

## How Governments Are Fueling Nanotech Innovations

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In recent years, nanotechnology has emerged as a pivotal area of scientific inquiry, promising groundbreaking advancements across various sectors.

This surge in interest has led to a global race in nanotech research, with governments worldwide stepping up to fund and support this cutting-edge field. Recognizing its potential, governments worldwide are significantly investing in nanotech research, fostering innovation and development.

### The [United States](#) and the Future of Nanotechnology

The [United States](#) has taken a prominent role in nanotechnology research through its National Nanotechnology Initiative (NNI) [1]. With a 2023 budget of \$1.99 billion, NNI focuses on diverse areas including nanoscience, device development, and addressing global challenges like COVID-19. Agencies like NIH, NSF, DOE, and DOD are key contributors, investing in areas ranging from biomedical innovations to space exploration. A unique aspect of NNI is its emphasis on responsible development, ensuring ethical and safe advancement in nanotechnology.

### [European Union](#)'s Horizon Europe

NANORIGO, funded by the [European Union](#)'s Horizon Europe programme, is an ambitious project involving 28 partners, coordinated by Aarhus University [2]. Launched in January 2019, this 50-month initiative, with a budget of €4.7 million, aims to create a comprehensive Risk Governance Framework (RGF) and a corresponding Council (RGC) for nanomaterials and nano-enabled products.

The project emphasizes stakeholder engagement across various sectors and focuses on developing a framework backed by scientific data for assessing nanomaterial risks. Collaborating with similar initiatives like RiskGONE and Gov4Nano, NANORIGO strives to establish a sustainable, equitable governance structure for nanotechnology in Europe.

## **[Japan](#)'s Strategic Investment**

In [Japan](#), the field of nanotechnology is thriving, largely due to robust government support and escalating investments in research and development [3]. In 2021, R&D investments saw a significant uptick, increasing by 2.6% to reach 19.74 trillion yen. This investment is a key driver of innovation and development in the sector. A notable trend contributing to the industry's growth is the emergence of self-powered nanotechnology devices, which are expected to revolutionize various applications.

Additionally, there are ambitious plans for future investments: the Japanese government, in collaboration with the private sector, aims to invest a staggering total of 120 trillion yen. This robust funding strategy underscores [Japan](#)'s commitment to maintaining and enhancing its position as a leader in the global nanotechnology market.

## **[China](#)'s Strategic Financial Commitment**

Over the past decades, [China](#) has significantly invested in nanotechnology, earmarking it as a strategic focus in its scientific plans from 2006 to 2020 [4]. Demonstrating this commitment, in 2012, [China](#) launched a Strategic Pioneering Programme on nanotechnology, allocating a substantial budget of one billion yuan (approximately \$152 million) over five years. This initiative, spearheaded by the Chinese Academy of Sciences in Beijing, has been instrumental in propelling [China](#) to the forefront of the nanotechnology field. As a result of these financial commitments, [China](#) now ranks first globally in terms of both the volume of nanotechnology-related scientific publications and patents.

## **Conclusion**

The global landscape of nanotechnology research is a testament to the collective effort and vision of nations recognizing the transformative potential of this field. From the [United States'](#) comprehensive initiatives to Europe's focused governance frameworks, [Japan's](#) strategic financial investments, and [China's](#) leading position in research outputs, each region contributes uniquely to the advancement of nanotechnology. These concerted efforts not only underscore the importance of nanotechnology in addressing contemporary challenges but also pave the way for future innovations that could reshape various industries and improve global well-being.

Read the [original article](#) on Nano Magazine.