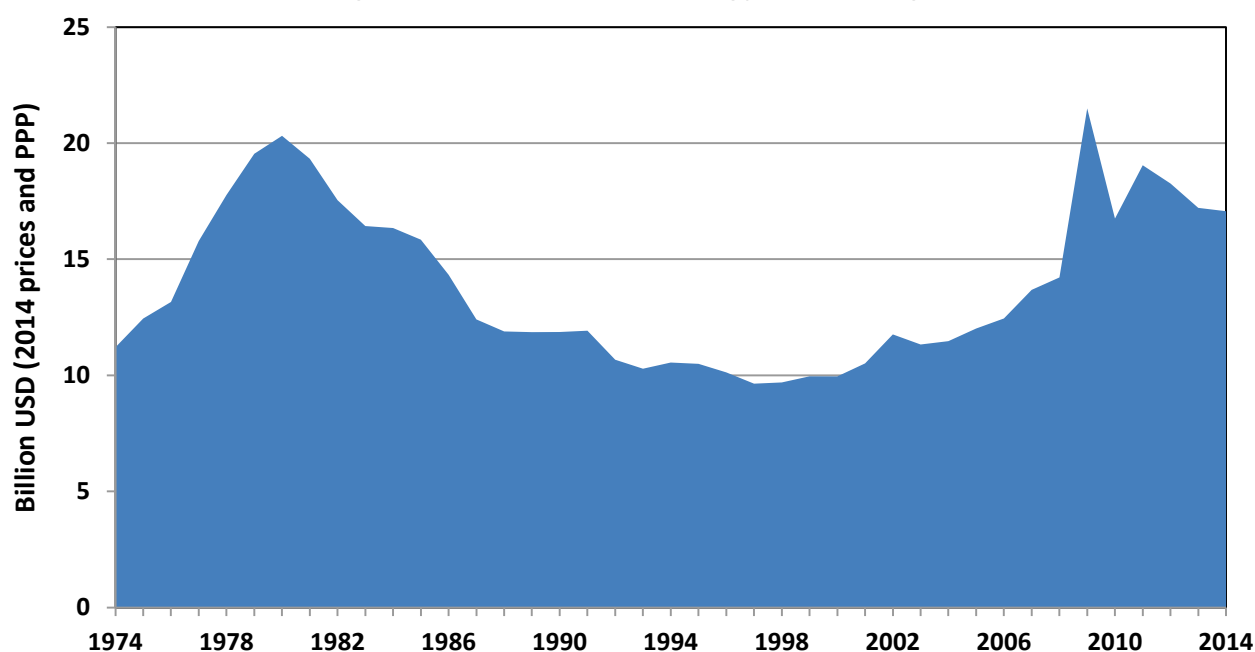


Key trends in IEA public energy technology research, development and demonstration (RD&D) budgets

Overall public energy RD&D budget in IEA

In 2014, the estimated total public¹ energy RD&D budget in IEA member countries was about USD 17 billion (2014 prices and PPP)² - a decrease of 1% compared to 2013. The total public energy RD&D budget has decreased over the past 3 years, but remains above the level seen in the 1980s and 1990s. RD&D expenditure reached a peak in 2009, chiefly as a result of the American Recovery and Reinvestment Act of 2009 (stimulus) spending.

Figure 1: IEA Total Public Energy RD&D Budget



¹ Public energy RD&D collected by the IEA includes central or federal government budgets as well as state-owned companies' budgets.

² Total public energy RD&D expenditure data, converted from current prices in national currencies to US dollar PPPs in constant 2014 prices using GDP deflators and 2014 PPPs. Purchasing power parities (PPPs) are the rates of currency conversion that eliminate the differences in price levels between countries. For more information on PPP methodology see www.oecd.org/std/ppp.

In the past 40 years energy has become progressively more diverse. Nuclear, dominant in 1974 with 74% of total public energy RD&D budget, showed a constant reduction in share to 23% in 2014, when energy efficiency, renewables and cross-cutting RD&D reached comparable shares in the total. RD&D on renewables has increased from 3% in 1974 to 20% in 2014.

The United States and Japan are among the countries with the largest share of energy RD&D budget in energy efficiency and renewable energy sources. Whilst, in 2014, Japan remains the country with the largest nuclear RD&D share (nearly 50%).

Figure 2: IEA Total Public Energy RD&D

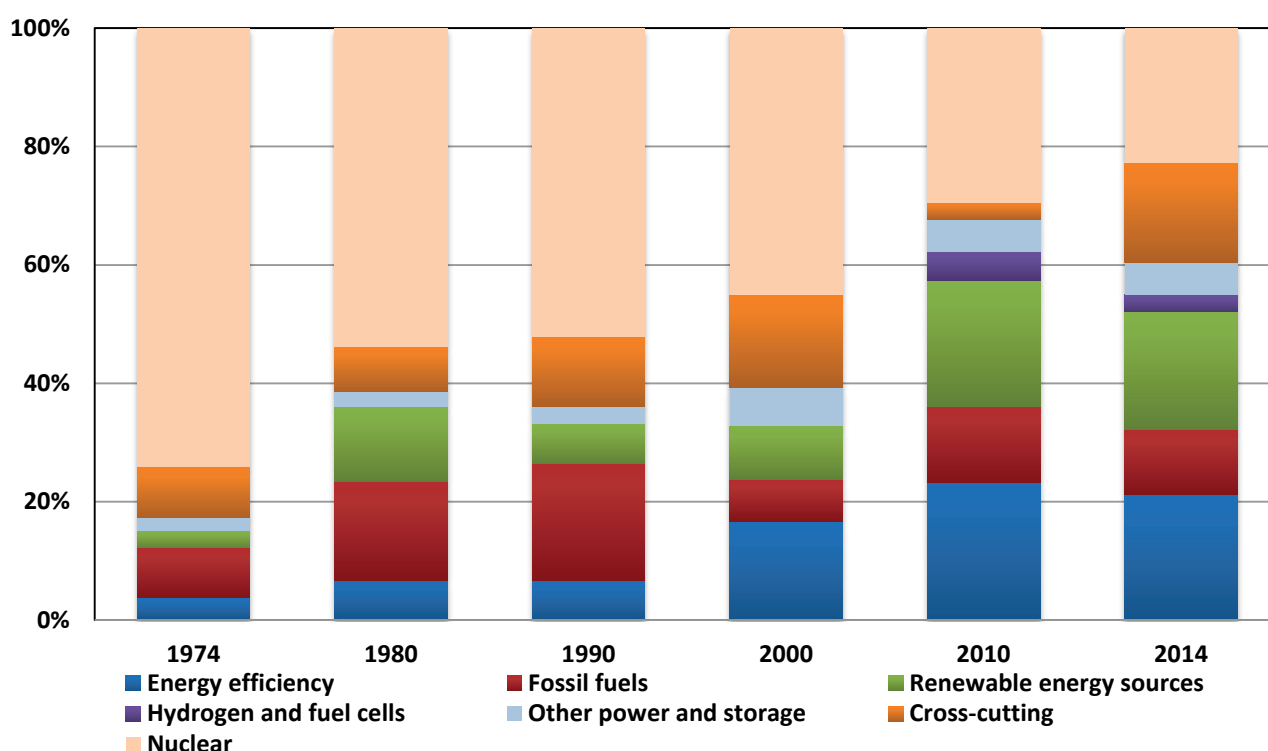
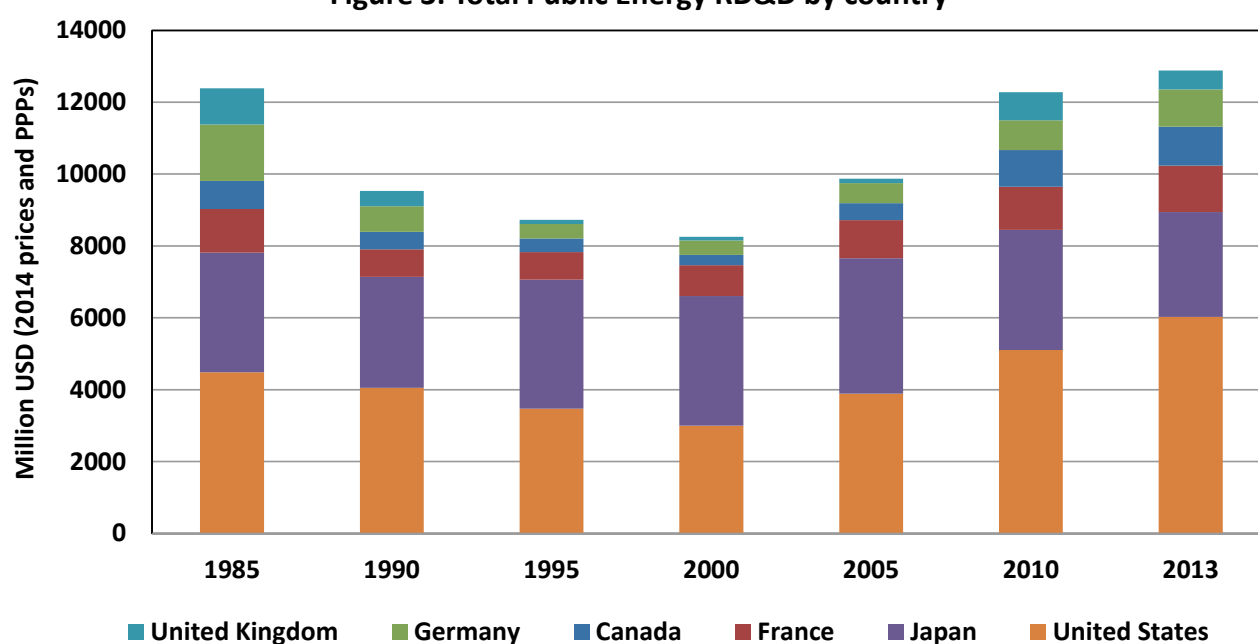


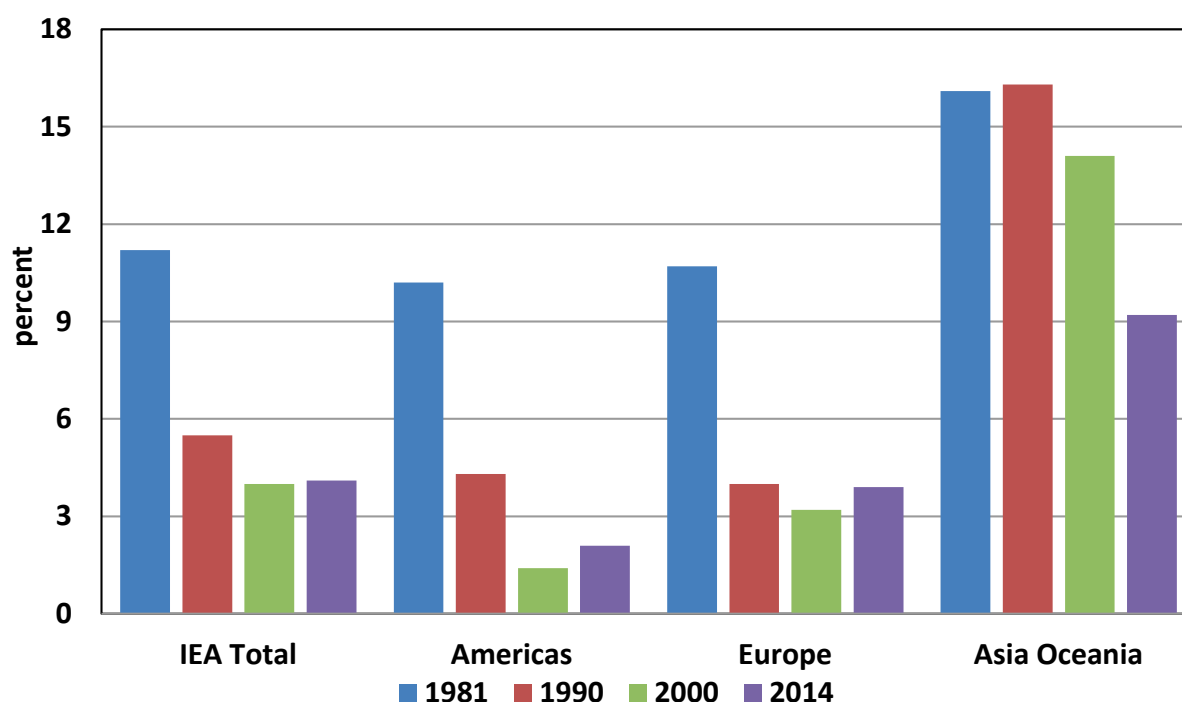
Figure 3: Total Public Energy RD&D by country



Energy in Total R&D

Overall, the 2014 share of energy in total³ R&D was 4% in the IEA, down from the 11% of 1981. While the Americas and Europe showed similar trends in time, with lowest values around the early 2000s' and slight increases more recently, Asia-Oceania has shown a rather different trend, decreasing more slowly to around 9% in 2014 - with the latest decline mainly driven by Australia, facing big budget cuts in research and renewable energy.

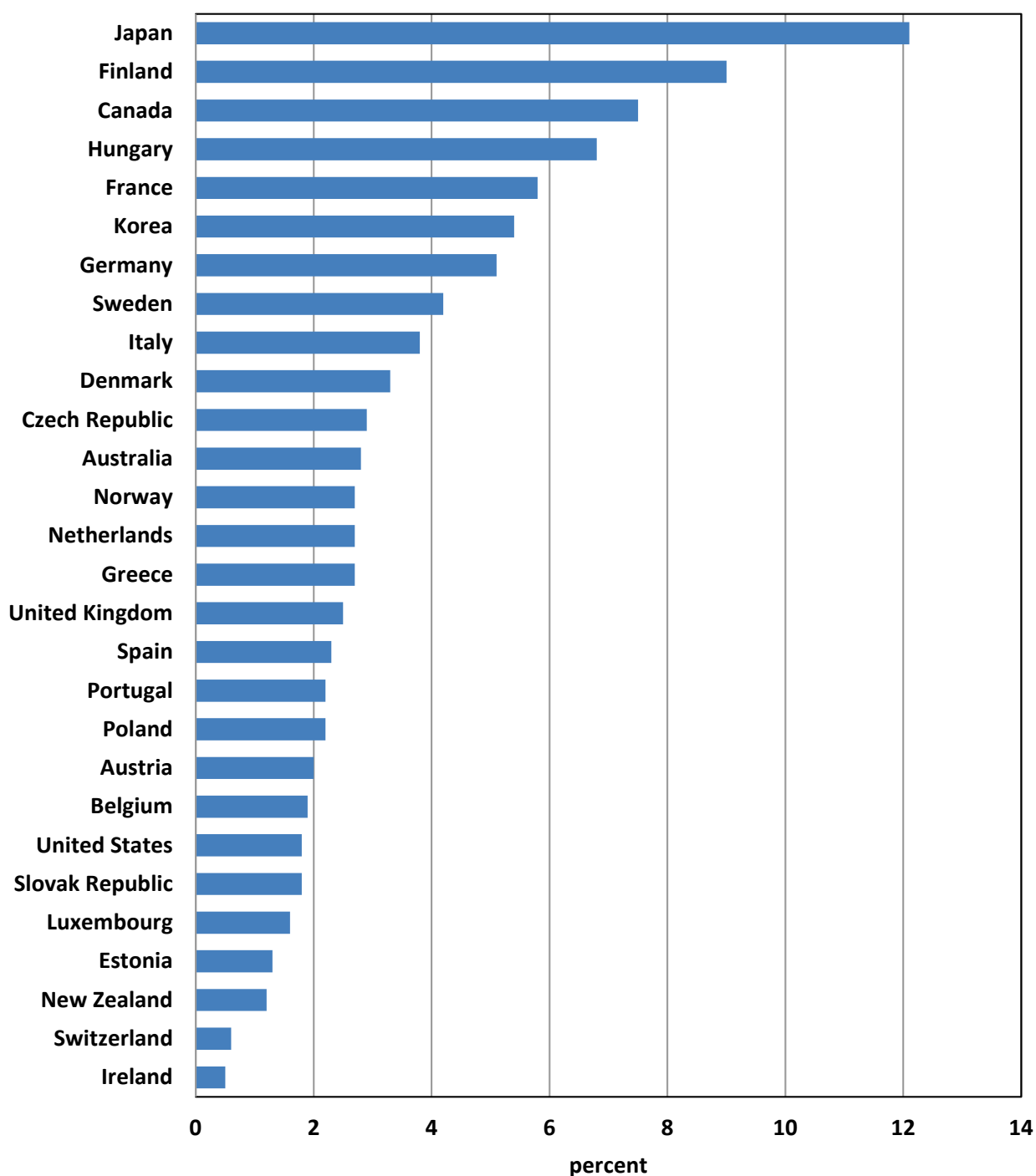
Figure 4: Share of Energy in Total R&D by region



³ Source for total R&D: OECD Government budgetary appropriations or outlays for R&D (GBAORD) data. GBAORD data exclude demonstration. http://stats.oecd.org/Index.aspx?DataSetCode=GBAORD_NABS2007

In 2014, Japan remained the country with the largest share of public energy RD&D budget in total R&D. However, Japan's share of energy RD&D had been decreasing over the years from 23% in 1990 to 12% in 2014. The United States with the largest absolute public energy RD&D budget of USD 6 billion (2014 prices and PPPs) among the IEA countries – had a share of energy in total RD&D budget of less than 2% in 2014.

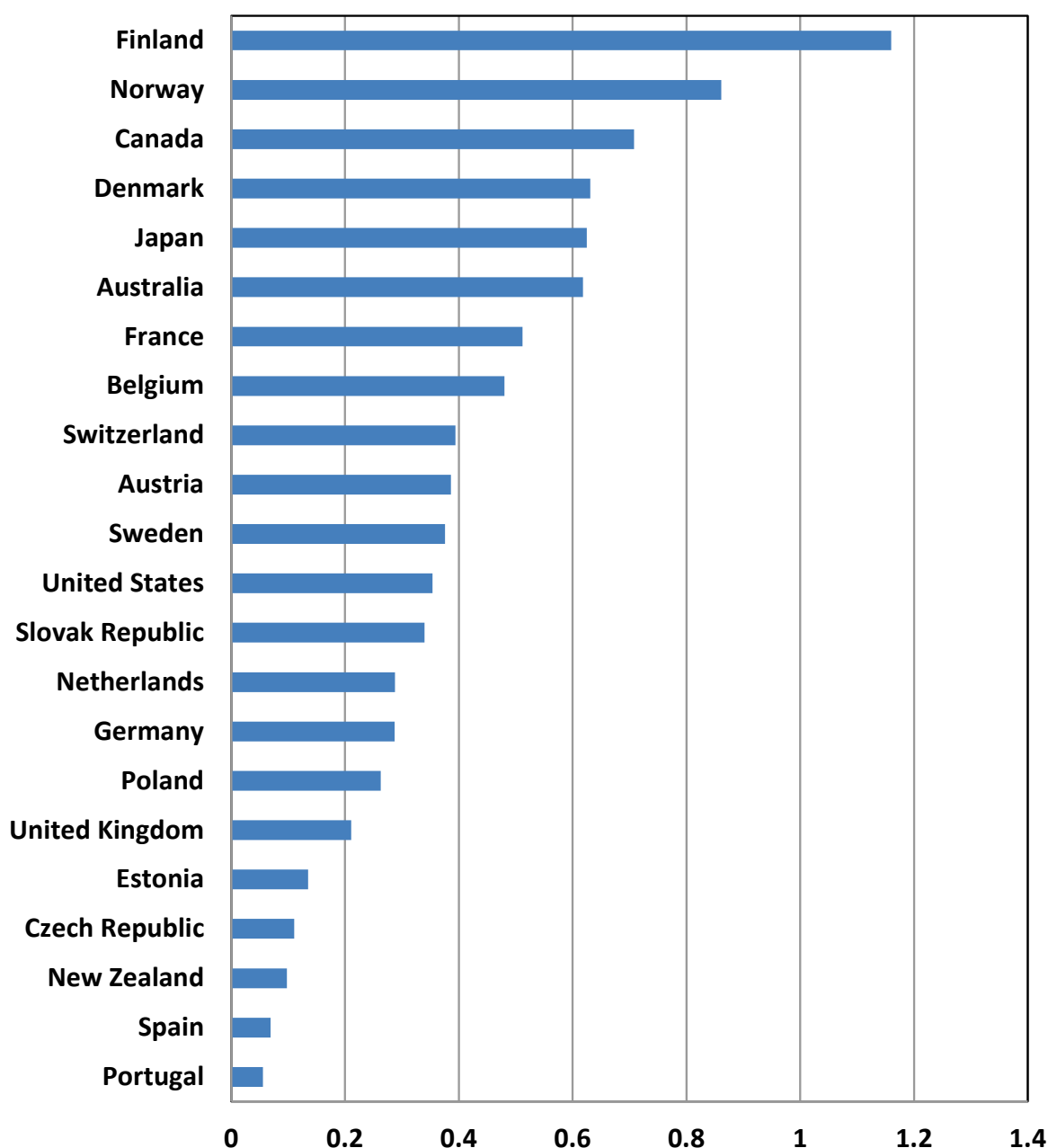
Figure 5 : Share of Energy in Total R&D in 2014



Energy RD&D and GDP

Across countries, the ratio of public energy RD&D budget per unit of GDP⁴ varies greatly, ranging from less than 0.1 to over 1 per thousand, with largest values in Finland, Norway and Canada.

Figure 6: Energy RD&D per thousand units of GDP in 2013



⁴ Total public energy RD&D expenditure in nominal national currencies divided by GDP in nominal national currencies at market prices and volumes, expressed in thousand units of GDP.

Released in September 2015.

Source: IEA Energy Technology RD&D Budgets (2015 edition)

Further information on RD&D statistics is available at:

<http://www.iea.org/statistics/RDDonlinedataservice/>

Queries should be addressed to: slt@iea.org

In addition, a wide range of free energy statistics can be accessed at:

www.iea.org/statistics

Please note that all IEA publications and data are subject to specific conditions that limit their use and distribution. These terms and conditions are available online at www.iea.org/t&c/.