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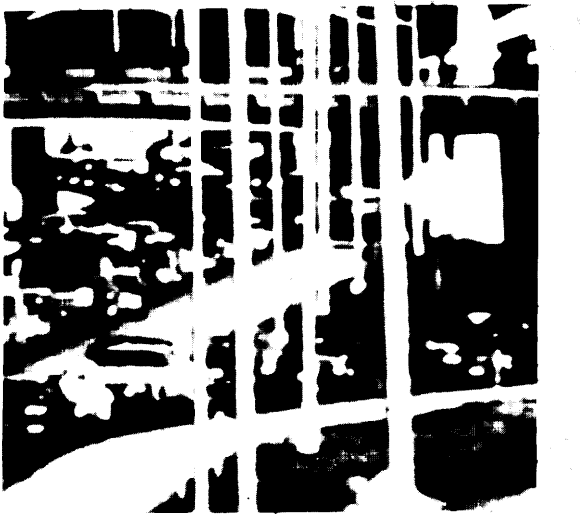
## nergy, Materials, and International Security Division

The Energy and Materials Program is responsible for assisting Congress in understanding the technological possibilities for developing our energy and materials resources and the consequences of these developments for society. OTA'S Energy and Materials Program covers those technologies that concern the extraction, delivery, and use of energy and materials, in addition to focusing attention on world markets and policies, including imports and exports of energy and materials.

The Industry, Technology, and Employment Program examines how technology affects the ability of U.S. industry to contribute to a healthy national economy. Its responsibilities include consideration of the competitiveness of U.S. industries in international markets, trade and economic development issues, the number and nature of employment opportunities, needs for worker education, training and retraining, and ways to ease adjustment in structural economic transitions. A Program with a specific employment focus is new at OTA (the Program was established in 1983), although many assessments have considered employment impacts, and employment and training issues have



*The Division comprises three programs: Energy and Materials; Industry, Technology, and Employment," and International Security and Commerce.*



been of central importance in several studies. This section of the program centers on the quantity, nature, and quality of jobs, the nature of and changes in job skills, and training and retraining across the work force.

OTA'S analyses of issues of national defense, international security, and space are conducted primarily by the International Security and Commerce Program. In recent years this has included: defense industry and technology, aspects of defense management, international collaboration, space transportation, orbital debris, nuclear offense and defense, arms control, export controls, NATO defensive strategy, terrorism, and commercial uses of space. The multi-disciplinary staff-including scientists, engineers, social scientists, and others-brings a broad perspective to these and other complex problems.

### FY1991 Activities

The Division contributed considerably to the debate on major issues in the 102d Congress. Its work on improving automobile fuel economy was used extensively in the draft legislation on increasing Corporate Average Fuel Economy (CAFE) standards, and its assessment on U.S. oil import vulnerability

was critical to the debate on the National Energy Security Act of 1991. Other important work in energy-related areas included studies of energy efficiency in the Federal Government and energy in developing countries.

Assessments focusing on trade and worker training assisted Congress in developing legislation which will expand America's ability to compete in the global economy. Work on manufacturing and the economy provided critical information for Congress on the need for the development and diffusion of commercially important technologies.

Finally, the Division's work in international security, defense reindustrialization, and space has broadened the debate in Congress. Assessments as diverse as technology against terrorism, the global arms trade, and exploration of the Moon and Mars have assisted Congress in sorting through these very complex issues. The timely study of defense reindustrialization issues is critical to the work in this area by the House and Senate Armed Services Committees.

#### ENERGY IN DEVELOPING COUNTRIES, JANUARY 1991

*Requested by:*

Senate Committee on Governmental Affairs  
House Committee on Energy and Commerce

#### ENERGY EFFICIENCY IN THE FEDERAL GOVERNMENT: GOVERNMENT BY GOOD EXAMPLE?, MAY 1991

*Requested by:*

Senate Committee on Governmental Affairs  
Senate Committee on Energy and Natural Resources  
House Committee on Energy and Commerce  
House Committee on Science, Space, and Technology

#### ENERGY TECHNOLOGY CHOICES: SHAPING OUR FUTURE, JULY 1991

*Requested by:*

House Committee on Energy and Commerce  
House Committee on Government Operations

#### ORBITING DEBRIS: A SPACE ENVIRONMENTAL PROBLEM—BACKGROUND PAPER, OCTOBER 1990

*Requested by:*

Senate Committee on Commerce, Science, and Transportation  
House Committee on Science, Space, and Technology

#### TECHNOLOGIES FOR START AGREEMENT: Verification Technologies: Measures for Monitoring Compliance With the START Treaty, December 1990

Verification Technologies: Managing Research and Development for Cooperative Arms Control Monitoring Measures, May 1991

Verification Technologies: Cooperative Aerial Surveillance in International Agreements, July 1991

*Requested by:*

Senate Committee on Foreign Relations  
House Committee on Foreign Affairs

#### WAGING THE NATION'S DEFENSE INDUSTRIAL STRENGTH IN A CHANGING SECURITY ENVIRONMENT:

Adjusting to a New Security Environment: The Defense Technology and Industrial Base Challenge-Background Paper, February 1991  
Redesigning Defense: Planning the Transition to the Future U.S. Defense Industrial Base, July 1991

*Requested by:*

Senate Committee on Labor and Human Resources  
Senate Committee on Commerce, Science, and Transportation  
Senate Committee on Foreign Affairs  
Senate Committee on Armed Services  
House Committee on Interior and Insular Affairs  
House Committee on Government Operations

#### GLOBAL ARMS TRADE: COMMERCE IN ADVANCED MILITARY TECHNOLOGY AND WEAPONS, JUNE 1991

*Requested by:*

Senate Committee on Armed Services  
House Committee on Government Operations

#### TECHNOLOGY AGAINST TERRORISM: THE FEDERAL EFFORT, JULY 1991

*Requested by:*

Senate Committee on Governmental Affairs  
Senate Committee on Foreign Relations  
Senate Committee on Commerce, Science, and Transportation

#### EXPLORING THE MOON AND MARS: CHOICES FOR THE NATION, JULY 1991

*Requested by:*

Senate Committee on Appropriations  
House Committee on Appropriations





*Photo credit: General Electric Company*