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## **ENERGY POLICIES AND PUBLIC ENERGY R&D EXPENDITURES IN THE OECD COUNTRIES**

### **Abstract:**

Most countries are seeking alternative energy sources to ensure economic security and sustainable growth due to reasons such as the adverse impact of oil price fluctuations on many economies, as well as increasing environmental concerns arising from the consumption of fossil fuels. In order to tackle the energy issues caused by dependence on fossil fuels most governments are attempting to shift from an oil-based economy to a bio-based economy by increasing focus being placed on technological advancement and innovations in the field of energy. One of the most important indicators of energy innovation is public R&D spending. Theoretically, there are several reasons for the public to implement policies that collaborate investments in energy R&D, such as market failure, environmental externalities and energy security. Increasing government R&D spending seems to be the most sustainable solution to increase energy efficiency, ensure energy security and reduce environmental externalities. This is because the spread of innovative activities, processes, and products in the energy field increases efficiency, reduces resource consumption and provides access to new energy sources. Some factors such as the level of development, technological capacity and energy dependency affect the amount of public energy R&D spending. OECD nations have the highest expenditures on energy R&D and among these, the United States, Japan, France, Germany, and the United Kingdom spend the most. R&D expenditures increased rapidly due to energy security concerns triggered by the oil crisis in the 1970s. Spending reached about \$23.5 billion in 1980, however, gradually declined as the crisis disappeared and concerns subsided. Since the 1990s, public R&D spending, which began to increase due to concerns about climate change, has never fallen below \$15 billion since 2007 and reached \$23.1 billion in 2021. In this study, public energy R&D expenditures and their effects will be analyzed by focusing on the energy policies of the OECD countries between 1970 and 2021.

### **Keywords:**

Public policy, energy policy, R&D, innovation, sustainable development, energy technology

**JEL Classification:** Q48, Q42, Q55