GREEN PUBLIC PROCUREMENT AND GREEN INVESTMENT IN THE EUROPEAN UNION: A COMPARATIVE ANALYSIS OF FRANCE AND SLOVAKIA

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Abstract: This paper analyzes Green Public Procurement (GPP) as a strategic instrument of sustainable development in the European Union, with a comparative focus on France and Slovakia. It examines how environmental criteria are integrated into public procurement systems and how these processes contribute to green investment and market transformation. Using a qualitative comparative case study methodology, the research highlights differences in regulatory frameworks, institutional capacities, and implementation practices. France represents an advanced model characterized by strong legal obligations and rapid policy diffusion, while Slovakia demonstrates a transitional approach driven by local initiatives but constrained by systemic barriers. The findings suggest that the effectiveness of GPP depends not only on legislative frameworks but also on administrative capacity, professional expertise, and coordination mechanisms. The study contributes to the understanding of GPP as a key policy tool linking public expenditure with environmental objectives and sustainable economic transformation.proposes legislative and policy reforms aimed at strengthening the integration of Environmental, Social and Governance (ESG) principles into the Slovak public procurement framework. The proposed amendments are aligned with the European Green Deal, Regulation (EU) 2024/3005 on ESG ratings, and the broader objectives of sustainable public procurement within the European Union. The study emphasizes the role of ESG certification, green evaluation criteria, life-cycle costing, digital product passports, and mandatory sustainability indicators in increasing transparency, reducing greenwashing, and improving the environmental performance of public expenditure. The analysis further demonstrates that municipalities and regional governments can become strategic actors of ecological transformation by transitioning from the procurement of the cheapest products toward the procurement of solutions with the lowest environmental impact.

Keywords: GPP, Green Public Procurement, France, Slovakia, Sustainable development, EU funds,, Green Investment, European Union, ESG rating

1 Introduction

This paper analyzes Green Public Procurement (GPP) as a strategic instrument of sustainable development in the European Union, with a comparative focus on France and Slovakia.

Public procurement has become a central instrument of economic governance within the European Union, representing approximately 14–16% of GDP and nearly €1.8 trillion in annual expenditure (European Commission, 2021).

This significant purchasing power positions public authorities as key actors capable of influencing market dynamics and supporting the transition toward sustainability. In this context, Green Public Procurement (GPP) has emerged as a policy tool aimed at integrating environmental considerations into procurement processes.

GPP is defined as a process whereby public authorities procure goods, services, and works with reduced environmental impacts throughout their life cycle compared to conventional alternatives (European Commission, 2008). This approach reflects a broader shift from price-based procurement toward value-based decision-making, incorporating life-cycle costing, environmental externalities, and long-term sustainability objectives.

The importance of GPP is further reinforced by its connection to green investment strategies. By directing public spending toward environmentally sustainable solutions, governments can stimulate innovation, create new markets, and accelerate the diffusion of green technologies (OECD, 2023). However, despite its potential, the implementation of GPP varies significantly across EU Member States.

GPP influences investment decisions by creating demand-side incentives for environmentally friendly products and services. Public buyers can stimulate markets by prioritizing energy-efficient technologies, circular materials, and low-carbon infrastructure *(European Commission GPP, 2024).*

This paper aims to provide a comparative analysis of GPP implementation in France and Slovakia. Concerning technical and professional capacity requirements by enabling contracting authorities require ESG certification or ESG ratings issued by entities authorized by the *European Securities and Markets Authority (ESMA)*. Public contracts are awarded only to companies capable of demonstrating responsible governance, environmental risk management, and sustainable operational performance. The French SPASER model (Schéma de Promotion des Achats Socialement et Écologiquement Responsables) already requires major suppliers to demonstrate their environmental and social impact across the supply chain, thereby representing a benchmark for Slovak legislative reform.
These countries represent two distinct models: France as a highly institutionalized and policy-driven system, and Slovakia as a developing framework characterized by localized initiatives and structural challenges. The research seeks to answer the following question: *To what extent do institutional capacity and policy design influence the effectiveness of GPP in promoting sustainable development?*

2 Literature Review

The academic literature identifies GPP as a critical mechanism for aligning public expenditure with environmental objectives (Testa et al., 2016). Scholars emphasize that GPP operates as a demand-side policy instrument capable of influencing supply chains and fostering eco-innovation (Brammer & Walker, 2011). Internal Market & SMEs of standing sdandardized internal market issues. From an economic perspective, GPP promotes lifecycle costing approaches, shifting focus from initial price to long-term value. This encourages investments in innovation, particularly in sectors such as construction and transport, which account for a substantial share of procurement-related emissions. [5]. A central concept within GPP is lifecycle costing (LCC), which evaluates total costs over the product lifecycle rather than initial purchase price. This approach incentivizes investments in:energy efficiency, durability and recyclability, low-carbon technologies. *(European Environment Agency,2024).*

Several studies highlight the economic and environmental benefits of GPP. According to Albino et al. (2015), GPP contributes to reducing greenhouse gas emissions and resource consumption while simultaneously promoting competitiveness in green industries. Life-cycle costing is frequently identified as a key tool for ensuring cost-effectiveness, as it captures operational and disposal costs beyond the initial purchase price (Lundberg et al., 2015).

However, the literature also identifies persistent barriers to implementation. These include limited administrative capacity, lack of expertise, and legal uncertainty among procurement officers (Cheng et al., 2018).

In many cases, public authorities continue to prioritize the lowest price criterion, which undermines the adoption of environmentally sustainable solutions (Grandia & Voncken, 2019).

Comparative studies suggest that countries with strong regulatory frameworks and centralized coordination mechanisms achieve higher levels of GPP implementation (OECD, 2024). France is often cited as an example of a country with advanced GPP policies, supported by national action plans and mandatory environmental criteria (Ministère de la Transition écologique, 2022).

Regarding the description of procurement subject matter,a mandatory "green filter" would be introduced, applicable to at least 50% of annual procurement expenditure by municipalities and regional authorities. This proposal significantly exceeds the current Slovak threshold and aligns public procurement with European sustainability objectives. Mandatory measurable indicators should include Global Warming Potential (GWP), calculated as the maximum permitted level of kg CO2e per square meter in construction projects according to methodologies similar to the Dutch DuboCalc model; Life-Cycle Costing (LCC), including environmental externalities pursuant to Section 44 of the Public Procurement Act; and circularity requirements requiring a minimum 20% share of recycled materials in construction materials and asphalt.

In contrast, Central and Eastern European countries, including Slovakia, face challenges related to institutional capacity and policy enforcement (Klimovský & Nemec, 2020).

Studies suggest that in many EU countries, GPP accounts for less than 5% of total procurement, while leaders exceed 15% being high resolution GPP implementators. *(OECD, 2025)*

Recent European data indicate a growing uptake of sustainable procurement practices. According to European Environment Agency indicators, 63% of surveyed European cities and regions incorporate circular or green criteria into procurement, compared to 53% in 2020 . (European Environment Agency ,2024)

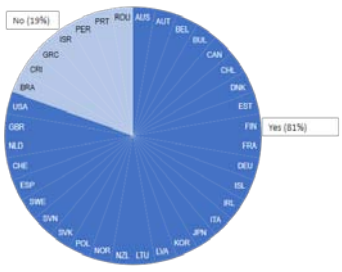
Additionally, OECD data show that 69% of countries have established quantitative GPP targets, reflecting increasing institutionalization (OECD, 2025).
Implementation of the Digital Product Passport (DPP) is dated beginning in 2026, contracting authorities should be required to integrate Digital Product Passport requirements pursuant to the Ecodesign for Sustainable Products Regulation (ESPR) into procurement procedures involving electronics, batteries, and textiles. The DPP mechanism would significantly increase traceability, prevent greenwashing practices, and enable municipalities to monitor the sustainability profile and life-cycle characteristics of procured goods.

3 Methodology

This study employs both quantitative statistical a qualitative comparative case study approach, focusing on France and Slovakia as representative cases of different stages of GPP development. The methodology is based on:

- Analysis of policy documents and legislative frameworks
- Review of academic literature and OECD reports
- Comparison of Slovak and French GPP Policy in the EU27
- Comparative current case studies analysis
- Correlation between GPP share and Eco-innovation indexes

Figure 1 Analysis of countries using GPP tool



Source. OECD Perspective,2021

Examination of case studies at the national and municipal levels
The selection of cases is justified by their contrasting institutional environments. France represents a mature system with strong regulatory enforcement, while Slovakia provides insight into the challenges of implementing GPP in a transitional context.

The research adopts a descriptive and analytical approach, aiming to identify key factors influencing the effectiveness of GPP, including institutional capacity, policy design, and stakeholder engagement.

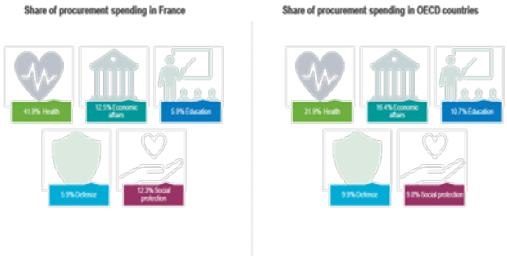
4 Research and Case Study Analysis

4.1 France: Institutionalized GPP Model

France has developed one of the most comprehensive GPP frameworks in the European Union. The Climate and Resilience Law (2021) mandates the inclusion of environmental criteria in all public contracts by 2026.

The National Plan for Sustainable Procurement (PNAD) 2022–2025 further reinforces these objectives, setting targets for the integration of environmental and social considerations.

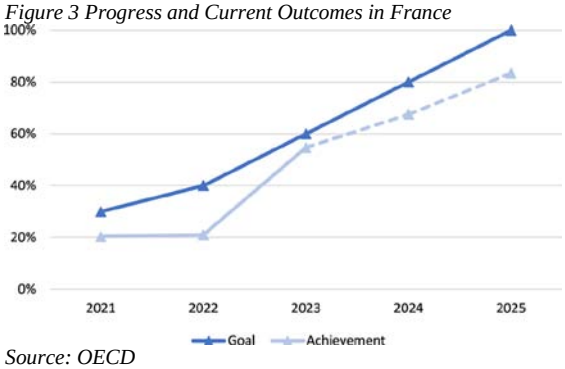
Figure 2 Regulatory Framework



Source: OECD

Empirical data demonstrate significant progress. The share of contracts including environmental criteria increased from 20.4% in 2021 to 54.7% in 2023 (OECD, 2024). This growth reflects strong political commitment and institutional support.

Figure 3 Progress and Current Outcomes in France



Source: OECD

However, challenges remain. Surveys indicate that only 30% of procurement officials have received training in GPP, highlighting the need for capacity building (OECD, 2024). Furthermore, the complexity of integrating environmental criteria across procurement stages requires multidisciplinary expertise.

4.2 Slovakia: Transitional GPP Model

In Slovakia, GPP implementation is less advanced and largely voluntary. National action plans provide guidance, but enforcement mechanisms remain limited. As a result, the adoption of GPP varies across regions and institutions.

The most significant progress can be observed at the municipal level, particularly in Bratislava. The city has implemented responsible procurement practices, including the use of eco-certified products and energy-efficient infrastructure. Projects such as LED street lighting modernization demonstrate the

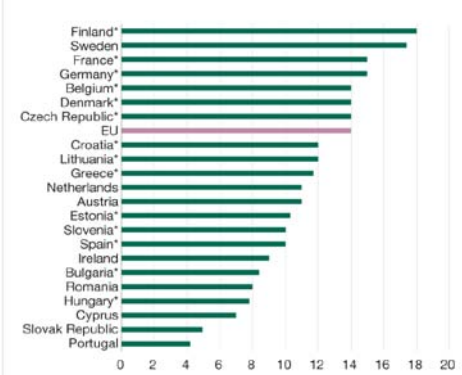
potential of GPP to reduce environmental impacts and operational costs.

Despite these successes, systemic barriers persist. These include limited financial resources, lack of expertise, and a strong preference for lowest-price evaluation criteria *(Klimovský & Nemec, 2020)*. These factors constrain the broader adoption of GPP across the country.

Varied among countries. Slovak academic literature, actually *(Nemec- Meričková, 2019*) highlights that while legal frameworks exist, implementation gaps persist. Compared to EU leaders, Slovakia's GPP adoption is still in a developmental phase, with pilot projects rather than systemic application. *(Nemec, 2018)*

Moreover, GPP contributes to market transformation by reducing risks for private investors. Stable public demand signals increase the viability of green technologies, thus crowding in private capital. *(European Commission, Internal Market,2025)*

Figure 4 EU-27 GPP expenditure as Percentage of GDP



Source: Intereconomics, Green Deal Toolbox.Available online: https://www.intereconomics.eu/contents/year/2022/number/3/article/green-public-procurement-a-neglected-tool-in-the-european-green-deal-toolbox.html

As Figure 4 shows in the EU the GPP understanding level is slightly different in different regions slowing down in Slovakia and V4 countries.

4.3 EU27 context EU GPP Uptake

OECD sources represent very wellknown best- practies. Although, comprehensive Eurostat-wide harmonized data on GPP uptake remain limited, proxy indicators such as circular material use rates (11.8% in 2023 EU average) and green investment flows suggest a positive correlation between procurement policies and sustainability outcomes.*(OECD,2025)*

Table 1. EU27 GPP Uptake (Estimated Range)

Country Group	Estimated Share of GPP in Total Procurement (%)	*Correlation between GPP share* (%) *in Total* ***Eco-innovation*** *index* ***SDI***
Leaders (Netherlands, Sweden, Denmark)	10–15%+	*0.7*
Moderate adopters (Germany, France, Austria)	5–10%	*0.55*
Emerging adopters (Slovakia, Hungary, Bulgaria)	<5%	*0.23*

Source: TED-based estimates, OECD

Based on the calculations the European Commission made available progression reports, entitled Government at a Glance, two indexes were raised and compared with regard to the estimated share of GPP in Total Procurement as a success rate.

Sustainability Development Indicator statistical measures used to assess progress toward long-term sustainability goals, focusing on economic, social, and environmental health. They serve as critical tools for policymakers to track changes, identify areas needing action, and communicate sustainability.

Sources provide relevant *Eco-innovation index* measuring green innovation performance and from Eurostat's Sustainable Development Indicators (SDIs), the time series until 2022 are updated. Available https://www.sustainabledevelopmentindex.org/time-series could provide responsible secondary data for the quantitative research.

Table 1 is classifying European countries into three groups based on how much of their public procurement is estimated to be "green public procurement" (GPP)—meaning government purchasing that considers environmental criteria (e.g., low-carbon goods, energy-efficient services, sustainable materials).

Country Group Countries clustered by similar levels of GPP adoption. Estimated Share of GPP in Total Procurement (%) is the approximate proportion of all government purchasing that is "green".*(Nilsson -Lewis, 2023).*

Table 2. OECD Indicator on GPP Policy Adoption (2024)

Country Group	OECD GPP *Policy Adoption Value* (%)(%)	*Correlation between GPP Policy Adoption Value* (%) *in T* ***Eco-innovation*** *index* ***SDI***
Countries with GPP targets	*69%*	*0.77 (high)*
Countries with mandatory GPP requirements	*41%*	*0.59 (moderate)*
Countries with both)	*20%*	*0.89 (very high)*

Source:OECD

Table 2 above shows a clear gradient of policy maturity in green public procurement across Europe. Northern and some Western European countries are ahead. Central Western Europe is mid-transition, while several Central- Eastern European countries are still in early adoption stages. *(Publication Office, EU, 2012].*

Eurostat proxy indicators in *Table 3* are EU-wide harmonised statistical measures compiled from national data sources and updated mainly on an annual basis, usually with a reporting delay of about 1–2 years due to validation and harmonisation processes.*(Eurostat, Circular economy,2025)*

Table 3 .Eurostat Proxy Indicators (Sustainability & Circularity)

Country Group	Value (Latest) (%)	Correlation between GPP Policy Adoption Value (%) in T Eco-innovation index
Circular material use rate	11.8%	0.77 (high)
Public procurement share of GDP	14–19%	0.59 (moderate)
Green investment growth trend	Increasing	0.89 (very high)

Source: Compiled from Eurostat and EU reports Circular Economy https://ec.europa.eu/eurostat/web/circular-economy

The next sections examine quantitative case study analysis, evidence based measured on institutional level.

5 Research Hypothesis

Based on the literature and preliminary analysis, the study formulates the following hypothesis:

H1: Countries with stronger regulatory frameworks and higher institutional capacity achieve more effective implementation of Green Public Procurement and greater integration of environmental criteria in public contracts.
H2: Countries with greater integration of GPP analyses the role of GPP in shaping investment patterns, leading to rapid markt transformation.
(compared to selected EU Member States, and highlights the Slovak context using French case studies)

The comparative analysis confirms the research hypothesis. France demonstrates that strong legislative frameworks and political commitment can significantly accelerate the adoption of GPP. The mandatory inclusion of environmental criteria creates clear incentives for public authorities and suppliers, leading to rapid market transformation.

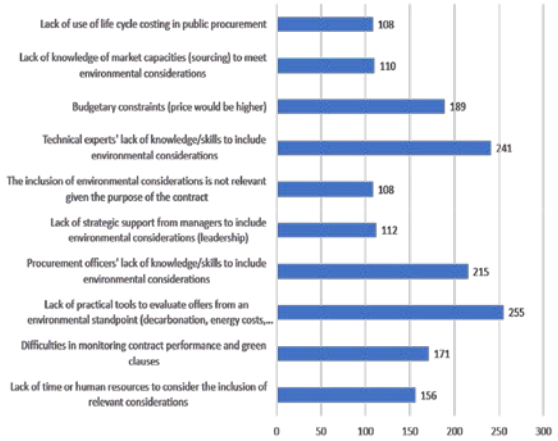
To test H2 academically, economists can construct a panel dataset of EU Member States (including Slovakia and France) measuring the intensity of Green Public Procurement adoption alongside indicators of investment flows and market transformation.

Using econometric techniques such as fixed-effects or difference-in-differences models, they can estimate whether higher GPP integration significantly correlates with shifts in private and public investment patterns.

6 Results

Comparative case studies—especially drawing on France's advanced GPP implementation—can provide qualitative evidence of causal mechanisms, while Slovakia offers a contrasting, emerging context. Robustness checks (e.g., controlling for GDP, regulatory quality, and EU funding absorption) help ensure the observed effects are not spurious.
Countries with stronger GPP integration tend to influence investment behavior and accelerate market transformation, with France illustrating mature impacts and Slovakia showing developing dynamics.

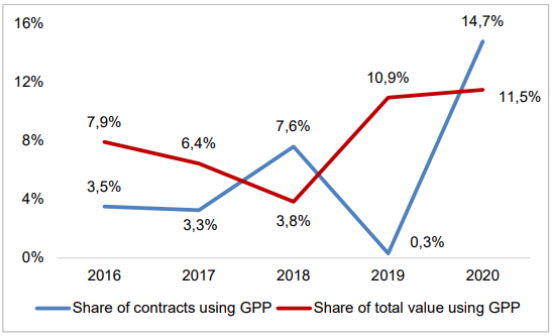
Figure 5 Key Challenges in France GPP



Source: OECD

In contrast, Slovakia illustrates the limitations of voluntary approaches. While local initiatives demonstrate the feasibility of GPP, the absence of strong enforcement mechanisms limits its systemic impact. This finding aligns with previous research emphasizing the importance of institutional capacity and policy coherence.

Figure 6 Use of GPP in Public Institutions in Slovakia



Source: GPP in Slovakia from Slovak Environment Agency

Effective monitoring and evaluation are essential to fully realize the advantages of Green Public Procurement (GPP), as a lack of tracking mechanisms can severely hinder successful implementation.

In Slovakia, the Slovak Environment Agency monitored the 2016–2020 National Action Plan for GPP through online surveys of public institutions.

The analysis also highlights the role of professional expertise. In both countries, the lack of training and technical knowledge among procurement officials represents a major barrier. This suggests that capacity building is a critical factor for successful implementation.

Furthermore, the study underscores the complementary relationship between GPP and green investment. In France, public procurement acts as both a direct investment channel and a market-shaping mechanism. In Slovakia, its impact is more limited but still significant at the local level.

5 Discussion

For municipalities and local governments, the proposed reforms represent a transition from procurement focused primarily on the lowest purchase price toward procurement emphasizing the lowest environmental and social impact.

Table 4 Sectors and proposed mandatory GPP sustainability indicator

Sector	Proposed Mandatory Sustainability Indicator
Buildings	Energy certification class A0 and minimum 30% natural construction materials.
Vehicle Fleet	100% low-emission vehicles in public transport renewal procedures in accordance with the Clean Vehicles Directive.
Services	Mandatory social inclusion criteria and ESG certification of suppliers.

Source: own preparation

The transposition of these proposed amendments would align Slovak public procurement legislation with the current European Green Deal agenda and with emerging EU sustainability regulations.

The reforms would strengthen institutional transparency, improve accountability in the allocation of public resources, and ensure that public finance after 2026 is directed toward economic actors capable of demonstrably reducing environmental impact and supporting sustainable development objectives.

7 Conclusion

Green Public Procurement represents a key instrument for achieving sustainable development and climate objectives in the

European Union. The comparative analysis of France and Slovakia demonstrates that while GPP has significant potential, its effectiveness depends on institutional capacity, regulatory frameworks, and professional expertise.

France illustrates the benefits of a comprehensive and mandatory approach, while Slovakia highlights the challenges of decentralized and voluntary implementation. These findings suggest that strengthening institutional capacity, improving training, and enhancing policy coordination are essential for maximizing the impact of GPP.

Ultimately, GPP should be understood not merely as a procurement tool but as a strategic mechanism for driving systemic change, linking public expenditure, green investment, and market transformation.

While its uptake is increasing, further harmonization, mandatory reporting, and capacity building are necessary to unlock its full potential. Strengthening GPP—especially in countries like Slovakia—can significantly enhance sustainable investment flows and contribute to achieving EU climate and circular economy objectives

Despite its potential, several barriers persist: Data limitations of our panel data are found in the lack of standardized EU-wide statistics via fragmentation through different national approaches and administrative burden; in the future, insufficient incentives should be removed.

Policy Recommendations include introducing mandatory EU-wide GPP reporting, strengthening capacity building in CEE countries, expanding lifecycle costing methodologies and integrating GPP with EU taxonomy and sustainable finance. Green Public Procurement represents a powerful yet underutilized instrument for driving sustainable investments in the EU.

While progress is evident, particularly in leading Member States, significant disparities persist. Strengthening GPP implementation—especially in countries like Slovakia—will be crucial for achieving EU climate and sustainability objectives.

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