

# **BUY EUROPEAN AND SUSTAINABLE ACT: ACCELERATING THE LOW-CARBON TRANSITION IN THE EUROPEAN UNION**

Synthesis

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# Synthesis

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- ▶ The objective of the study is to describe in concrete terms the criteria that a Buy European and Sustainable Act (BESA) on public procurement could contain to accelerate the low carbon transition and resilience of some European economic sectors, and to measure the climate, economic and social impacts of such a directive.
- ▶ Public procurement is responsible for 10% of the total carbon footprint of the EU and represents an amount equivalent to 15% of EU's GDP. Yet most public procurement contracts are still awarded based on price alone.
- ▶ This analysis tested the implications of the hypothetical implementation of a Buy European and Sustainable Act on the EU public procurement of heavy materials, vehicles, food and new buildings construction from 2019 onward.
- ▶ The key results at EU level are as follows:

## Significant climate gains

- **34 MtCO<sub>2</sub>e** average annual decrease of the EU's carbon footprint
- **9 MtCO<sub>2</sub>e** average annual decrease of EU territorial emissions
- **+64%** of total EU carbon footprint reduction between 2015 and 2019
- **30%** reduction on the EU public procurement carbon footprint in the scope of the study
- **9%** reduction on the total EU public procurement carbon footprint

## Positive economic and social impact

- **6 bn€** annual sales increase for EU companies and improvement in the EU's trade balance
- **86 bn€** mobilised annually for the rise of green activities through EU public procurement
- **30 000** additional jobs in the EU
- **380 000** additional jobs in green activities in the EU

## Bringing innovations to market

- The public sector **aligns with a net zero objective** and **provides guidance** on low-carbon procurement, of use to **all economic actors**
- Increased demand for green products provides **certainty needed by European producers to invest and bring low-carbon innovation to scale**

- ▶ The analysis focuses on products with a high GHG content, for which public purchasing is a significant market and where quantified criteria can be applied: steel, aluminum, cement, construction, vehicles, food and catering services. The scope represents about 30% of the carbon footprint of public procurement. The positive impact would be even greater if these measures were extended to all public procurement. Moreover, although the analysis provides insight into the direct impacts of public procurement, it does not quantify broader leverage effects. It is a conservative approach.
- ▶ When it comes to public procurement, ecological transition goes hand in hand with job creation. Setting sustainability criteria without locality criteria will reduce emissions, but will have limited positive effect on employment, because the rest of the world already has a low-carbon production base.
- ▶ Conversely, localism on its own does not make an ecological policy: the introduction of locality criteria without sustainability criteria would certainly have a positive effect on employment but would only marginally reduce emissions (a reduction of only 2% in the carbon footprint). It is the combination of the two criteria that will contribute to a just transition that creates jobs and is a source of technological innovation for the entire European and global economy.
- ▶ It is not too late. Incorporating ambitious sustainability and locality criteria into the Public Procurement Directive within the first 100 days of the next Commission would ensure opportunities for European businesses and farmers committed to producing to standards aligned with the objectives of the Paris Agreement.
- ▶ Increasing 'green' demand through BESA would give the EU industry the means to invest and the visibility needed to become a leading supplier of low-carbon transition solutions. Public procurement is a key tool in innovation policy. Not using it to the full to kick-start the transition would be a mistake in terms of aligning public policy with the European Union's climate objective.
- ▶ In terms of public procurement, the EU is an exception, prohibiting the inclusion of locality criteria. Elsewhere in the world, notably in China and the United States, national companies are favored by public procurement contracts.





## Context

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All over the world, industrial nations are implementing plans to stimulate job creation and develop an industry providing low-carbon transition solutions. The EU is no exception and is stepping up the pace, with the Net-Zero Industry Act adopted by the European Parliament in November 2023 which aims to accelerate the manufacturing of clean technologies in the EU. In this context, public procurement has an important role to play in supporting the EU industrial policy and developing a European economy compatible with achieving carbon neutrality.

Public procurement is responsible for 10%<sup>1</sup> of the total carbon footprint of the European Union (EU) and represents an amount equivalent to 15% of EU's GDP<sup>2</sup>. However, even though the Paris Agreement commits EU countries to drastically reducing their GHG emissions, 55% of public procurements are solely based on lowest price assessments<sup>3</sup>. Achieving GHG emission reductions through public procurement is a necessity for EU Member States to meet their climate target. Sustainable or green public procurement (GPP) can be used as a tool to mitigate the environmental impact of the public sector and to provide a strong market signal to accelerate the low carbon transition and resilience of economic sectors such as industry, construction, transport, energy, and agriculture.

To date, only a few countries make it mandatory to implement measures that promote the development of GPP, including France, Germany, United States, South Korea, and Switzerland. Setting mandatory requirements, developing standardized reporting methods, and providing more tools, resources, and training for GPP could accelerate and harmonize its uptake.

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<sup>1</sup> Carbone 4 analysis based on Eurostat

<sup>2</sup> OECD (2021). Government at a glance 2021: Size of public procurement

<sup>3</sup> European Commission (2022): Single Market Scoreboard: Access to public procurement

# Objective and methodology

## Objective

The objective of the study is to understand to what extent the introduction of a Buy European and Sustainable Act (BESA) on public procurement could **accelerate the low carbon transition and resilience of some European economic sectors**. The Buy European and Sustainable Act (BESA) would be a European directive regulating how public authorities in EU member states award contracts for goods, services, and works by introducing additional environmental, carbon and local content criteria.

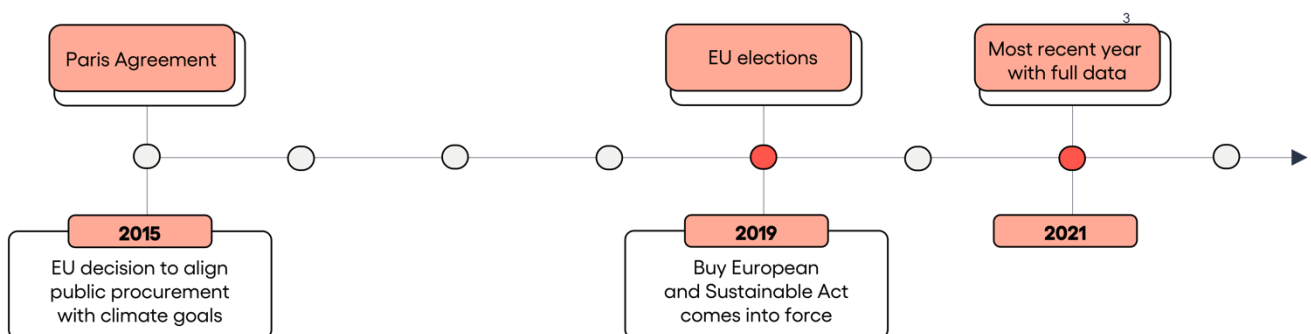
## Scope

We consider a hypothetical narrative: *What if the EU countries had decided to align their public procurement with their climate mitigation ambition at the time of the Paris Agreement, with full effect from 2019?*

The scope of our analysis considers 2019 and 2021 and covers all European Union countries.



**Geographical and time scope:** All EU countries, 2019 and 2021



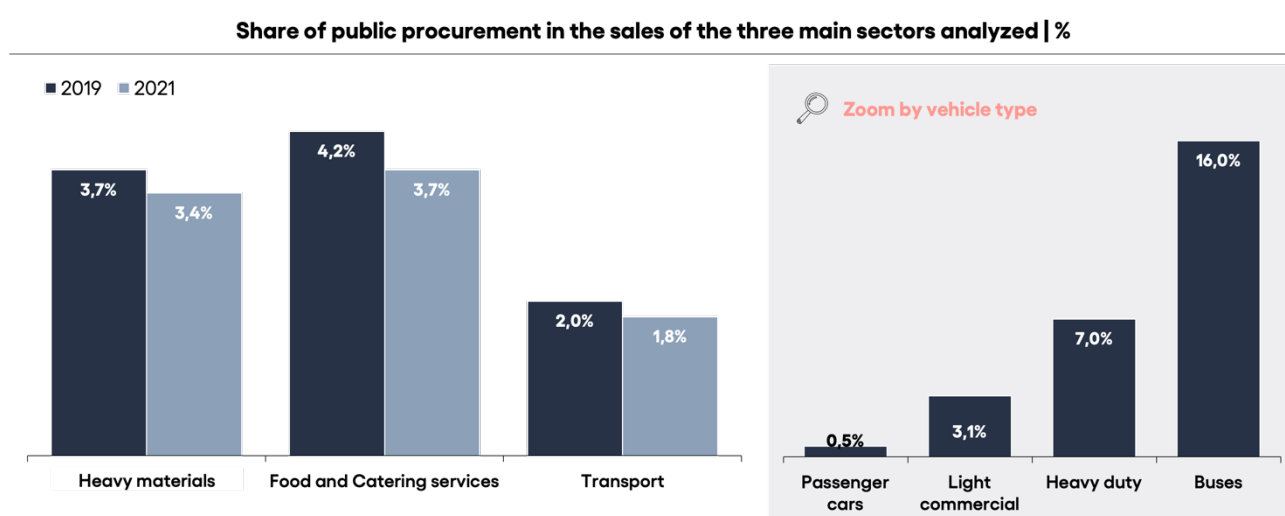
The key indicators used to assess the impact of the BESA are:

- Sales increase for EU-based companies (bn€)
- Public purchases benefiting activities that accelerate the EU's low-carbon transition (bn€)
- Carbon footprint of EU public procurement (ktCO<sub>2</sub>e)
- EU territorial emissions (ktCO<sub>2</sub>e)
- Additional jobs in the EU (FTE)
- Additional jobs in green activities in the EU (FTE)

The study does not assume that all public procurement would introduce low-carbon criteria. The analysis focused instead on products with a high GHG content, for which public purchasing is a significant market and where quantified criteria can be applied. They have been selected based on an analysis of the main needs of the EU economy to accelerate decarbonization and increase resilience.

The corresponding economic sectors analyzed in this study are **heavy GHG-intensive materials, vehicles, food and catering services, and new buildings construction.**

Public orders represent between 1,8% and 4,2% of total orders for heavy materials, food and catering services and vehicles, among which large differences can be observed depending on the vehicle type (see figure below).



Sources: Analysis based on FIGARO and Exiobase data.  
 Right graph statistics on the French vehicle fleet from <https://www.statistiques.developpement-durable.gouv.fr/>

This scope represents **about 30% of the carbon footprint of public procurement.** Other purchase categories with a significant carbon footprint not covered in the study are:

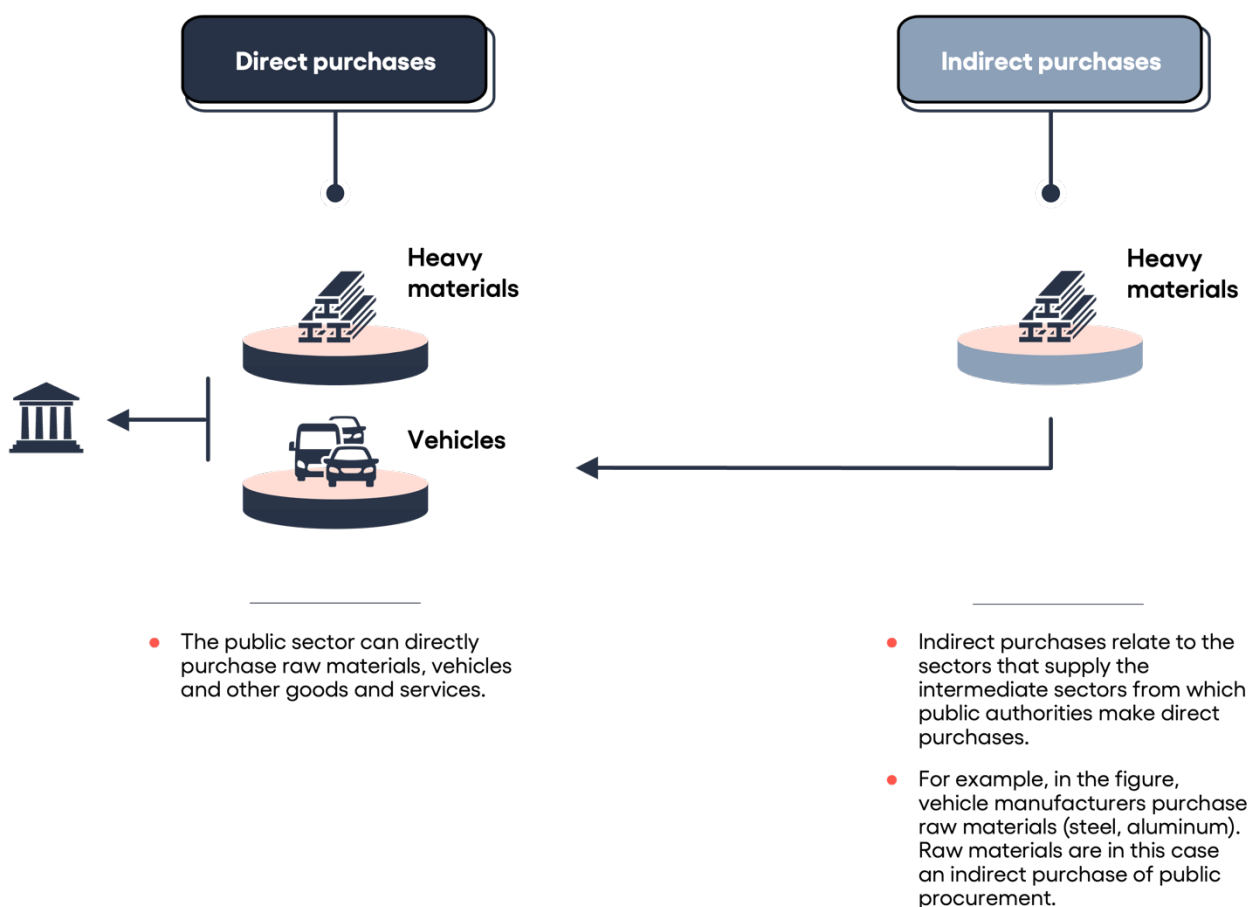
- Public administration and defense, compulsory social security
- Education
- Human health activities
- Social work activities
- Fossil fuel purchases for existing public vehicles and public buildings
- Travel services excluding public vehicles

Moreover, some technologies crucial for the energy transition and subsidized by public expenses, such as electric vehicles (EV), Wind and PV, are specifically analyzed in the study.

## Data sources

The main analysis is done using socioeconomic and environmental data from FIGARO<sup>4</sup> and EXIOBASE<sup>5</sup> input-output tables. These large databases provide information on inter-country supply and demand, employment, and emissions. They are used in a complementary way to base the analysis on detailed product-level data and complete GHG emissions. Both direct and indirect purchases are considered in the analysis.

### Example of public procurement purchase



<sup>4</sup> <https://ec.europa.eu/eurostat/web/esa-supply-use-input-tables/information-data#figaro>

<sup>5</sup> <https://www.exiobase.eu/>





# Buy European and Sustainable Act criteria

The study offers a concrete description of what a Buy European and Sustainable Act could look like. It defines public procurement criteria for the purchase of **heavy materials, vehicles, food and catering services**, and **new buildings construction**. These criteria are based on best practices in the EU economy. They are meant to send a strong market signal and create economic outlets for the most virtuous players in the EU.

Two types of criteria are modelled:



**Local content:** a minimum threshold is set for the European content of products purchased by public authorities. This criterion influences the geographical origin of the products purchased, and therefore all the indicators monitored (revenues of EU companies, jobs, GHG emissions).



**Climate:** a maximum threshold is set for the GHG content or emissions in the use of goods acquired through public procurement. We estimate the impact of this criterion on GHG emissions, under the existing structure of public procurement in 2019-2021 (no structural changes are assumed to take place because of this criterion).

To ensure the practical feasibility of meeting these criteria at the desired volume, implementing the system should be phased over several years to allow for necessary private investments. For instance, public purchasers could set a declining GHG-content trajectory over 5 years, with a binding constraint applied in from the 5<sup>th</sup> year onward.

## Heavy materials

Sector	Criteria
Steel	<ul style="list-style-type: none"> <li>Maximum carbon intensity of <b>0,5 tCO<sub>2</sub>e/t</b> for direct and indirect new purchased steel.</li> <li><b>100% of steel purchased</b> produced in EU (all transformation process).</li> </ul>
Aluminum	<ul style="list-style-type: none"> <li>Maximum carbon intensity of <b>4 tCO<sub>2</sub>e/t</b> for direct and indirect new purchased aluminum.</li> <li><b>100% of aluminum purchased</b> produced in EU (all transformation process).</li> </ul>
Cement	<ul style="list-style-type: none"> <li>Maximum carbon intensity of <b>0,45 tCO<sub>2</sub>e/t</b> for direct and indirect new purchased cement.</li> <li><b>100% of cement purchased</b> produced in EU (all transformation process).</li> </ul>

The criteria target materials with high emissions, such as steel, aluminum, and cement, which respectively account for 4%, 3%, and 2% of European emissions<sup>6</sup>.

There is currently no universally agreed standard for 'green' steel. Achieving a carbon intensity of 0,5 kgCO<sub>2</sub>e/kg for steel is both feasible and ambitious<sup>7</sup>. Given that the current average carbon intensity in the EU stands at 1,7 kgCO<sub>2</sub>e/kg, such a criterion holds the potential to slash emissions by a significant 71% on the perimeter considered.

Similarly, we have used a threshold carbon intensity of 4 kgCO<sub>2</sub>e/kg for aluminum, representing a 47% reduction on the European average of 7.5 kgCO<sub>2</sub>e/kg, based on data from EU manufacturers and International Energy Agency (IEA) trajectories.

Cement, known for its challenging decarbonization process due to clinker usage, has an average carbon intensity of 0,6 kgCO<sub>2</sub>e /kg in the EU. Here, we propose a criterion of 0,45 kgCO<sub>2</sub>e /kg, aiming to reduce emissions from cement by roughly 20%. This is feasible through the reduction of the clinker-to-cement ratio by adopting supplementary cement materials (SCMs) and utilizing low-carbon fuels<sup>8</sup>.

In comparison, the EU Taxonomy is based on carbon intensities of 0.47 tCO<sub>2</sub>e/t for cement and 1.5 tCO<sub>2</sub>e/t for aluminum. There is no direct carbon intensity target for steel, but the criteria mentioned are compatible with the 0.5 tCO<sub>2</sub>e/t threshold. The thresholds used in the study are therefore in line with the EU Taxonomy for cement and steel, and more conservative than it for aluminum.

To ensure that these criteria have an impact on overall emissions, the EU ETS (Emissions Trading System) will have to consider the BESA by reducing the total CO<sub>2</sub> cap. Implementing these criteria would also enable the development of the low-carbon materials market, an important boost for the innovations needed to achieve carbon neutrality by 2050 at the latest.

Regarding the local content criterion, public procurement of these materials predominantly originates from EU countries, with EU production shares averaging 89% for steel, 89% for aluminum, and 94% for cement. A local content requirement thus appears reachable.

The EU's limited material extraction, processing, and recycling capacity pose significant risks to its supply of critical resources. In response, the Critical Raw Materials Act of March 2023 outlines a strategy and objectives for securing critical and strategic resource supplies by 2030. These regulations could potentially be applied to public procurement sooner through mechanisms such as the BESA.

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<sup>6</sup> UNFCCC GHG data (2023)

NB: Carbon intensities mentioned correspond to embedded emissions from the extraction of raw materials to the manufacturing process and delivery (Cradle-to-Gate), including electricity emissions calculated based on average emission factor of the country of origin or actual emission factor in the case of direct technical connection or power purchase agreement.

<sup>7</sup> IDDI, FMC, SteelZero, IEA and EU industry

<sup>8</sup> IEA 2024

## Food and catering services

Sector	Criteria
Food and catering services	<ul style="list-style-type: none"> <li>• <b>98%</b> of food and catering services procured should be <b>from European Union countries</b>, which corresponds to the highest national rate, observed for Romania, in 2019 and 2021.</li> <li>• <b>A 20% reduction in volumes of animal products procured</b>, to be compensated by the public procurement of plant-based products.</li> <li>• <b>100% organic food</b> or <b>food grown using agro-ecological practices</b>, which results in - 20% GHG emissions for plant-based products<sup>9,10,11</sup>.</li> </ul>

On average, 93% of the public procurement of food and catering services is sourced within EU countries. Implementing a reduction of 20%<sup>12</sup> in animal products consumed would foster a shift towards a more vegetarian diet in public institutions, equivalent to incorporating one meat-free day per week.

## Vehicle purchases

Sector	Criteria
Vehicle purchases	<ul style="list-style-type: none"> <li>• <b>100% of public procurement demand</b> for vehicles, transport equipment or maintenance should be <b>from the EU</b>.</li> <li>• <b>Application of the Clean Vehicle Directive:</b> <ul style="list-style-type: none"> <li>• 40% of light duty vehicle purchases should be clean vehicles.</li> <li>• 15% of heavy-duty vehicles should be clean vehicles.</li> <li>• 60% of buses and coaches should be clean vehicles.</li> </ul> </li> <li>• <b>Weight reduction of around 20%</b> for all other light duty vehicle purchases (60% of purchases).</li> </ul>

On average, 88% of public procurement of transport services, including manufacturing, services, and maintenance, are from European countries. A local content requirement (i.e. from 88% to 100%) seems reachable.

Concerning sustainable purchasing criteria, the Clean Vehicles Directive, ratified by the European Parliament in 2019, was to be integrated into national legislation by 2021. Our analysis focuses on the impact of this directive, had it been implemented in 2019 and 2021. Specifically, the directive requires that 40% of purchases of light vehicles, 15% of heavy vehicles and 60% of buses and coaches be clean vehicles, defined as follows:

Light vehicles	Heavy vehicles
<ul style="list-style-type: none"> <li>• Until 31 December 2025, no more than 50 gCO<sub>2</sub>e/km</li> <li>• From 1 January 2026, only zero emissions vehicles</li> </ul>	<ul style="list-style-type: none"> <li>• Use one of the following alternative fuels: Hydrogen, electric battery (including hybrid), natural gas, liquid biofuels, LPG, synthetic &amp; paraffinic fuels</li> </ul>

<sup>9</sup> ADEME (2020), Empreintes sol, énergie et carbone de l'alimentation

<sup>10</sup> Guyomard H. et al. (2023) « The European Green Deal improves the sustainability of food systems but has uneven economic impacts on consumers and farmers », Communications Earth & Environment, 4(1), 358

<sup>11</sup> Bellassen, V. et al. The carbon and land footprint of certified food products. J. Agric. Food Ind. Organization 19, 113–126 (2021).

<sup>12</sup> This goal is advocated by various sources, including the IPCC AR6 WGIII report, Climate Change Committee (UK) and Haut Conseil pour le Climat (France)

The last proposed criterion on transport involves reducing the weight of the other 60% of total light-duty vehicles purchases by 20%. By prioritizing lighter vehicles, public procurement can decrease the life cycle emissions of light duty vehicles by approximately 25% if compared to average light duty vehicles.

## Criteria on new buildings construction

Sector	Criteria
Public buildings energy use	<ul style="list-style-type: none"> <li>All new buildings should reduce their carbon intensity for use, compared to their countries average, by -67%.</li> </ul>

Energy use in buildings represents almost 80% of total carbon lifecycle emissions of buildings in the EU. The proposed criterion is based on the CRREM<sup>13</sup> methodology and on the idea that public purchasing should be 10 years ahead of the average on a 1.5°C scenario trajectory. The carbon intensity threshold should be reviewed every 5 years.

## Beyond public procurement: PV, wind and electric vehicles benefiting from public subsidies in the EU

Low-carbon technologies such as PV, wind and electric vehicles are included in the analysis, although they are beyond the public procurement perimeter. The criteria on these sectors focus on relocalization of the manufacturing and carbon intensity, with the following thresholds:

Sector	Criteria
PV	<ul style="list-style-type: none"> <li><b>40% solar panels installed should be manufactured in the EU with a maximum manufacturing carbon intensity of 75 kgCO<sub>2</sub>/kW</b> <i>The Net Zero Industry Act includes a target to achieve 40% manufacturing of clean technologies in the EU before 2030.</i> <i>The average solar panel manufacturing carbon intensity in the EU is 75 kgCO<sub>2</sub>/kW, -70% carbon intensity compared to current 224 kgCO<sub>2</sub>/kW average PV installed in Europe (90% manufactured in China).</i></li> </ul>
Wind	<ul style="list-style-type: none"> <li><b>100% of wind turbine manufacturing is done in the EU</b> <i>This is already almost the case.</i></li> <li><b>The criteria defined above for steel and cement apply</b></li> </ul>
Electric vehicle	<ul style="list-style-type: none"> <li><b>50% of battery manufacturing for electric vehicles should originate from EU countries</b> <i>The Net Zero Industry Act targets a minimum of 40% of battery capacity manufacturing before 2030. Under the IRA, 50% of the value of battery components must be produced or assembled in North America for EV subsidies.</i></li> <li><b>The criteria defined above for steel and aluminum apply</b></li> </ul>

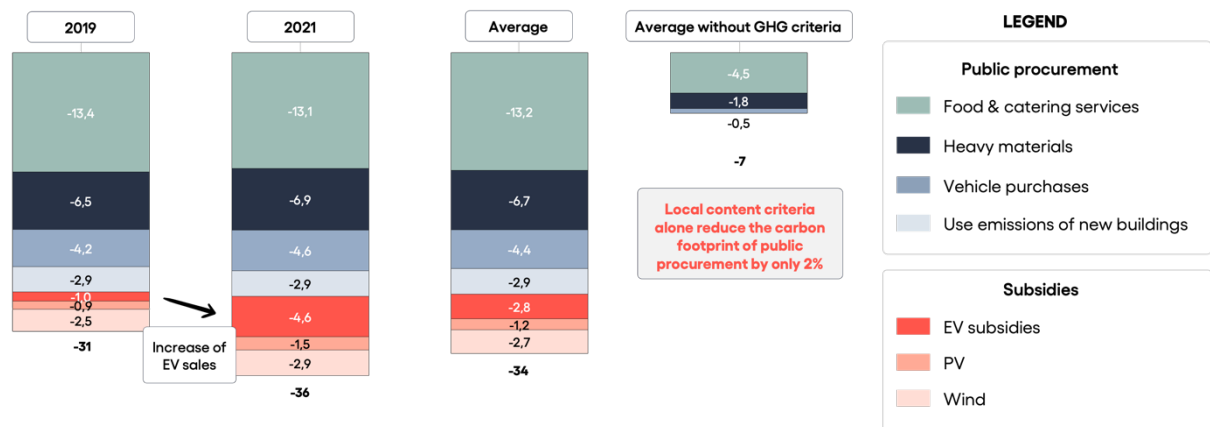




# Climate, economic and social impacts of the Buy European and Sustainable Act

If the Buy European and Sustainable Act as described in this study had been implemented since 2019, it would have enabled annually a 34 MtCO<sub>2</sub>e decrease of the EU's carbon footprint, i.e. ~9% of EU's public procurement carbon footprint.

Summary of Buy European and Sustainable Act's annual carbon savings by sector | MtCO<sub>2</sub>e

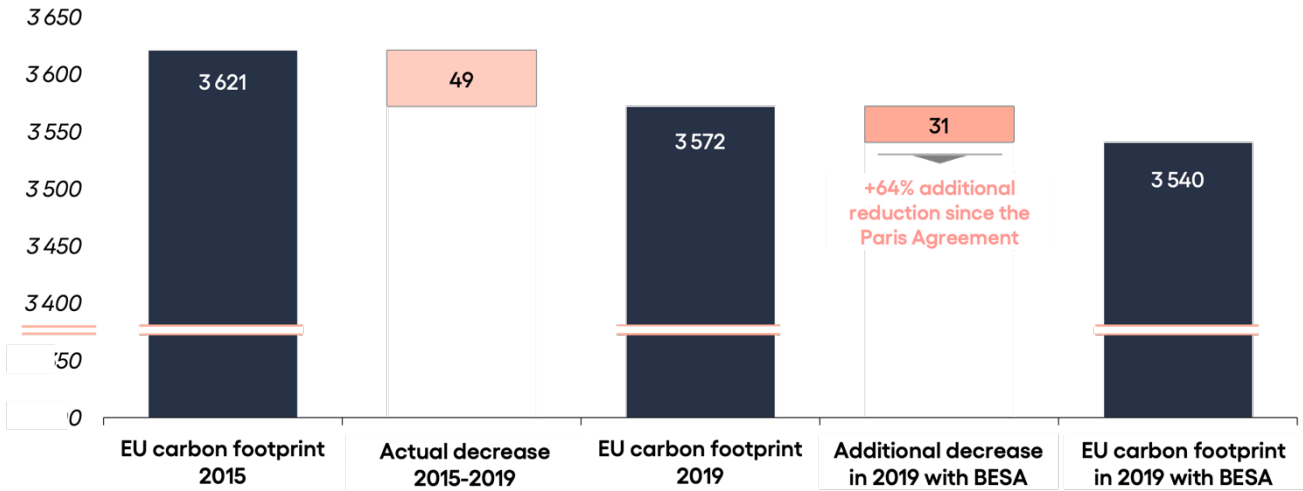


The scenario “Average without GHG criteria” corresponds to the modelling of a scenario in which no climate criteria are included in the BESA, and therefore only relocation criteria apply. This shows that relocation criteria alone have a limited effect on carbon footprint reduction and must be supplemented by carbon criteria to be effective.

Considering only the criteria related to public procurement, i.e. excluding subsidies, the average annual carbon footprint reduction obtained with the BESA is 27 MtCO<sub>2</sub>e, i.e. an 8% reduction in the carbon footprint of public procurement.

If implemented in 2019, the BESA would have enabled an additional 64% reduction in the EU's carbon footprint over the 2015-2019 period.

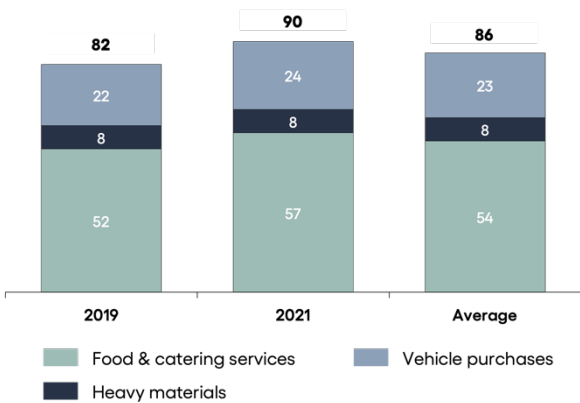
**Comparison of the reduction in the EU's carbon footprint enabled by the BESA in 2019 with the actual reduction observed over the 2015-2019 period | MtCO<sub>2</sub>e**



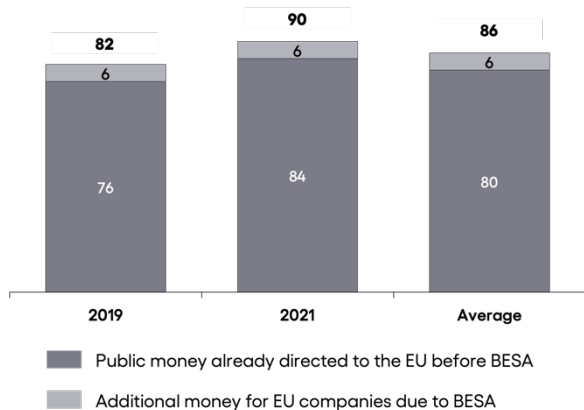
The implementation of a Buy European and Sustainable Act as described in this study could therefore have generated significantly higher reductions in the EU's carbon footprint than those observed over the 2015-2019 period. This additional theoretical reduction made possible by the BESA over the period 2015 - 2021 is 24%. However, it should be noted that the reduction due to the BESA remains limited compared to the EU's total carbon footprint (~1%).

Beyond the reduction of the carbon intensity of public procurement, an important benefit of the BESA is that it redirects money spent on public procurement towards activities that accelerate the EU's low-carbon transition.

**Volume of EU public procurement directed towards 'green' activities if BESA implemented - by sector | bn€**



**Volume of EU public procurement directed towards 'green' activities if BESA implemented - by type | bn€**

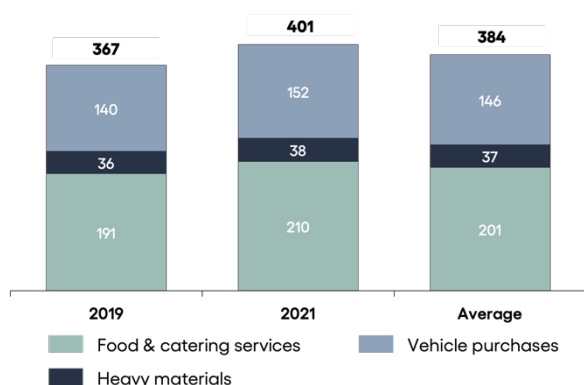


This flow of money towards 'green' activities in the EU creates new, sustainable outlets for these players, and gives the industry the visibility it needs to make significant investments favorable to the low-carbon transition.

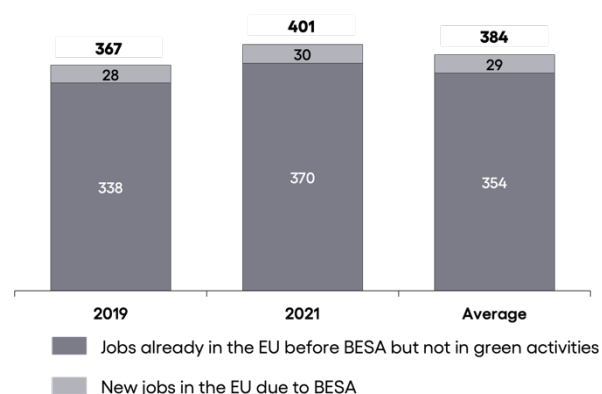
Sustainability criteria are essential for this, relocation criteria only do not enable significant investments towards a resilient industry in the EU.

Similarly, the BESA could create many green jobs in the EU, averaging 384,000 over the years analyzed. 8% of this total corresponds to relocated jobs which are additional at the EU level.

**Additional jobs in 'green' activities in the EU if BESA implemented - by sector | Thousands FTE**



**Additional jobs in 'green' activities in the EU if BESA implemented - by type | Thousands FTE**



The development of these green jobs is essential for job security in the EU in a context of the transition towards carbon neutrality. The choices made for public purchasing have an important role to play in accompanying EU workers through changes in the economy and employment structure.

Finally, the following table summarizes the values of key indicators calculated at EU level to assess the impact of the Buy European and Sustainable Act:

KPI	2019	2021	Average	Avg. Without GHG criteria
Sales increase for EU companies   bn€	6,1	6,1	6,1	6,1
Public purchases benefiting activities that accelerate the EU's low-carbon transition   bn€	82	90	86	-
Decrease of EU public procurement carbon footprint   MtCO <sub>2e</sub>	31	36	34	7
Decrease of EU territorial emissions   MtCO <sub>2e</sub>	8	10	9	-4
Additional jobs in the EU   thousands FTE	28	30	29	29
Additional jobs in green activities in the EU   thousands FTE	367	401	384	-

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If the Buy European and Sustainable Act as described in this study had been implemented since 2019, it would have enabled significant climate benefits including:

- **34 MtCO<sub>2</sub>e** average annual decrease of the EU's carbon footprint
- **9 MtCO<sub>2</sub>e** average annual decrease of EU territorial emissions
- **+64%** of total EU carbon footprint reduction between 2015 and 2019
- **30%** reduction on the EU public procurement carbon footprint in the scope of the study
- **9%** reduction on the total EU public procurement carbon footprint

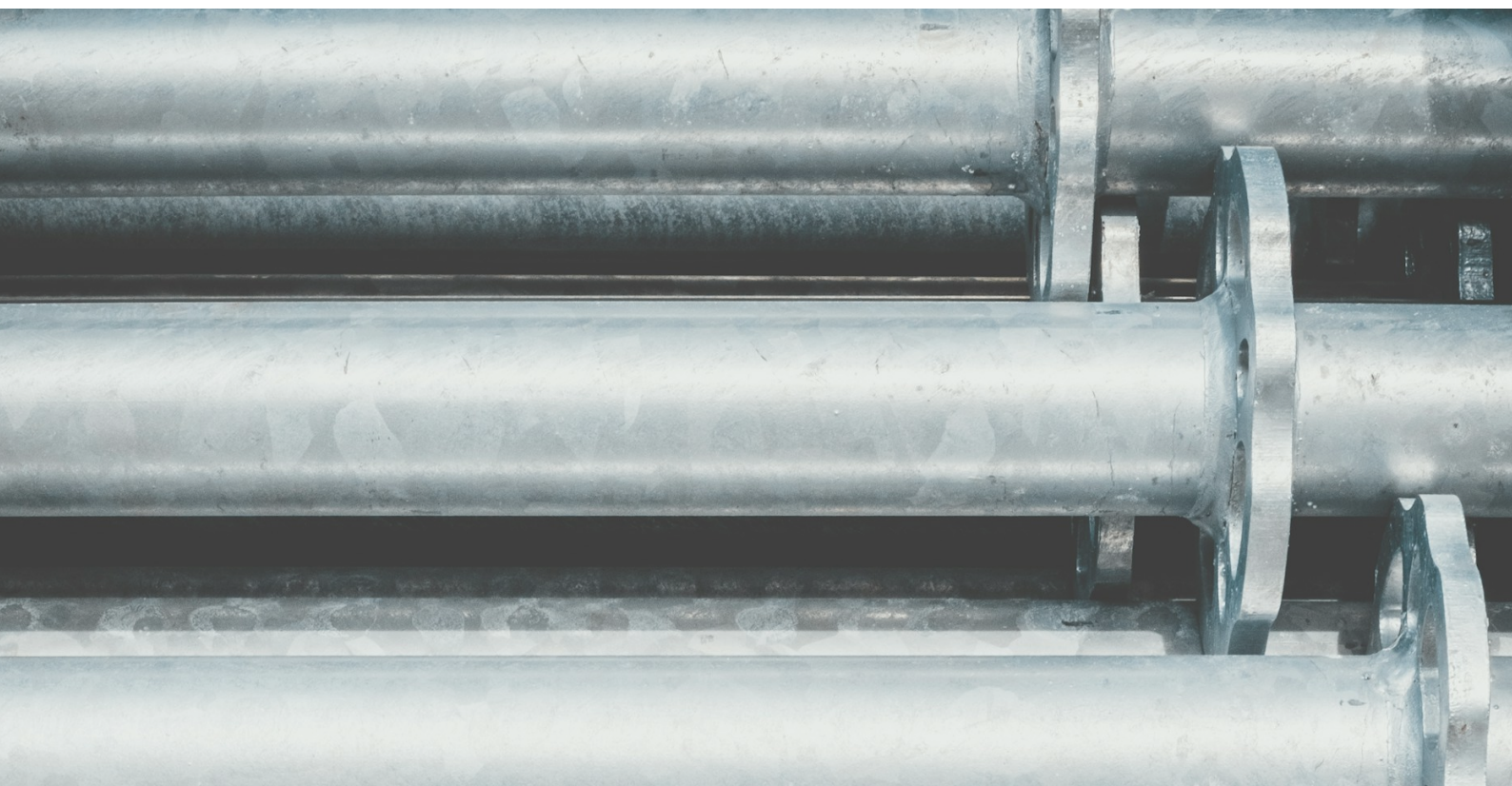
It should be noted that relocation criteria alone have a limited effect on carbon footprint reduction and must be supplemented by carbon criteria to be effective.

The Buy European and Sustainable Act would also have positive economic and social impact while accelerating the transformation of the EU economy towards greater resilience and compatibility with carbon neutrality:

- **6 bn€** annual sales increase for EU companies and improvement in the EU's trade balance
- **86 bn€** mobilized annually for decarbonization through Europe-wide public procurement.
- **30,000** additional jobs in the EU
- **380,000** additional jobs in green activities in the EU

Even if not quantified in this analysis, the leverage effect of such a policy could be significant. The new channels created by this scheme could encourage similar action from the private sector and accelerate the development of a low-carbon industrial ecosystem. Increasing 'green' demand would give the EU industry the means to invest and the visibility needed to become a leading supplier of low-carbon transition solutions.

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# Additional costs due to the Buy European and Sustainable Act

Costs associated with green public procurement are not expected to increase much across key sectors due to BESA implementation.

For the procurement of heavy materials, the extent of the 'green premium' varies significantly depending on the material and 'green' demand. Production methods requiring technological shifts, such as transitioning from Blast Furnace - Basic Oxygen Furnace route (BF-BOF) to Electric Arc Furnace route (EAF) for steel production or incorporating renewable energy and recycling, may incur price increase<sup>14</sup>.

For the transport sector, adopting low-carbon steel for vehicle manufacturing is projected to have minimal impact on final product prices, with an estimated increase of approximately 1%<sup>15</sup>. However, when including both the manufacturing and usage costs, the Total Cost of Ownership (TCO) for Electric Vehicles (EVs) typically stands 1%-20% higher than combustion vehicles, depending on factors like mileage and vehicle type<sup>16</sup>. Batteries constitute a substantial part - between 10-30% - of the total cost of electric vehicles. It should be noted that battery manufacturing within the EU carries a premium of around 20% compared to China, which could increase EV prices by 2-6%<sup>17</sup>. In addition, fuel savings (which are largely imported) are strategically and macroeconomically a very beneficial consequence of transport electrification, not modeled in this study.

In the construction industry, adopting green practices can result in higher upfront expenses, but could provide substantial savings in the long term. Efforts to implement energy-saving measures are balanced to produce lasting benefits. Estimates from the World Economic Forum suggest an increase in construction costs ranging from 1 to 3 % when incorporating sustainability measures<sup>18</sup>.

The financial implications of the transition to a sustainable diet, characterized by reduced meat consumption, organic farming, and agroecology, remain ambiguous in the literature. While some studies predict negligible or minimal overall cost effects, others indicate potential increases in spending. Key determinants influencing outcomes include reducing consumption of animal products, which can mitigate costs, as well as efforts to reduce food waste, an important lever for cost reduction, with approximately 7% of volumes lost during the consumption phase. Additionally, the relative price of sustainable products compared to conventional alternatives varies over time and depends on the product and the country. Beyond the cost on public procurement, the spread of sustainable and healthy diets could have a positive impact on medical and social spending, which has not been quantified in this study.

These additional costs remain limited in comparison with the inflation rates faced in recent years by public procurement, which have exceeded 9% in the EU in 2022<sup>19</sup>.

The criteria for subsidies (EV and renewables) do not necessarily entail additional costs for public authorities, depending on the level of subsidy chosen.

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<sup>14</sup> McKinsey (2022)

<sup>15</sup> CEPS (2024), Sandbag (2024)

<sup>16</sup> IEA TCO tool, Leaseplan (2022)

<sup>17</sup> Bloomberg (2023)

<sup>18</sup> World Economic Forum (2022)

<sup>19</sup> Eurostat 2023

# Limits of the study

Some limitations exist in this study, this paragraph describes them to anticipate opportunities for further development.

In this study, a defined public procurement perimeter is chosen to apply relocation and sustainability criteria. The sectors selected have been chosen based on an analysis of the main needs of the EU economy to accelerate decarbonization and increase resilience. This study does not constitute an exhaustive action plan for the decarbonization of public procurement, which would then have to cover all sectors.

Current impact modeling is mainly based on monetary data. The use of physical emission factors (measured in kgCO<sub>2</sub>e/tons or units) would allow a more precise calculation of the GHG impacts. This requires using input-output tables with physical data in addition to monetary data, which is not yet possible on the scope covered by this study, FIGARO and EXIOBASE being monetary IOT.

In addition, as this study focuses on GHGs as an environmental issue, complementary dimensions such as biodiversity, water consumption and critical resources could be explored as a complement.

The models are based on publicly available data and could be refined locally based on the most accurate data available from local administrations and authorities. Impacts could also be modeled prospectively, as the impact of the criteria on electric vehicles and low-carbon electricity generation will increase significantly in the future.

Although the analysis provides insight into the direct impacts of public procurement, it does not quantify broader leverage effects. It is a conservative approach. Further analysis on how public purchasing decisions influence supplier behavior, industry standards and market dynamics could reveal significant additional benefits beyond the immediate scope of purchasing actions.

The indirect impact of GHG criteria on switching suppliers and relocating production has not been modeled. The consequences of improved trade balances and health gains are not calculated.

The perception that sustainable products and services are more expensive is considered one of the main obstacles to green public procurement<sup>20</sup>. However, the impact of BESA criteria on public procurement costs is not modelled in this study. Modelling price dynamics with an input-output table would require too many assumptions. Therefore, an estimate of additional costs per sector has been carried out, based on an analysis of the literature.

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<sup>20</sup> UNEP 2017



**Carbone 4** is the first independent consultancy specialised in low carbon strategy and adaptation to climate change.

Constantly on the lookout for low amplitude signals, we deploy a systemic view of the energy-climate issue, and put all our rigour and creativity to work to transform our clients into leaders in the climate challenge.

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