

33. Norway

Institutional framework

Norway has been active in space for the last 50 years, driven in the beginning by solar research and sounding rocket activities on the launch facility of Andøya, an island in northern Norway. In the last decades, the country's geographic situation combined with low population density and strong maritime interests have made space applications particularly relevant. The proximity to the North Pole also makes it an important location for ground stations for polar-orbiting satellites. In 2013, the Norwegian government expressed a series of priorities and goals in a White Paper reviewing the national space policy for the first time in almost 30 years (Norwegian Ministry of Trade, Industry and Fisheries, 2013). The importance of space for economic growth and meeting societal needs was underlined.

The Norwegian Space Centre (NSC) is a government agency under the Ministry of Trade, Industry and Fisheries. The Agency carries out Norwegian space policy, co-ordinates all space-related activities and represents the country in the European Space Agency. In 2013, the total space-related institutional budget was NOK 788.9 million (USD 134 million). This included NOK 428 million (USD 73 million) in allocations to the European Space Agency and NOK 196 million (USD 33 million) to the European Union for their Galileo and Copernicus satellite programmes. It should be noted that Galileo and Copernicus are operated by the European Space Agency through its earth observation and navigation programmes. Norway also participates in several bilateral programmes with Canada, Switzerland, Germany, France and Sweden. In addition, the yearly contingent in Eumetsat (i.e. the European Organisation for the Exploitation of Meteorological Satellites) amounted to USD 6.4 million. All in all, of the Norwegian space budget was spent on international activities, with 13% devoted to the Norwegian Space Centre and support to national industry and infrastructure. In the period between 2007 and 2013, the Norwegian space-related budget increased by 38%, adjusted for inflation,

reflecting mainly the increase in European allocations due to investment and operation costs of the Galileo (satellite navigation) and Copernicus (earth observation) programmes. In 2013, Norway made allocations to all of the voluntary programmes of the European Space Agency, with a main emphasis on earth observation, technology development and telecommunications.

Norwegian space industry

The Norwegian space industry has strong links to the defence industry, as well as the off-shore and maritime industries. An important space-related sector in Norway is satellite telecommunications and there are also a significant number of ground stations for polar-orbiting satellites on Norwegian territory (including Svalbard and Antarctica Troll station). The industry produces high-technology equipment to ground stations and there are Norwegian-built electronics on the Galileo-satellites (e.g. frequency generation units and Search and Rescue transponders). In 2012, annual space-related turnover amounted to approximately NOK 6 billion (USD 1 billion), 70% of which was generated by the telecommunications sector. In 2012, there were about 40 companies with a level of space activity. The manufacturing sector was dominated by one company (Kongsberg), both in terms of employment and turnover. Space manufacturing employment in industry amounted to at least 364 full-time-equivalents in 2013 (Eurosace, 2014). The number of people employed in the other Norwegian space-related services companies, as well as in universities and research institutions involved in space activities, is probably much higher.

Notes

33.1 and 33.2: EUMETSAT estimates for 2007 and 2008.

33.3: Several types of multi-annual adjustments and other mechanisms of the ESA financial system have an effect on yearly comparisons. ESA budgets and national allocations to ESA will not necessarily add up.

Key facts for Norway

Space budget as a share of GDP (2013): 0.025%.

Space budget per capita (2013): USD 18.1 (PPP).

Number of regional clusters including space industry: 1 (Norwegian Aerospace Cluster).

Share in scientific production in satellite technologies (2013): 1.08%.

Share of space-related patent applications filed under PCT (2009-11): 0.9%.

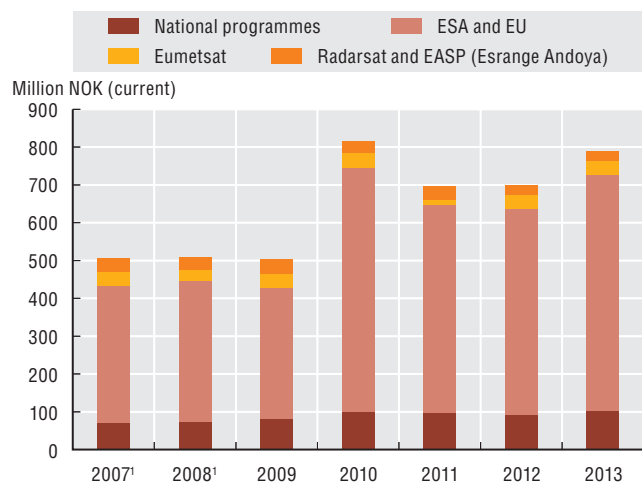
Subscribers of Direct-to-home (DTH) satellite services (2011): 655 000 (30.55% of television households).

Number of operational satellites: 4.

Student performance in science (PISA 2012 mean score): 495 (OECD average of 501).

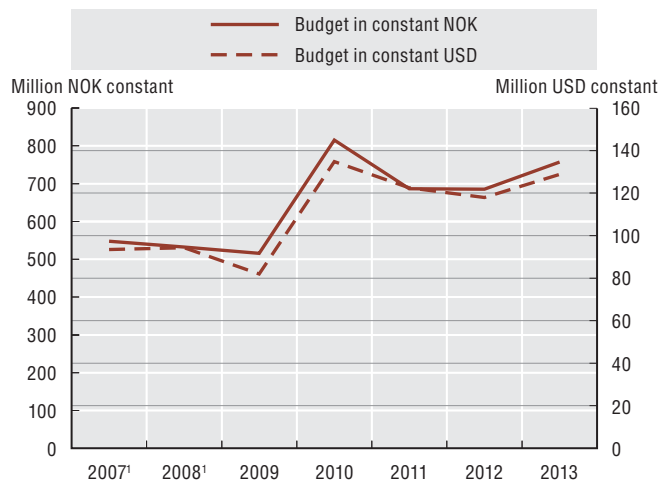
33.1. Norway's space budget

In million NOK (current), 2007-13



33.2. Norway's inflation-adjusted space budget

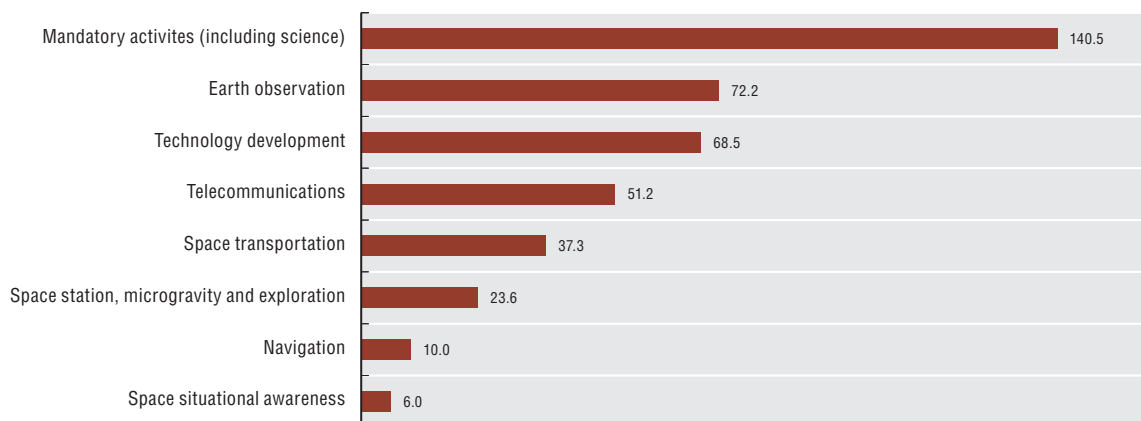
In constant NOK and USD million, 2007-13



Source: OECD calculations and data from the Norwegian Ministry of Industry and Trade and Fisheries, 2013b and previous years, and Norwegian Meteorological Institute, 2013 and previous years.

33.3. Norway's ESA allocations by main programmes

In million NOK (current), 2013



Source: Norwegian Ministry of Trade and Industry and Fisheries, 2013.

33. Norway

Norwegian aerospace industry

The aerospace industry is relatively small in Norway compared to other OECD countries. Norwegian aerospace companies are organised in the Norwegian Aerospace Industry Cluster, which counted 12 members in early 2013 (FSI, 2014). They specialise mainly in maintenance, repair and overhaul (MRO) for civil and military aircraft as well as the production of composites and structures for defence aircraft. According to OECD data, Norway exported aerospace goods for a total value of USD 517 million in 2012, while the value of imported goods amounted to USD 1.5 billion (OECD, 2014). Main export trading partners in 2012 were the United States, France and the United Kingdom. Imports from the United States accounted for 75% of total imports in 2012.

Sources

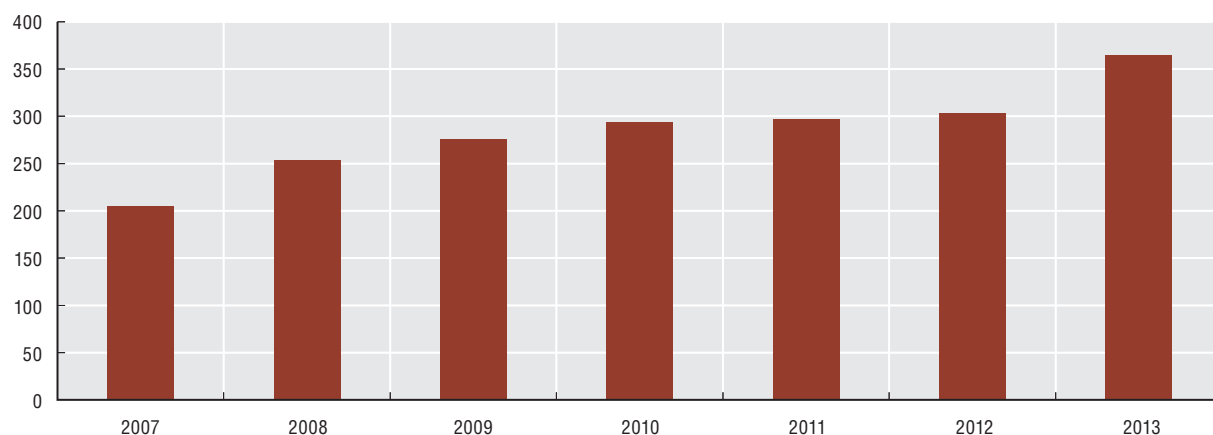
Eurospace, www.eurospace.org/.

Norwegian Ministry of Trade and Industry and Fisheries (2013a), Meld. St. 32 (2012–2013) Report to the Storting (White Paper): Between heaven and earth: Norwegian space policy for business and public benefit, Oslo, 26 April.


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OECD STAN Bilateral Trade Database by Industry and End-use (BTDIxE), data extracted April 2014, www.oecd.org/sti/btd.

OECD, *Main Science and Technology Indicators database*, www.oecd.org/sti/msti.

33.4. Space manufacturing industry employment in Norway*Number of full time equivalent, 2007-13*

Source: Eurospace, 2014.

33.5. Norway's main aerospace trading partners*In million USD (current), 2012*Source: OECD STAN Database, 2014, www.oecd.org/sti/btd.StatLink  <http://dx.doi.org/10.1787/888933142159>



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