

National Science and Technology Council
Committee on Environment and Natural Resources
Subcommittee on Toxic Substances and Hazardous and Solid Waste

Full Subcommittee Meeting

September 29, 1994

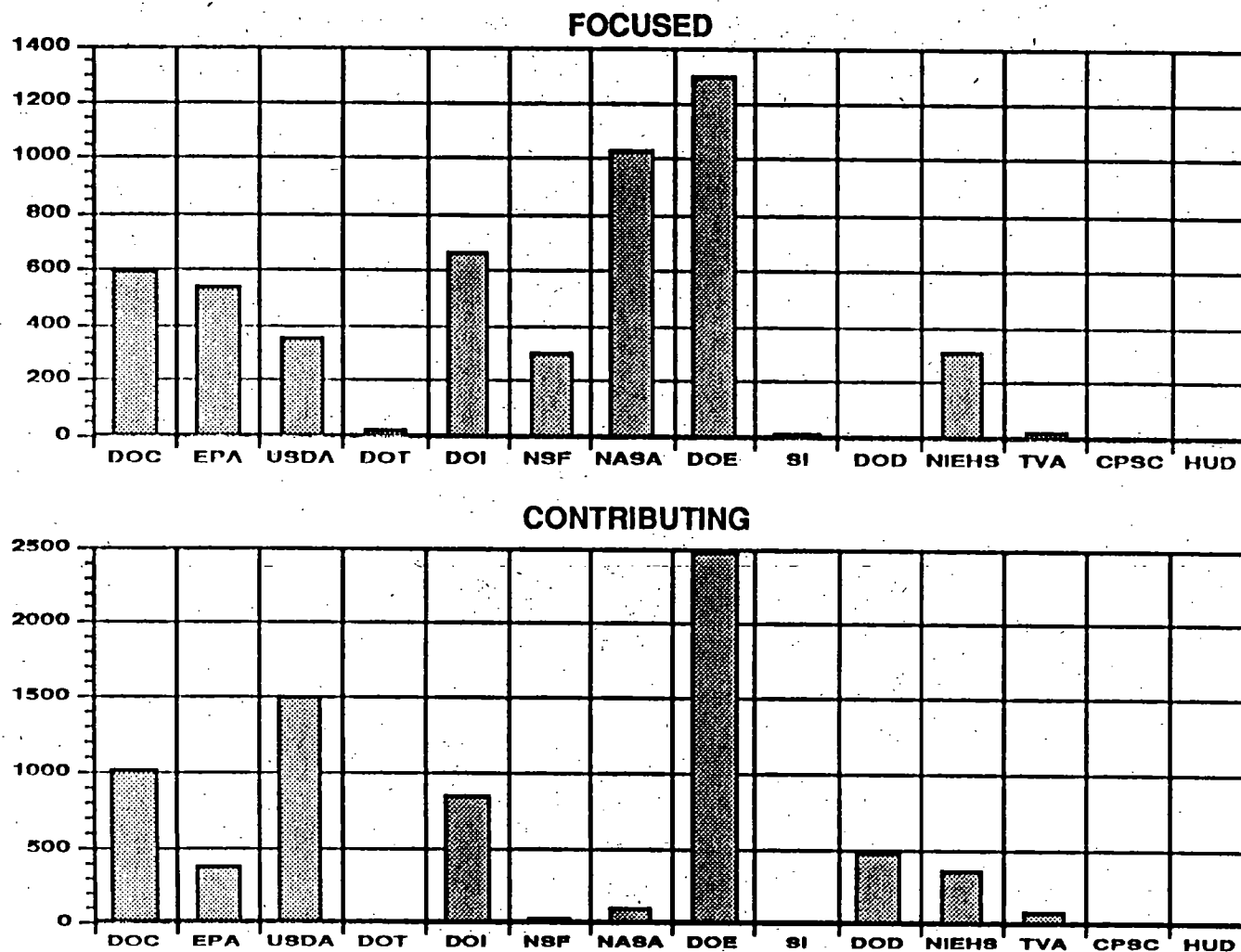
2:00 p.m. to 4:00 p.m.

EPA, Washington Information Center Room 2 South
Conference Call Number (202) 260-3819

Agenda

Welcome and Review of Agenda	Bob Huggett
Report on 9/26 CENR Principals Meeting	Huggett/Matthews
Report on Agencies FY 96 Budget Submissions	Lisa Matthews
Concurrence for R&D Strategy	Lisa Matthews
- External Review Plans	
Discuss Draft Implementation Plan	Steve Lingle
Plan for October	
- Finalize Implementation Plan	
- Incorporate External Review Comments on R&D Strategy	
Adjourn	

FY 1994 CENR Resources (in millions)

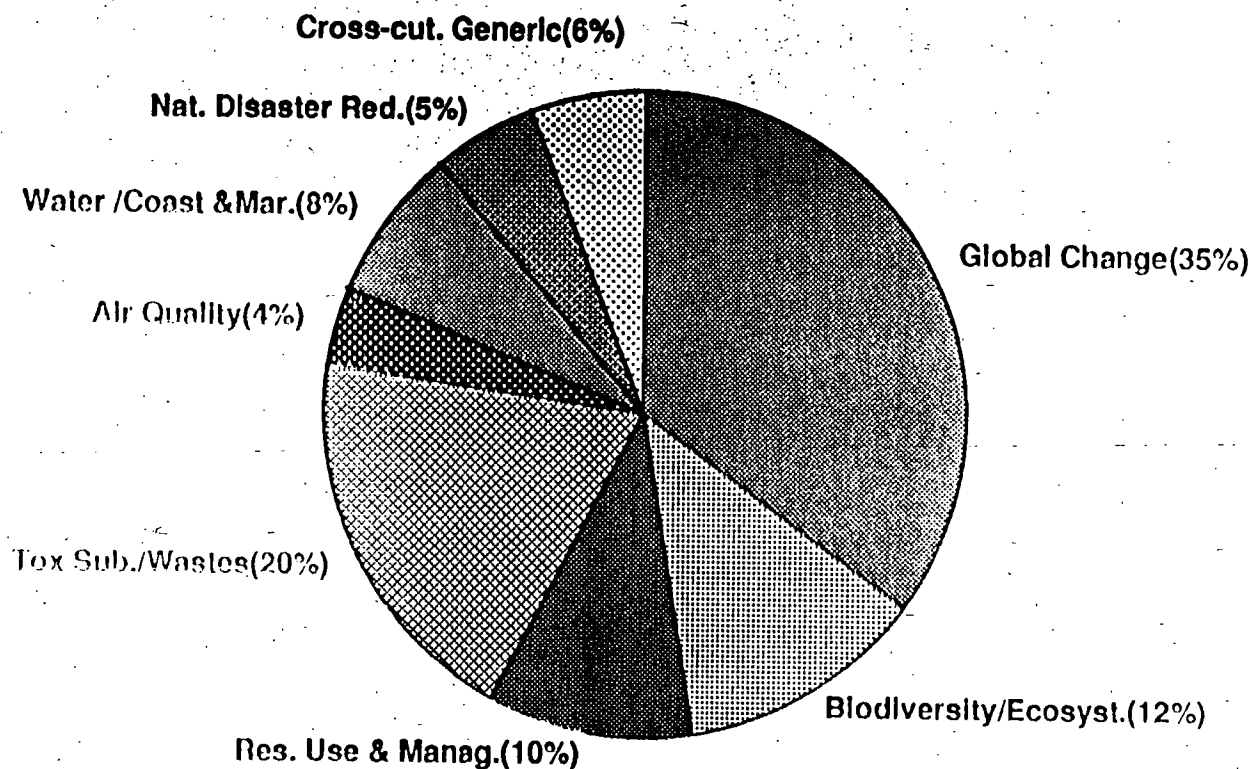


NOTE: AID and FEMA data not available for FY 94

AID, FEMA and DOD data not available for FY 95 & 96

FY 1994 CENR Resources by Issue Subcommittee

\$5,138 in FOCUSED R&D

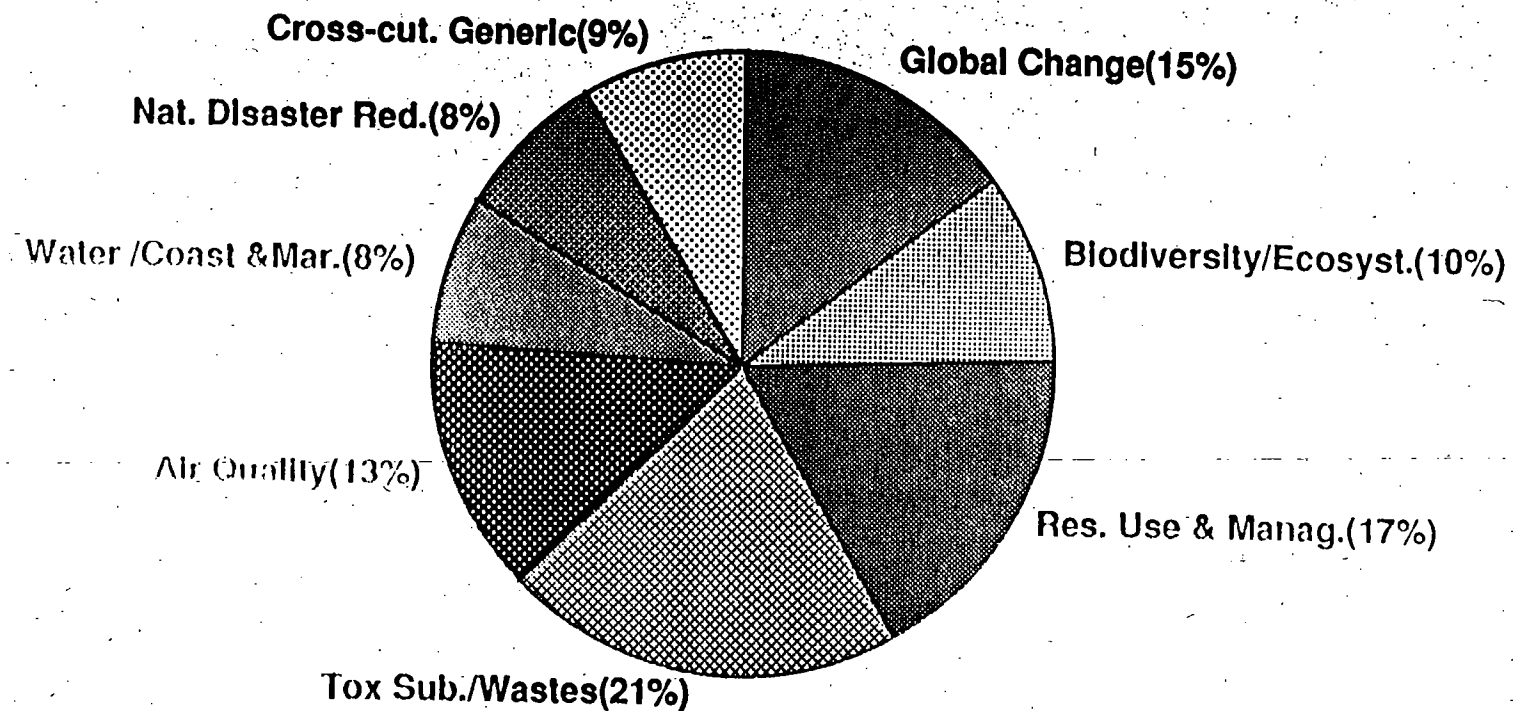


NOTE: AID and FEMA data not available for FY 94

AID, FEMA and DOD data not available for FY 95 & 96

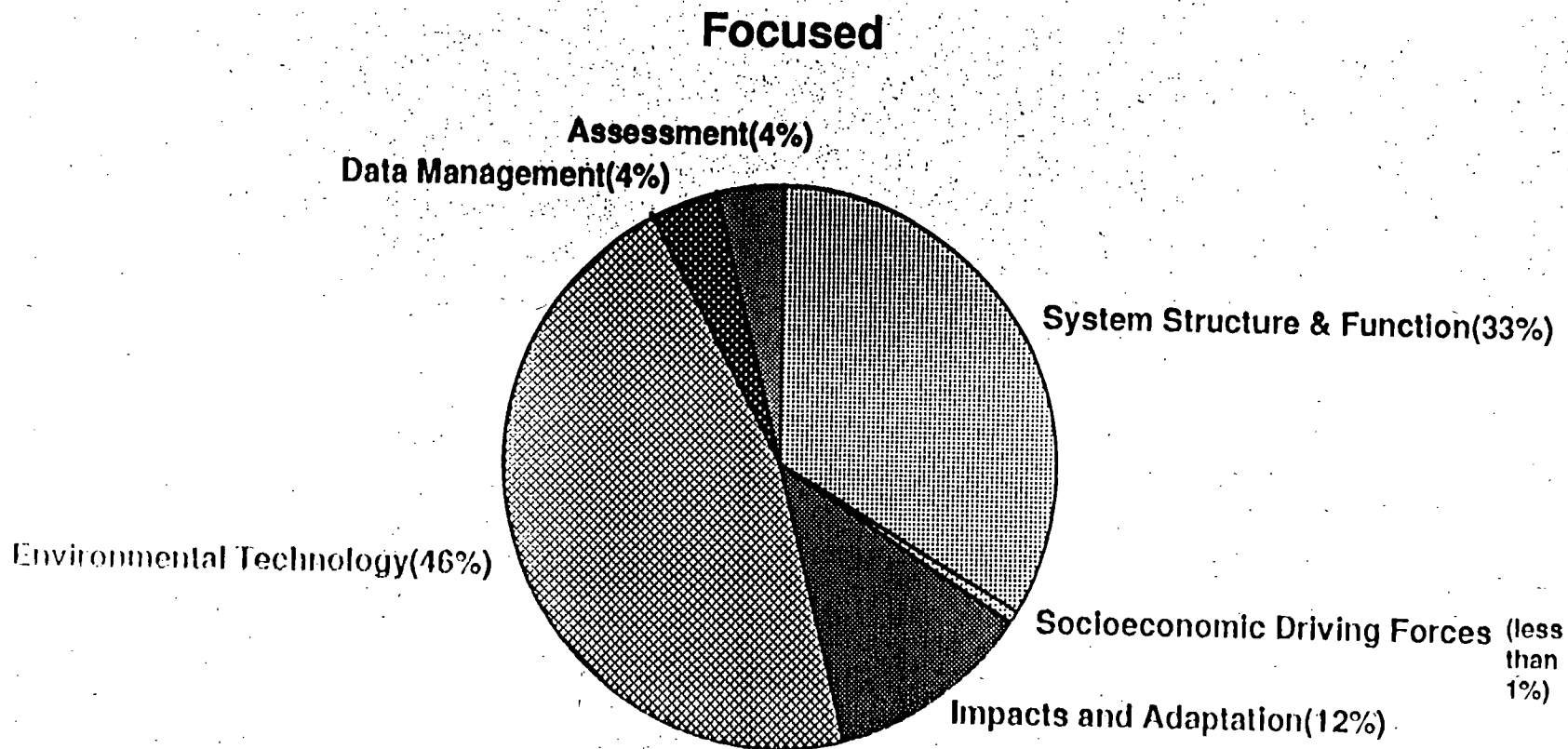
FY 1994 CENR Resources by Issue Subcommittee

\$7,285 M CONTRIBUTING R&D



NOTE: AID and FEMA data not available for FY 94
AID, FEMA and DOD data not available for FY 95 & 96

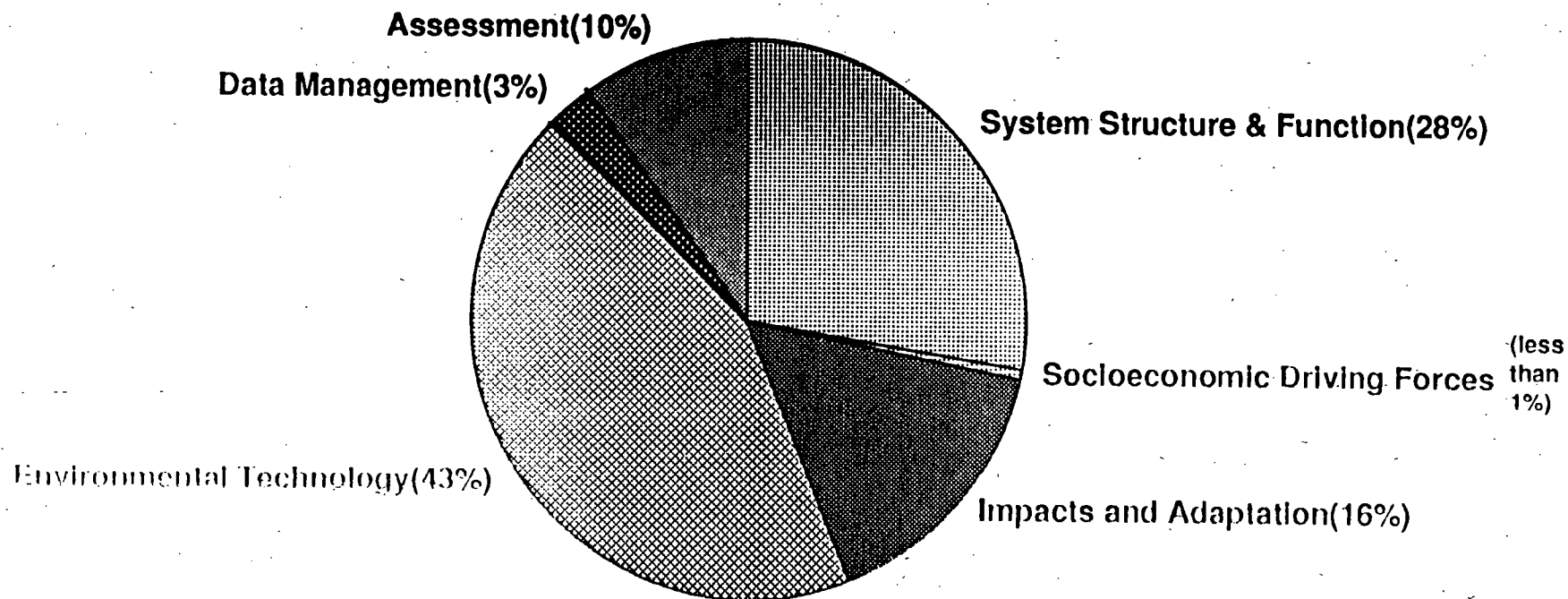
FY 1994 CENR Resources by Type of Activity



**NOTE: AID and FEMA data not available for FY 94
AID, FEMA and DOD data not available for FY 95 & 96**

FY 1994 CENR Resources by Type of Activity

Contributing



NOTE: AID and FEMA data not available for FY 94
AID, FEMA and DOD data not available for FY 95 & 96

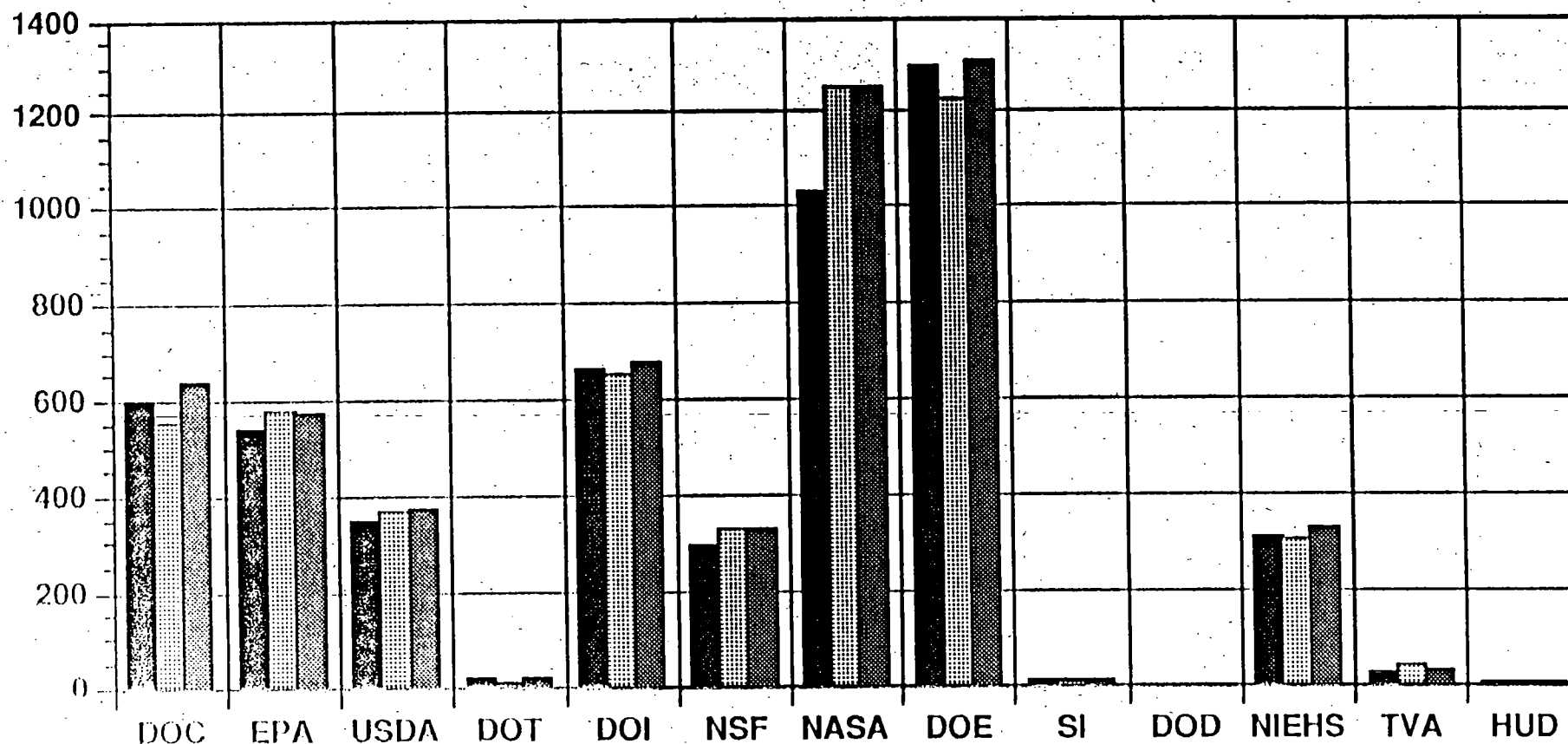
CENR Resources Changes from FY 94,95 & 96

(In millions)

FY 94 \$5,138 M

FY95 \$5,333 M

FY96 \$5,527 M

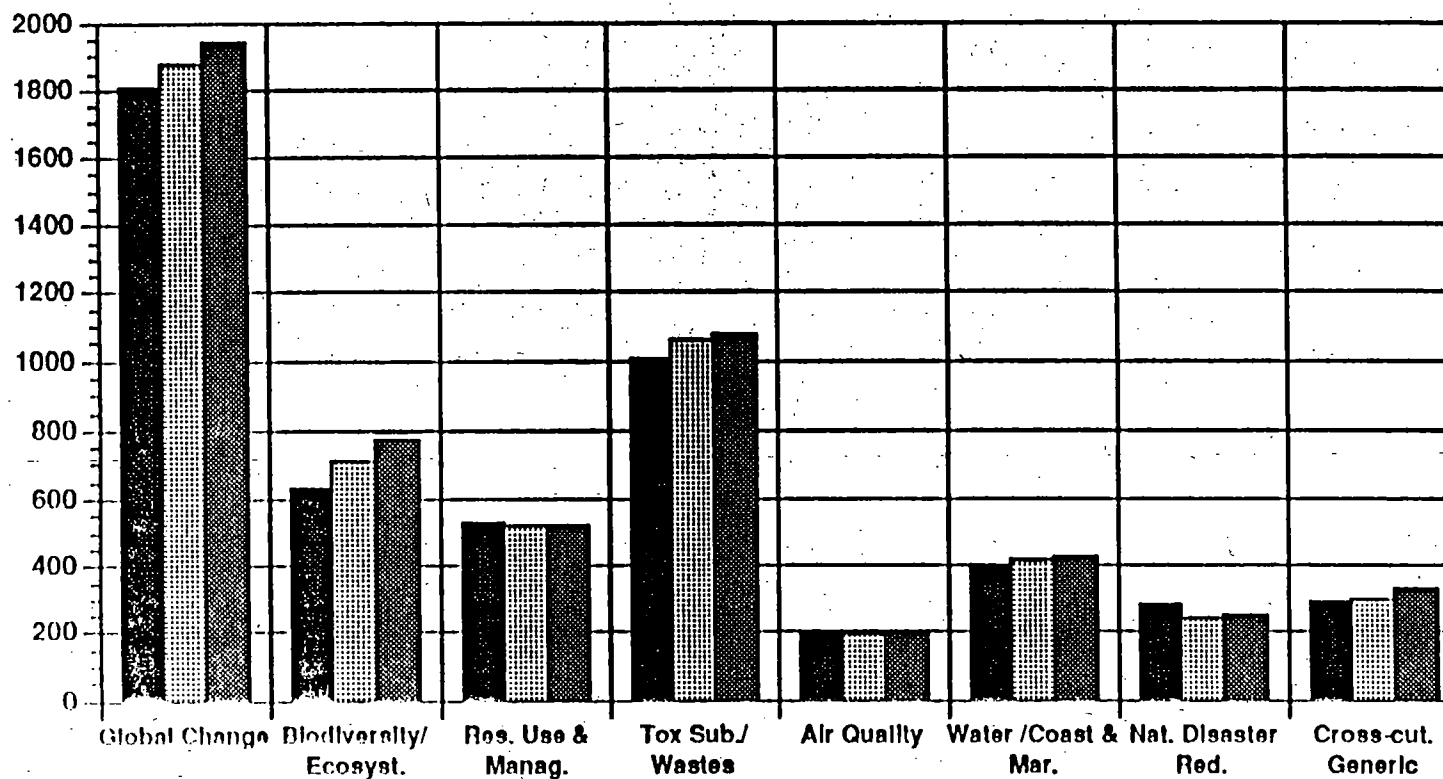


NOTE: AID and FEMA data not available for FY 94
AID, FEMA and DOD data not available for FY 95 & 96

CENR Resources Changes from FY 94,95 & 96

(In millions)

Subcommittees



NOTE: AID and FEMA data not available for FY 94
AID, FEMA and DOD data not available for FY 95 & 96



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 28 1994

OFFICE OF
RESEARCH AND DEVELOPMENT

Note to: Donna Wieting, NOAA
CENR Executive Secretary

From: *Lisa Matthews*
Lisa Matthews, EPA
CENR Toxic Substances and Hazardous and Solid Waste
Executive Secretary

As requested, I have written up the following CENR initiatives in the area of "Development of Science Policy Tools" (note that these initiatives would require additional funds above and beyond agency FY 96 requests). These initiatives are relevant to the Toxic Substances and Hazardous and Solid Waste Subcommittee and the Risk Assessment Subcommittee. In addition, the "Potential Health Effects of Airborne Particulate Matter" is an important priority for the Air Quality Subcommittee as well.

I will attempt to send you this note via Internet as well so that you will have an electronic copy to work with. I have completed a summary of EPA's successes in responding to CENR priorities; it is being reviewed by the Budget office. Hopefully I will be able to send it to you by the end of the day. If you have any questions, call me at (202) 260-7993.

Attachment

cc: Bob Huggett



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Initiatives for CENR Science Policy Tools

- I. **Human Variability in Susceptibility to Toxic Agents.** Person-to-person differences in behavior, immune response, genetic makeup, diet, and life history together confer on individual people unique susceptibilities to toxic substances. Such interindividual differences can be inherited or acquired. Research is needed to better characterize the ranges of susceptibilities for different diseases and chemical exposures. Such research will better characterize the potentially disproportionate risk borne by minorities because of lifestyle differences or genotype. Agencies Involved: ATSDR, EPA, NIEHS, NSF, DOE, and DOD. Proposed Budget: \$10M.
- II. **Exposure Assessment.** This should be a collaborative research project to investigate variation of key exposure parameters (factors) among subpopulations. This research is necessary to ensure that minorities and other subpopulations are adequately protected. Sensitive subpopulations would include those more highly exposed due to cultural and social factors (e.g., subsistence farmers or fishermen) and those more susceptible due to previous exposure or weakened or vulnerable health. Agencies Involved: EPA, NSF, DOE. Proposed Budget: \$15M.
- III. **Ecological Risk Assessment Research Initiative.** Ecological risk assessments evaluate the likelihood that adverse ecological effects will occur as a result of exposure to stressors related to human activities, such as draining of wetlands or release of chemicals. The term stressor describes any chemical, physical, or biological entity that can induce adverse effects on ecological components, that is, individuals, populations, communities, or ecosystems. This Ecological Risk Assessment Initiative is designed to develop methods to scientifically evaluate the likelihood of adverse effects of exposure to chemical stressors on the environment. The primary goal of this research program is to develop methods for conducting a scientific ecological risk assessment that focuses on toxic materials while putting into perspective a broad array of non-chemical stressors and ecological components.

Strategic directions. The research will concentrate on developing methodologies for conducting risk assessments at higher-level systems (communities and ecosystems). Included will be a greater emphasis on the relationship between lower and higher levels of biological organization (issues of extrapolation and calibration) to increase the ability to use lower-level studies to predict higher-level effects. A basic understanding of the mechanisms and processes of community structure and ecosystem function is necessary to interpret and predict ecological impacts from chemical stressors. Community and ecosystem level research objectives will be complimentary to initiatives from other CENR Subcommittees.

Agencies Involved: EPA, NOAA, DOI, USDA, DOE, and DOD. Certain aspects of this initiative are well suited to specific agencies. For example, DOI (F&WS) could explore the issue of risks to threatened and endangered species; NOAA could concentrate on risks to coastal systems; EPA could serve to integrate the work and look at cumulative impacts. Proposed Budget: \$30M.

- IV. Potential Health Effects of Airborne Particulate Matter.** Recent epidemiologic studies suggest that fine particulate matter may be a major contributor to environmentally induced disease. The magnitude of the potential health impact of PM, and the complexity of PM issues warrant a significant increase in funding. Additional resources would be directed at increased understanding of the relationship between health impact and particle characteristics, including mechanism of action, deposition in the respiratory tract, and the relationship of morbidity and mortality to particle size and composition. Agencies Involved: EPA and NIEHS. Proposed Budget: \$8M.

Toxic Substances and Hazardous and Solid Waste

"Toxic Materials" is a very *broad* issue that includes:

- ♦ new and existing chemicals
- ♦ toxic releases to all media
- ♦ pesticides
- ♦ biotechnology products
- ♦ ionizing and nonionizing radiation
- ♦ oil and chemical spills
- ♦ solid waste
- ♦ hazardous waste
- ♦ mixed waste

R&D Strategy is organized along the lines of *risk assessment* and *risk management*. Risk assessment is the *basis for both policy and technical decisions* regarding risk management.

Subcommittee Environmental Issues are:

Risk Assessment

- ♦ human and ecological effects
- ♦ exposure assessment
- ♦ risk characterization

Risk Management

- ♦ pollution prevention
- ♦ pollution control
- ♦ remediation/restoration
- ♦ monitoring
- ♦ social and economic aspects

Specific research in need of additional emphasis:

✱ **Better risk assessment of toxic substances for both human and non-human populations, including:**

- ♦ mechanisms of action of toxic materials
- ♦ variability of susceptibility within populations
- ♦ non-cancer endpoints (reproductive, neurotoxicological effects)
- ♦ methods and biomarkers for defining exposure history and potential adverse health effects
- ♦ validations to test the effectiveness of existing fate models and guide further development efforts
- ♦ short-term tests for toxic effects

Examples of how agencies have responded: New initiatives at EPA in ecological effects of endocrine disruptor-type chemicals and pesticides & kids. NIEHS has new initiatives in these human effects and exposure areas. Little effort is going into ecotoxicological research which focuses on the effects of toxic chemicals.

- ⚙ Toxic waste risk management, including:
 - ◆ focus on pollution prevention methods & cleaner technologies and processes in partnership with specific sectors. As cleanup becomes more effective, transition resources from remediation research to pollution prevention.
 - ◆ technology demonstration and verification
 - ◆ groundwater cleanup
 - ◆ radioactive and mixed wastes
 - ◆ unexploded ordnances

Examples of how agencies have responded: This is a large category that is relatively well funded in comparison to other programs. The agencies recognize its importance. DOD, DOE, and EPA are working to form industry-by-industry partnerships. There are some common areas of interest with the JSET, and we are consistent with the Technology for a Sustainable Future document.

- ⚙ Social and economic aspects from managing toxic materials, including:
 - ◆ identify and pilot incentives to encourage private sector development and commercialization of innovative risk management technologies
 - ◆ ensure that risk assessment and cost-benefit analyses guide the development of new regulations concerning toxic substances so that unnecessary burdens are not placed on U.S. industry
 - ◆ develop new approaches and tools to provide the public with quality data in a form that allows them to evaluate the role of toxic materials in their community and to participate in the decision-making process
 - ◆ develop techniques to identify and survey "high end" behavior which impacts exposure levels across different socioeconomic groups
 - ◆ advance research at minority colleges and universities with expertise in EJ issues
 - ◆ evaluate state, tribal, and local government EJ initiatives and characterize conditions leading to their success or failure

Examples of how agencies have responded: A very high priority and gap area. NIEHS is significantly increasing its programs in this area for FY 1996 and has initiated a number of community outreach and health programs. EPA is developing an EJ R&D strategy to integrate EJ concerns to all research activities.

FY 1996 FOCUSED PROGRAMS

5 * need breakout

QUESTIONS OF USABILITY

FY 1996 CONTRIBUTING PROGRAMS

40 QUESTIONS: 96 ANSWERS

ORPM/PCS

NIOSH
ATSDR
POL/OSHA

9/29/94 Draft

QUESTIONS OF DEGREE ARE ANSWERED