



**Project GPP-STREAM “Green Public Procurement and Sustainability Tools for
Resource Efficiency Mainstreaming”**

**GREEN PUBLIC PROCUREMENT AS A TOOL FOR A LOW-
CARBON ECONOMY**

ACTIVITY: POLICY BRIEF

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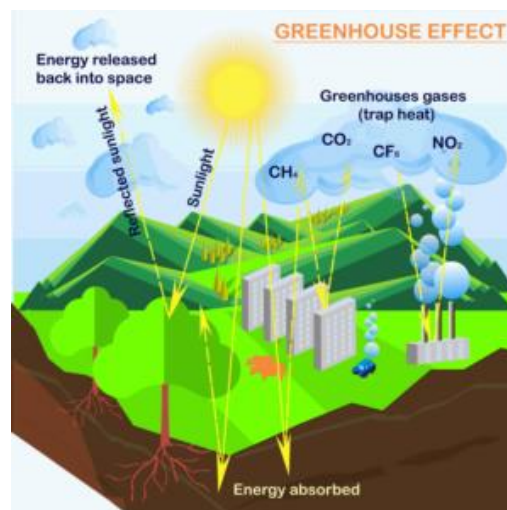
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1. Overview

Carbon dioxide (CO₂) is the most significant greenhouse gas in Earth's atmosphere. Since the Industrial Revolution, anthropogenic emissions – primarily from use of fossil fuels and deforestation – have rapidly increased its concentration in the atmosphere, leading to global warming. Carbon dioxide also causes ocean acidification because, dissolving in water, it forms carbonic acid. Low-carbon economy is the key for sustainable development and an important policy instrument in the fight against climate change.

Public authorities are the biggest assigner in EU and Green public procurement is the tool for buying low-carbon goods and services and helps to stop the process of “greenhouse” effect.



This policy brief is based on the lesson learned during the transnational event held in Sibiu, Romania 11-13.09.2020 and on the Municipality development Plan of Gabrovo municipality.

During the event, presentations “**Climate Change Adaptation in the Frame of Green Path Towards Sustainable Development**” and “**Education for Green Public procurement and sustainable development and climate change adaptation**” were given by speakers from National Meteorological Administration, Romania and the University “Lucian Blaga” of Sibiu.

The Municipal Development Plan of Gabrovo Municipality is a strategic document defining goals, measures and specific actions for sustainable development on the territory of the municipality. The different sections of the plan include specific goals and policies, providing sustainable development for the community, the pursuit of resource efficiency, as well as the inclusion of innovative approaches to the environment – reduced consumption, zero waste, carbon footprint and so on.

2. Introduction

The main Greenhouse gases (GHGs) are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases. GHGs occur naturally in the Earth's atmosphere, but activities such as the burning of fossil fuels are increasing the levels of GHGs in the atmosphere, leading to climate change.

In most activities carbon dioxide represent the most relevant greenhouse gas. Agriculture, forestry, fishing, mining and quarrying are the only activities where emissions of methane and nitrous oxide (expressed in CO₂ equivalents) were greater than those of carbon dioxide.

Air emissions accounts measure the interplay between the economy and the environment, in order to assess whether current production and consumption activities are on a sustainable path of development. Measuring sustainable development is a complex undertaking as it has to incorporate



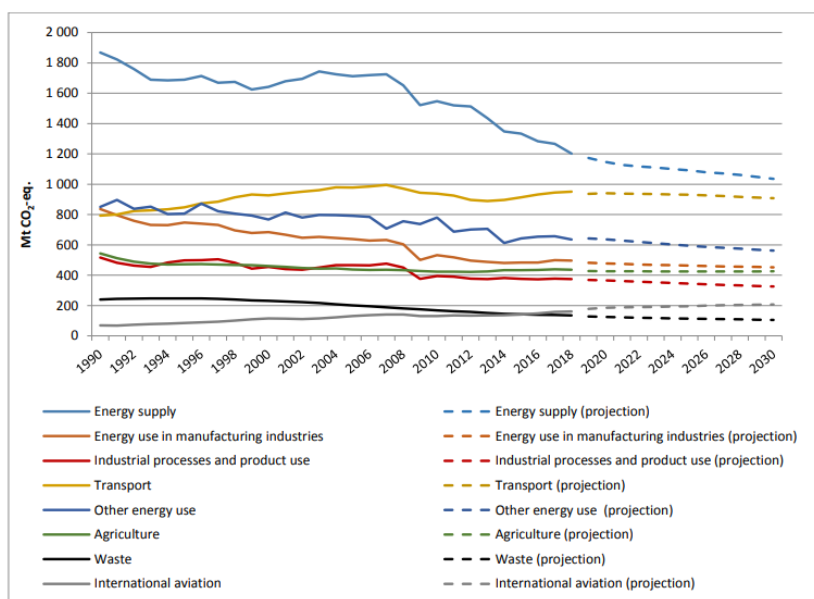
economic, social and environmental indicators. The data obtained from air emissions accounts may subsequently feed into political decision-making or underpinning policies that target both continued economic growth and sustainable development.

EU has set goals to reduce emissions by 20% by 2020. The 2020 targets of GHG emissions set the maximum level of emissions an EU country permitted. Thus, countries with a lower GDP are permitted to emit a higher level of greenhouse gases, as their economy is dependent on activities that cause pollution. At the same time, they have more interest for implementing GPPs with more tangible results, replacing standard criteria with green (sustainable) ones. Nevertheless, less wealthy countries are still obligated to minimise their GHG emissions.

With the new Green Deal European Commission set the ambition target to transform the EU into a modern, resource-efficient and competitive economy with no net emissions of greenhouse gases by 2050. The Commission has already set out a clear vision of how to achieve climate neutrality by 2050. Between 1990 and 2018, it reduced greenhouse gas emissions by 23%, while the economy grew by 61%. However, current policies will only reduce greenhouse gas emissions by 60% by 2050. By summer 2020, the Commission will present an impact assessed plan to increase the EU's greenhouse gas emission reductions target for 2030 to at least 50% and towards 55% compared with 1990 levels in a responsible way.

As we see in the tables below, although harmful emissions are reduced even the best performing EU Countries didn't reach their target on the base for 2017.

EU GREENHOUSE GAS EMISSIONS BY SECTOR



- The table EU GREENHOUSE GAS EMISSIONS BY SECTOR is provided by https://ec.europa.eu/clima/sites/clima/files/strategies/progress/docs/swd_2019_396_en.pdf



According to the Progress made in cutting emissions published on EU commission website (https://ec.europa.eu/clima/policies/strategies/progress_en) EU greenhouse gas emissions were reduced by 23% between 1990 and 2018, while the economy grew by 61% over the same period the MS needs continue implementing their policy for CO2 emissions to be able to reach EU next target set for “2030 Climate and Energy Framework” - “Overall target: at least -40 % domestic GHG emissions reduction vs 1990”

GPP as a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured. GPP has a power to boost the public authority to reach their goals for CO2 reduction. Public authorities can use energy efficiency as a minimum requirement or as a criteria for evaluation of the offer. For example 1 kWh energy from electricity in Bulgaria is 0.82 kg CO2 or 1 kwh energy from Natural Gas in Bulgaria is 0.2 kg CO2.

Use GPP to reduce energy consumption or change the energy source public authority reduces the GHG. The good example how GPP helps is Gabrovo municipality tender for changing traffic lights, where the Contract award criteria were the best price-quality ratio and one of the elements that were evaluated were energy consumption. As a result the winner offer traffic lights with twice lower energy consumption compare to the next participant and four times lower energy consumption compare to the replaced ones. This simple example of GPP shows how such a simple requirement (energy consumption) saves 478 kg CO2 for one year compare to the standart/conventional public procurement, that doesn't take into account environmental impact.

3. Policy Context

POLICY FRAMEWORK

EU Level:

- European Green Deal – an ambitious package of measures ranging from ambitiously cutting greenhouse gas emissions, to investing in cutting-edge research and innovation, to preserving Europe’s natural environment.
- EU Emissions Trading System – The EU emissions trading system (EU ETS) is a cornerstone of the EU's policy to combat climate change and its key tool for reducing greenhouse gas emissions cost-effectively. It is the world's first major carbon market and remains the biggest one.
- Effort sharing: Member States' emission targets - The Effort Sharing legislation establishes binding annual greenhouse gas emission targets for Member States for the periods 2013–2020 and 2021–2030. These targets concern emissions from most sectors not included in the EU Emissions Trading System (EU ETS), such as transport, buildings, agriculture and waste. The Effort Sharing legislation forms part of a set of policies and measures on climate change and



energy that will help move Europe towards a low-carbon economy and increase its energy security.

National and local level:

- **National Development program: Bulgaria 2020** - Outlines the use of GPP as a mechanism for stimulation of the demand on environmentally-friendly products, produced through an effective use of resources.
- **Third National Action Plan on Climate Change 2013-2020** - The PP procedures which are associated with energy efficiency requirements are pointed out as a fundamental tool for meeting the goals of the strategy.
- **Draft of a National Climate Change Adaptation Strategy and action plan for the period until 2030** - Point out the enhancement of GPP as a measure with an indirect effect on the reduction of the greenhouse gas emissions.
- **Municipal development plan of gabrovo municipality 2014- 2020 - PRIORITY 8:** Implementation of an active policy by the Municipality of Gabrovo for sustainable energy and reduction of the carbon footprint.

GREEN Public procurement legislation:

Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC Text with EEA relevance – Motive (91) Article 11 TFEU requires that environmental protection requirements be integrated into the definition and implementation of the Union policies and activities, in particular with a view to promoting sustainable development. This Directive clarifies how the contracting authorities can contribute to the protection of the environment and the promotion of sustainable development, whilst ensuring that they can obtain the best value for money for their contracts

The Public procurement act is national regulation about public procurement rules in Bulgaria. It encourages public authorities to set as a minimum requirements or criteria or as a bid evaluation indicator environmental protection requirements.

ORDINANCE № H-18 of 8.08.2016 on determining the methodology for calculating certain costs for the entire life cycle of road vehicles - the ordinance determines the methodology for calculating LCC of road vehicles of categories M and N.

LCC include the costs of energy consumption, emissions of carbon dioxide (CO₂), nitrogen oxides (NO_x), non-methane hydrocarbons (NMHC) and particulate matter for the entire service life of road vehicles.



MAIN BARRIERS AND ISSUES

Lack of management support is one of the barriers. Although EU policy for climate changes adaptation there is still many public authorities across Europe do not have a high awareness of the importance of the GPP agenda or that their awareness is not made explicit to their purchasing staff. In the provision of almost all goods and services, a point in their life cycle can be identified in which harmful emissions are generated, but in order to take into account the level of GHG in the public procurement, management needs to support experts and anticipate higher costs for Green goods/services compared to the standard one.

A way to motivated decision maker to support GPP is with monitoring and compares GHG in GPP contracts to the standard one. See the example of replacing traffic lights.

Green products are perceived to cost more:

A key challenge identified by many public sector organisations is changing behaviour within purchasing departments. In particular using purchase price alone to decide between offers, rather than the full life-cycle cost of the product or service, can affect the take-up of green products and services.

While applying environmental criteria to procurement procedures can sometimes mean higher initial purchasing costs, the overall costs often actually decrease since the higher purchasing prices of green goods and services are compensated by lower operating, maintenance or disposal costs.

The hire level of GPP usages can boost the companies to invest in Low-carbon production, increase the competition and reduce the price of Green goods and services.

Lack of training and limited established environmental criteria for products/services

Staff responsible for carrying out specific tasks do not always have the skills, or are not provided with the appropriate training. Training is generally required for procurers on the legal and technical aspects of GPP implementation, on the concept of life-cycle costing and for end-users on the sustainable use of products.

For many product and service groups, public authorities do not have access to clear and verifiable criteria which allow them to incorporate environmental considerations into their tendering while complying with the requirements of the Procurement Directives and other sources of procurement law.

The GPP trainings can increase the expert competency: to identify the point of goods and services life cycle with hire level of GHG generation; to set the correct requirements and criteria; to set the correct value of the green criteria and the way to evaluate it and how to control the contract and monitoring the GHG emissions.



Nowadays main criteria and requirements linked to the CO₂ reductions are energy efficient and level CO₂ production during the exploitation (mainly in vehicles) of goods and services. In the future the GPP should include more criteria and requirements saving CO₂ emissions – transportation from the manufacturer to the customers (distance, kind of vehicles use), reduce the unusable materials as packages or use the recycle materials that produce less GHG.

Lack of co-operation between authorities.

There is still little in terms of systematic implementation of GPP across Europe, with the majority of public authorities acting alone, often on their own initiative. Both informal and formal cooperation needs to grow to enhance GPP. The lack of coordinated exchange of best practice and networking between authorities has been identified as an obstacle to greater GPP implementation. Joint procurement can save CO₂ by optimizing the transport of goods and encourage the companies to offer environmental neutral goods because of the amount of the order and to develop the innovation companies to invest in eco-friendly production.

HOW CAN GPP-STREAM HELP TO SOLVE THE PROBLEM?

- GPP-Stream project will help partners and their stakeholders to increase the number of GPP thought the approval action plans. The practice shows that the energy efficiency goods and services and amount of saved CO₂ emissions are the most suitable criteria and the public authorities use them, but as we shown during experience exchange during the first phase of the project in a food supply chain there is also opportunities to reduce GHG in each level – production, logistic/transport and consumption.
- Improvement of the communication with citizens and business will support the public authorities to dial with the public attitudes and perceptions about the need to invest in low-carbon goods and services, even at a slightly higher value. This will also increase the CO₂ saves through the efficiently use of the goods and the proper organization of the services. A big amount of GHG emissions are generated during the exploration of goods and services, and Public authorities acquires most of them to be used by citizen. It is very important the proper behave of the users so GPP-Stream will help citizens to build and develop this proper behave through the actions for communications and information campaigns.
- GPP TENDER MODELS TOOLKIT FOR RESOURCE EFFICIENCY – contained tender models that can be used directly or adopted by the public authorises to implementation of the various policy instruments that has as a result CO₂ reduction.
- Straightening the communication among the PP experts from various public institutions and project partners and share their knowledge and experience on GPP will give the necessary confidence in less skilled colleagues/experts. They will also exchange best and new practices and tools (e.g., GPP tender models, LCC calculation tools) and knowledge how to use them and discuss specific legal and technical aspects related to the application of GPP.



4. The way forward

PROMOTE THE GPP AS A STRATEGIC TOOL FOR LOW-CARBON ECONOMY:

Through the presentations **“Climate Change Adaptation in the Frame of Green Path Towards Sustainable Development”** and **“Education for Green Public procurement and sustainable development and climate change adaptation”** were strongly presented the consequences from the greenhouse effect. The natural anomalies such as a flood, hurricanes, droughts etc. have a direct impact on a human’s life.

The full potential of GPP is not reach yet. Most of the experts accepted GPP as an administrative process for choosing the contractor. The GPP is a process started with analyze and planning of public authorities need, market research and market engagement, writing tender documentation, published, run off the tender and contract assigned and finally and very important is monitoring of the contract and results, and start the process from the beginning with the analyze and compare with the similar contract.

The full potential and efficient of the GPP will be reach when the decision maker, experts and business realize that the GPP is “endless” process.

The next phase of the project ant its goals through partners’ actions plans is to improve the mentioned stages, as the contracting authorities appoint persons responsible for the various activities, conduct relevant training of public procurement experts, organize information meetings and campaigns among the public and create a system for evaluation and monitoring of public procurement.

To explain better the potential of GPP and methods (tools) that experts may use to convince the decision maker and citizen for benefits of GPP and improve it here are some examples.

1. Gabrovo municipalities replace 11 diesel busses with 11 CNG buses.



Input	Baseline				Conventional tender			Green tender				
	Quantity of vehicles	Average distance per vehicle per year (km/yr)	Kind of fuel	Amount of fuel per 100 km	Quantity of vehicles	Average distance per vehicle per year (km/yr)	Kind of fuel	Amount of fuel per 100 km	Quantity of vehicles	Average distance per vehicle per year (km/yr)	Kind of fuel	Amount of fuel per 100 km
Standard Engine - fuel 1	11	100 000	Gas	55.0 l/100 km					11	100 000	CNG	50.0 l/100 km
Standard Engine - fuel 2			Gas	55.0 l/100 km							CNG	50.0 l/100 km
Electro Engine			Electricity	kWh/100km			Electricity	kWh/100km	1	11 000	Electricity	15.0 kWh/100km
Hybrid Engine			Electricity	kWh/100km			Electricity	kWh/100km			Electricity	kWh/100km
Hybrid (combined test cycle)			Electricity	kWh/100km			Electricity	kWh/100km			Electricity	kWh/100km
Fuel (combined test cycle)			Gas	l/100 km			Gas	l/100 km			Gas	l/100 km
TOTAL	11	100 000			0	0			12	111 000		
Total consumption and emissions	In case there is a second fuel like in a bi-fuel engine or if not only diesel but also 100% Biodiesel is used as fuel				Please insert the amount of fuel provided by the COMBINED test cycle			Please insert the amount of fuel provided by the COMBINED test cycle			Please insert the amount provided	
	Annual fuel consumption (l/yr)	CO ₂ -emissions per year (t)	Energy consumption (kWh/yr)	CO ₂ -emissions per year (t)	Total amount of fuel during the life time of the vehicles (l)	Energy consumption (kWh)	CO ₂ -emissions per year (t)	Total amount of fuel during the life time of the vehicles (l)	Energy consumption (kWh/yr)	CO ₂ -emissions per year (t)		
Standard Engine - fuel 1	418 000	4.18	1 151	0	0	0	0	0	0	0		
Standard Engine - fuel 2	0	0	0	0	0	0	0	0	0	0		
Electro Engine	0	0.00	0	0	0	0	0	0	1 150	0.00	0	0
Hybrid Engine	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid (combined test cycle)	0	0	0	0	0	0	0	0	0	0	0	0
Fuel (combined test cycle)	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL		4,18	1 151			0,00	0			3,33	830	
Savings	Total savings (Baseline / Green tender)				Savings (Conventional tender / Green tender)							
	Energy savings (GWh/yr)	CO ₂ -savings (t/yr)	% of energy savings	% of CO ₂ -savings	Energy savings (GWh/yr)	CO ₂ -savings (t/yr)	% of energy savings	% of CO ₂ -savings				
Standard Engine - fuel 1	0,86	322	20%	28%	-3,32	-829	80%/91	80%/91				
Standard Engine - fuel 2												
Electro Engine	0,00	0	0%/01	0%/01	0,00	0	0%/01	0%/01				
Hybrid Engine												
Hybrid (combined test cycle)	0,00	0	0%/01	0%/01	0,00	0	0%/01	0%/01				
Fuel (combined test cycle)												

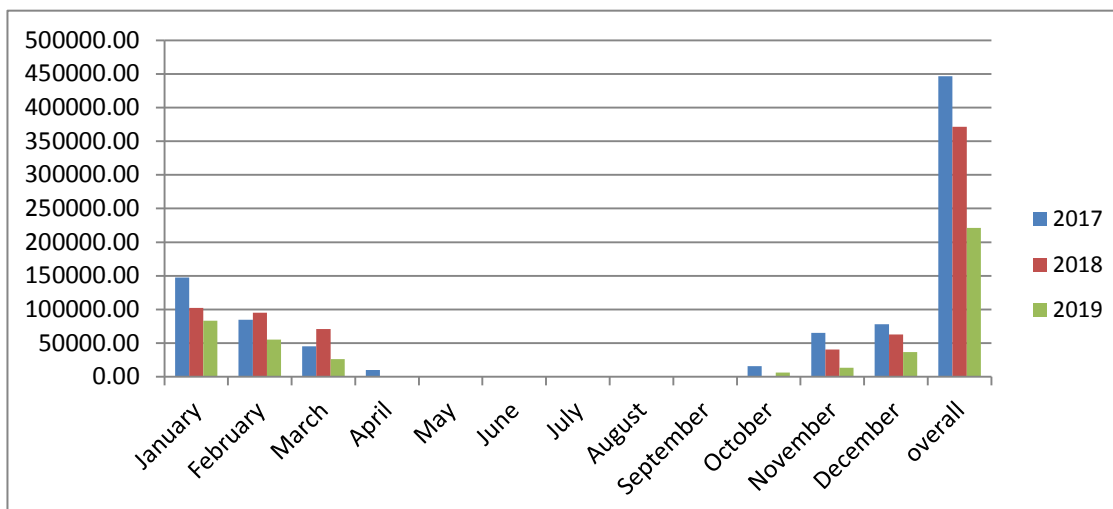
With this calculator Gabrovo municipality experts calculate that for one year (100 000 kilometers per bus) we save more than 300 tons of CO₂ emissions.

This kind of calculators also may be used for expert when they find the best proportion of price and energy savings, otherwise it is possible to buy very expensive goods with minimum environmental savings, or to miss the green goods and services because the ratio between price and savings are unrealistic.

Next level is with GPP for electric buses, but in addition to the better CO₂ emissions the experts think how to minimize the harmful substances from batteries and now Gabrovo municipality has a contract for 3 ultra-capacitors buses in which “batteries” there are no substances like lithium.

2. In most of the tenders Gabrovo municipality set a requirement or criteria for energy savings. This way in a tender for replacing of traffic lights as a criterion for offers evaluations was set energy efficient this made participants to offer energy efficient traffic lights. The result is that the contractor offer twice more efficient traffic lights compare to the second one. The savings of CO₂ are small approximately 500 kg per year (for 3 installations) comparing the Green offer to the conditional one. But through the experience exchange we other public authorities will multiplicity the model in their future GPP.

3. monitoring of GPP - Gabrovo municipalities renovate school building using GPP. As a result after the implementation of energy efficient measurement we have reduced the energy for heating (natural gas) the building with almost 50 percentages from 446420 kWh for 2017 to 221340 kWh for 2019 which is about **45466 kg CO₂**. The good visualization is more visible and influential, so when expert do their monitoring it is recommended to create graphics or tables, that will make audience to accept information and realize it better.



4. All kind of visualizations are acceptable to present the effect of the GPP. Good example was presented in Bulgaria during the National program for implementation of energy efficient measurement in multifamily residential building. The people were sceptic about the effect of the program and believe that there is not effect of the measures. There were organized a lot of meetings but the people continued to be sceptic until one international meeting where the presenter from France share with us how they solve this issue. They made a picture with a thermal camera end shown it to the owners of the buildings.



A photo like this changes people's attitudes about energy efficiency measures

To reach all this is necessary to promote GPP as a strategic tool against the climate changes among the public procurers and decision makers by presenting them different approaches to the acquisition of goods and services process:

- Better need analyzes and market engagement.
 - o Better knowledge: During the planed training will be present the modules Strategic Aspects of GPP, Needs Assessment, Market engagement and other based on training materials developed by the EC.



- An awareness-raising campaign about the benefits on low-carbon economy will be a part of campaign for raising public knowledge on the principles of circular economy and the role of GPP
- Providing for conditions of performance (technical specifications):
 - Quality of the product (aspect, taste, seasonality)
 - Reference to labels and tools for CO₂ savings calculation
- Setting adapted criteria to compare offers:
 - Important to take energy efficient and greenhouse gasses into account in weighting

OTHER RECOMMENDATIONS TO THE NATIONAL AND EU POLICY DECISION MAKERS:

The role of the trade market may be better linked to the GPP. Nowadays there aren't enough mechanisms and/or tool for Public authorities to realize the saved CO₂ emissions to the "carbon market". The green goods and services that public authorities buy are a little bit more expensive than the conventional one. There is mechanisms for companies and/or national governments to trade with the CO₂ emissions as EU Emissions Trading System, A 'cap and trade' system, but there aren't mechanism for the local authorities to trade the saved CO₂ emissions (realized by GPP) or there isn't enough information for it.

Our recommendation is for better regulation that allow local authority to trade directly the saved carbon emission that will boost the process to low-carbon economic.

5. Sources of Information

This policy brief is based mainly on lesson learned during the transnational event held in Sibiu, Romania 11-13.09.2020 and municipality development plan of Gabrovo municipality, but also use information from EU commission website:

- https://ec.europa.eu/clima/sites/clima/files/strategies/progress/docs/swd_2019_396_en.pdf
- https://ec.europa.eu/environment/gpp/barriers_en.htm
- <https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide>
- https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Greenhouse_gas_emissions_by_industries_and_households#Analysis_by_economic_activity
- <https://g8fip1kplyr33r3krz5b97d1-wpengine.netdna-ssl.com/wp-content/uploads/2019/12/The-European-Green-Deal-Communication.pdf>



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For more information about GPP-STREAM project visit:

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