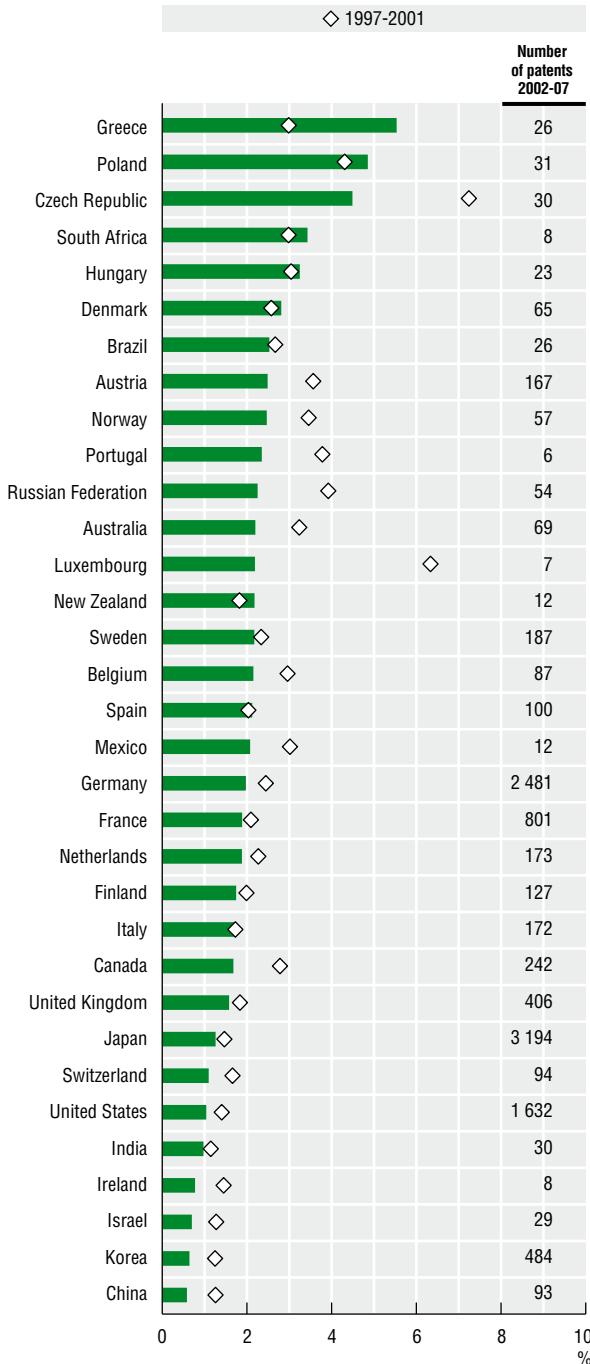


Technological change is essential to ensure that economic growth and environmental improvements progress together. It is important for environmental and technology policies to provide appropriate incentives to develop and diffuse environmental technologies.

Patent applications in pollution abatement and waste management technologies, 2002-07

As a percentage of patenting in all sectors



Source: OECD calculations based on EPO, Worldwide Patent Statistical Database, September 2009. See chapter notes.

StatLink <http://dx.doi.org/10.1787/836234010113>

DID YOU KNOW?

The share of the government R&D budget devoted to the environment decreased by 7% in the OECD area in the last decade.

(OECD, Research and Development Database, 2009.)

While the major OECD economies are generally the most active innovators in air and water pollution abatement and solid waste management, some smaller economies have developed specialisations in this area. Work undertaken at the OECD indicates that predictability, flexibility and stringency of environmental policies are conducive to higher investment in innovation.

Over the last decade, both the level of patenting and public research efforts related to environmental technologies have decreased. However, while patent levels for air pollution abatement have generally increased, innovation for solid waste management has decreased.

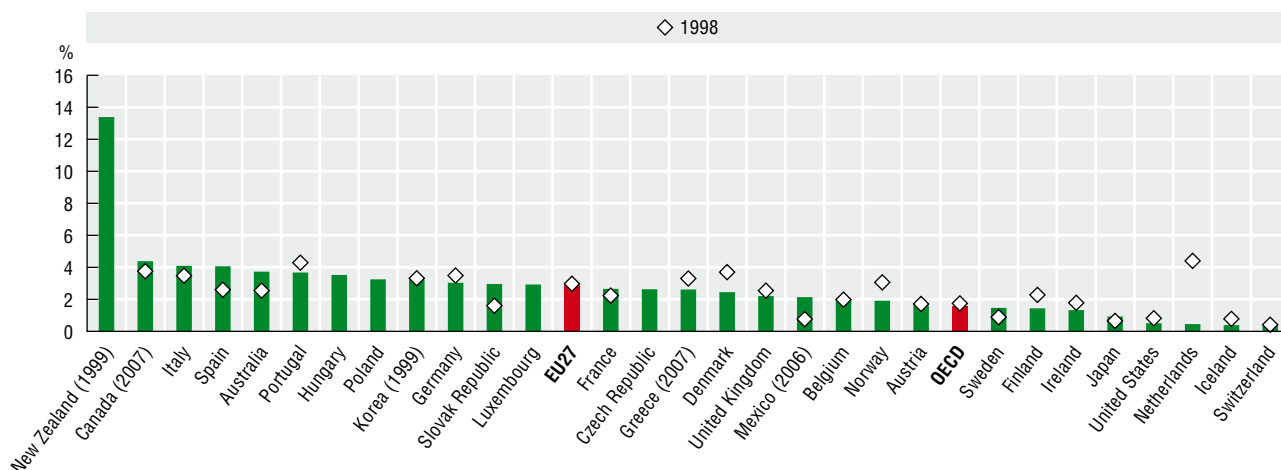
Evidence at the plant level shows differences in innovation efforts across sectors and countries. Empirical analysis indicates that the propensity to report environmentally related R&D increases with the use of incentive-based measures such as environmentally related taxes.

Definitions

Pollution abatement technologies include air pollution control, water pollution control and wastewater treatment. Waste management technologies cover disposal of solid waste, waste material re-use and recycling, and energy recovery from waste. For further details on classifications see www.oecd.org/environment/innovation/indicator. Government budget appropriations or outlays for R&D (GBAORD) measures the funds committed by the federal/central government for R&D. It can be broken down by various socioeconomic objectives, including control and care for the environment. Facility is defined as business establishment. For more information see the OECD Project on Environmental Policy and Corporate Behaviour (www.oecd.org/env/cpe/firms).

Government R&D budget devoted to control and care for the environment, 2008

As a percentage of total government R&D budget

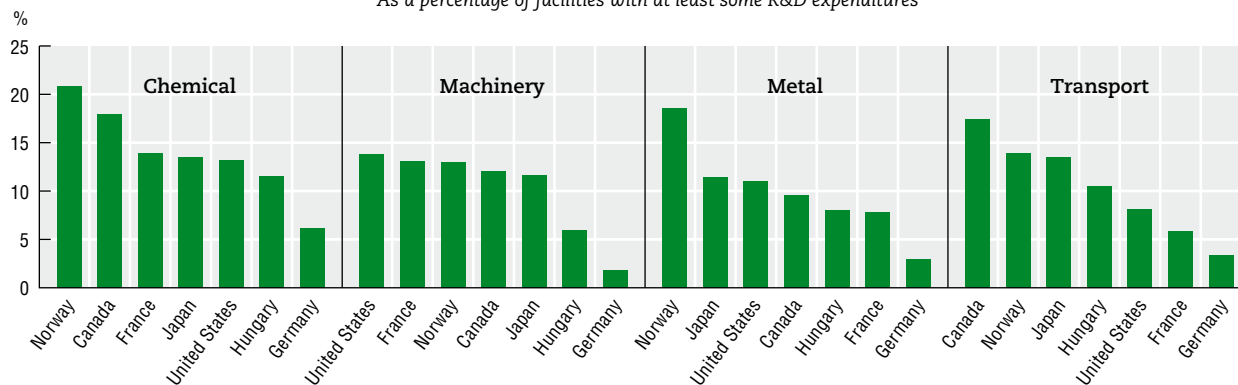


Source: OECD, Research & Development Database, December 2009.

 StatLink <http://dx.doi.org/10.1787/836234010113>

Facilities with environmentally related R&D in selected manufacturing sectors, 2003

As a percentage of facilities with at least some R&D expenditures


 Source: OECD (2007), *Business and the Environment*, OECD, Paris.

 StatLink <http://dx.doi.org/10.1787/836234010113>
Measurability

Collection of data on environmental innovation is complicated because many innovations with positive environmental consequences are not explicitly concerned with environmental improvement. Many environmentally significant innovations involve changes in production processes that reduce operating costs or improve product quality. Determining whether an innovation is environmental or not is a question of degree and not of kind. Bearing this in mind, search algorithms developed by the OECD Secretariat with the help of researchers from the Paris Graduate School of Economics, Statistics and Finance were used to generate data on environmental technology patent applications. The data cover technologies for water and wastewater treatment, air pollution abatement, and waste management, recycling and prevention.

A 2003 OECD survey of over 4 000 manufacturing facilities collected data on environmental R&D expenditures, the adoption of integrated environmental technologies, and organisational innovations with positive environmental consequences. Development of a panel database would help to understand the determinants of environmental innovation.