

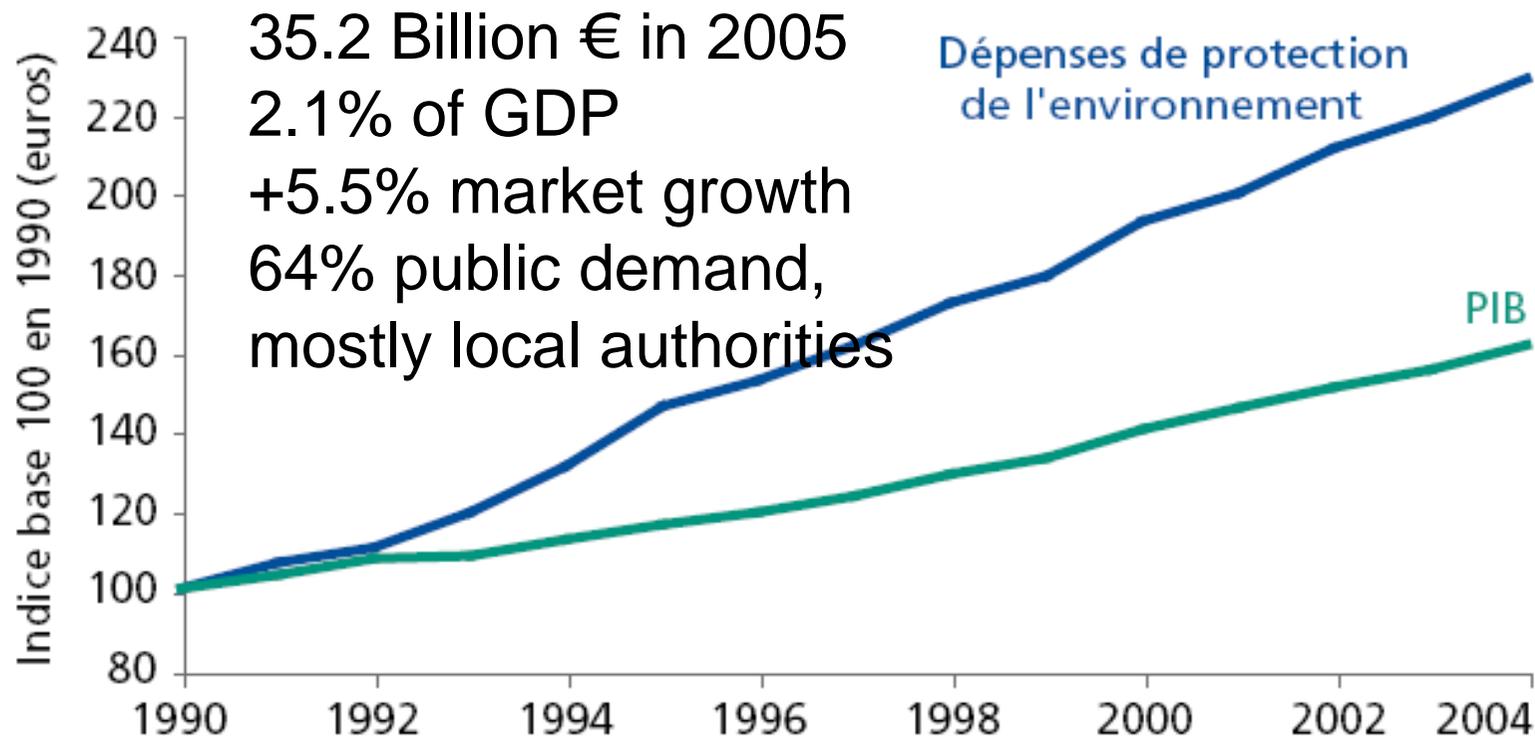


**Ecotechnologies at French Research Agency
Some outcomes of the Research Programme
PRECODD (2005-2008)**

Philippe Freyssinet

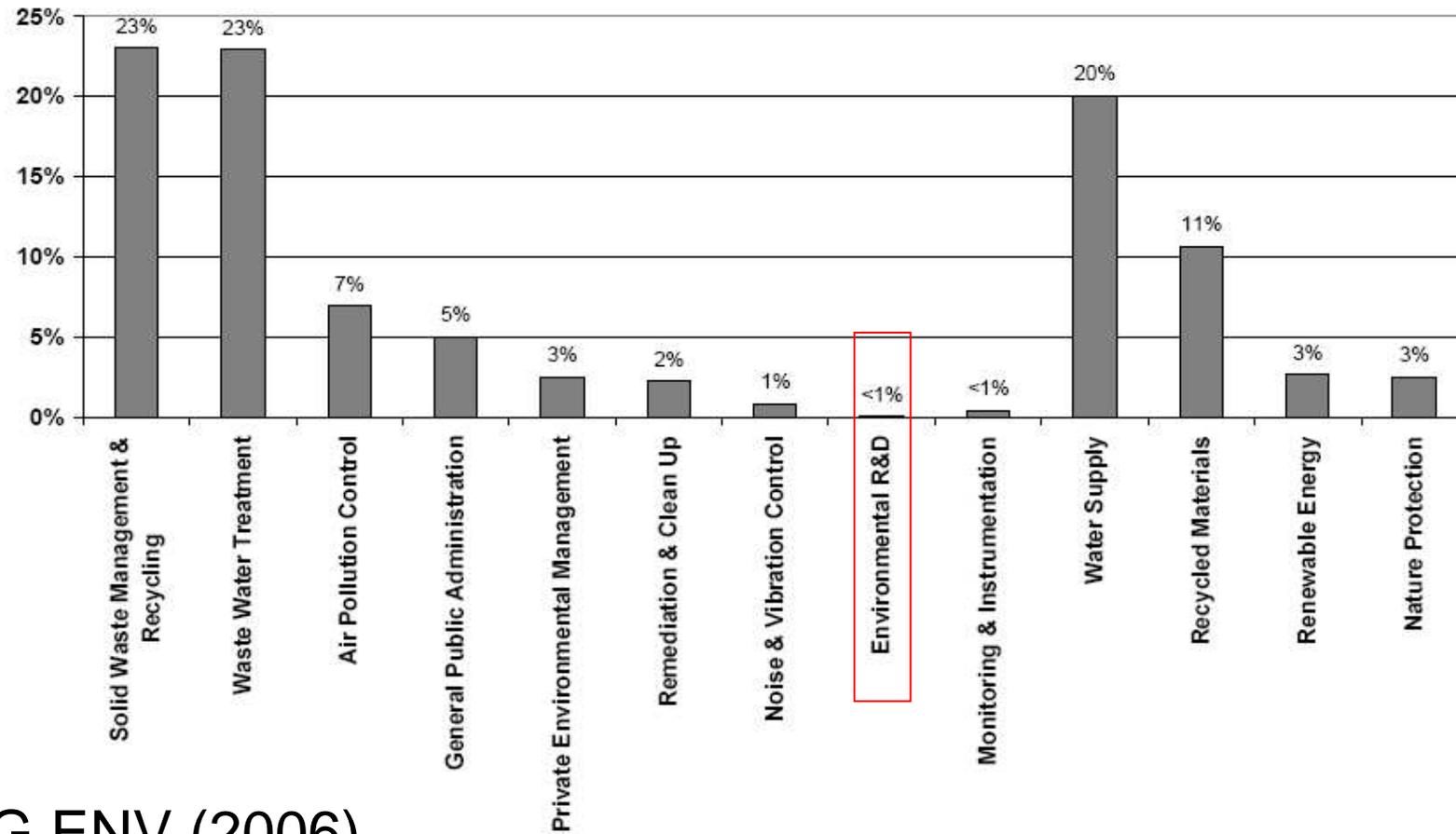
www.agence-nationale-recherche.fr
www.precodd.fr

Environmental protection expenses in France vs. GDP



Source : Ifen.

Eco-industry in Europe



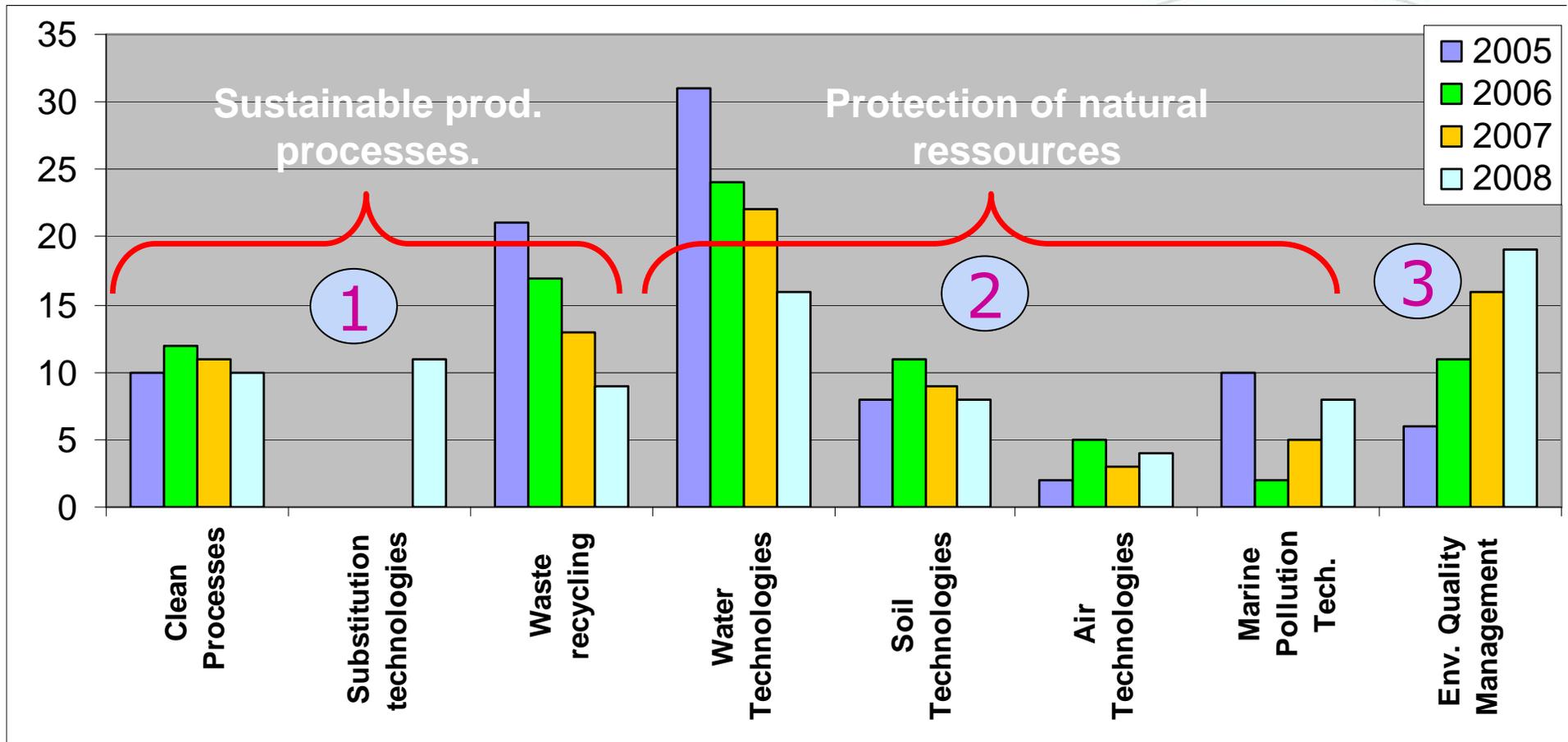
DG ENV (2006)

The research programme PRECODD

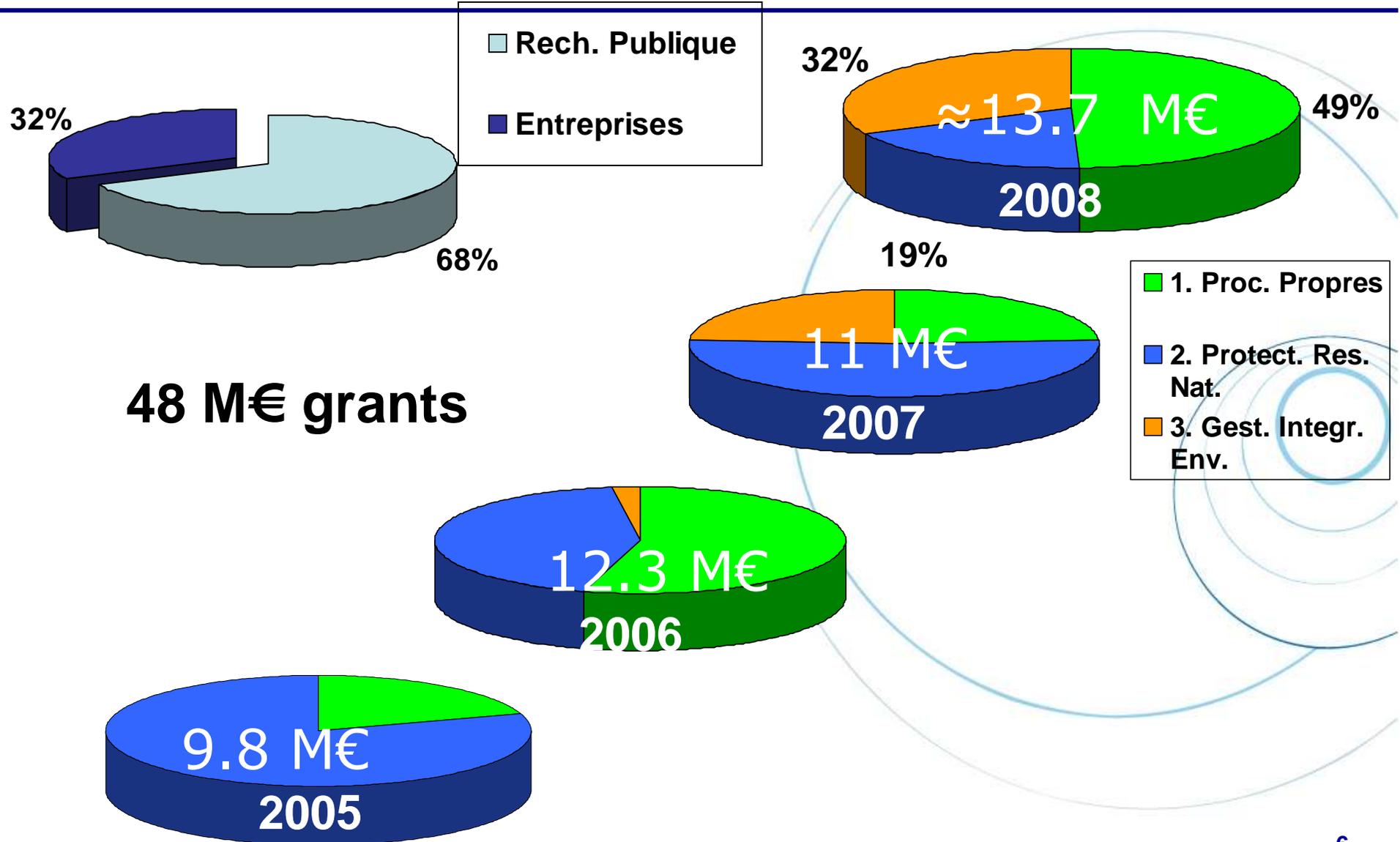
- Theme 1. Sustainable production processes
 - Clean processes / substitution technologies
 - Innovative management of wastes
- Theme 2. Protection and management of natural resources
 - Water
 - Soil and sediments
 - Marine pollutions
- Theme 3. Hollistic management of pollutant emissions
 - Integrated management tools and services,
 - Methodologies and tools for environmental policy assessment



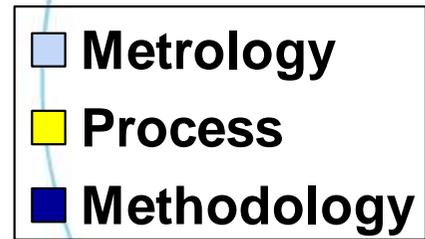
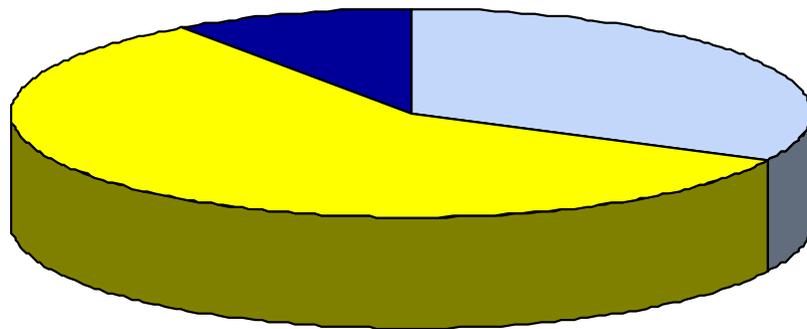
Thematic axes (nbr of proposals)



Grants per theme

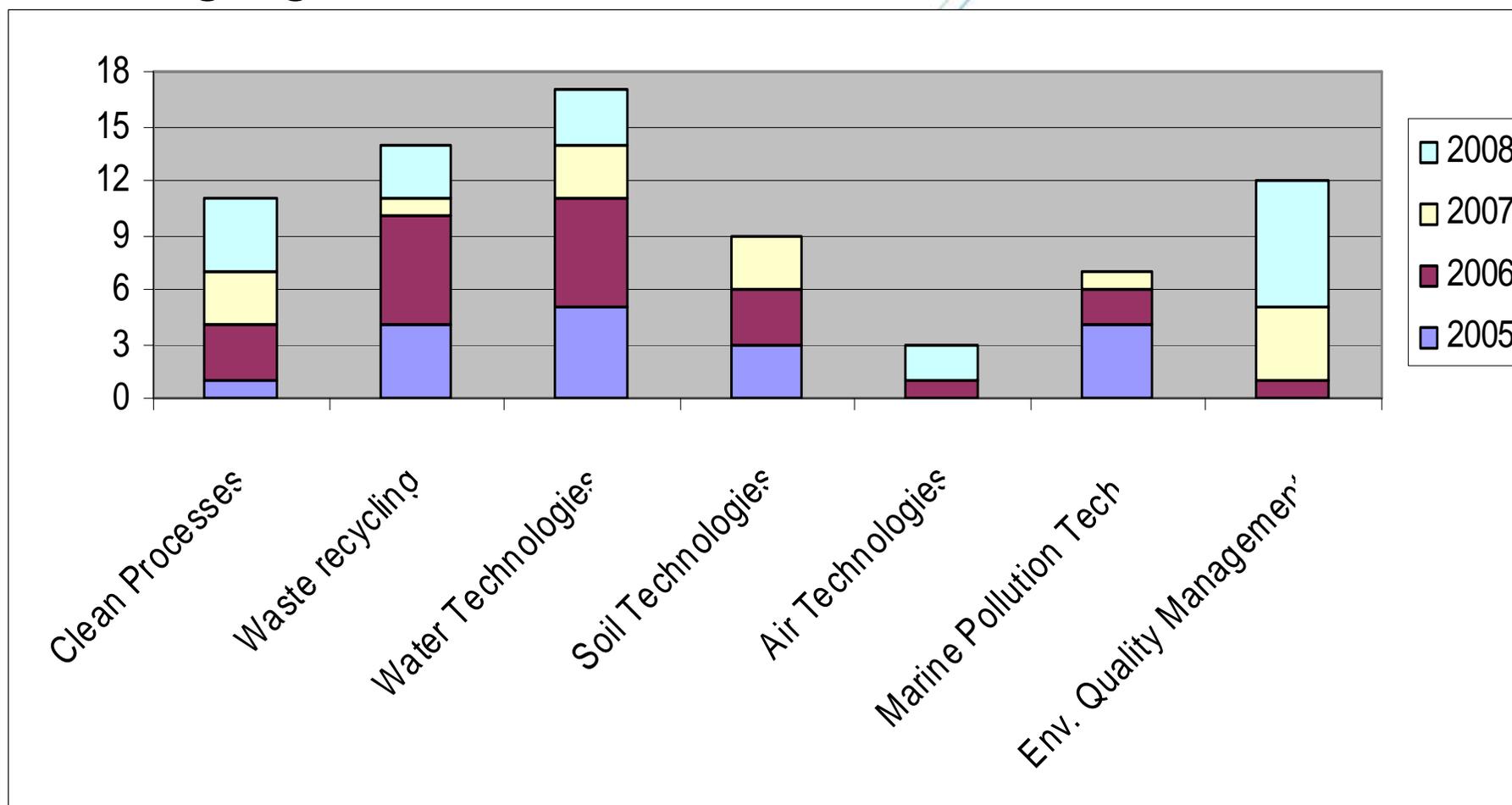


Project type



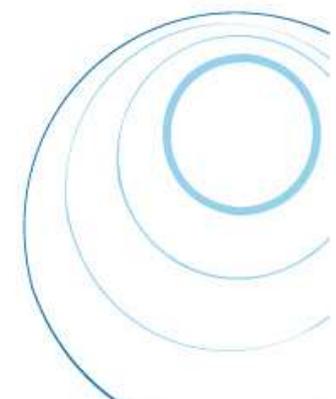
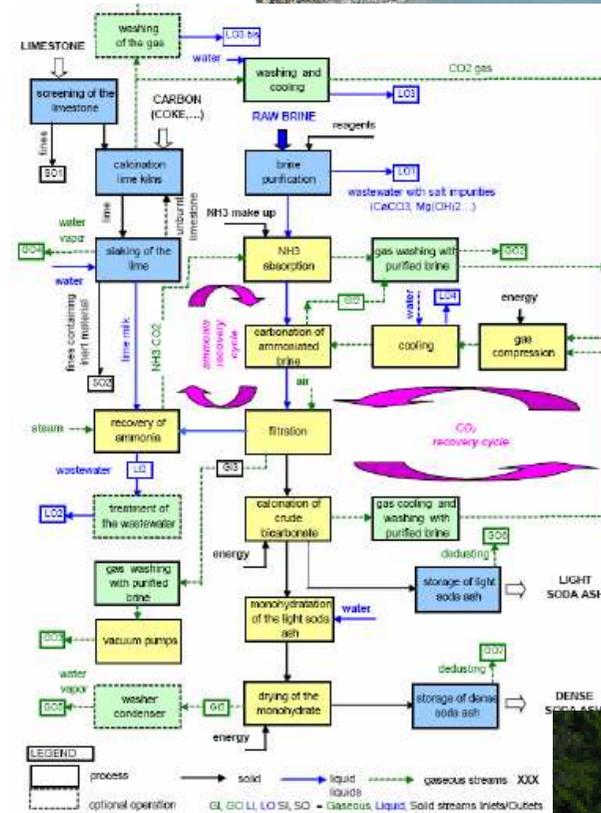
PRECODD : Thematic distribution of selected projects

73 granted projects
Average grant : 700k€



DECALCO : Recycling of alkaline waste combined with CO2 reuse

- Use of CO2 emitted by Solvay process (Soda ash production)
- Combination with alkaline wastes
- Production of neutral carbonated material usable for road construction
- Le procédé permettrait de diminuer d'environ 4Mt de déchets industriels/an et 15-20% d'abattement de CO2 par tonne de carbonate de sodium produite.

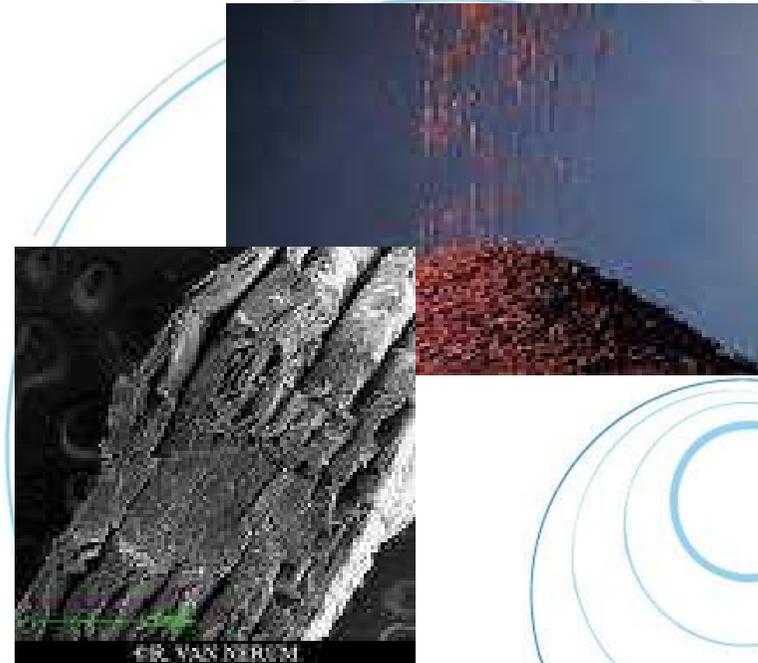


EXPANTHERM : Granulats légers par EXPANsion THERMique de formules à base de schistes ardoisiers, boues de STEP et rejets minéraux

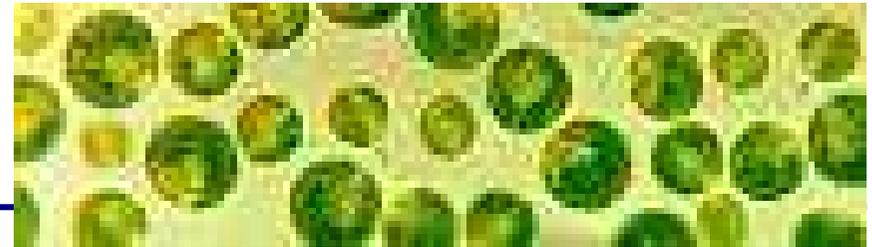
Valorisation de déchets

Synthèse of light materials
resulting from thermal expansion
of sewage sludge + mineral
wastes

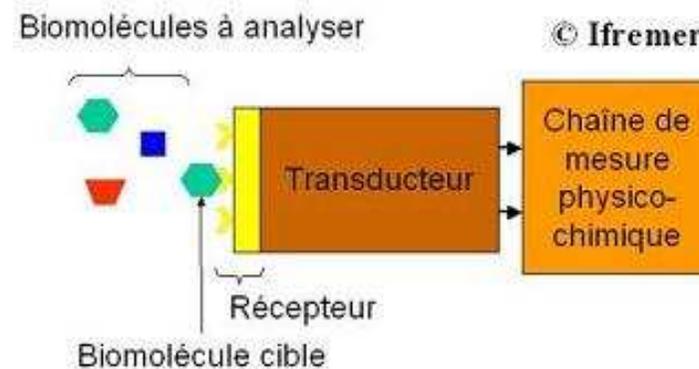
Material to be used for low
density concrete



HAB SEACHIP



- In situ biocapteur for coastal monitoring
- Sensible to the detection of 3 toxic micro-algae for oysters and mussels



Proliphyc

DCE implique une surveillance accrue des cyanobactéries toxiques

développement, à la validation et à la pré-industrialisation d'un système de surveillance (dynamique et activité) du phytoplancton et notamment des cyanobactéries toxiques dans les écosystèmes aquatiques continentaux

Système intégré avec télétransmission



Projet PERLE : Préparation d'échantillons d'eau résiduaire pour fiabiliser l'analyse de légionelles

Légionelles : pourquoi l'assainissement ?

Pas de preuves épidémiologiques.
Mais ouvrages d'assainissement sont directement ou indirectement mis en cause.

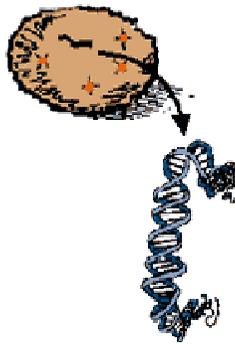
Mise au point de 4 protocoles
1 protocole validé – AFNOR
Essais inter-labo européen



Concentration

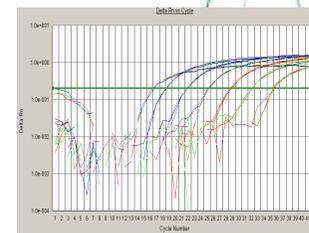
Souches testées

✓ *L. pneumophila*

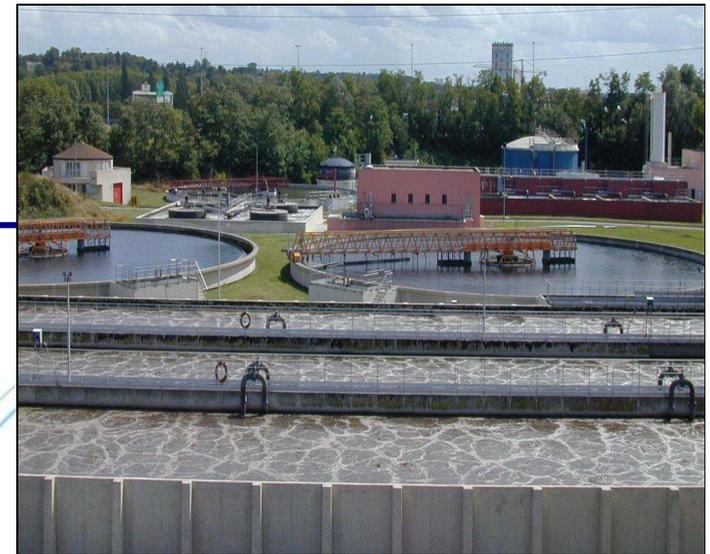


Extraction/purification
ADN

Composés
stabilisateurs



PCR temps réel





The new program ECOTECH 2009

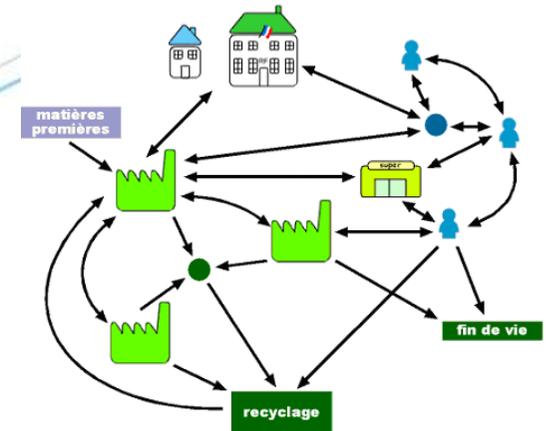
The objectives of the program

To strengthen technology transfer from :

- Information and communication technologies
 - Nanotechnologies
 - Biotechnologies
-
- Open the program to economical analysis of new sustainable models, but also engineering and industry organisation systems
 - Reinforce public-private partnerships
 - **A new program structure with 5 components**

1. Change of paradigm

- Analysis of industrial organization
- Economy of functionality
- Industrial ecology (circular economy)
- Need for new tools, methodologies and indicators
- New service developments



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2. For a sustainable industrial production

- Substitution technologies
 - How to face REACH implementation ?
 - New process allowing CO₂ reduction in industrial sector (steel, glass, cement,...)



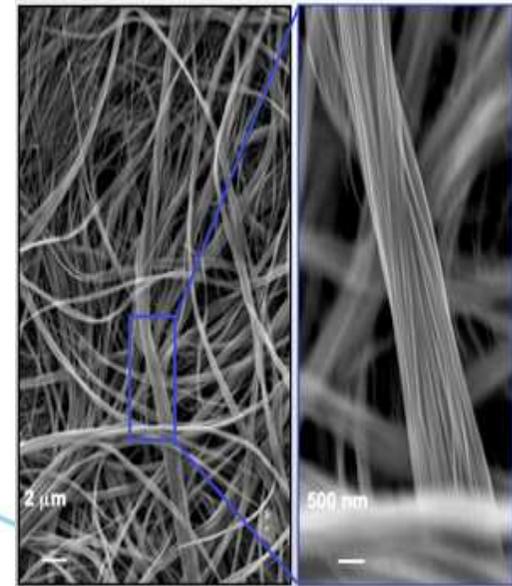
3. Towards « secondary » raw materials

- Improve recycling rates
- Target on large volume waste streams or high added values materials (metals, plastics...)
- Target on technological barriers (sorting, separative tech., waste & material identification, etc.)



4. React : better process for polluted environments

- Treatment technologies
- Focus on breakthrough technologies
- Favor technology transfer from biotechnologies and nanotechnologies



5. Better monitor the environment

- How to process heterogenous and large amount of environmental data ?
- Need for low cost monitoring and analytical tools
- Favor technology transfer from ICT
- Implementation strategies for online and continuous monitoring (soil, water, sea and space)
- Numerical tools for environmental data management and processing.



ECOTECH 2009

- Deadline : April 8th, 2009
- Call : www.agence-nationale-recherche.fr