant role in promoting innovation and technology. Programs are primarily designed to promote innovation- not sustainability. But we have focused our attention on those with clear and strong ties to environmental issues.

The State Secretariat of Industry (notably the department of Innovation & Intellectual Property) is taking a leading co-ordinating role in the following projects:

- Promotion of Innovation via “ANVAR” addressed to SME. Budget of 91 Euro M plus loans totalling Euro 182 million.
- Action of technology diffusion via the “DRIRE”: budget 3 Euro M
- European programs:
Eureka projects organised around technology clusters such as software, connectivity and micro-systems; They aim to promote R&D projects at the European level. « PCRD » (Point de Contact national) and Centre Relais Innovation (« CRI »). Since 1999, “ANVAR” plays a co-ordinating role in the implementation of these programmes in France.

- The “Key Technologies” program:
The “Key technologies” program was launched in 1996 for a period of four years. It is designed to improve French position by promoting ambitious technology projects with strong economic and commercial stakes. The aim of this program is also to focus public and university research to the benefit of industrial production and to extend the “industry to industry” partnership (notably between large sized enterprises and SME). It offers grants or loans.

Nine sectors have been identified as priorities. They include: Health and Life Technologies; Environment; Information and Communication Technologies; Transports; Materials; Energy; Building and Infrastructures; Organisational and Change Technologies; and Production, Instrumentation and Measurement.

50 “Key technologies” have been selected and public calls are launched to attract the most innovative projects. In the field of environment, selected topics are:
- Rehabilitation and decontamination of polluted lands
- Stocks of nuclear waste
- Metrology applied to environment
- Measurement and impacts of polluting agents
- Urban waste stocks
- Utilisation of transversal channels for waste destruction

C. Ministry of National Education, Research and Technology
Similar to the programs initiated by the Ministry of Industry, we are outlining those with specific links to environmental issues.

The Ministry of National Education, Research and Technology has a special secretary for Technology. At the direction of Technology, the department Innovation & Technology Development is co-ordinating the “Networks” projects with “ADEME”.

The program of setting up “Networks” for Research and Technology Innovation was launched in 1998. The Ministry of Technology is managing the program but several ministries provide financing. Their aim is to promote collaboration between public research and industrial research on specific themes.

The goal of setting up such networks is also to develop co-operation between the large industrial groups, SMEs and research institutes. They aim to contribute to the creation and growth of innovative enterprises through subsidies and loans. They currently comprise eight projects out of which one is directly related to sustainability: “Combustible Batteries”. Another network on “Water and Environment” has been launched in the year 2000.

The network of “Combustible Batteries” was launched in June 1999 and registered 35 projects out of which 22 received a label and 4 got financing. In 1999, the financing totalled Euro 7.6 million and was allocated in the following way:
- Ministry of National Education, Research and Technology, Euro 3 million
- Ministry of Economics, Finance and Industry, Euro 3 million
- “ADEME”, Euro 1.5 million
The replacement of the Minister Claude Allègre by Roger-Gérard Schwartzzenberg at the Ministry of Research beginning of May 2000, should preserve what was acquired notably in terms of innovation. One of the priorities of the new Minister is to “reconcile science and environment” and stressed his will to proceed with the launch of the “Water and Environment Network”.

D. Agencies

“ADEME” (Agence pour l’Environnement et le Contrôle de l’Energie)
The French Environment and Energy Control Agency is an “industrial and commercial public corporation” established in 1990. It is under the supervision of the Ministries of the Environment, Industry and Research. It carries out organizational missions on research, technical advice, heightening awareness and providing financial incentives in the following areas: the control of energy and raw materials, the development of renewable forms of energy, waste disposal and recycling, air and soil pollution control, the development of clean technologies, and noise control.

It has three technical centers (in Angers, Paris-Vanves and Valbonne Sophie-Antipolis) and 26 regional offices with a total budget: of Euro 273 million; and a staff of 700 of whom 400 are engineers.

«INERIS» (Institut National pour l’Environnement Industriel et des Risques)
The National Institute for Industrial Environment and Risks is an “administrative public corporation” established in 1990 and is in charge of furnishing technical expertise to environmental actors, and in particular to the Ministry of the Environment, in order to forecast and assess the consequences of industrial activities on the environment and people.

It operates in three areas: testing and research, studies and consulting, standardization, certification and regulation. The objectives focus on the environment through the survey of the impact of water, air and site pollution, eco-toxicology, and the prevention of industrial risks and the analysis of their consequences on the environment, property, and the health and safety of the populations. INERIS has a budget of Euro 20 million.

“IFEN” (Institut Français de l’Environnement)
The French Environmental Institute is an administrative public corporation established in 1991 to meet the need to include environmental considerations in the thinking of decision-makers by establishing an up-to-date system of reliable information concerning the environment. It serves as the statistical service within the Ministry of the Environment. Its mission is to develop statistical methodologies and to disseminate scientific and statistical documents in the various fields.

This agency acts within the framework of a European partnership with the European Environment Agency, for which it serves as the focal point in France and has a budget of Euro 6 million.

«ANDRA» (Agence Nationale pour la gestion des Déchets Radioactifs)
Created in 1979, the French National Radioactive Waste Management Agency is responsible for the long-term protection of mankind and its environment, at all stages of radioactive waste management.

In managing waste, ANDRA’s role is threefold:
• Industrial: with its Manche Center for Disposal Facility, ANDRA develops and implements disposal techniques for the operational management of 90% of all waste generated in France (i.e., mostly in short-lived low-level and intermediate-level waste);
• Research: ANDRA is in charge of studying the possibility of reversible or irreversible disposal of long-lived high-level radioactive waste in deep geological formations, notably through the construction of underground research laboratories.

• Informational: in 1992, ANDRA established a national observatory to locate and index all radioactive waste throughout France. Since 1993, the Observatory has been preparing a yearly inventory and is now distributing several thousands of copies. This inventory constitutes an essential tool for the organisation and record keeping radioactive waste. Budget: non available.

« ANVAR » (Agence Nationale pour la Valorisation de la Recherche)
The National Agency for the Valorisation of Research was created in 1979 and is dedicated to the promotion of innovation among SME. The agency is defined by three major mandates:
• To promote the industrial development and growth by supporting innovation through financing, incentive, and advisory.
• To contribute, with the same means, to the valorization of scientific research and hiring of researchers and engineers.
• To contribute to fund raising necessary to the development of innovative enterprises, notably through its networking with the financial community.

The agency’s activities have lead to the following results (1979-1999):

• 61.000 interventions out of which 42.600 for the feasibility and development of new products, process and services
• Euro 3.3 billion of subsidies
• 26.300 beneficiaries
• 60% of the amount provided have been reimbursed
• 5900 blue collar recruited in R&D since 1998
• 225000 jobs created or maintained
• 67000 technical, economic and financial feasibility studies

In 1999, the total budget of ANVAR totalled Euro 213 million which was distributed as follows:
• Euro 51 million of subsidies
• Euro 162 million in repayable advances in case of success
• More than half of the projects are in industry

« DRIRE » (Direction régionales de l’Industrie, de la Recherche et de l’Environnement): The DRIRE comprehends regional agencies that have the mission to enforce national legislation. In the field of environment, the DRIRE are acting for the Ministry of Environment. Their role is to control industrial activities which might impact the environment.

Their actions are addressed to:
• Prevention of major technological risks
• Reduction of pollution and nuisances
• Control and elimination of waste

2.3. MODALITIES
Generally, the programs are launched through a public call or bidding process for proposals to which companies and/or research institutes respond. The specification of the work required is often left quite open although the conditions under which it should be completed are specific. The projects do not tend to compete against each other. The selection of the project is made in the frame of a budget which confers one of the aspects of competition. On the other side, the project proposals are usually evaluated in committees based on loosely defined set of criteria.
2.4. ORGANIZATION

Programs are usually conducted under the supervision of a steering group which can be composed not only of public servants but also of private institutions and companies.

They are generally funded by ministries but there is an increasing participation of the regional authorities which can also initiate local projects (often with the support of a specific ministry).

Generally, during the project the required reporting is minimal. The companies often do not have to provide any public information of the project except some proof of the conducted work.

In many cases, the company uses government support as an opportunity to promote its business/research/innovation to a larger public and to leverage its reputation through the networking it brings. This is especially the case for innovative projects subsided by ANVAR.

The research projects are required to do more reporting and produce public results since they are suppose to disseminate them at a later stage.

Local administrations and specialised agencies are generally those interacting directly with the beneficiaries during the course of the project. There is often a separation between the funding agents (ministries or regions) and the project co-ordinators (agencies).

2.5. METHODS TO ASSESS EFFECTIVENESS

The effectiveness of the government actions is not systematically assessed. Not all of the major organisations involved- different ministries, agencies, research institutes, etc.- have been evaluated. When it is the case, it is most of the time performed by internal evaluation teams.

At the program level, a final report is traditionally completed incorporating basic indicators on the projects (money allocated, number of projects and companies involved etc.). But there is not as such a systematic methodological or organisational structure for evaluations.
3. SPECIFIC EXAMPLE PROGRAM DESIGN CHARACTERISTICS

3.1. SPECIAL FOCUS: ADEME

Given the limited number of existing programs in France, the selection of specific experiences that could be of direct relevance was fairly straightforward. However, rather than a specific program, we decided to select an entire organization that aims at promoting innovation for sustainable developments through a number of instruments.

3.1.1. Background and Objectives

ADEME is closely involved in implementing the government’s environment and energy policies and helps France to meet its international commitments.

In order to be effective, ADEME acts in synergy with many players on different levels who share its aims and the themes of its actions. Through the work of its regional branches, ADEME helps to marshal strong support for projects promoting harmonious land use management and job creation.

- Its effectiveness is reinforced by its contractual relations with the districts for waste disposal and with the regions through the Regions-State Plan. Whether in the area of waste treatment or air quality monitoring, ADEME is close to decisionmakers and users. In the same vein, the regional branches work with professional federations and chambers.
- At a national level, the agency cooperates with private and public players, such as the state-owned energy utilities, social housing authorities and financial establishments, in implementing and disseminating best practices.
- On a European and international level, ADEME participates in the work of the European Commission and carries out projects with the World Bank, the OECD and the International Energy Agency. In particular, it participates in bringing Central and Eastern European countries’ legislation into compliance with European environmental regulations, with a view to their admission into the European Union.
- ADEME also takes part in setting up and organizing international networks grouping similar agencies: European energy network (Club EnR); Mediterranean Association of National Agencies for Energy Conversation (Medener); European Council for an Energy Efficient Economy (ECEEE), and European Renewable Resource and Material Association (ERMAs).

All of these projects, alliances and cooperation efforts (to which the agency is committed for several years) aim to communicate the concept of sustainable development to a wider range of decision makers.

To increase dissemination of best practices and the results of research and experience which it has helped to develop, ADEME has an active communications policy with several targets. It makes the issues in energy management and environmental policy known to decisionmakers, elected representatives and opinion leaders, and raises awareness of legal deadlines and international commitments, such as those made at Kyoto. Scientific and technical information is also communicated to engineers and technicians in companies and local authorities via regular publications and events.

When addressing the general public, ADEME contributes to the diffusion of knowledge about the causes of pollution, the improvements achieved by actions undertaken and the performance of technologies used every day by citizens (automobiles, household appliances, etc.). To do this, the agency uses new information technologies, such as its Internet web site, and takes part in a variety of public events and communication operations. Information is also made available via the press and publication of awareness-raising documents.
3.1.2. Policy Instruments

A. Encouraging research and development
ADEME develops scenarios for the future which incorporate the implications of sustainable development. It is strongly involved in research and development. However, as an objective-oriented agency, it does not have its own laboratories. This makes it unlike other research bodies under the Ministry for Research and has led ADEME to rely on public research bodies, universities, companies and technical centers.

The research supported by the agency is not only selected based on its technical merits. While sponsored projects need to be totally oriented toward practices and technologies, it is also concerned with the social and economic value of the research, in terms of job creation and the emergence of new companies. ADEME has awarded grants to more than 250 grant holders in France. Their work leads to employment in the public or private sectors in more than 90 per cent of cases.

ADEME is the national contact point for the European Commission’s fifth framework program in the areas of energy and environment. Within this framework, ADEME mobilizes French operators to respond to bid calls. R&D programming pivots around scientific, technical, economic and social networks involving a coherent range of public and private players. Depending on the network, the companies involved may be small and medium-sized businesses or large corporations.

Three objectives guide the orientation and organization of research:
- providing scientific support to programs in progress,
- producing scientific results that are usable in future programs, and
- international scientific and technological research to enrich knowledge and reflection on strategies.

B. Providing advice for decision support
ADEME regional branches receive inquiries from local bodies and companies and provide answers to them. They are able to provide references for consultants, design engineering practices or specialists, as well as typical specifications for studies. Four brochures giving information on decision-making aids for companies, agriculture, construction and local authorities are available from the branches. They describe, for each sector, the types of studies, the conditions for obtaining ADEME aid and the amount available depending on the actions undertaken.

In an early stage of decisionmaking, ADEME becomes involved, assisting the relevant decisionmakers to make their choices, in particular through the financing of preliminary studies. Acting as an impartial presence, ADEME guides its partners at every stage of project development and implementation to precisely identify factors for success or failure before choices are made.

This mechanism for technical and financial aid is an essential factor for local authorities, which often have to decide on their positions in areas in which they have little internal competence or experience. This is also the case for small and medium-sized businesses faced with increasing regulation. Thus, ADEME offers its services through direct advice or disseminating the results of studies.

Advice, which includes early diagnosis and orientation, aims to identify problems and to list and rank possible solutions. In the area of energy, diagnosis is made in a very short time, to allow decision makers to quickly organize the questions they have raised, and to prioritize the
commercial proposals they often receive at the same time. Advice on orientation is intended to aid in ranking possible actions affecting a complex existing situation or in a context of operations involving a large number of partners.

The studies ADEME supports cover diagnosis and feasibility studies. The purpose of diagnosis is to determine possible solutions by examining the detail of the broad outlines and by identifying expected results by quantifying their costs and impacts. The purpose of feasibility studies is to provide an exact description and analysis of the solution directions selected that could facilitate their implementation.

C. Disseminating best practices
To promote dissemination of best practices and stimulate investment, ADEME assists local authorities and companies (industries, tertiary sector, agriculture, construction) with projects that best correspond to its objectives. Assistance with demonstration projects and operations through ADEME reinforces the links between policies on research areas and on knowledge transfer of successful processes to the market. By supporting demonstration projects, ADEME participates in the initial application of technologies resulting from research and development. ADEME also assists in dissemination of good practices arising from technologies which are proven but not sufficiently known and by supporting exemplary operations. The aim is to introduce and develop technologies or forms of organization allowing a region or ‘département’ to advance on the path to sustainable development.

Practical examples prove the feasibility of innovative projects and provide many lessons to enable wide dissemination. The exemplary operations are developed in partnership with regional authorities under the contractual State-Regions Plan. Some of ADEME areas of activity also involve assistance with investment. For waste management, investment aid is available for recycling packaging, newspapers, magazines and fermentable materials, waste disposal facilities and incineration.

The available levels of support vary depending on the method concerned. With respect to transport and protecting air quality, ADEME finances equipment for preventing or reducing polluting emissions. It provides assistance in developing the use of alternative vehicle types and combined transport systems. The agency has also developed a set of aid packages for the dissemination of and investment in renewable energy technologies. These are intended to bring the market share of renewables to critical mass and to bring about reductions in production, sales and operating costs. These forms of assistance are aimed, in particular, at wood-burning units, solar water heating and photovoltaics development.

Dissemination of information is achieved by numerous seminars and events presenting best available technologies and best practices. The agency also reports on its work through publications, meetings and via the Internet. At a European and international level, ADEME gives priority to the exchange of experiences and practices resulting from partnerships. It contributes to putting into practice international agreements (e.g., Rio and Kyoto) to promote technology transfers.

To implement its policy, the state has fixed ADEME objectives. ADEME must now commit itself to results. Indicators have been developed for each of its areas of activity so that the effects of its actions can be monitored year by year. In particular, the indicators show:

- the flow of re-directed waste,
- the energy savings,
- the volume of carbon dioxide emissions avoided,
- production from renewable energy sources,
- emissions of atmospheric pollutants avoided,
- jobs created.
4. APPENDIX: POINTS OF CONTACTS

4.1. GENERAL INFORMATION

1. MINISTRIES

A. Prime Minister
Premier Ministre
57, rue de Varenne - 75700 Paris
Tel. : 01 42 75 80 00
http://www.premier-ministre.gouv.fr/

Interministerial Environmental Committee: CIADT
Comité Interministériel d'Aménagement et de Développement du Territoire

Interministerial Committee on Global Warming Effect: CIES
Commission Interministérielle de l'Effet de Serre

Committee on Economic Analysis: CAE
Conseil d’Analyse Economique

B. The Ministry of Territorial Planning and Environment
Ministère de l'aménagement du territoire et de l'environnement
20, avenue de Ségur - 75007 Paris
Tel. : 01 42 19 20 21
http://www.environnement.gouv.fr/

The Commission on Sustainable Development: CDD
Commission du Développement Durable

Directorate of Economic Studies and Environmental Evaluations: D4E
Direction des Etudes Economiques et de l’Evaluation Environnementale

C. Ministry for Economic Affairs, Finance and Industry,
State Secretary with responsibility for Industry
Secrétariat d'Etat chargé de l'industrie - Direction générale de l'énergie et des matières premières
99, rue de Grenelle - 75353 Paris
Tel. : 01 43 19 36 36
Fax : 01 43 19 42 74
http://www.industrie.gouv.fr/energie/sommaire.htm/

D. The Ministry of National Education, Research and Technology, Directorate for Technology
Ministère de l'Education Nationale, de la Recherche et de la Technologie, Direction de la Technologie
1, rue Descartes - 75005 Paris
Tel. : 01 46 34 39 20
Fax : 01 46 34 37 30
http://www.education.gouv.fr/technologie
2. State-supervised and jointly-supervised agencies

**The French Environment and Energy Control Agency: ADEME**
Agence de l'Environnement et de la Maîtrise de l’Energie
22, rue Louis VICAT - 75015 Paris
Tel. : 01.47.65.20.00

**The French National Radioactive Waste Management Agency: ANDRA**
Agence Nationale pour la gestion des Déchets Radioactifs
Parc de la Croix Blanche
1-7, rue Jean-Monnet - 92298 Chatenay-Malabry Cedex
Tel. : 01 46 11 80 00
Fax: 01 46 11 82 25

**National Agency for the Valorization of Research: ANVAR**
Agence Nationale pour la Valorisation de la Recherche
43, rue Caumartin - 75436 Paris Cedex 09
Tel. : 01 40 17 83 00
Fax : 01 42 66 02 20

**The French Environmental Institute: IFEN**
Institut Français de l’Environnement
61, boulevard Alexandre Martin - 45058 Orléans Cedex 1
Tel : 02 38 79 78 68

**The National Institute Industrial Environment and Risks: INERIS**
L’Institut National de l’Environnement Industriel et des Risques
the Parc Technologique ALATA
B.P. 2 - 60550 Verneuil-en-Halatte
Tel : 03 44 55 66 77

**Industry, Research and Environmental Regional: DRIRE**
Direction régionales de l’Industrie, de la Recherche et de l’Environnement
Decentralized network acting for the Ministry of Environment.
E.g. Paris agency:
10, rue Crillon - 75194 Paris Cedex
Tel. : 01 44 59 49 49
Fax : 01 44 59 47 00
[http://www.drire-ile-de-france.fr/](http://www.drire-ile-de-france.fr/)
4.2. CONTACTS

ADEME
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• Astrid Lemasson, Responsable Europe de l'Ouest, +33 1 47 65 24 84, astrid.lemasson@ademe.fr
• Jean-Claude Oppeneau, Responsable Eco-industries, +33 1 47 65 20 55, jeanclaude.oppeneau@ademe.fr

Comité Interministériel de l'Aménagement et du Développement du Territoire (CIADT)
– DATAR
• Monsieur Ribière, Conseiller, +33 1 40 65 12 34

Commissariat au Plan
• Nicolas Matheu, Chargé de mission

Commission Française du Développement Durable
• M. Brodhag, Ex-Secrétaire Général

CSQA (centre de sécurité et de la qualité de l'air)
• Emeric Fréjalon, +33 4 77 32 79 85

Dexia - Crédit Local de France
• Nathalie Dotres, Responsable Communication, +33 1 43 92 76 63, +33 1 43 92 76 72,

IFEN
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INERIS
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• Eric Vindimian, Directeur Général, +33 3 44 55 68 27, eric.vindimian@ineris.fr

MATE
• Dominique Bureau, Futur directeur de la D4E, +33 1 42 19 20 65,
• M. Husseenot, Responsable Eco-industries, +33 1 42 19 16 73,
• Dominique Dron, Chargé de mission - Cellule de prospective,

Mission Interministérielle de l'Effet de Serre
• Marie Jaudet, +33 1 42 75 87 92, marie.jaudet@mies.premier-ministre.gouv.fr
• Marc Gillet, +33 1 42 75 87 17, marc.gillet@mies.premier-ministre.gouv.fr

Ministère de l’Education Nationale, de la Recherche et de la Technologie
• Didier Coulomb, Sous-Directeur, Direction de la Technologie, Sous-DIRECTION de l’Innovation et du Développement Technologique, +33 1 46 34 37 22, didier.coulomb@education.gouv.fr
• M Stohr, Chargé de projet "Réseau Eau et Environnement", Direction de la Technologie, +33 1 55 55 97 18
• M Laurent, Chargé de projet "Réseau Piles à combustibles", Direction de la Technologie, +33 1 55 55 97 22

Ministère de l’Économie, des Finances et de l’Industrie
• M Mazodier, Sous-Directeur, Secrétariat à l’Industrie, Sous-DIRECTION de l’Innovation et de la propriété intellectuelle, +33 1 43 19 36 36