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Increasing Public Investment, Fostering Digitalization, and Supporting the Green Transition: A Difficult Challenge

Xun Li and Yu Ching Wong

SIP/2025/019

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Increasing Public Investment, Fostering Digitalization, and Supporting the Green Transition: A Difficult Challenge

Prepared by Xun Li and Yu Ching Wong

Authorized for distribution by Jean-François Dauphin
March 2025

ABSTRACT: Public investment in Belgium has been low historically. Against severe budgetary constraints and fiscal consolidation requirements, public investment should however be preserved or, ideally, increased to mitigate the demand impact of consolidation and enhance productive capacity to lift potential growth. Furthermore, there is growing need for strategic public investment to facilitate digitalization and the green transition. This paper examines these intertwined challenges and proposes policy measures to help bolster public investment.

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Increasing Public Investment, Fostering Digitalization, and Supporting the Green Transition: A Difficult Challenge

Belgium

Prepared by Xun Li and Yu Ching Wong

INTERNATIONAL MONETARY FUND

BELGIUM

SELECTED ISSUES

March 3, 2025

Approved By
European Department

Prepared By Xun Li and Yu Ching Wong (both EUR)

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INCREASING PUBLIC INVESTMENT, FOSTERING DIGITALIZATION, AND SUPPORTING THE GREEN TRANSITION: A DIFFICULT CHALLENGE UNDER FISCAL CONSOLIDATION[1]

Public investment in Belgium has been low historically. Against severe budgetary constraints and fiscal consolidation requirements, public investment should however be preserved or, ideally, increased to mitigate the demand impact of consolidation and enhance productive capacity to lift potential growth. Furthermore, there is growing need for strategic public investment to facilitate digitalization and the green transition. This paper examines these intertwined challenges and proposes policy measures to help bolster public investment.

A. Introduction

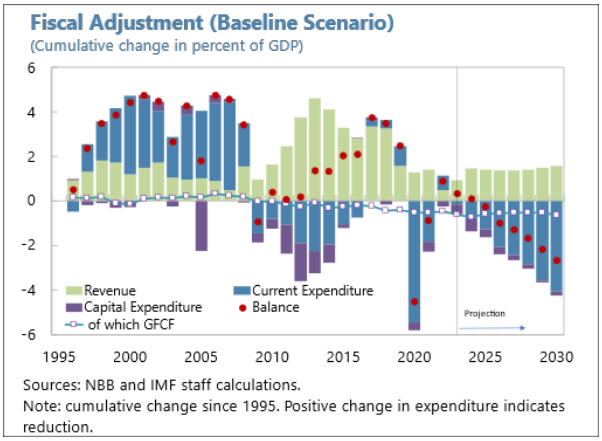
1. Belgium needs sustained fiscal consolidation. Despite the unwinding of pandemic and energy crisis support measures, public expenditure faces ongoing pressures from wage and social benefit indexation, interest expenses, defense spending, and aging costs, which are projected to persist into the medium term. If current policies remain unchanged, the fiscal deficit is expected to widen by 3 percentage points (ppts) of GDP to about 7.0 percent of GDP and public debt to increase by close to 20 ppts of GDP to 125 percent of GDP by 2030 compared to 2023 levels. The large budget deficits and rising public debt call for sustained fiscal consolidation efforts to rebuild buffers.

2. At the same time, higher public investment is needed to lift potential growth, promote digitalization, and foster the green transition. Rationalizing public consumption will need to be at the core of the fiscal adjustment. In contrast, public investment in infrastructure and human capital should be preserved or, ideally, increased to mitigate the demand impact of consolidation while boosting potential growth through increased productive capacity (Box 1). Notably, a higher level of investment is needed to support digitalization, which will enable businesses and public services to operate more efficiently, and foster innovation and productivity growth. Moreover, a substantial increase in investment for the green transition is essential to accelerate the development and use of clean technologies, reduce reliance on fossil fuels, and foster sustainable economic growth by reducing climate risks and losses in the long run.

3. Thus, securing a pivotal shift towards growth-enhancing public investment within a decreasing overall spending envelop is essential. Historically, Belgium has had relatively low levels of public gross fixed capital formation (GFCF). Capital spending has not declined significantly

[1] Prepared by Xun Li, and Yu Ching Wong (both EUR). The chapter benefited from useful comments by Jean-François Dauphin and Mark Horton. The authors also appreciate the helpful suggestions and discussions from Simon Black, Emanuele Massetti and Nate Vernon (all FAD), as well as Stefan Van Parys, Thomas Stoerk, and participants at a National Bank of Belgium seminar.

during periods of fiscal consolidation (1996–2007), nor has it increased in post-crisis periods, such as after the pandemic. The relatively large increase in capital spending in 2011–12 (by 0.9 and 0.4 ppt of GDP) was primarily due to changes in other capital expenditures. Looking ahead, amid severe budgetary constraints and the need for fiscal consolidation to address long-term spending pressures stemming from aging population and defense needs, fiscal adjustments will require larger reductions in current expenditures and/or increases in revenue to at least maintain capital spending at its current levels.



Sources: NBB and IMF staff calculations.
Note: cumulative change since 1995. Positive change in expenditure indicates reduction.

Box 1. Public Investment: A Catalyst for Demand and Growth Potential

Public investment is generally found to have a relatively strong short-term impact, despite uncertainty surrounding the size of the multipliers, which are typically influenced by factors such as country-specific conditions, time duration, macroeconomic conditions, financing, and debt sustainability (ECB, 2016; IMF 2020).

- Recent findings from Ciaffi et al. (2024) indicate that for OECD countries, public investment multipliers range between 1.36 and 2.30 over a five-year period, and are higher than public consumption multipliers (0.77-1.78). They emphasized that public investment leads to higher reduction in the public debt-to-GDP ratio than public consumption.[1]
- Small open economies, like Belgium, tend to have lower multipliers. NBB (2017) estimated a public investment multiplier of about 1.5 over 1-2 years and about 1.8 over 10 years and highlighted that debt-financed public investment tends to have a higher short-term GDP impact than tax-financed investment. Additionally, the efficiency of public investment is crucial, as investments that effectively enhance productive capacity generate larger multipliers.

A policy simulation using the IMF's Global Integrated Monetary and Fiscal Model (GIMF) indicates that a gradual expenditure-neutral shift from current spending towards public investment (peaking at 2 percent of GDP after five years) in Belgium could yield a cumulative GDP increase of about 6 percent in the long run, as general government fixed assets have been considerably lower as a share of GDP compared to peer countries since the 1980s. The GDP increase is driven by improved productivity, lower prices, and increased exports (IMF, 2018).

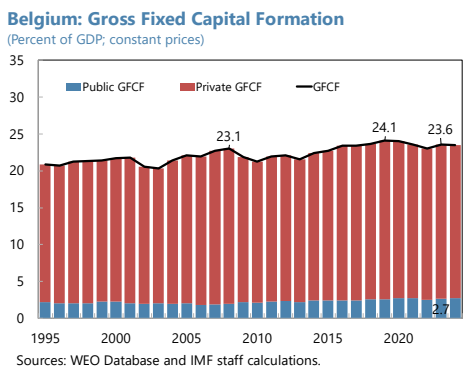
1/ Using the Local Projections approach to a dataset of 14 OECD countries, including Belgium, for the period 1981–2017.

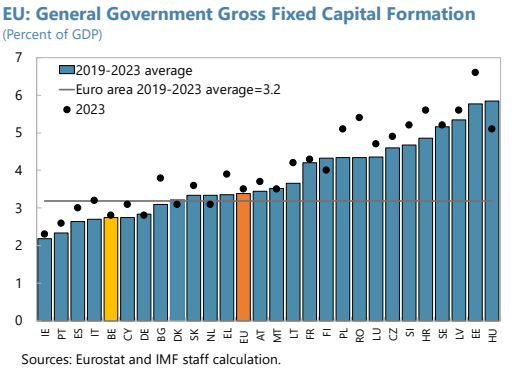
4. The reminder of the paper is as follows. Section B provides an overview of the current state of public investment in Belgium. Section C examines the need for public investment to support digitalization and the green transition in the medium term. Section D discusses policy options to overcome the challenges in gearing up public investment amid fiscal adjustment, including by improving the overall efficiency of public spending to create fiscal space, improving coordination of public investment, incentivizing private investment, and increasing the use of EU funding whenever possible. Section E concludes.

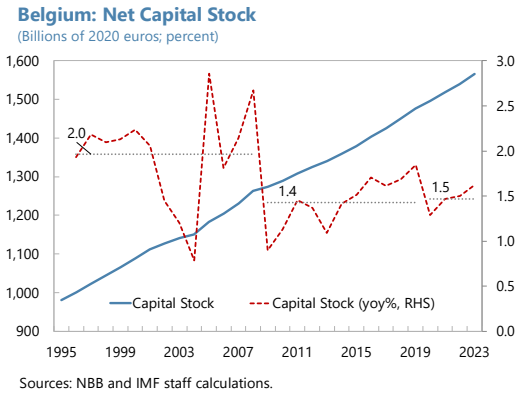
B. Current State of Public Investment

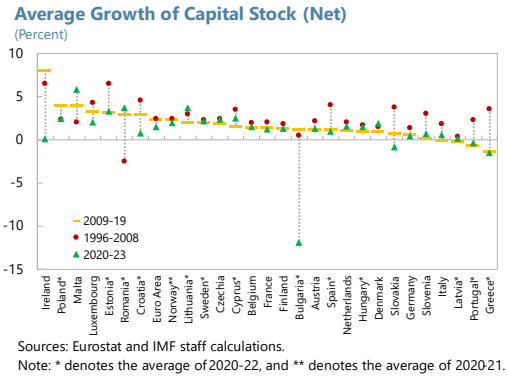
5. GFCF has gradually increased but remains low. GFCF—the acquisition of physical assets (e.g., building, machinery, and infrastructure) minus disposals—has increased marginally in Belgium over the last three decades. However, at 23.6 percent of GDP in 2023, it remains below the pre-pandemic peak of 24 percent of GDP in 2019. Public GFCF has remained below 3 percent of GDP since 1990s, accounting for about one-tenth of total GFCF and was only 2.7 percent of GDP in 2023. In comparison with neighboring economies, Belgium's public GFCF as a percentage of GDP has been consistently lower than those of France and the Netherlands, which have hovered in the 3.5-4 percent of GDP range, while it is comparable to that of Germany. More broadly, the average growth of total net capital stock—a key ingredient of future growth—slowed in Belgium following the global financial crisis during the period 2009–19, before seeing a slight recovery in 2020–23. Throughout all periods, Belgium's growth in total capital stock has consistently ranked slightly below the euro area average (Figure 1).

Figure 1. Gross Fixed Capital Formation and Capital Stock





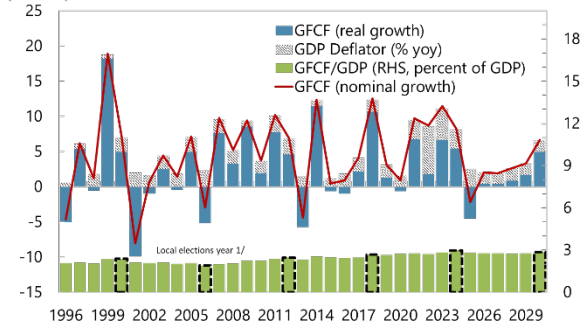




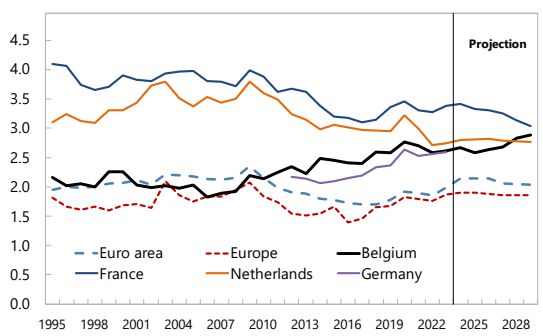
6. Public investment is expected to remain subdued over the medium term. The coalition government agreement in 2020 set a target to raise public investment to 4 percent of GDP by 2030, initially financed with Next Generation EU grants. However, NGEU-financed public investment under the Resilience and Recovery Fund quickly stalled making achieving this target unlikely. Indeed, the coalition agreement of the new government formed in February 2025 aims for an annual investment

of 3 percent of GDP over the next four years, marginally above the EC's economic governance rules requirement to exceed 2.8 percent of GDP (Figure 2). It is important to note that measuring the exact size of public spending that augments productive capacity is challenging as public GFCF itself does not cover it all. Taking into account capital transfers in addition to public GFCF, the overall level of public investment may be slightly higher (Box 2).[2]

Figure 2. Public Gross Fixed Capital Formation



Sources: NBB and IMF staff calculation.
1/ The planning of public GFCF tends to be influenced by the six-year local elections cycle.

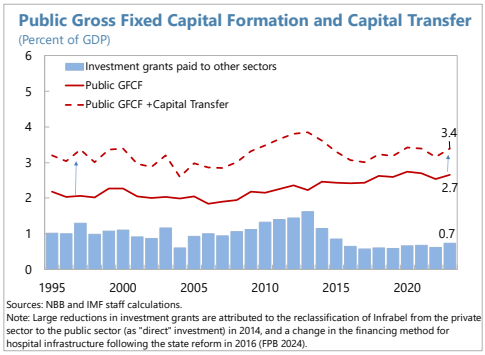


Sources: Eurostat, WEO (October 2024), and IMF staff estimates.

Box 2. Consideration on Measurement of Public Investment

A broader definition and data coverage would be useful in fully capturing the effective size and impact of public spending that augments productive capacity.

Capital transfers. One concept is accounting for capital transfers in the form of investment grants paid to other sectors (i.e., to companies that are not part of the government sector) which contribute to public investment (FPB 2024). The size of investment grants is typically around 1 percent of GDP in Belgium. Therefore, as of 2023, in addition to investments made directly by the government (public GFCF) of 2.7 percent of GDP, public investment (i.e., government expenditure on the purchase of fixed assets) including capital transfers of 0.7 percent of GDP amounted to 3.4 percent of GDP. The size of government capital transfers in Belgium is comparable to that of Germany and France (close to 1 percent of GDP) but higher than that in the Netherlands (about ¼ percent of GDP). Therefore, under the boarder definition of total public investment, sum of public GFCF and capital transfers, Belgium is at similar level to Germany and slightly lower than France and the Netherlands for 2005–22. (FPB 2024).



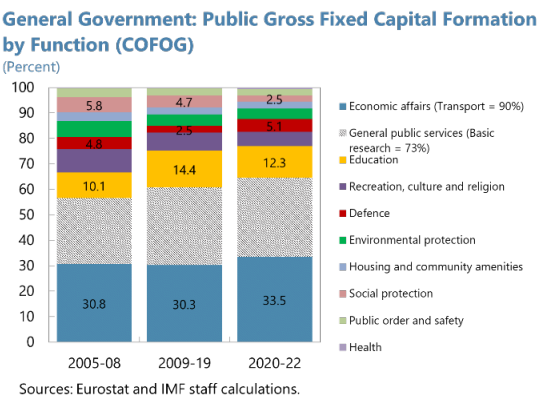
Sources: NBB and IMF staff calculations.
Note: Large reductions in investment grants are attributed to the reclassification of Infrabel from the private sector to the public sector (as "direct" investment) in 2014, and a change in the financing method for hospital infrastructure following the state reform in 2016 (FPB 2024).

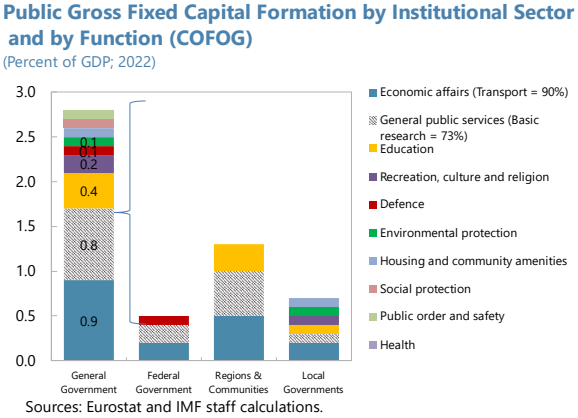
7. Half of total public GFCF under the general government account is concentrated in transport and basic research. The transport sector, which accounts for 90 percent of economic

[2] See Hallaert (2023) and accompanying SIP for discussions on public investment in human capital via healthcare and education.

affairs by function, received by far the largest share of public GFCF, accounting for 31 percent of total or 0.8 percent of GDP in 2022. This is primarily explained by the dense transport network and the classification of railway infrastructure companies in the government sector (FPB 2024b). The next largest is basic research, primarily conducted within universities, which accounts for 73 percent of general public services by function. It received 22 percent of total public GFCF or 0.6 percent of GDP in 2022.[3] Notably, in 2020-22, the share of public GFCF allocated for economic affairs increased to one third from about 30 percent of total, and the share for defense doubled to 5 percent of total, with corresponding share reductions in social protection and education (Figure 3).

Figure 3. Public GFCF by Function (COFOG)





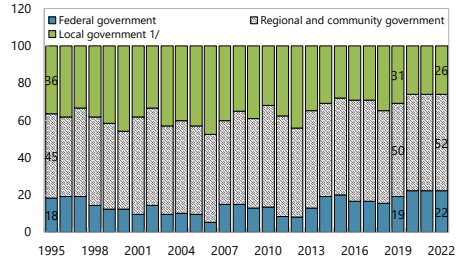
8. Over half of total public GFCF is made by regional and community governments, following successive rounds of state reforms and fiscal decentralization. The sixth state reform in 2011 transferred additional competencies from the federal to the regional and community governments. Regions are responsible for territorial matters, including economic development, infrastructure (excluding railway), environment, housing, and employment. Communities oversee language issues and policies related to individual and family such as culture, education, and family allowances. Public GFCF implemented by regions and communities increased to 52 percent of the total in 2022, from 45 percent in 1995. These investments cover key areas including education (75 percent of total public investment in education), economic affairs (63 percent), and general public services (56 percent) (Figures 3, 4). However, the total share of public GFCF undertaken by the federal government has increased in recent years due to rising defense-related investment. Public investment in defense is projected to double to 0.6 percent of GDP in 2026 compared to 2023, broadly in line with Belgium's commitment to progressively increase the defense budget to 2 percent of GDP in line with NATO obligations. Overall, the fact that territorial matters including environment, energy policy, transport, and public works are regional competences within the federal

[3] Public GFCF in R&D is predominantly fundamental research conducted in universities in Belgium. The government's support for applicational or commercial R&D is largely based on tax incentives rather than on direct financing (FPB 2024b).

structure adds complexities to the planning, selection, and implementation of public investment projects (see Hearne 2025).

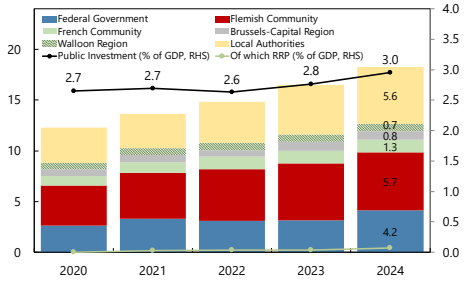
Figure 4. Public GFCF by Government

Public Gross Fixed Capital Formation by Federated Entities
(Percent; current prices)



Sources: Eurostat and IMF staff calculations.
1/ Calculated as general government minus federal and regional and community governments .

Public Investment
(Billions of euros)

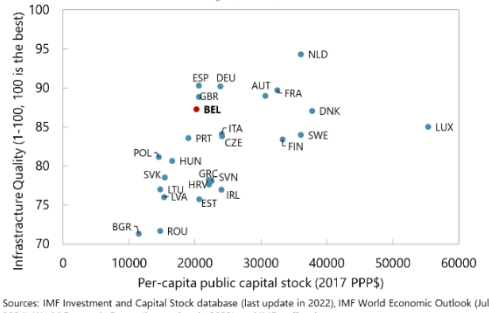


Sources: NBB projections and IMF staff calculations.

9. Existing public infrastructure in Belgium is not operating at the efficiency frontier. Belgium's infrastructure quality somewhat lags that of some European countries at comparable levels of per-capita accumulated public investment, such as Spain, the UK, and Germany. Overall transport infrastructure competitiveness also falls behind that of its neighboring countries, particularly in the road, railroad, and air transport sectors. Furthermore, Belgium's adoption of information and communication technologies (ICT) is below the midpoint level among European countries.

Figure 5. Infrastructure Efficiency

Infrastructure Efficiency (2019)



Sources: IMF Investment and Capital Stock database (last update in 2022), IMF World Economic Outlook (July 2024), World Economic Forum (last update in 2023), and IMF staff estimates.

Europe: Infrastructure Competitiveness (2019)
(Index, from 0 to 100, lower to higher performance)

	Infrastructure						ICT Adoption
		Transport				Utility	
	Overall	Railroad	Air	Road	Sea		
Netherlands	89.2	89.2	83.5	89.8	94.4	99.5	76.3
Spain	83.6	75.4	88.4	89.2	81.6	97.0	78.2
Germany	84.3	82.6	87.2	83.4	83.8	96.2	70.0
France	82.6	83.0	85.3	85.3	76.7	96.9	73.7
Austria	78.7	85.5	68.0	82.7	-	99.3	65.6
United Kingdom	81.0	77.6	86.1	77.9	82.4	96.8	73.0
Belgium	**75.6**	**75.8**	**69.4**	**73.7**	**83.6**	**98.9**	**67.0**
Denmark	75.7	79.5	72.8	81.4	69.0	98.5	83.3
Luxembourg	71.4	83.2	57.4	73.5	-	98.7	78.1
Italy	73.2	76.0	81.2	71.4	64.2	95.0	64.5
Sweden	69.1	54.4	72.7	83.9	65.5	98.9	87.8
Czechia	70.5	79.2	62.0	70.3	-	97.1	68.4
Portugal	71.2	61.7	69.6	88.7	64.9	96.0	71.2
Finland	67.2	62.2	73.9	81.3	51.5	99.6	80.4
Poland	67.8	74.2	64.3	71.6	60.9	94.5	65.4
Hungary	66.0	73.7	56.1	68.3	-	95.3	64.2
Slovak Republic	59.5	75.0	36.9	66.6	-	97.6	69.2
Croatia	62.1	62.0	58.9	77.6	49.7	94.4	60.7
Slovenia	58.3	67.8	44.9	70.1	50.5	97.9	69.2
Greece	60.7	38.5	74.9	68.3	61.0	94.7	64.7
Lithuania	59.2	68.0	50.5	76.3	42.1	94.8	81.5
Ireland	60.4	58.9	71.4	72.6	38.7	93.6	66.6
Latvia	57.3	67.5	58.8	66.1	36.7	94.8	79.7
Estonia	55.7	60.2	46.7	74.2	41.7	95.9	78.8
Malta	55.9	-	58.7	48.6	60.2	94.2	75.5
Cyprus	55.1	-	59.8	68.2	37.3	94.7	62.0
Romania	54.4	65.1	57.1	55.9	39.4	89.0	72.0
Bulgaria	51.7	64.0	53.3	58.4	31.1	91.0	73.4

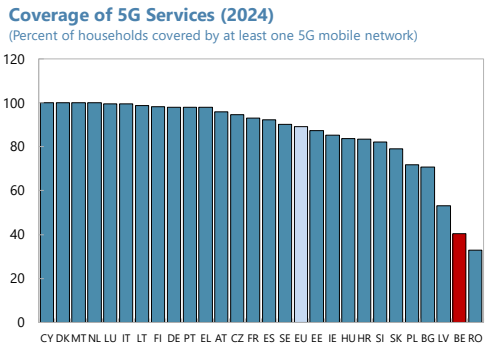
Source: World Economic Forum (last update in 2023).

C. Addressing Investment Needs for Digitalization and the Green Transition

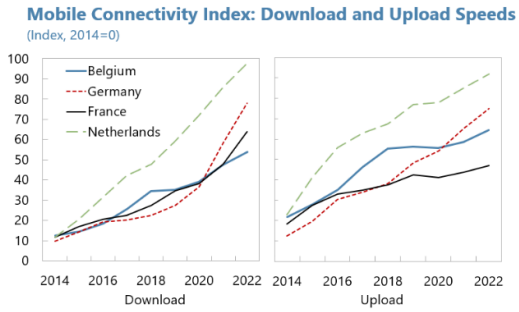
Digital Infrastructure

10. Deployment of ICT needs to be accelerated to close the gap with EU peers. As of 2024, only 30 percent of households in Belgium had access to at least one 5G coverage, ranking second to last in the EU. The mobile upload and download speeds in Belgium were lower than those of neighboring countries in 2022. In 2024, only 25 percent of Belgian households were covered by fiber optic to the premises (FTTP), which enables more seamless access to online services than traditional copper-based connections, placing Belgium the lowest among EU countries. While over 60 percent of companies in Belgium adopted artificial intelligence (AI), cloud computing, or data analytics in 2024 (Figure 6), inadequate digital infrastructure may hinder Belgium's ability to apply cutting-edge technologies in new fields such as telemedicine, autonomous port logistics, and smart cities. So that businesses can leverage the scale and network effects from digital transformation, it is essential to increase investment in telecommunication technologies for data transfer, to improve speed and capacity of wireless networks. According to the European Commission's Digital Decade Country Report, Belgium aims to increase public investment by €892 million or 0.2 percent of GDP by 2030 to align with the EU's 2030 ambitions covering most of the key performance indicators for digitalization.

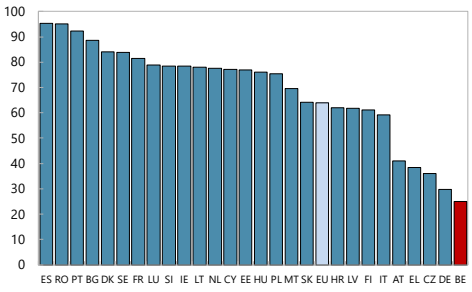
Figure 6. Current State of Digital Infrastructure



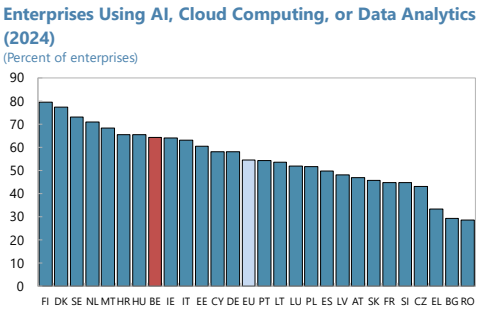
Source: European Commission.



Sources: Global System for Mobile Communications and IMF staff calculation.
Note: The original unit of measurement is in Mbps (from Ookla Speedtest Intelligence) and is indexed by GSMA.



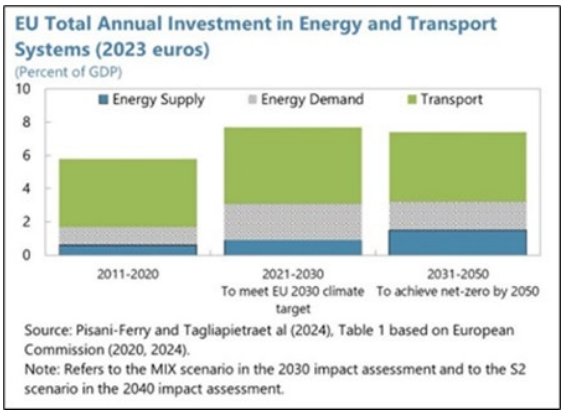
Source: European Commission.



Source: Eurostat.
Note: Enterprises with 10 or more persons employed. All manufacturing and service sectors, excluding the financial sector.

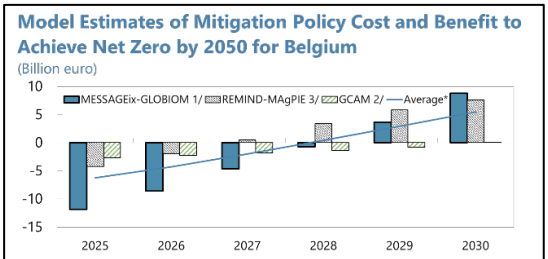
Energy Infrastructure

11. The magnitude of investment needed to achieve the green transition is difficult to quantify precisely but likely sizable. Projections of green investment needs vary among institutions and are subject to considerable uncertainty depending on factors such as underlying assumptions, methodologies, and implementation strategies (see ECB 2025 for recent comparison). For example, the European Commission identified a substantial investment gap in achieving climate objectives. Projections indicate that the EU as a whole must step up its investment to 7.7 percent of GDP in 2021–30, from 5.8 percent of GDP in 2011–20, to meet the EU 2030 climate targets. This level of investment must be sustained during 2031–50 to achieve net zero. The public sector share of the additional investments is expected to range between 0.5 to 1 percent of GDP in 2021–30 (Pisani-Ferry and Tagliapietra 2024). For Belgium, the National Bank of Belgium projects an investment need of 2.5 percent to 3.5 percent of GDP annually through 2050, while the European Investment Bank estimates the investment needed for the green transition at 1.4 percent of GDP annually until 2050 (2020/21 EIB Investment Report).



Source: Pisani-Ferry and Tagliapietraet al (2024), Table 1 based on European Commission (2020, 2024).
Note: Refers to the MIX scenario in the 2030 impact assessment and to the S2 scenario in the 2040 impact assessment.

12. Potential losses from the materialization of climate risks and mitigation costs will increase with slow green transion. The Network for Greening the Financial System (NGFS) uses three different models to estimate a range of possible economic impact of climate risks materializing and mitigation costs under different assumptions on how transitions are achieved. Under current policies ('hot house world scenario'), physical risks losses are projected to reach 6 percent of GDP in 2030 and continue to increase in the following decade.[4] In contrast, the early introduction of mitigation policies and adhering to them stringently to achieve net zero in 2050 could yield positive mitigation benefits by 2030 ('orderly scenario') (Box 3). These models incorporate a shadow carbon price as the primary channel to foster the transition. In the short term, rising energy costs could lower demand and GDP, while inducing modest increases in inflation and unemployment (NGFS 2023). The average estimated cost of implementing stringent mitigation policy is approximately €6 billion, or 1 percent of GDP in 2025 (text chart). This cost arises as the negative impacts on demand, driven by higher



Sources: Network for Greening the Financial System (2023) Scenarios Portal; and International Institute for Applied Systems Analysis (2023), NGFS Phase 4 Scenario Explorers; and IMF staff calculations.
Notes: (LHS and RHS Average*) Average of the three models:
1/ The Model for Energy Supply Strategy Alternatives and their General Environmental Impact-Global Biosphere Management Model (MESSAGE) evaluates the implications of energy and climate polcies, incorporating carbon pricing, renewable energy subsidies, and energy efficiency standards.
2/ The Global Change Analysis Model (GCAM) captures potential regulatory and fiscal policies, including coal phaseout, renewable portfolio standards, EV targets, and fuel efficiency standards on climate change mitigation and adaptation.
3/ The Regional Model of Investments and Development (REMIND) examines the optimal mix of investments in the economy and the energy sectors given a set of technology, policy, and climate constraints. It accounts for regional trade characteristics on goods, energy fuels, and emissions allowances. It includes a broader range of taxes than the other two models.

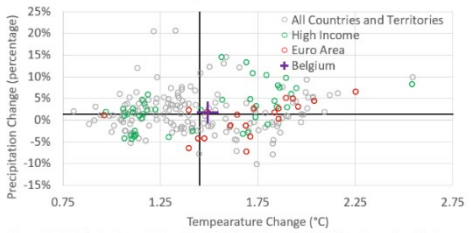
[4] Refers to the pledge targets of Nationally Determined Contributions (NDCs) for the Paris Agreement. It includes policies that might not been backed up by implementation and the currently implemented policies.

carbon prices and energy costs, are mitigated by recycling revenue into public investment, as indicated in the models (NGFS 2023) (Box 3). Fully recycling carbon tax revenue through public investments could lead to higher GDP than if recycled through tax cuts, transfer to households, or reimbursement of public debt (NGFS 2023).

Box 3. Climate Physical Risks and Economic Impact

Through 2050, Belgium is projected to experience increased precipitation and faster warming than most countries.[1] The average annual temperature in Belgium during 1991-2020 was more than 1.2 degrees Celsius higher than during 1961-90. The consensus among climate models is that in 2050, the average temperature in Belgium will be 1.5 degrees Celsius higher than during 1985-2014, reaching 10.3 degrees Celsius. This increase is more than the median expected change across all countries estimated at 1.4 degrees Celsius. The National Adaptation Plan for 2023-26 ('NAP') acknowledged the implications for critical infrastructures and warned about the pressure on the demand of key materials for the transition.[2]

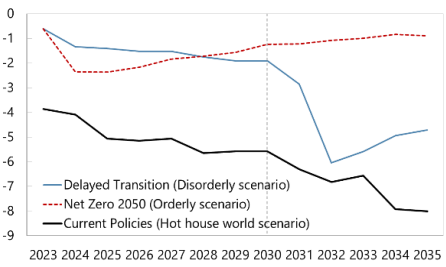
Cross-Country Comparison of Projected Temperature and Precipitation Changes (2050, SSP2-4.5)



Source: FADCP Climate Dataset (Massetti and Tagklis, 2024), using CMIP6 data (Copernicus Climate Change Service, Climate Data Store, 2021).
Notes: Bias-adjusted ensemble median projections of temperature and precipitation anomalies in 2036-2065 with respect to 1985-2014 data using CMIP6 data. The SSP2-4.5 scenario represents continuation of present trends. Solid lines display sample medians.

The public sector often bears the residual risk associated with increased frequency and severity of losses from climate-related catastrophes. For example, Belgium incurred €1.86 billion (0.4 percent of GDP) losses from floods in July 2021. The most severely impacted region was Walloonia, which has since pledged €1.03 billion for full recovery (European Commission, 2023). Less than 15 percent of the affected population were insured against natural disaster other than fire (Federal Public Service Health). The 2023–26 NAP, adopted thereafter, aimed to improve Belgian legislation on insurance for such large-scale natural disasters by expanding coverage and improving coordination in climate risk insurance.

Potential GDP Loss from Climate Risks for Belgium
(Percent of GDP)



Sources: Network for Greening the Financial System (NFGS) and IMF staff calculation.
Note: Average of three estimate models (GCAM, MESSAGEix-GLOBIOM, and REMIND-MAgPIE).

Source: FADCP Climate Dataset (Massetti and Tagklis, 2024), using CMIP6 data (Copernicus Climate Change Service, Climate Data Store, 2021) and CRU data (Harris et al., 2020).
1/ Projections are based on the SSP2-4.5 scenario, with CMIP6 bias-adjusted ensemble median projections of temperature and precipitation anomalies provided for a 30-year period centered around the chosen year with respect to CRU 1985–2014 (1999) averages. The observed temperature change compared to 1901–30 (1915) can serve as a proxy of warming relative to the pre-industrial period. The SSP2-4.5 scenario represents continuation of present trends.
2/ For example, the competing demand for sand to be extracted for building materials and those preserved to combat costal floods.

13. Fiscal support measures and energy price signals are not conducive to the shift to renewable energy. According to the National Energy and Climate Policy (NECP), the public sector plans to invest about 0.7–0.8 percent of GDP annually in the mobility and energy sectors through 2030. Within this, 0.6 percent of GDP, will be directed to smart solutions and infrastructure for advancing digitalization and decarbonization. These investment amounts are much lower than current spending on fossil fuel subsidies, which is estimated to exceed 1.7 percent of GDP. Fuel

subsidies sustain demand for brown energy and contribute to GHG emissions.[5] Indeed, close to 60 percent of government energy spending is directed at mitigating high energy prices (IEA Policy Database, September 2024). In contrast, the Netherlands allocates only 15.2 percent of its energy spending to energy affordability, while more than half is dedicated to technological innovation. Furthermore, in Belgium, natural gas for residential use (mostly heating and cooking) receives the highest amount of explicit and implicit subsidies, whereas the residential electricity price remains higher than the cost of supply plus value-added tax (Figure 7).

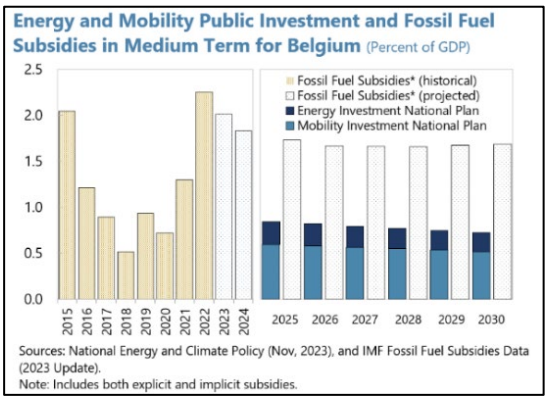
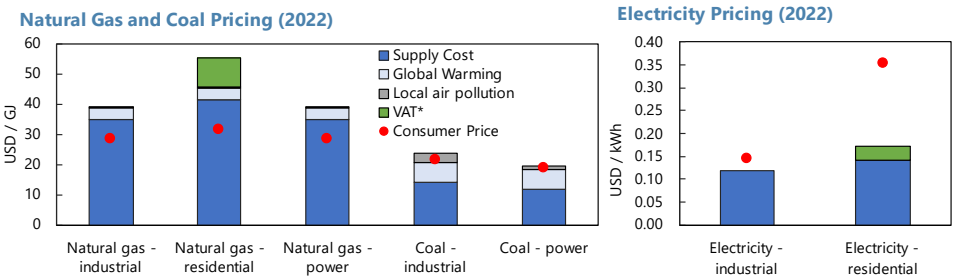


Figure 7. Fossil Fuel Subsidies and Electricity Prices

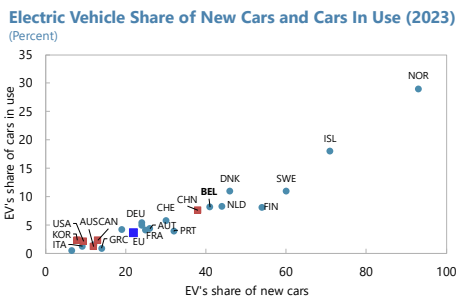


Source: IMF Fossil Fuel Data: 2023 Updates.
Note: VAT is only applied to final consumption,weighted by share of consumption.

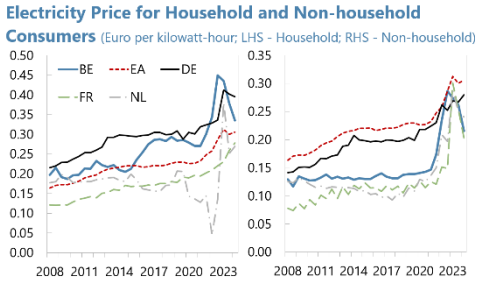
14. To advance the green transition, it is crucial to establish consistent energy pricing policies and mobilize investments to promote electrification. The above pricing distortion disincentivizes residential consumers to switch from fossil fuels to electrical applications powered by a mix of energy that includes renewables, such as heat pumps and hybrid and electric vehicles (EVs). Belgium has experienced a significant increase in EVs, which account for 8.2 percent of total vehicles in use in 2023, driven in part by tax incentives (Figure 8, LHS). The trend towards electrification may slows as electricity prices have risen sharply and become more volatile in the past four years, potentially discouraging further adoption of EVs and other alternatives to fossil fuel (Figure 8, RHS). The NBB has also recommended lowering the ratio between the electricity price and competing fossil fuel prices to increase the attractiveness of heat pump installation as a key mechanism to reduce GHG emissions produced by buildings. Additionally, inadequate power grid capacity underscores the urgent need for infrastructure upgrades to accommodate a larger share of renewable sources (Box 4). This includes supporting distributive storage capacities, such as utility-scale storage systems and EV batteries, and to facilitate broader electrification across all sectors.

[5] The staff's calculation of investment annualizes the estimates from the NECP for the period 2021–30 and applies them to the period 2025–30.

Figure 8. Electric Vehicles and Electricity Prices



Source: International Energy Agency Global EV Outlook (2024).
Note: Electric Vehicles include fully battery electric and plug -in hybrid (BEVs and PHEVs). Red squares are top five non-European countries.



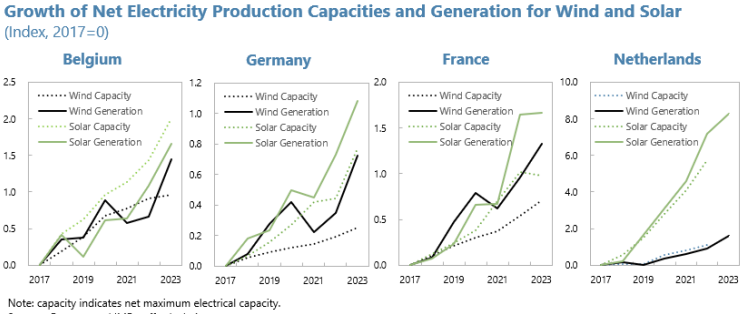
Source: Eurostat.
Note: Electricity price includes all taxes and levies. Household consumers is defined as medium-sized consumers with an annual consumption between 2500 kWh and 5000 kWh. Non-household consumers is defined as medium-sized consumers with an annual consumption between 500 MWh and 2000 MWh.

Note: Comparator countries are selected based on data availability. Electricity price compares prices in the neighboring countries.

Box 4. Investment in Electricity Grids

Timely improvements of electricity grids can enable low-emission and digitalized economic activities. Enhanced infrastructure can accommodate increased electricity usage by reducing grid congestions and lowering efficiency losses. Smart grids can help lower peak network prices by effectively predicting and responding to demand, thereby avoiding last-minute purchases from fossil fuels, which are typically more costly, and improving reliability of the grid. Deploying smart grids can also facilitate digitalization to benefit from cloud computing and instantaneous communications with distributed energy resources, creating a nexus between digitalization and green transition goals. The NECP estimates that private investment needs will amount to about €17 billion to expand the transmission and distribution network and support the transition to smart grids.

Upgrading grid infrastructure is essential for utilizing additional renewable energy for electricity generation. The growth of net electricity generation from wind and solar farms, which represent 85 percent of total renewable energy sources in Belgium, was trailing their capacity growth in 2017–23. In contrast, additional electricity generation using solar and wind energy has outpaced capacities growth of solar and wind in Germany and France. In the Netherlands, the growth of both generation and capacities has been more closely aligned. The gap in Belgium suggests inefficiencies in incorporating the significant increase in renewable energy capacities into the overall energy mix. Upgrading electricity grid is needed to address the aging of existing infrastructure and under-developed interconnectors, thereby increasing the capacity to manage the increased flows of renewable energy, and the deployment of emerging technologies such as storage solutions. Given the fast evolution of clean electricity production, timely upgrading of electricity grids infrastructure is paramount to avoid exponential cost increases from delayed actions (Ember 2024).



Note: capacity indicates net maximum electrical capacity.
Sources: Eurostat and IMF staff calculation.

D. Policy Recommendations

15. Raising the efficiency of public investment is critical for achieving more with less spending. This is particularly important given the need to secure fiscal space to accommodate substantial additional investments required to support the green transition and digitalization of the economy. As highlighted in the accompanying SIP by Hearne, this should include laying out clear infrastructure investment strategies, strengthening project appraisal, selection, and governance, and improving coordination within and among the federal and regional governments.

16. There is significant scope to improve the coordination and burden sharing of fiscal consolidation and public investment among federal and federated entities. Going forward, notwithstanding the lack of hierarchy, it will be crucial to adopt a pragmatic approach to foster coordination among federal and regional and community governments in achieving fiscal targets and establishing investment strategies, including national energy climate goals. This should contribute to the efficient planning and implementation of key public investment projects, reducing duplication of investment and resource waste while enhancing economies of scale. In this context, the establishment of the new Study Committee on Public Investment (SCPI) under the High Council of Finance in February 2023 could play a useful role in improving the coordination and efficiency of public investments. The SCPI is tasked to provide an inventory of public investment; identify public investments needs (with initial report on climate transition underway); identify implementation obstacles; methodological tools and procedures; and support technical dialogue among entities.

17. Clearly defined and communicated national goals would help anchor firms' expectation and guide their long-term strategies and investments in line with sustainability objectives. As Belgium stands at a pivotal point in fostering the digital and green transitions, establishing clear medium to long-term public investment objectives and highlighting investment gaps are essential to mobilize private sector investment. Indeed, public investment can play a strategic role in signaling the policy objectives and guiding private investors' expectations. Enhancing the prospects for private investments in electricity power grid is a case in point.

18. Fostering higher public investment in the green transition requires harmonizing energy policies, delivering clear market signals, and phasing out or repurposing fossil fuel subsidies. Repurposing subsidies currently allocated to petroleum, gas and coal should be a key part of the strategy to incentivize renewable energy adoption, reduce overall energy consumption, and address funding shortages. Belgium should redirect fiscal resources currently providing general price subsidies, which likely hinder or delay the transition, to renewable energy. At the same time, affordability measures should directly target the most vulnerable segment of the population. Looking forward, effectively utilizing the proceeds from carbon pricing under the new EU ETS2, which is expected to start in 2027 and will cover transport, buildings, and most small businesses, will be important. This includes determining the revenue distribution between federal and federal entities to augment fiscal resources for public investment. Additionally, increasing carbon pricing could further augment the fiscal envelope (Vernon 2022).

19. Increasing public investment could also involve enhancing public-private partnership (PPP) and blended finance initiatives. PPP investment across all sectors declined to less than 0.1 percent of GDP in 2019 from 0.2 percent GDP in 2014. Total PPP capital stock of Belgium is also relatively low at 1.1 percent of GDP (IMF ICSD database). In this context, increasing strategic public investment through private sector participation, with appropriate safeguards to mitigate fiscal risks, could be further explored to support large scale infrastructure projects. The increasing focus on blended finance, leveraging public funds to attract private investments for the green transition objectives, could help maximize the impact of limited fiscal resources.

20. Lastly, EU funding opportunities should be actively pursued to accelerate public investments in the green transition. The EIB Group committed in 2023 about €2.4 billion, of which €230.5 million through the European Investment Fund, for projects in Belgium, with close to 80 percent of these allocated to climate projects (EIB 2024). The Recovery and Resilience Facility (RRF) framework, set to expire in 2026, provided substantial financing for digitalization and climate resilience projects but this financing has so far been largely untapped as progress in achieving related milestones stalled. Looking ahead, the Medium Term Fiscal Structural Plan (MTFSP) under the EGF requires reforms and investments responding to country specific requirements (CSRs). Among the CSRs, investments to reduce overall reliance on fossil fuels and accelerate the deployment of renewable energies and related grid infrastructure have been recommended to Belgium, including through the implementation of the RRP and RePowerEU. Leveraging EU funds and prioritizing EU-backed investments can both alleviate budgetary constraints and ensure alignment with the European Green Deal objectives.

E. Conclusion

21. Belgium must secure a shift towards growth-enhancing public investment despite fiscal consolidation to boost its potential growth and address long-term investment needs, notably for digitalization and the green transition. Improving the efficiency of public investment is critical to deliver high-quality infrastructure within a constrained fiscal environment. There is significant scope to improve coordination across federal, regional, and community governments. Additionally, improving transparency in public investment policy and the establishment of clear, long-term objectives will help mobilize private sector investment and address the existing investment gap. Increasing public investment through public-private partnerships and actively pursuing EU funding opportunities, will further accelerate progress in the green transition and support Belgium's alignment with European sustainability goals.

22. Belgium has significant opportunities to enhance its digital and energy infrastructure, which are critical for closing competency gaps and achieving a successful green transition. The energy sector faces challenges due to high greenhouse gas emissions and reliance on fossil fuels, necessitating increased public investment to support clean energy initiatives. The government needs to reallocate funds from existing subsidies for fossil fuels to green investment and measures that support renewable energy adoption and technological innovation.

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