

With regard to the more generalized problems of cost effectiveness of environmental pollution, the established Department of Defense programming procedures take into account both near and long term requirements. The economics of environmental pollution abatement require that the problem of allocating resources efficiently within the present technology be distinguished from the problem of advancing the state of the art and for developing new technology. The question of cost effectiveness of environmental pollution abatement programs and procedures can be thought of as being somewhat analogous to the economic analysis utilized in some aspects of Defense Department planning and programming (see also answer to question 2). There is no question but that the problem of environmental pollution abatement requires immediate remedial and interim preventive measures or that new technology and new concepts will be developed to provide for the future. There is likewise no question but that the Federal departments and agencies must undertake activities to abate and prevent pollution from their installations and operations. From a truly cost effective viewpoint insofar as the Department of Defense is concerned, the direct cost associated with installing, operating, and maintaining environmental pollution abatement control procedures contributes only incidentally to the maintenance of military effectiveness. The principal direct gains and costs of the Defense program are associated with such desired ends as deterrent and limited war capabilities. Direct costs are the goods and services which are necessary to the national security program. There are many indirect impacts of Defense operations, some of which may be described as benefits and others as costs. Since environmental pollution control programs contribute to the preservation of natural resources and through their effect on improvement in health and well-being of the population to the Nation's manpower potential, there are some Defense implications in the indirect benefits of these expenditures. In "The Economics of Defense in the Nuclear Age," Hitch and McKean point out that it should be recognized that there are numerous spill-over benefits to private sectors of the economy from Defense operations. They pointed out that highways built for Defense purposes, sea and air navigational aids, military education programs, and research on Defense activities provide contributions to the national well-being. This applies also to the environmental pollution abatement expenditures.

Like military problems, the central consideration in assessing cost versus benefits or cost effectiveness is the need for definition of the objective. In attempting to assess the cost effectiveness of a particular program, the ultimate end must be carefully scrutinized so as to arrive at criteria which allow a realistic judgment. The methods of operation of Department of Defense programming do result in this sort of analytical approach to our environmental pollution abatement programs. Where the objectives are not clearly specified in form of environmental quality standards or statements, necessary judgments are made utilizing the best available information and consideration of the various alternatives. When viewed against that rationale the military programs for environmental pollution abatement do indeed have a cost effectiveness basis. Insofar as the larger issue of the national programs, it is believed that the technique discussed with regard to question 2 and the comments relating to systems