

Belgian Federal Science Policy from 1895 until present

LHPS Research Day #6

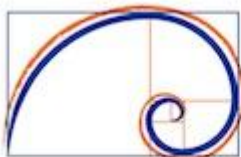
Brussels, 22 May 2025

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<https://lefever.space/>



CLPS CENTRE FOR LOGIC &
PHILOSOPHY OF SCIENCE
RESEARCH GROUP



Background:

Belgian federal structure

- Unitary state from 1830 until 1970
 - So, “federal” science policy before 1970 is an anachronism...
- Evolution to a federal state between 1970 and 1993:
 - 6 State reforms in 1970, 1980, 1988-1989, 1993, 2001, 2012-2014

Background:

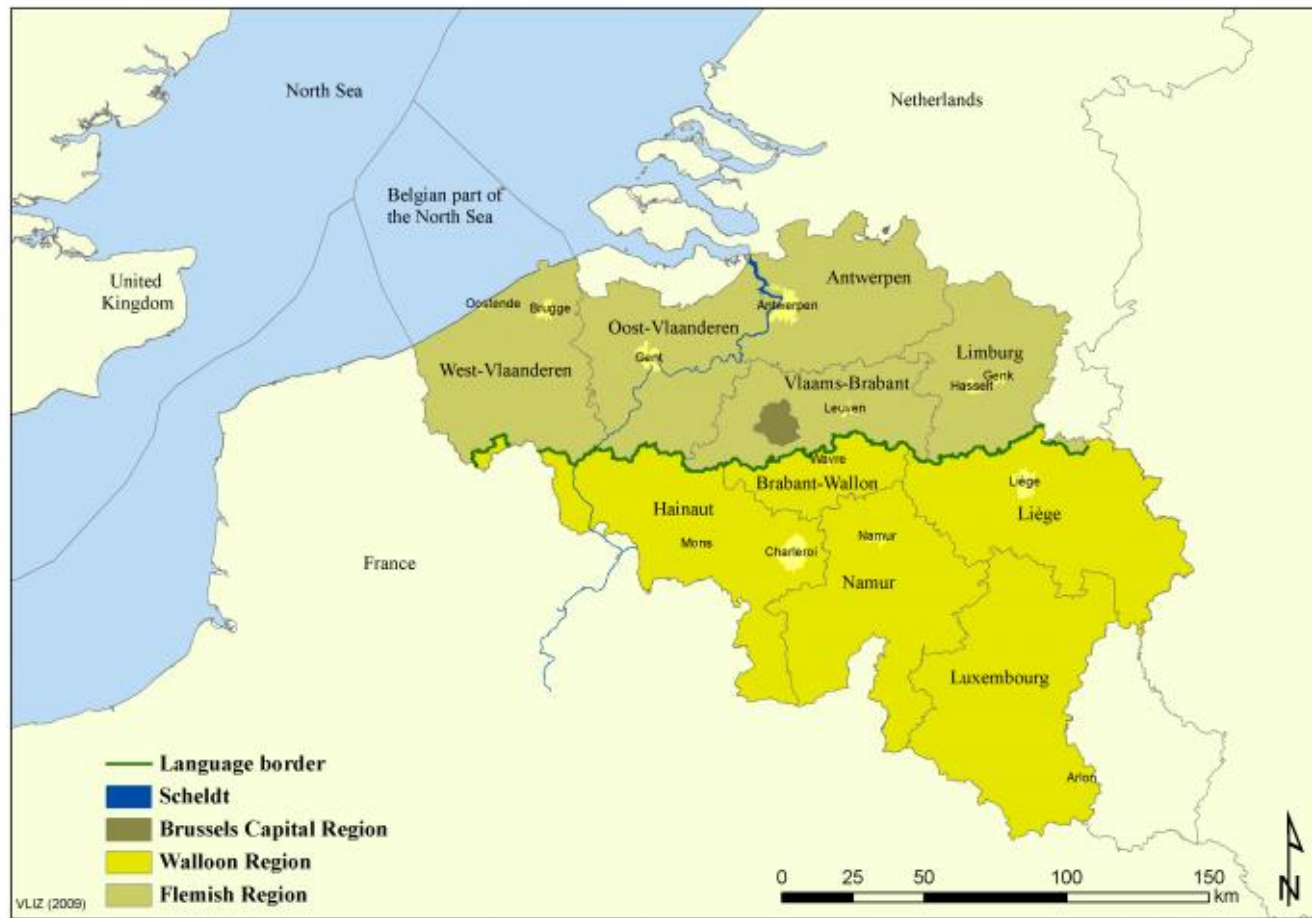
Belgian federal structure

- One Federal State:
 - Kingdom of Belgium
- Three Communities (by language):
 - Flemish Community
 - French Community
 - German Community
- Three Regions (by territory):
 - Flanders Region
 - Walloon Region
 - Brussels Capital Region

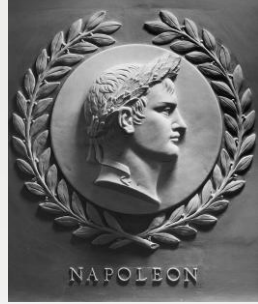
The North Sea is federal territory, the coast is Flemish.

Belgium

and the Belgian part of the North Sea



Belgian science policy is older than Belgium



- **1808:** Emperor Napoleon I decrees the foundation of the Faculty of Arts & the Faculty of Science in Liège as part of the French Imperial University.
- **1817:** King Willem I of the United Kingdom of the Netherlands (Koninkrijk der Nederlanden / Royaume des Beligues, 1815-1830) founds
 - the State University of Liège (University of Liège since 1989)
 - the State University of Ghent (Ghent University since 1991)
 - the State University of Leuven (1817-1835)
 - in 1835, the Catholic University of Mechelen (founded in 1834) moves into the abandoned buildings of the State University of Leuven.
- **1826:** King Willem I founds the Royal Observatory under the impulse of the astronomer and mathematician Adolphe Quetelet. During the Belgian Revolution of 1830, fighting took place in and around the observatory.



Sources: https://en.wikipedia.org/wiki/University_of_Li%C3%A8ge
https://nl.wikipedia.org/wiki/Rijksuniversiteit_Leuven
https://en.wikipedia.org/wiki/Royal_Observatory_of_Belgium
<https://www.astro.oma.be/nl/informatie/geschiedenis-van-de-sterrenwacht/>

Belgian Science Policy since 1895

- **1895:** Frans Schollaert becomes the first Minister for Home Affairs and Sciences & Arts
- **1919:** Universitaire Stichting
- **1927:** Redevoering van Seraing
- **1928:** *Fonds National de la Recherche Scientifique / Nationaal Fonds voor Wetenschappelijk Onderzoek (NFWO/FNRS)*



Sources:

https://www.dbnl.org/tekst/hall014gesc02_01/hall014gesc02_01_0029.php

https://nl.wikipedia.org/wiki/Toespraak_van_Seraing

https://www.bestor.be/wiki_nl/index.php/Nationaal_Fonds_voor_Wetenschappelijk_Onderzoek



- **1959:** Creation of the structures for the political and administrative coordination of science policy, including the *Interministerial Commission for Science Policy* (ICSP) and the *National Council for Science Policy* (NCSP).
- **1968:** Creation of the post of Minister for Science Policy (Théo Lefèvre). The *Science Policy Office* (SPO) is established as a State administration.

Sources:

https://www.bestor.be/wiki_nl/index.php/Voor_wetenschap_en_vaderland._Het_Belgische_wetenschapsbeleid

https://www.belspo.be/belspo/organisation/about_history_en.stm

- **1970-1976: Project Sea**

- Phase I of the Belgian Federal North Sea Research Programme; budget: 4,4M€

- about 200 researchers from 40 different university laboratories and scientific institutes worked together on the programme. For 5 years, samples were collected within a network of 25 marine stations, at a frequency of 4 to 6 campaigns a year. The results were collated in a range of mathematical models developed over the period.

- **1975: Creation of the *European Space Agency***

- European Interministerial Space Conference held in Brussels and chaired by Belgium.

- **1976: *Management Unit of the Mathematic Model of the North Sea (MUMM)*.**



RV Belgica & Plane OO-MMM



RV Belgica A962: 1984-2021

RV Borys Aleksandrov, Odesa: since 2021

RV Belgica: since 2022



Britten-Norman BN-2A-21 Islander
since 1975

- **1977-2010: North Sea Programme Phase II to Phase VII**
- **2012-2017: Phase VIII**
 - Embedded in the BRAIN-be programme: Belgian Research Action through Interdisciplinary Networks
- **2018-2023: BRAIN-be 2**
- **2024: new research programmes**
 - Policy for Science: funding Federal Research Institutes
 - Science for Policy: thematic top-down projects



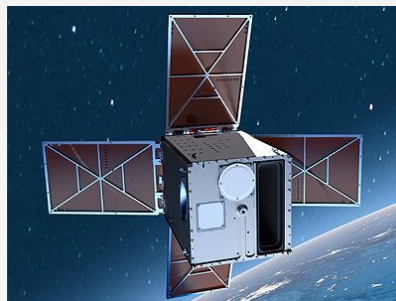
P₄Science

S₄Policy

Earth and Sea observation from space



SPOT 4 Satellite



PVCC Satellite

Programmes:

TELSAT I 1985 - 1989

TELSAT II 1989 - 1993

TELSAT III 1993 - 1996

TELSAT IV 1996 - 2000

STEREO I 2001 - 2006

STEREO II 2007 - 2013

STEREO III 2014 - 2022

STEREO IV 2022 - 2029



Ariane 6



PROBA-V Satellite

images (artist's impressions) by [ESA](#)



Belnet

- **1989: 'Information Technologies Impulse' program**
 - The main goal of this program is to promote the use of supercomputers by Belgian researchers. A second part of this program focuses on installation of a network that allows researches to access these supercomputers remotely.
- **1993: Creation of Belnet**
 - Belnet's mission is to operate a high-performance network for universities, colleges, research centres and government departments. The Belnet network is also the gateway to other research networks worldwide and is therefore an engine for (inter)national cooperation in education and research.
 - Belnet also manages the Belgian internet node BNIX.
- **2019: EuroQCI**
 - European Quantum Communication Infrastructure with Belnet, IMEC and the Royal Military Academy.

Sources: <https://www.belnet.be/en/about/history>
<https://digital-strategy.ec.europa.eu/en/policies/european-quantum-communication-infrastructure-euroqci>

Connecting communities

Belnet



- **1988-1989:** Federalisation of the Education Ministry
- **1994:** *Federal Office for Scientific, Technical and Cultural Affairs (OSTC):*
 - Integration into the SPO of cells responsible for national matters at the "Ministère de l'Education nationale" and the "Ministerie van Onderwijs", the Community Affairs Administration, the State Scientific Institutes and the National Congress Service.
- **1988-2006:** Federalisation of the *Fonds National de la Recherche Scientifique / Nationaal Fonds voor Wetenschappelijk Onderzoek (NFWO/FNRS)*
 - Flanders: FWO
 - Wallonia: FRS-FNRS
 - Federal: FFWO / FFRS

1999-2000: Copernicus Reform

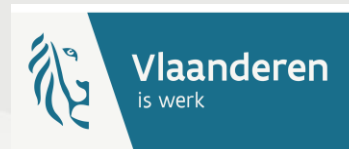
- Modernisation of the Belgian federal public administration:
 - Ministries are being replaced by *Federal Public Services* (FPS) and *Federal Public Planning Services* (PPS):
 - The *Office for Scientific, Technical and Cultural Affairs* (OSTC) becomes the *Belgian Science Policy Office* (BELSPO), a PPS “originating” from the FPS *Economy, SMEs, Self-Employed and Energy*.
 - Federal civil servants are selected based on competencies (by exams) in stead of by political background of the candidate:
 - Until 2023: *Selor* ; since 2023: werkenvoor.be.
 - Federal civil servants are autonomous.
- Royal Decree 12 December 2002

Sources: <https://nl.wikipedia.org/wiki/Copernicushervorming>
https://www.belgium.be/en/about_belgium/government/federal_authorities/federal_and_planning_public_services
<https://www.belspo.be/belspo/organisation/law/SPP-POD.pdf>

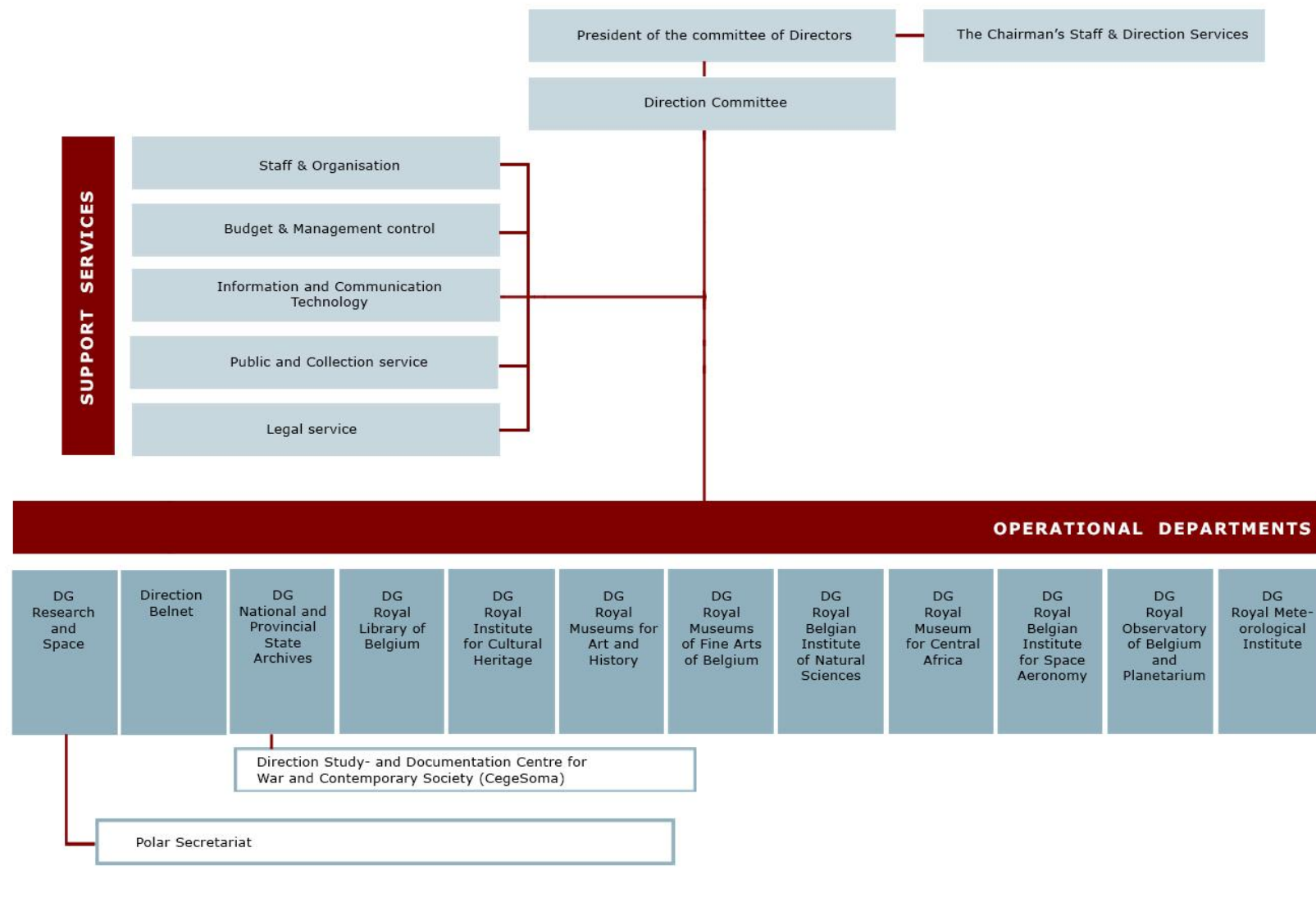


Belgian Public Research Funders

- **Federal:**
 - Belgian Science Policy Office (BELSPO)
- **Flanders:**
 - Fonds voor Wetenschappelijk Onderzoek (FWO)
 - Vlaamse Agentschap Innoveren en Ondernemen (VLAIO)
 - Department of Work, Economy, Science, Innovation and Social Economy (WEWIS)
- **Wallonia:**
 - Fonds de la Recherche Scientifique (FRS–FNRS)
 - Service Public de Wallonie - Department of Research Programmes
 - Fédération Wallonie-Bruxelles
- **Brussels:**
 - Innoviris



Organigram of BELSPO



Federal Scientific Institutions

Fully funded by Belspo

- Royal Belgian Institute of Natural Sciences
 - (Dinosaur) Museum
 - Management Unit of the Mathematical Model of the North Sea (MUMM)
 - Geological Survey of Belgium...
- Royal Meteorological Institute
- Royal Belgian Institute for Space Aeronomy
- Royal Observatory of Belgium & Planetarium
- Royal Museum for Central Africa
- Royal Institute for Cultural Heritage
- Royal Museums for Art and History
- Royal Museums of Fine Arts of Belgium
- Royal Library of Belgium (“Albertina”)
- State Archive
 - Study- and Documentation Centre for War and Contemporary Society (CegeSoma)

Other public research institutions

- Federal
 - Sciensano (Ministry of Health)
 - War Heritage Institute, National Geographic Institute (Ministry of Defence)
 - National Institute for Criminalistics and Criminology (Ministry of Justice)
 - Etc...
- Flanders
 - Universities
 - VLIZ: Flanders Marine Institute
 - ILVO: Institute for Farming, Fisheries and Food Research
 - INBO: Research Institute Nature & Forest
 - Etc...
- Wallonia
 - Universities
 - Etc...

International representation

European:

- Joint Programming Initiatives

- [JPI Climate](#)
- [JPI Oceans](#)
- [JPI MYBL](#)



- Partnerships

- [SBEP](#): Sustainable Blue Economy Partnership



- Research Infrastructures

- [MIRRI](#): Microbial Resource Research Infrastructure
- [EMBRC](#): European Marine Biological Resource Centre
- [EOSC](#): European Open Science Cloud

- Etc...



EMBRC
EUROPEAN
MARINE
BIOLOGICAL
RESOURCE
CENTRE

United Nations:

- [IOC/UNESCO](#): Intergovernmental Oceanographic Commission

- [ISA](#): International Seabed Authority

- UNCLOS: United Nations Convention on the Law of the Sea

- Etc...



Federaal Regeerakkoord 2025-2029

“RECHTSZEKERHEID

- De regering zal de huidige regeling inzake de BV-vrijstelling voor O&O medewerkers verder verduidelijken en kwalitatieve verbeteringen aanbrengen om een maximale rechtszekerheid, efficiëntie, budgettaire bewaking en stabiliteit te waarborgen.

Het toepassingsgebied van de gedeeltelijke vrijstelling van doorstorting van bedrijfsvoorheffing wordt hervormd voor betreft onderzoek bij universiteiten, hogescholen, universitaire ziekenhuizen en fondsen voor wetenschappelijk onderzoek. Verder voorzien we in een verduidelijking van het toepassingsgebied voor erkende wetenschappelijke instellingen door te voorzien in objectieve criteria en transparante regels.” (p. 44)

Federaal Regeerakkoord 2025-2029

“WETENSCHAPSBELEID

- De Federale regering ondersteunt, binnen haar bevoegdheidsdomeinen, de Belgische kandidatuur voor de bouw van de Einstein Telescoop, samen met Nederland en Duitsland.” (p. 66)

“BESTUURSZAKEN

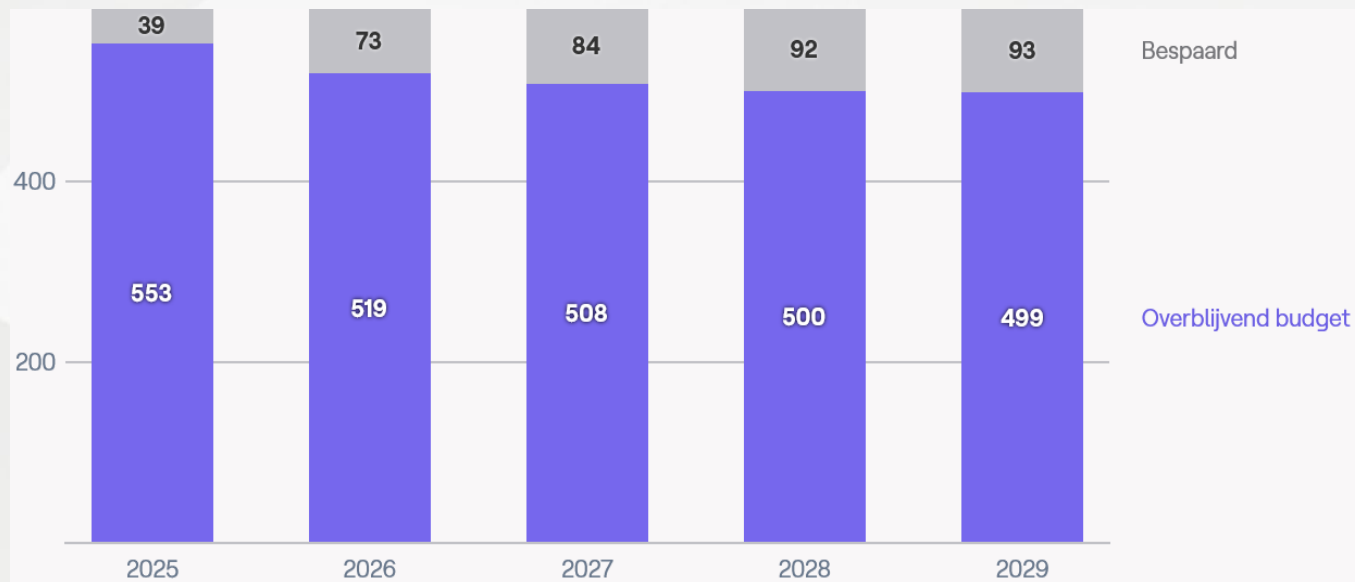
- De twee Programmatorische Overheidsdiensten (POD's) worden ingekanteld in hun FOD van oorsprong.” (p. 68)

“FEDERALE WETENSCHAPPELIJKE EN CULTURELE INSTELLINGEN

- De regering wil de Federale Wetenschappelijke en Culturele instellingen dynamiseren. De bevoegde minister zal de nodige voorstellen formuleren om deze instellingen te professionaliseren en een grotere efficiëntie te organiseren.” (p. 75)

Belspo Budget 2025-2029

- The federal government plans to save *at least* 381M€ on Science Policy during its term.



- above is probably an under-estimation, because:
 - Every federal government service, including the POD Science, must save 9 percent on operating costs and personnel by the end of the legislature.
 - Some very vaguely defined deductions in the savings tables of the “Arizona” government could ultimately also lead to science policy.

Source:

<https://www.vrt.be/vrtnews/nl/2025/02/15/besparingen-wetenschapsbeleid-belgische-ruimtevaartindustrie-ong/>



Vanessa Matz,
Federal Minister for the
Modernization of
Government,
responsible for Public
Enterprises, Civil
Service, Building
Management,
Digitalization and
Federal Scientific
Institutions

- « La situation géopolitique impose des investissements au niveau de la défense, mais il ne s'agit pas seulement d'armement lourd, ce sont aussi des investissements dans le spatial qui garantit notamment notre capacité de résilience et notre autonomie stratégique par rapport aux Etats-Unis. Le maintien d'un niveau élevé d'engagement sur la politique spatiale nous permettra également de remplir nos engagements en matière de dépenses de défense à hauteur de 2 % du PIB. »
- « la politique spatiale existe en tant que telle. Elle n'a pas besoin d'être utile à notre défense pour être indispensable. Il faut certes créer des ponts et avoir des partenariats, mais je veux signifier que le spatial exerce des missions importantes sur d'autres enjeux, terriblement importants, comme la gestion de crise, les événements climatiques comme les inondations, l'observation de la Terre... »
- « la réponse viendra quand le budget sera discuté [...] Nous travaillons pour qu'elle (= la contribution à l'ESA) soit maintenue. Mais il n'y a pas encore d'accord formel sur le budget. »

Beleidsverklaring Wetenschapsbeleid

13/03/2025

- For the duration of the current legislature: 2025-2029
- Strengthen synergies between science policy and defense industry
 - Dual use of space research
- Making co-operation between industry and the public sector
 - Bio-pharmacy
- Dynamisation of Federal Scientific Institutions
- Einstein telescope
- Reforms: budget, personnel, administrative simplifications...

Beleidsnota Wetenschapsbeleid 2025

24/04/2025

- For the year 2025
- Modernisation of the administration
- Making space industry more competitive
- DEFRA: Defence-related Research Action
- Girls in STEM
- Integration of BELSPO in FPS Economy
- Optimising supporting services
- Evaluation of the missions of Federal Scientific Institutions
- Small Nuclear Reactors, Hydrogen
- Making private gifts easier, fiscal stimulants

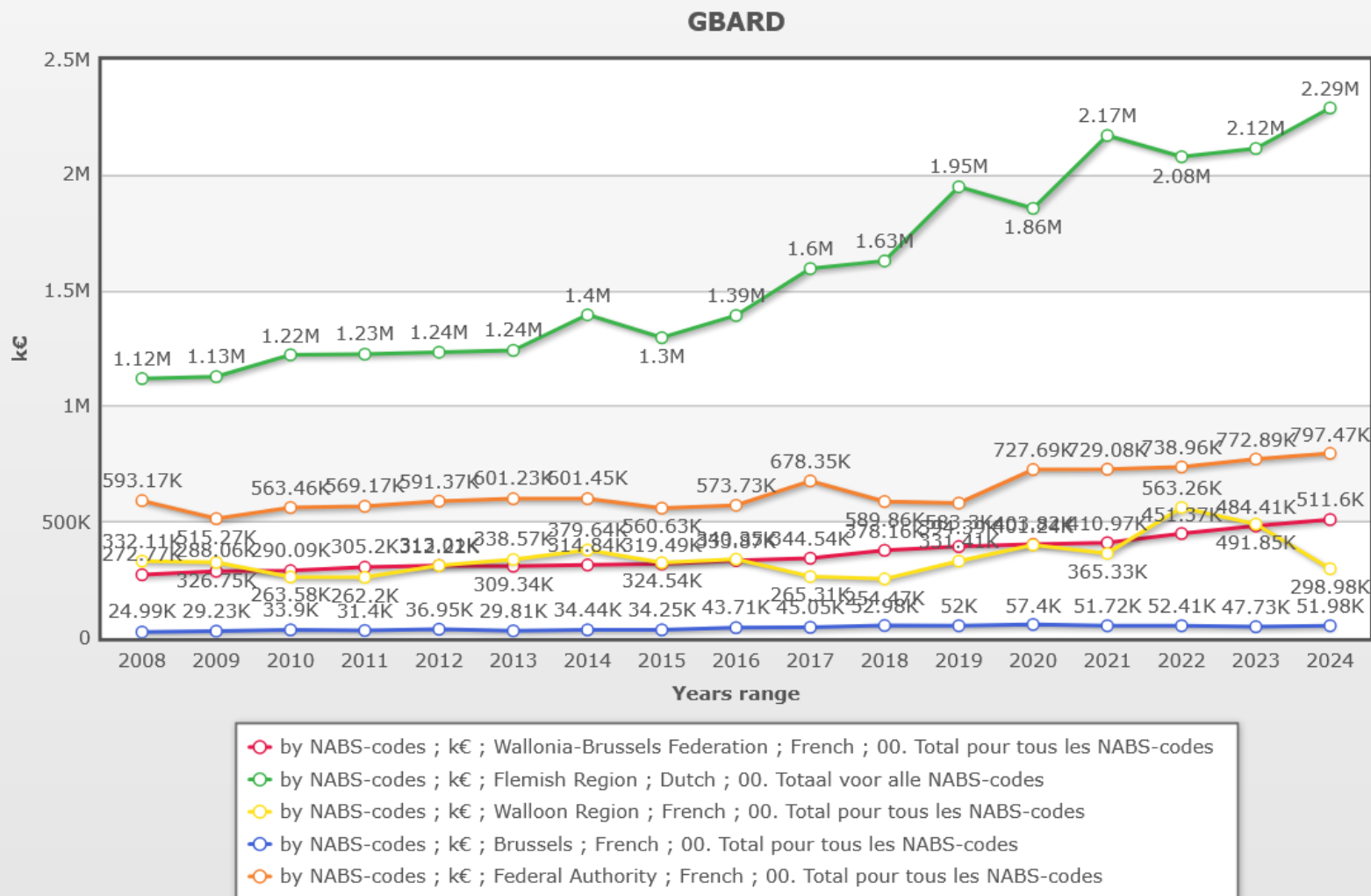
Source: Belgische Kamer van Volksvertegenwoordigers, DOC 56 **0856/031**

<https://www.dekamer.be/doc/FLWB/pdf/56/0856/56K0856031.pdf>

Some statistics

...in case I have time left...

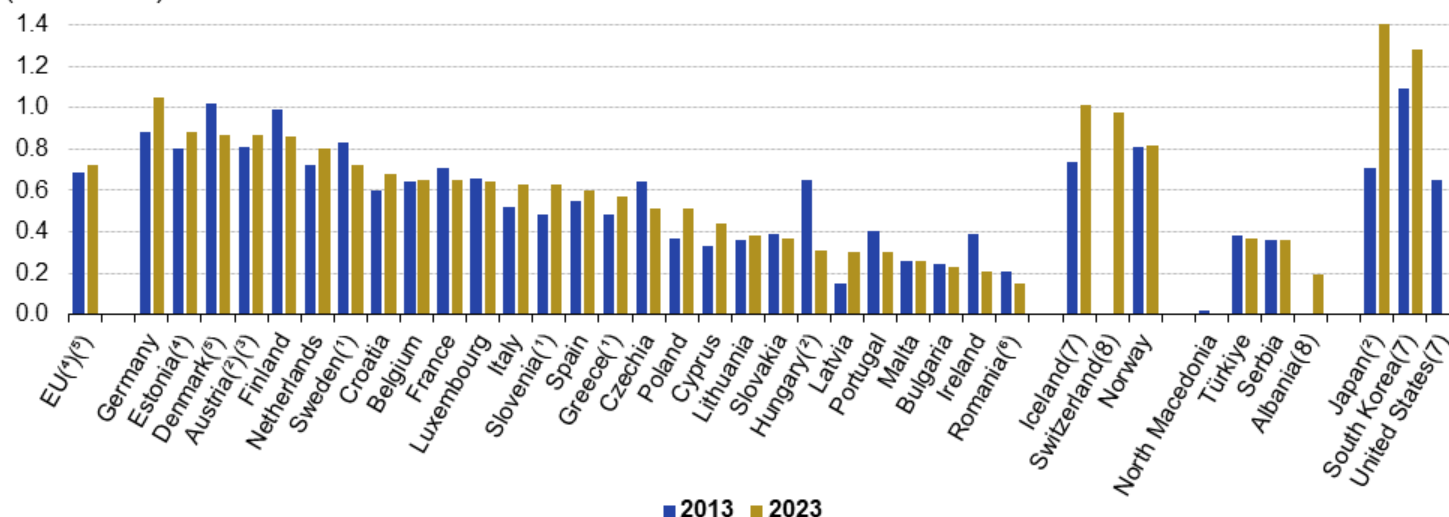
Government budget allocations for R&D (GBARD)



Government budget allocations for R&D (GBARD)

Government budget allocations for R&D, 2013 - 2023

(% of GDP)



(¹) break in time series in 2023

(²) definition differs in 2013

(³) definition differs in 2023

(⁴) estimated in 2013

(⁵) estimated in 2023

(⁶) break in time series in 2013

(⁷) provisional data for 2023

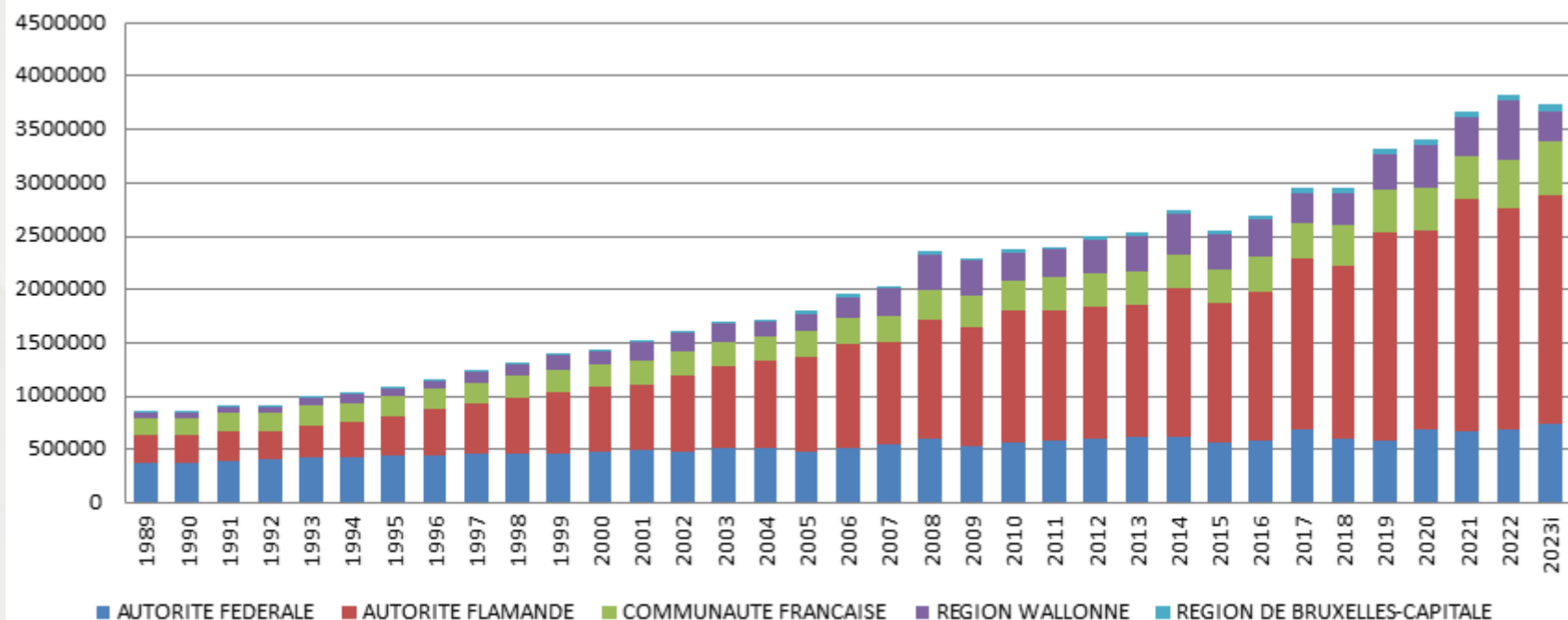
(⁸) data not available

Source: Eurostat (online data code: GBA_NABSFN07);

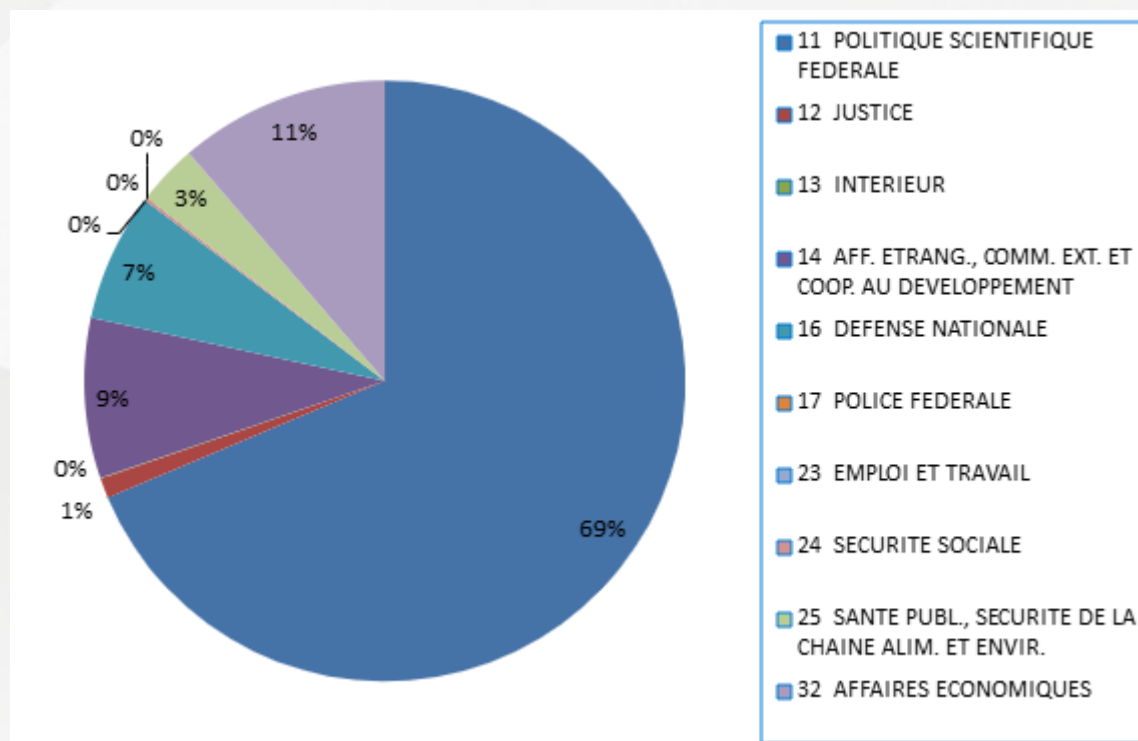
OECD Government budget allocations for R&D for data on Japan, China (except Hong Kong), South Korea and the United States.

eurostat 

Public credits for R&D (GBARD) Evolution by entity (in thousands of euros)



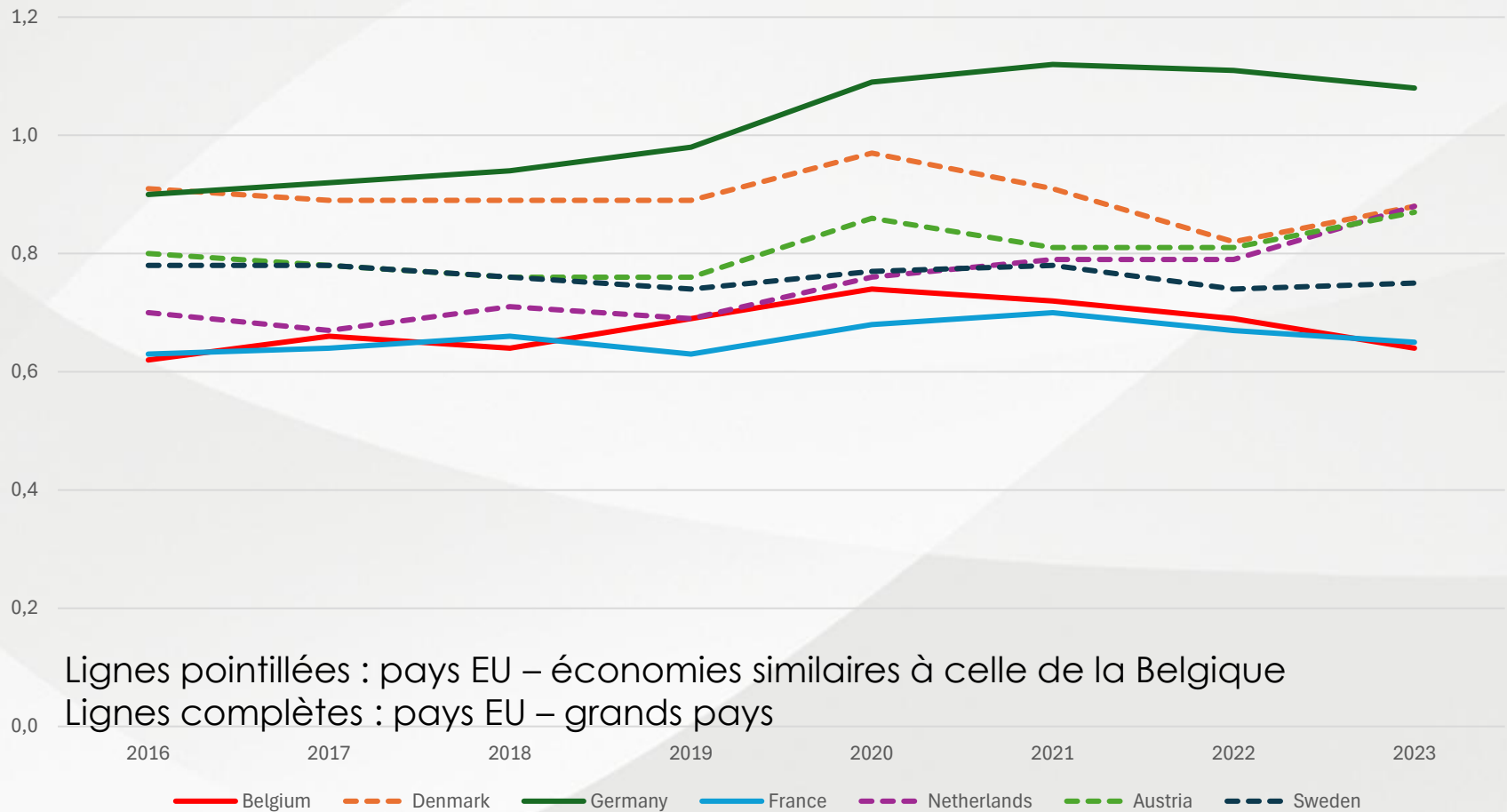
Public credits for R&D (GBARD) federal authority by department (2023)



Source: FPS BOSA

<https://bosa.belgium.be/fr/publications/spending-review-lefficacite-de-laide-federale-en-matiere-de-recherche-et-developpement>

Government appropriations for R&D (GBARD) as a % of GDP



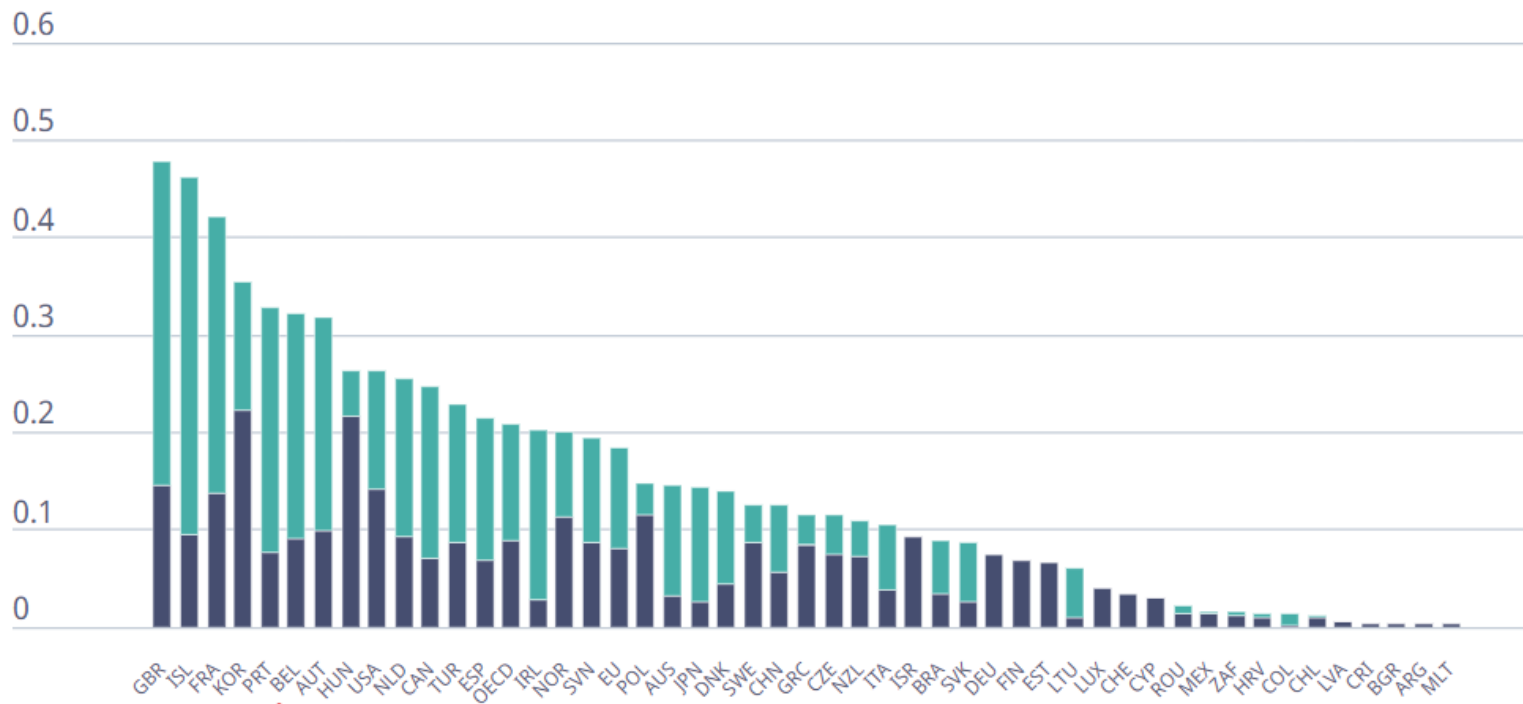
Source: FPS BOSA

<https://bosa.belgium.be/fr/publications/spending-review-lefficacite-de-laide-federale-en-matiere-de-recherche-et-developpement>

R&D support: tax incentives vs. direct support international comparison / % of GDP (2021)

Direct government funding and government tax support for business R&D, 2021

■ Direct government funding of business R&D ■ Government tax relief for R&D expenditures

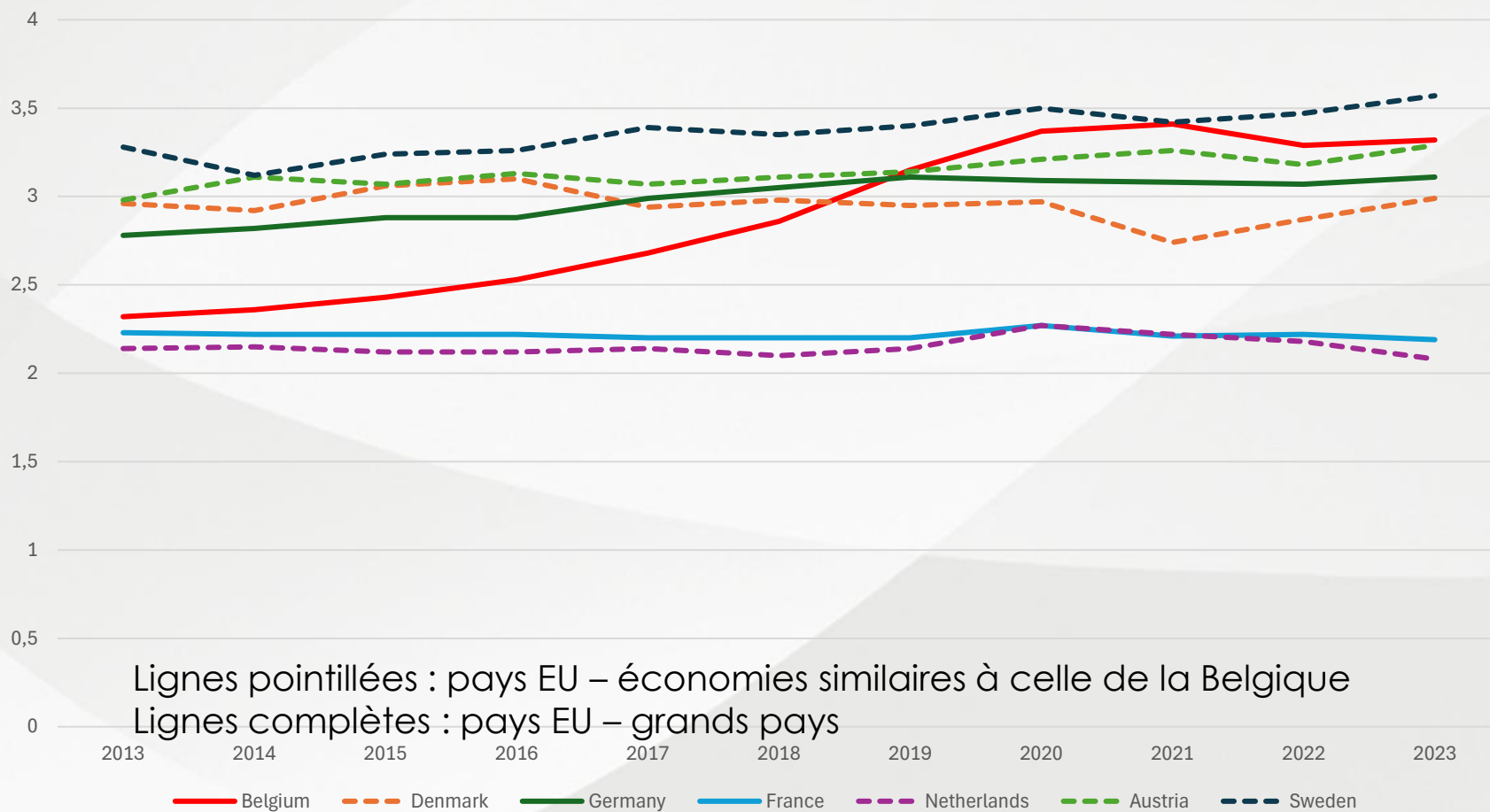


Belgium

Source: FPS BOSA

<https://bosa.belgium.be/fr/publications/spending-review-lefficacite-de-laide-federale-en-matiere-de-recherche-et-developpement>

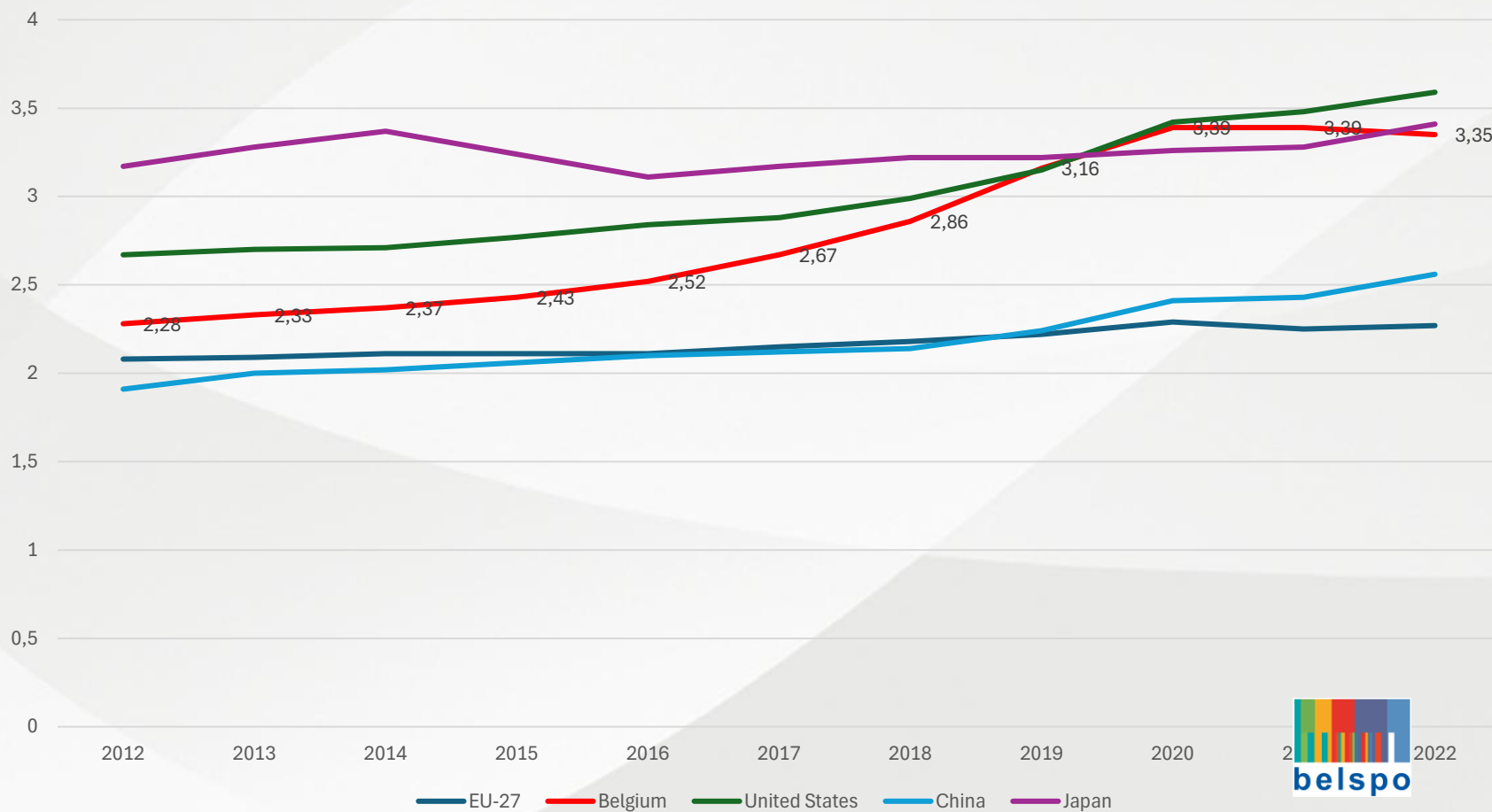
R&D intensity – comparison EU R&D expenditure / GDP (%)



Source: FPS BOSA

<https://bosa.belgium.be/fr/publications/spending-review-lefficacite-de-laide-federale-en-matiere-de-recherche-et-developpement>

R&D intensity – international comparison of R&D expenditure / GDP (%)



Source: BOSA

<https://bosa.belgium.be/fr/publications/spending-review-lefficacite-de-laide-federale-en-matiere-de-recherche-et-developpement>



Final remarks

- Marine & oceanographic science policy are somewhat over-emphasized in this presentation, simply because that is what I know best.
- Not much philosophical research on science policy or on the practice of science policy has been done yet, there is still a lot of low hanging fruit.
 - Feel free to contact me if you want to do research in that field.
- A career in science policy may be interesting for philosophers of science and historians of science:
 - You learned thinking about science; this is an opportunity to bring your wisdom & knowledge into practice.
 - Also for researchers who did not complete their PhD:
 - Understanding why & how a research project fails is relevant experience!
 - There are many organisations active in the field:
 - National and regional authorities
 - International authorities: European Community, United Nations...
 - Non-governmental and intergovernmental organisations
 - Scientific institutions, universities, industry...
 - In that case, the job titles you are looking for are “policy officer” & “programme/project manager”

Related talks by Koen Lefever

- “Belgian Federal Marine Science Policy”
 - Marine Data and Sustainable Development Goals Conference
 - The Royal Academy for Overseas Sciences (RAOS) and the Chinese Academy of Sciences (CAS),
 - Brussels 4-5 June 2024
 - [Slides \(PDF\)](#)
- “Belgian Marine Science Policy: an Interdisciplinary Approach in an International Context”
 - LRR12: Logic, Reasoning and Rationality 2024 Workshop "Transforming Science"
 - Ghent 24-26 April 2024
 - [Slides \(PDF\)](#) & [Abstract \(PDF, page 11\)](#)
- “Joint Programming Initiative Healthy and Productive Seas and Oceans (JPI Oceans)”
 - FELNET studiedag "Tussen Bubbels en Silo: sporen naar adequate informatie"
 - Brussels, 24 November 2022
 - [Slides \(PDF in Dutch\)](#)