

SCIENCE AND TECHNOLOGY PROGRAM - USA

\$1.0 billion for R&D, is a high priority for the nation. Americans have seen the cost of energy for homes and transportation rise significantly over the past year. Despite these costs being low compared with other developed countries, Congress is concerned about a consumer and industry revolt, and the effect on a struggling economy of energy price increases. For a number of years, DOE has sponsored industrial and university research for more fuel-efficient transportation. Future research by DOE will likely be directed to providing renewable and clean energy to the home at a reasonable cost. The national security of the energy supply, much of which is imported by the US, is also driving energy research.

Education, the workforce of tomorrow, re-training for displaced workers:

The Department of Commerce's (DOC) R&D budget is \$1.1 billion, part of which is driven by the DOC's Technology Administration. Although post-secondary education in the US is competitive and has developed through the leadership of the top universities and NFP's, the K-12 educational system has not been the focus of an educational renewal, other than the improvements being sought for science and math education, as a response to the technology workforce issue. No doubt at some point, hopefully in this decade, the US will become as sophisticated in their K-12 teaching methods and curricula as the best educational systems in Europe. It is possible that the NSF, and departments of Commerce and Education will fund longer-term research in this area.

Environment, human use of the planet, clean manufacturing, minimising secular changes:

The Environmental Protection Agency (EPA) has an R&D budget of \$686 million, the US Department of Agriculture \$2.0 billion, and the NSF and DOE have budgets also contributing to this area of research. Certainly, advanced research will be required into minimizing the effects on soil of growing food (by reducing or eliminating the use of chemicals), the effects on air quality of pollution from all types of human work, and the effects on the atmosphere (ozone hole, global warming) of the use of environmentally unfriendly products. How soon and how much research will depend on human reaction to changes in the planet. As the human race becomes more E-world orientated – telecommuting can be integrated in to traditional work methods, E-learning can be integrated in to traditional learning, robotics can do more human tasks, then the use of inefficient transportation systems will be reduced. E-technology (such as high-speed Internet to the home, sophisticated provision of goods and services using the Internet), will be an area of development to reduce the effect of the human race on the planet. If large energy-inefficient vehicles – with a single driver commuting to work in the city – are to be gone within a decade, research into new methods of acceptable transportation is required.