

How to combat the climate change with EU Public Procurement law

Mandatory obligations or award criteria?

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Abstract

There are great challenges we have to face in the environmental and climate field, especially when greenhouse gas emissions are changing the conditions for human life and impacting biodiversity. The main reason resulting in climate change is greenhouse gas emissions during production and consumption of goods and services. The Green Public Procurement (hereafter GPP) acts as a powerful tool to reach sustainable development goal—to combat climate change, since it stimulates public authorities to procure goods, services and works with a reduced environmental impact throughout the life cycle.

EU legislations have set mandatory obligations to alleviate the climate crisis in the process of public procurement in certain areas, such as infrastructure, food and catering services, vehicles and energy-using products. Meanwhile, there are flexible award criteria for stakeholders who take environmental externalities into consideration. In this thesis the author will (1) explore the underlying factors affecting climate change and GPP policy in EU level; (2) identify mandatory obligations in different sectors for environmental externalities; (3) elaborate the application of environmental award criteria in case law and comparison among different stages; (4) set out the balance of economic and environmental goals from practices. How to combat climate change with GPP tools while maintaining the economic benefits with mandatory obligations or award criteria is the research question the author will investigate.

Abbreviations

CSR	Corporate Social Responsibility
EEA	European Environment Agency
EMAS	Eco-Management and Audit Scheme
EMS	Environmental Management System
ETS	Emissions Trading System
EU	European Union
GHG	Greenhouse Gas
GPP	Green Public Procurement
IPCC	Intergovernmental Panel on Climate Change
LCC	Life-cycle Costing
MEAT	Most Economically Advantageous Tender
SDG	Sustainable Development Goal
SPP	Sustainable Public Procurement

1. Introduction

1.1 Background

The climate change has ripple effects on weather, food production, water supplies, human health and more.¹ For instance, extreme weather events may cause increased nutrient loading in the catchment,² which will jeopardize inland waters and then the polluted agriculture and water would be a serious threat to health. The direct or indirect effects of climate change will lead to global temperature rise and associated physical-chemical alterations,³ thereby bringing severe and great changes on physical structure and biological configuration.

Sustainable Development Goal (hereafter SDG) 13 aims to “take urgent action to combat climate change and its impact”⁴ in the 2030 Agenda for Sustainable Development, and combating climate change is an explicit objective of EU environmental policy.⁵ Under such circumstances, many recent studies⁶ have focused on the problem of combating climate change with Green Public

¹ UNICEF, ‘The Ripple Effect: Climate change and children’s access to water and sanitation’ (2016) <<https://www.unicef.org/media/91291/file/Climate-change-WASH-Brief.pdf>> accessed 12 April 2021.

WORLD HEALTH ORGANIZATION, ‘Global climate change and health: an old story writ large’ in A.J. McMichael (eds), *Climate change and human health: risks and responses* (WHO 2003).

Mbow, C., C. Rosenzweig, L.G. Barioni, T.G. Benton, M. Herrero, M. Krishnapillai, E. Liwenga, P. Pradhan, M.G. Rivera-Ferre, T. Sapkota, F.N. Tubiello, Y. Xu, 2019: Food Security. In: *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.-O. Pörtner, D.C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press.

² Faycal Bouraoui, L. Galbiati and Giovanni Bidoglio, ‘Climate Change Impacts on Nutrient Loads in the Yorkshire Ouse Catchment (UK)’ (2002) 6(2) HESS <https://www.researchgate.net/publication/29627048_Climate_Change_Impacts_on_Nutrient_Loads_in_the_Yorkshire_Ouse_Catchment_UK> accessed 12 April 2021.

³ Gouin, T., Armitage, J. M., Cousins, I. T., Muir, D. C., Ng, C. A., Reid, L., & Tao, S. (2013). Influence of global climate change on chemical fate and bioaccumulation: the role of multimedia models. *Environmental toxicology and chemistry*, 32(1), 20–31. <<https://doi.org/10.1002/etc.2044>> accessed 20 April 2021.

⁴ United Nations Statistics Division (2016) *The Sustainable Development Goals Report 2016*. United Nations.

⁵ Article 191(1), Treaty on the Functioning of the European Union, the fourth objective is “promoting measures at international level to deal with regional or worldwide environmental problems, and in particular combating climate change”.

⁶ Municipal administration of Gabrovo, Green Public Procurement As A Tool For A Low-Carbon Economy in ‘Project GPP-STREAM “Green Public Procurement and Sustainability Tools for Resource Efficiency Mainstreaming”’ (EU European Regional Development Fund).

Olga Chiappinelli, Friedemann Gruner, and Gustav Weber, ‘Green Public Procurement: climate provisions in public tenders can help reduce German carbon emissions’ (2019) DIW Weekly Report 51/52 <https://www.diw.de/documents/publikationen/73/diw_01.c.701237.de/dwr-19-51-1.pdf> accessed 20 April 2021.

Procurement (hereafter GPP) tools,⁷⁸ namely, how the public buyers react to the sharp increase in temperature and effects of climate change in the public procurement procedure. The uptake of GPP will mitigate the climate crisis and formalize goals set in Kyoto Protocol, Paris Agreement and United Nations SDGs.⁹ The aim of GPP described by EU is to “stimulate a critical mass of demand for more sustainable goods and services which otherwise would be difficult to get onto the market and make GPP a strong stimulus for eco-innovation”¹⁰ as an environmental regulatory tool.

Green public procurement concentrates on environmental issues, in a more limited scope compared with Sustainable Public Procurement (hereafter SPP) including three pillars of economic, social and environmental responsibility. Governments have been put in the position to ‘lead by example’ and advanced the goals of sustainable development with their purchasing power.¹¹ The value of public procurement accounts for a large portion¹² that further improvement on GPP can mitigate the climate change to some extent, especially within specific industrial sectors, such as energy, transport, waste management, social protection and the provision of health or education services, where public authorities are the principal buyers.¹³

Directive 2014/24/EU has two complementary goals to protect the internal market. One is to allow procurers to make better use of public procurement in support of

⁷ GPP is 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.

⁸ The combination of Goal 12 “Ensure sustainable consumption and production patterns” with Goal 13 “Take urgent action to combat climate change and its impacts” in the 2030 Agenda for Sustainable Development.

⁹ United Nations Environment Programme, ‘*Global Review Of Sustainable Public Procurement*’ (2017) <https://wedocs.unep.org/bitstream/handle/20.500.11822/20919/GlobalReview_Sust_Procurement.pdf> accessed 22 April 2021.

¹⁰ Green Public Procurement - Environment - European Commission. (n.d.). European Commission. <https://ec.europa.eu/environment/gpp/index_en.htm> accessed 25 April 2021.

¹¹ Dragos, Dacian C. and Neamtu, Bogdana, Sustainable Public Procurement in the EU: Experiences and Prospects (April 27, 2014). Francois Lichere, Roberto Caranta, Steen Treumer (eds), Novelities in the 2014 Directive on Public Procurement, DJOF Publishing, December 2014 Forthcoming, <<https://ssrn.com/abstract=2488047>> accessed 25 April 2021.

¹² Government expenditure on works, goods and services represents around 14% of the EU’s gross domestic product (GDP), accounting for roughly EUR 1.8 trillion annually. From European Commission (2015) Public Procurement Indicators 2013. These figures exclude spending by utility companies; earlier estimates (2011) including utility procurement were of around 19% of EU GDP, accounting for more than EUR 2.3 trillion.

¹³ Centre for Enterprise Liability (CEVIA). ‘Procurement beyond price: Sustainability and CSR in public purchasing’(SMART, May 2017). <<https://www.smart.uio.no/events/events/20170504-procurement-beyond-price.html>> Accessed 1May 2021.

common societal goals such as environmental protection and the other is to increase the efficiency of public spending in general.¹⁴ Considering economic benefits when promoting environmental interests in the GPP processes, the main issue is how to keep the balance between economic and ecological aims with obligatory or preferable criteria. The thesis will explain how to integrate environmental considerations into cost-efficient public procurement, including ecological requirements, the application of award criteria and eco-friendly factors in the production or consumption process with life-cycle analysis.

1.2 Aim and research question

The aim of the research is to evaluate the methods of promoting green public procurement tools to address the climate change at the EU level. In this thesis the author will (1) explore the underlying factors affecting climate change and GPP policy; (2) identify mandatory obligations in different sectors for ecological requirements; (3) elaborate the application of environmental award criteria in case law and comparison among different stages; (4) set out the balance between economic and environmental goals from practices. The main research question is how to combat climate change with GPP tools while maintaining the economic benefits with mandatory obligations or award criteria in the public procurement processes.

1.3 Scope and constraints

As the pioneer of exploiting public procurement tools to meet sustainable development goals, the actions of the EU will form the scope of this thesis. The author will interpret the new public procurement directive and analyze leading examples of the Swedish and Danish government's practices. However, due to the final deadline for completion, there is not enough time for interviews with stakeholders regarding problems on applying the environmental criteria in the process of public procurement. Results of the survey conducted by the Swedish

¹⁴ Public procurement and repealing Directive 2004/18/EC Text with EEA relevance [2014] OJ L 94/65 Recital 2.

Environmental Protection Agency¹⁵ will be drawn on to identify the establishment of environmental requirements in connection with the purchasing of goods and services.

1.4 Materials and method

The research for this thesis is mainly based on EU legislations (*Directive 2014/24/EU*¹⁶ particularly, some sectoral directives and case law). Meanwhile, the author analyzes the current situation with reports from various organizations, such as United Nations, European Commission and Intergovernmental Panel on Climate Change (hereafter IPCC). Advanced practices in Sweden and Denmark, for instance, will be introduced to give recommendations for stakeholders.

Legal research is adopted for the methodology. Under Article 18 and Article 67 of *Directive 2014/24/EU*, what obligations or preferences are for public buyers and corporates to mitigate the climate change, how the environmental criteria develop in the case law will be interpreted.

The research combines procurement law and environmental law with social science, economics and politics from an interdisciplinary perspective. Furthermore, socio-legal scholarship employs a wide range of applied social science methods including quantitative and qualitative research. For instance, to study the impacts of public procurement tools, the data of greenhouse gas emissions should be collected during the process of applicable measures thus assessing the effectiveness of those changes. To evaluate the quality of green products or services, how well the product demonstrates performance against the criteria set out will be taken into consideration.

1.5 Structure

The thesis is divided into four discussion chapters. Chapter 2 will identify main factors affecting the climate change and the actions adopted to mitigate the urgency

¹⁵ Oelreich, Kristina von, Märta Philp, and Sverige. Naturvårdsverket. *Green Public Procurement : A Tool for Achieving National Environmental Quality Objective*. Rapport / Naturvårdsverket: 6600. Naturvårdsverket, 2013.

¹⁶ Public procurement and repealing Directive 2004/18/EC Text with EEA relevance [2014] OJ L 94/65.

with green public procurement at the EU level. The author will clarify GPP criteria as well.

Chapter 3 will consider mandatory obligations for stakeholders in specific sectors, such as buildings, food and catering services, vehicles and energy-using products and interpret the new public procurement directive. Additionally, corporate social responsibility to reach the sustainable environment will be promoted.

Chapter 4 will elaborate the application and development of award criteria with environmental externalities in case law. The competitive tendering should take into account eco-friendly factors and the Most Economically Advantageous Tender (hereafter MEAT) principle. Different stages will be compared and an example for the application of award criteria in the road construction sector will be set.

Chapter 5 will assess how to reach the balance between ecological and economic aims with mandatory obligations and award criteria, considering Life-cycle Costing (hereafter LCC). The green procurement can improve the climate and environment as creating growth and jobs at enterprises, reducing utility bills for energy-efficient or water-saving products for financial savings at the same time.¹⁷

¹⁷ European Commission. (2016). *Buying green! A handbook on green public procurement* (3rd ed.). Publications Office of the European Union. <<https://doi.org/10.2779/246106>> accessed 8 April 2021.

2. Factors affecting climate change and GPP tools

2.1 Introduction

In accordance with *Climate Booklet*, the main factor of climate change is greenhouse gas emissions, and consequently, greenhouse gases trap heat in the atmosphere, leading to global warming.¹⁸ Warming above 1.5°C risks further sea level rise, extreme weather, biodiversity loss and species extinction, as well as food scarcity, worsening health and poverty for millions of people worldwide.¹⁹ The climate crisis can be attributed to various consumer sectors: transport is the biggest contributor in EU, at around 40 per cent, followed by industry and commerce.²⁰ With the increasing demand for energy, the urgent action is to shift from using fossil fuels to renewable forms of energy on transportation. The EU seeks to ensure that climate concerns are taken on board in areas such as transport and energy, and also promotes low-carbon technologies and adaptation measures.

To reach the aim of limiting global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels²¹ stated in the Paris Agreement, EU has set a high standard for the implementation, through its commitment to climate neutrality by 2050, and a 55% reduction by 2030.²² As an efficient tool to

¹⁸ myclimate. (2020). Climate Change and Protection. <https://www.myclimate.org/fileadmin/user_upload/myclimate_Klimabooklet_2020_EU.pdf> accessed 2 May 2021.

¹⁹ Hoegh Guldberg, D. Jacob, M. Taylor, M. Bindi, S. Brown, I. Camilloni, A. Diedhiou, R. Djalante, K.L. Ebi, F. Engelbrecht, J. Guiot, Y. Hijikata, S. Mehrotra, A. Payne, S.I. Seneviratne, A. Thomas, R. Warren, and G. Zhou, 2018: *Impacts of 1.5°C Global Warming on Natural and Human Systems. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. In Press.

²⁰ European Commission. (2016). *Buying green! A handbook on green public procurement* (3rd ed.). Publications Office of the European Union. <<https://doi.org/10.2779/246106>> accessed 10 April 2021.

²¹ The Paris Agreement, (United Nations-Climate change), < <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>> accessed 6 May 2021.

²² 2030 Climate Target Plan, COM/2020/562 final.

adapt and mitigate climate change, green public procurement is searching for mechanisms for a low-carbon economy.

In the meantime, the greatest challenge in pursuing environmental goals is framing the proper law, regulatory tool and public policy initiative.²³ GPP policy in EU shall be put into well-implemented practices to effectively facilitate combating climate change.

2.2 Factors affecting climate change

2.2.1 Effects of climate change

Increasing greenhouse gas emissions raise air and sea temperatures, which reduces the total global snow and ice mass. As a result of the growing volume of water and higher temperatures, sea levels are rising and the evaporation rate is accelerating at the same time.²⁴ Climate change would negatively impact agricultural activity and biodiversity of local ecosystems, because of increasing mortality rates and limited adaptive capacity of flora and fauna.²⁵ Extreme weather such as heavy storms will lead to more infrastructural issues. Power cuts, restrictions on train travel and overcrowded streets are doing damage to daily life gradually.²⁶

The climate change would also present detrimental consequences for humanity. First of all, it will affect food supply since productive agricultural areas shift geographically and the productivity of grazing land could drop.²⁷ Second problem is water supply, higher rates of evaporation and increased intensity and duration of droughts will elevate water scarcity in some parts of the world.²⁸ The climate refugee is another area of concern, where exacerbated droughts, soil erosion,

²³ Stallworthy, M. (2012). *Everyday Environmentalism - Law, Nature and Individual Behaviour*. By Jason J. Czarnetzki. *Journal of Environmental Law*, 24(1), 178–181. <<https://doi.org/10.1093/jel/eqr037>> accessed 6 May 2021.

²⁴ Mimura N. (2013). *Sea-level rise caused by climate change and its implications for society*. Proceedings of the Japan Academy. Series B, Physical and biological sciences, 89(7), 281–301. <<https://doi.org/10.2183/pjab.89.281>> accessed 7 May 2021.

²⁵ European Commission, op.cit, 20.

²⁶ Guldberg, op.cit, 19.

²⁷ Food and Agriculture Organization of the United Nations, 'The State Of Food And Agriculture' in *Climate Change, Agriculture And Food Security* (FAO 2016).

²⁸ Hugh Turrall, 'Climate change, water and food security' in *FAO Water Reports* (FAO 2011).

desertification and natural disasters can all lead to population displacement and human migration.²⁹

2.2.2 Human causes of climate change

The direction of climate change is being drastically altered by humanity. In the last few millennia, the main factors of climate change are tectonic shifts of the continents, and fluctuation in ocean circulation and placement of mountain ranges across the globe.³⁰ However, since the industrial revolution coming, human activities have accelerated the trajectory greatly to levels of unprecedented warming and atmospheric disruptions.³¹ The increased level of greenhouse gases is mainly due to the burning of fossil fuels, both modern agriculture and deforestation are major contributors as well.

2.2.2.1 The burning of fossil fuels

The Intergovernmental Panel on Climate Change has found that emissions from fossil fuels are the dominant cause of global warming. Changes in the composition of the atmosphere are due to natural events like volcanic events before, whereas being driven by fossil fuel consumption now.³² When fossil fuels are dug or pumped up from the ground and burned, carbon dioxide is released.³³ Humans' burning of carbon-rich materials such as oil, coal and gas would disrupt the natural system and increase the emission of CO₂ faster than natural processes can handle.³⁴ As a result, the ecological scale is tipped and has thrown the climate out of balance. In the process of public procurement, purchasers are supposed to make their commitments for the environment, such as replacing fossil fuels with renewable energy sources, increasing energy efficiency, and electrifying sectors such as transportation and buildings.

²⁹ European Commission, op.cit, 20.

³⁰ Alex Mitchell, 'The Drivers of a Changing Climate' (*RESET*, February 2018) <<https://en.reset.org/knowledge/climate-change>> accessed 8 May 2021.

³¹ Ibid.

³² Holli Riebeek, 'The Carbon Cycle' (*Earth Observatory*, June 2011) <<https://earthobservatory.nasa.gov/features/CarbonCycle>> accessed 8 May 2021.

³³ Clientearth, 'Fossil fuels and climate change: the facts' (*ClientEarth Communications*, 11 November 2020) <<https://www.clientearth.org/latest/latest-updates/stories/fossil-fuels-and-climate-change-the-facts/>> accessed 10 May 2021.

³⁴ Mitchell, op.cit, 30.

2.2.2.2 Modern agriculture and deforestation

Agriculture releases greenhouse gases when the land is cultivated and artificial fertilizers are produced and used.³⁵ Deforestation has added large quantities of carbon dioxide to the atmosphere, which would otherwise have been bound to the trees and in the ground.³⁶ “Climate-smart” agriculture³⁷ would be a green tool to achieve the triple-win of food security, adaptation and mitigation, which will facilitate reduced emissions from deforestation. Sustainable intensification of agriculture (the increase of yields per unit of land or other input)³⁸ will be one resilient strategy for reducing its impacts on climate change. Perennial and intensified annual-crop agriculture that adopts sustainable agricultural land management approaches may be able to sequester significant amounts of carbon in the soil and above-ground biomass.³⁹ Organic modern agriculture will be beneficial to the climate and it is the goal for green food procurement.

2.3 GPP policy in EU

Green procurement initiatives began in the early 1990s in Europe, following the inclusion of GPP in the 1992 Rio Earth Summit and Agenda 21, then becoming a significant feature of the European policy landscape and a global initiative by the late 1990s.⁴⁰ The Swedish action plan establishes that “Green public procurement is a market-based and powerful controlling tool in the work of guiding society towards long-term and sustainable consumption and production”.⁴¹ Green public procurement is a publicly induced private environmental governance model that incorporates standard-setting through environmental and technical criteria, information disclosure through labelling and accompanying standards, and market-

³⁵ European Environment Agency, 'Agriculture and climate change' (EEA, June 2015) <<https://www.eea.europa.eu/signals/signals-2015/articles/agriculture-and-climate-change>> accessed 10 May 2021.

³⁶ Annika Dean, 'Deforestation and climate change' (*Climate Council*, 21 August 2019) <<https://www.climatecouncil.org.au/deforestation/>> accessed 10 May 2021.

³⁷ THE WORLD BANK, 'Climate-smart Agriculture' (5 April 2021) <https://www.worldbank.org/en/topic/climate-smart-agriculture> accessed 10 May 2021.

³⁸ Eva Wollenberg, Bruce M. Campbell, Peter Holmgren, Frances Seymour, Lindiwe Sibanda, and Joachim von Braun, *Actions needed to halt deforestation and promote climate-smart agriculture* (June 2011)

³⁹ Jeff Schahczenski and Holly Hill, 'Agriculture, Climate Change and Carbon Sequestration' (2009) NCAT, <https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs141p2_002437.pdf> accessed 11 May 2021.

⁴⁰ Christopher McCrudden, *Buying Social Justice: Equality, Government Procurement, and Legal Change* (Oxford 2007) 389-91.

⁴¹ Sverige. Naturvårdsverket (2009) *Green public procurement in Sweden*. Swedish Environmental Protection Agency.

based mechanisms in terms of measuring and pricing the environmental externalities of production and consumption.⁴²

Green Public Procurement is regarded as an efficient tool for the achievement of the climate-related commitments explicitly. The energy efficiency has been taken into considerations in the Public Procurement Directive, that is to say, public administrations across EU could save up to 20% of their energy use by 2020, with corresponding carbon reductions.⁴³ At the same time, GPP offers contracting authorities the choice to make decisions regarding implicit carbon prices that are higher than the general carbon price, and more environmental impacts than solely carbon emissions as well.⁴⁴ This indicates public purchasers can integrate more stringent climate considerations with the discretion when buying green products and services.⁴⁵

To improve the environmental performance of both production and consumption, there are various types of instruments for GPP targets. For instance, considering externalities of climate change and the resource use, quantitative tools can be limiting GHG emissions or formulating maximum electricity usage, by the same token, administrative policies can be demanding transports executed with biofuel vehicles and ban on hazardous chemicals.⁴⁶

There are two different kinds of criteria of GPP: Core criteria and Comprehensive criteria. The Core criteria are aiming at simple application of GPP and decreasing administrative costs for companies to the minimum on key areas of environmental performance.⁴⁷ Whereas the Comprehensive criteria are adopted by authorities who want to take a lead on environmental and innovative goals, including more aspects and higher requirements.⁴⁸ The Core criteria are the reflection of availability while Comprehensive ones manifest the ambition of green products.

⁴² Czarnezki, J. J. (2019). Green Public Procurement. Amsterdam University Press.

⁴³ Correia, F., Howard, M., Hawkins, B., Pye, A., Lamming, R.: Low carbon procurement: an emerging agenda. *J. Purch. Supply Manag.* 19, 58.

⁴⁴ B. Martinez Romera and R. Caranta, EU Public Procurement Law Purchasing beyond price in the age of Climate Change, *EPPPL*, 3/2017, p. 282.

⁴⁵ Chiappinelli, O., Zipperer, V.: Using public procurement as a decarbonization policy: a look at Germany. *DIW Econ. Bull.* 49, 523–533 (2017).

⁴⁶ Lundberg, Sofia & Marklund, Per-Olov, 2012. "Green Public Procurement as an Environmental Policy Instrument: Cost Effectiveness," *Umeå Economic Studies* 847, Umeå University, Department of Economics.

⁴⁷ COM/2008/0400 final.

⁴⁸ Ibid.

Both sets of criteria will allow Member States and contracting authorities to continuously improve levels of GPP and create a level playing field, hence accelerating the internal market for environmentally sound goods and services.

For instance, if a given product is covered by both the Energy Star (energy efficiency requirements) and by the voluntary European Ecolabel, the Core GPP criteria would be set at the level of the energy efficiency requirements of the Energy Star Regulation, whereas the Comprehensive criteria would be set on the basis of ecolabel criteria.⁴⁹ The Core criteria are set to address critical environmental impacts which are easier to comply with, on the other hand the Comprehensive criteria would address additional criteria considered relevant for defining a given product.⁵⁰

Environmental criteria are applied in different ways in different stages of procurement processes. When GPP criteria are used for technical specifications, tenderers will be demanded to comply with requirements if they are willing to participate in the contract. On the other hand, if GPP criteria are adopted in award criteria, there will be additional bonus for bidders aligning with preferences, however, bidders who submit the lowest price may still score the highest points which depends on the proportion.

Principal types of environmental requirements stipulated are general requirements like environmental policies, individually tailored requirements for product or service and certified environmental management system or the equivalent.⁵¹ Among those requirements, in accordance with the survey reported by Swedish Environmental Protection Agency, a very large majority (75%) of the organizations that stipulate environmental requirements when purchasing do so as mandatory obligations/ “shall” requirements.⁵² A majority (56%) do so as award criteria/ “should” requirements, whereas 40% organizations do it as special contractual/ agreement conditions.⁵³ Mandatory obligations are mainly applied in areas which

⁴⁹ Ibid.

⁵⁰ Ibid.

⁵¹ Czarnezki, Jason J., *Green Public Procurement: Legal Instruments for Promoting Environmental Interests in the United States and European Union* (December 13, 2019).

⁵² Oelreich, K. von, Philp, M. and Sverige. *Naturvårdsverket (2013) Green public procurement : a tool for achieving national environmental quality objective. Naturvårdsverket (Rapport / Naturvårdsverket: 6600)*..

⁵³ Ibid.

lead to greenhouse gas emissions mostly and award criteria are more feasible at a broader range. However, the respondents said it depends on the type of good/service is to be procured.⁵⁴ Voluntary approaches tend to be more common in decentralized countries, leaving as much autonomy as possible to the sub-central government level.⁵⁵ The majority of EU member states have adopted a voluntary approach to GPP, while certain member states have introduced mandatory green procurement for their central governments or for selected product groups.⁵⁶

There are several tools for green procurement to motivate public authorities to specify environmental requirements. The first method is to involve decision makers. The government can exercise controlling in the form of legislation and promote to concern climate change via information and dialogue in the process of assuring green procurement.⁵⁷ The second way is improving skills. Specifying environmental requirements demands skills, hence, the government shall offer training and practical guidance on green procurement for more professionals.⁵⁸

At the same time, it is a good idea to offer an efficient and simple purchasing tool. The government can supply a simple tool in the form of predetermined procurement criteria. The Environmental Management Council in Sweden is drafting procurement criteria for products purchased in the public sector, which comprise proposed requirements, criteria and contract terms, background information and explanatory notes.⁵⁹ Continuous follow-up is crucial as well. Green procurement processes must be followed up in order to know how the instrument is developing and how to propose new measures.⁶⁰

⁵⁴ Ibid.

⁵⁵ Hasanbeigi, A., Becque, R., Springer, C. 2019. *Curbing Carbon from Consumption: The role of Green Public Procurement*. San Francisco CA: Global Eciency Intelligence.

⁵⁶ Ibid.

⁵⁷ Czarnezki, Jason J., op.cit, 51.

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ Ibid.

3. Mandatory obligations on GPP

3.1 Introduction

In various public sectors where the conduct of stakeholders might negatively affect climate change in a large extent, for instance, transportation, food and construction, there are mandatory obligations to achieve the goal of GPP. The government will impose requirements that certain technologies should be used to abate Greenhouse Gas (hereafter GHG) emissions and as the consequence economic actors are not free to choose whether or not to comply with the regulation as it is 'commanded'.⁶¹ The obligations for economic operators in the performance of public contracts can be found in the Article 18(2) of *Directive 2014/24/EU*, which states that measures should comply with the environmental law. The obligations must be interpreted as legally binding, that is to say, non-adherence to environmental law may be sanctioned and the development of mandatory obligations to those economic operators when bidding for public contracts.⁶² Meanwhile, for suppliers who want to pursue public contracting opportunities, they must meet specific mandatory requirements related to Corporate Social Responsibility (hereafter CSR) principles mostly.

3.2 The interpretation of Directive 2014/24/EU

Directive 2014/24/EU has created innovative provisions aiming at environmental protection. For example, the adoption of LCC to calculate the real cost of a tender and clarification of taking considerations from all production processes for the subject matter of public contracts in environmental criteria under Article 67.⁶³ Moreover, it will give contracting authorities the discretionary power to award a contract in line with the optimum price-quality ratio.⁶⁴

⁶¹ Keohane and Olmstedt, *Markets and the Environment* (2007), pp. 130-131.

⁶² Telles, P., & Ølykke, G. (2017). Sustainable Procurement: A Compliance Perspective of EU Public Procurement Law. *European Procurement & Public Private Partnership Law Review*, 12(3), 239-252. <<https://www.jstor.org/stable/26695461>> accessed at April 8, 2021.

⁶³ Article 67 of 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, OJ L94/65 of 28.03.2014.

⁶⁴ SIGMA: Incorporating environmental considerations into public procurement, Brief 13 (2016). Available at: <<http://www.sigmaweb.org/publications/Public-Procurement-Policy-Brief-13-200117.pdf>> p. 9.

Sustainable public procurement is clearly mandated to achieve a level economic playing field. Article 18, known as the horizontal clause, requires economic operators to comply with environmental, social and labor obligations established by EU law, national law, collective agreements and international law in the performance of public contracts.⁶⁵ It also emphasizes that “contracting authorities shall treat economic operators equally and without discrimination and shall act in a transparent and proportionate manner” which is the main principle of procurement.⁶⁶ According to Article 18(2), it is mandatory obligation for economic actors to abide by environmental requirements in the law. However, the provision is formulated in general, there are more specific rules in various sectors for potential tenderers. In the same vein, a compulsory provision has been set out in Article 69(3), “*contracting authorities shall reject the tender, where they have established that the tender is abnormally low because it does not comply with applicable obligations referred to in Article 18(2)*”.

Furthermore, characteristics required of the work, service or supply according to Article 42 of the Directive, which are defined as technical specifications, may be formulated in terms of performance or functional requirements including environmental aspects.⁶⁷ Indicatively, they may cover environmental and climate performance levels, production processes and methods at any stage of the life-cycle of works.⁶⁸ Article 43 spells out a specific label may be required to prove the works, services or supplies at stake corresponding to the environmental characteristics.⁶⁹ Similarly, under Article 62, economic operators can be required for the production of certificates drawn up by independent bodies attesting they are compliant with

⁶⁵ Czarnezki, Jason J., Green Public Procurement: Legal Instruments for Promoting Environmental Interests in the United States and European Union (December 13, 2019).

⁶⁶ Article 18 of 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, OJ L94/65 of 28.03.2014.

⁶⁷ Weatherill, S.: EU law on public procurement: internal market law made better. In: Bogojevic, S., Groussot, X., Hettne, J. (eds.) Discretion in EU Public Procurement. Hart Publishing, Chicago (2019), pp. 41–42.

⁶⁸ Van den Abeele, E.: Integrating social and environmental dimensions in public procurement: one small step for the internal market, one giant leap for the EU? Working Paper 2014.08, Brussels (2014). Available at: <https://www.etui.org/publications/working-papers/integrating-social-and-environmental-dimensions-in-public-procurement-one-small-step-for-the-internal-market-one-giant-leap-for-the-eu>, p. 12.

⁶⁹ Pouikli, K. Towards mandatory Green Public Procurement (GPP) requirements under the EU Green Deal: reconsidering the role of public procurement as an environmental policy tool. ERA Forum 21, 699–721 (2021). <<https://doi.org/10.1007/s12027-020-00635-5>> accessed 10 May 2021.

certain environmental management systems or standards, for instance, Eco-Management and Audit Scheme (hereafter EMAS) of the Union.⁷⁰

3.3 Mandatory obligations in specific areas

The directive on public procurement does not include general mandatory requirements for environmental procurement or obligations demanding member states to address environmental aspects in all procurement processes. The differences among individual sectors of the procurement market have been found to be too vast to impose general obligations.⁷¹ The specificities of different sectors in procurement shall be taken into consideration, thereby promoting the installation of sector-specific mandatory standards. Furthermore, specific mandatory obligations will be the necessary complement to the general requirements and they would be in a position to provide guidance and support for effective implementation.⁷²

The conduct of authorities in the sectoral green public procurement is the key for combating climate change, so sector-specific EU legislation creates mandatory obligations in the fields of buildings, food and catering services, vehicles and energy-using products. For example, *2010/31/EU on the Energy Performance of Buildings (recast)* makes certain minimum energy performance standards compulsory for all new build and major renovation projects from 2013. There is a minimum percentage of food which must be organically produced⁷³ and the use of fruit and vegetables which are in season. Specific sustainable public procurement approaches should be developed for vehicles such as buses, emergency vehicles and waste collection trucks which are stipulated in the Clean Vehicles Directive.⁷⁴

Member States can formulate mandatory rules of higher level on GPP use. In order to decrease GHG emissions for timber purchases, the Danish government requires

⁷⁰ Keohane and Olmstedt, *op.cit.*, 61.

⁷¹ Recital 95(1) of 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, OJ L94/65 of 28.03.2014.

⁷² Pouikli, K. Towards mandatory Green Public Procurement (GPP) requirements under the EU Green Deal: reconsidering the role of public procurement as an environmental policy tool. ERA Forum 21, 699–721 (2021). <<https://doi.org/10.1007/s12027-020-00635-5>> accessed 2 May 2021.

⁷³ Council Regulation (EC) 834/2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91 [2007] OJ L 189/1.

⁷⁴ Promotion of clean and energy-efficient road transport vehicles [2009] OJ 2 120/5.

sustainable timber when state institutions procure wood and wood-based products and the use of wood for state development projects as well.⁷⁵ As for energy using products, state institutes have to follow the guidelines for electricity using products set out by the Danish Energy Agency.⁷⁶ Additionally, public authorities are obliged to make an assessment of the vehicle's environmental impact and energy consumption throughout the life of the vehicle included in the purchasing decision when it comes to clean and energy efficient road transport vehicles.⁷⁷

3.3.1 Food and catering services

In Sweden the food represents one-third of the climate impact from households, meanwhile accounts for over 10% of greenhouse gas emissions in Europe.⁷⁸ Meat-consumption and food waste are two major challenges, and food waste alone is responsible for similar amount of CO₂ equivalent emissions across Europe as those emitted by an entire country such as Romania or the Netherlands each year.⁷⁹ Food production leads to animal and plant species being threatened, pollution of the oceans and increasing strains on the planet's resources as well.

A leading case in Malmö, Sweden took place in 2010, which is a policy for Sustainable Development and Food approved by the local government council. The policy aims to deliver green food of high quality in all public canteens and has targets for food served across all service departments to be certified organic by 2020, with greenhouse gas emissions related to food cut by 40 percent by 2020, compared to 2002 levels.⁸⁰ At the end of 2012, 40 percent of the food budget (about nine million Euros) was spent on organic food.⁸¹

Another prototype on wholesaler of sustainable food for schools and elderly care homes in the city of Helsingborg, Sweden, a range of environmental requirements

⁷⁵ National GPP Action Plans (policies and guidelines), <https://ec.europa.eu/environment/gpp/pdf/210303_GPP%20NAPs_March%202021.pdf>accessed 1 May 2021.

⁷⁶ Ibid.

⁷⁷ Ibid.

⁷⁸ European Environment Agency (2014) Greenhouse gas emissions share by sector in EU28, 2012.

⁷⁹ European Commission (2010) Preparatory study on food waste across the EU27, at page 16.

⁸⁰ Clement, Watt, Semple, THE REAL COSTS OF PROCUREMENT, The Procura+ Manual, A Guide to Implementing Sustainable Procurement, 3rd Edition (ICLEI – Local Governments for Sustainability, European Secretariat 2016) P94.

⁸¹ Smith, J., Andersson, G., Gourlay, R., Karner, S., Mikkelsen, B. E., Sonnino, R., & Barling, D. (2016). *Balancing competing policy demands: the case of sustainable public sector food procurement*. Journal of Cleaner Production, 112(Part 1), 249–256.

were applied as mandatory rules. For instance, all organic products provided should fulfil the requirements in the regulation (EC) 834/2007 on organic production and labelling of organic products, with verification given to the procuring organizations.⁸² By requiring organic food, the hazardous impacts from pesticides and stress on agricultural land are reduced. Besides, the food packaging should be easy to recycle to decrease disposal costs. If additional costs apply for one-time use packaging, this price must be included.⁸³ The demands for certificated palm oil also make sure that the procurement does not contribute to deforestation and loss of biodiversity.⁸⁴

3.3.2 Transportation

Particular responsibility shall be placed on the transport sector, which accounts for a quarter of the EU's total greenhouse gas emissions.⁸⁵ *Directive 2009/33/EC* on the promotion of clean and energy-efficient road transport vehicles (*the Clean Vehicles Directive*) is pursuing to promote clean transit mass in public procurement tenders and set the standard for clean vehicles.⁸⁶ The proposal is in line with the European Commission's energy union package, which plans action on the further decarbonization of road transport concerning with the 2030 climate and energy targets.⁸⁷

The Clean Vehicles Directive requires that contracting authorities take into account the lifetime emissions of carbon dioxide, nitrogen oxides, non-methane hydrocarbons, particulate matter and energy consumption in any purchase of road transport vehicles above the EU thresholds.⁸⁸ The objective can be reached by setting maximum values as technical specifications for energy and environmental performance or including ecological impacts in the purchasing decision as award criteria or monetizing and internalizing the environmental externalities (calculating an 'operational lifetime cost' according to the 'harmonized' methodology laid out in

⁸² GPP in Practice, Issue no.95, March 2020.

⁸³ Ibid.

⁸⁴ Ibid.

⁸⁵ European Environmental Agency, 'Greenhouse gas emissions from transport in Europe' (EEA, 11 May 2021), <<https://www.eea.europa.eu/data-and-maps/indicators/transport-emissions-of-greenhouse-gases-7/assessment>> accessed 13 May 2021.

⁸⁶ Czarnecki, Jason J., op.cit, 65.

⁸⁷ COM(2015) 80 final.

⁸⁸ Czarnecki, Jason J., op.cit, 65.

the directive).⁸⁹ The first option would stipulate mandatory obligations for contracting authorities. As a pioneer on GPP, the Swedish government agencies have higher requirements, which requested all automobiles purchased or leased must be green cars.⁹⁰ Additionally, purchasers shall ensure that cars use renewable fuels to the greatest possible extent.

The European Commission has set specific emission targets annually for each manufacturer under Regulation (EU) 2019/631⁹² which entered force on 1 January 2020. The new EU fleet-wide CO₂ emission targets will apply from 2020, 2025 and 2030 and the Regulation includes a mechanism to incentivize the uptake of zero- and low-emission vehicles.⁹³ For example, during the period 2020-2024, cars should control the emission under 95 g CO₂/km and 147 g CO₂/km for vans.⁹⁴ If the average CO₂ emissions of a manufacturer's fleet exceed its specific emission target in a given year, the manufacturer has to pay an excess emissions premium of €95 per g/km of target exceedance for each of its vehicles newly registered in that year.⁹⁵

3.3.3 Construction and buildings

The construction sector has been identified as a fundamental area to achieve the aim of the Copenhagen 2025 Climate Plan, that is, making the city the world's first carbon-neutral capital by 2025.⁹⁶ Mandatory obligations are stipulated for suppliers, for instance, meeting 2020 building code requirements for all new buildings constructed 2015-2020.⁹⁷ In addition, Copenhagen's 2010 *Sustainability in Construction and Civil Works* document contains binding standards for construction, remodeling, renovation projects, and civil works that involve the city.

⁸⁹ Gregor Erbach, 'Review of the Clean Vehicles Directive' European Parliamentary Research Service, PE 614.690 August 2019.

⁹⁰ Petrol or diesel driven automobiles may emit no more than 120 grams of carbon dioxide per kilometre; light commercial vehicles may emit a maximum of 230 grams of carbon dioxide per kilometre.

⁹¹ Sverige. Naturvårdsverket (2009) *Green public procurement in Sweden*. Swedish Environmental Protection Agency.

⁹² Setting CO₂ emission performance standards for new passenger cars and for new light commercial vehicles, and repealing Regulations (EC) No 443/2009 and (EU) No 510/2011 [2019] OJ 111/14.

⁹³ Ibid.

⁹⁴ Ibid.

⁹⁵ Article 8, *ibid*.

⁹⁶ Copenhagen Commune, The CPH 2025 Climate Plan, <<https://urbandevlopmentcph.kk.dk/artikel/cph-2025-climate-plan>> accessed 12 May 2021.

⁹⁷ Hasanbeigi, A., Becque, R., Springer, C. 2019. *Curbing Carbon from Consumption: The role of Green Public Procurement*. San Francisco CA: Global Eciency Intelligence.

These standards must be incorporated into tenders for municipal construction and civil-works projects. To achieve major goals⁹⁸ under the climate plan, obligatory rules are required.

3.4 Corporate Social Responsibility

According to Swedish Environmental Protection Agency Report, more than half (54%) of the organizations regard environmentally compliant purchasing as a strategic tool for helping to achieve the generational goal and national environmental quality objectives.⁹⁹ In fact, government agencies do so to a lesser extent than other individual organizations.

However, to reach sustainable objectives is not mandatory obligations for private actors. While contracting authorities may include environmental criteria for the specific supplies in the purchase, they cannot more generally require the supplier to align with certain corporate social responsibility policies.¹⁰⁰ As stated in the Preamble of public procurement directive, contracting authorities should "not be allowed to require tenderers to have a certain corporate social or environmental responsibility policy in place".¹⁰¹

Even though for potential tenderers considering environmental sustainability is not obligatory responsibility, for those who want to pursue public contracting opportunities, they must still meet specific mandatory requirements related to CSR principles mostly. These requirements concern standards of responsibility (technical specifications) and eligibility (certification).¹⁰² The driving force to take responsible business conduct for suppliers is staying competitive. The accounting and reporting standards of GHG emissions which are stipulated in *The Greenhouse*

⁹⁸ Reduce energy consumption in city administration buildings by 40% compared to 2010 levels; Meet 2015 building code requirements in municipal buildings built before 2015, and meet 2020 building code requirements for all new buildings constructed 2015-2020; Install 60,000 square meters of solar panels on municipal buildings.

⁹⁹ Oelreich, K. von, Philp, M. and Sverige. Naturvårdsverket (2013) Green public procurement : a tool for achieving national environmental quality objective. Naturvårdsverket (Rapport / Naturvårdsverket: 6600).

¹⁰⁰ Laurens Ankersmit, 'The contribution of EU public procurement law to corporate social responsibility' [2020] 26(1-2) European Law Journal-Review of European Law in Context 9-26.

¹⁰¹ Recital 97 of 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, OJ L94/65 of 28.03.2014.

¹⁰² Keith Snidera and others, 'Corporate social responsibility and public procurement: How supplying government affects managerial orientations' [2013] 19(2) Journal of Purchasing and Supply Management 63-72.

Gas Protocol help entities manage environmental risks to ensure long-term success in the sustainable economy (identifying reduction opportunities and participating in GHG markets) and prepare for climate policies (mandatory reporting programs and voluntary GHG programs).¹⁰³

To promote CSR in public procurement processes, CSR principles may be applied in the contract award decision for evaluating contractor proposals.¹⁰⁴ While mandatory proposal evaluation factors include cost/price, quality, past performance, and small and medium-sized enterprises participation, the government's procuring agency has flexibility in determining the relative importance of the evaluation factors.¹⁰⁵ More green factors would be added as mandatory CSR-related factors in the future. For instance, fuel efficiency and the use of alternative fuel sources can be significant evaluation factors in an aircraft development contract.¹⁰⁶

Requirements for companies in GPP will stimulate responsible business practices and raise awareness of environmental crisis. For example, winning and executing a contract for development of a particular “green” technology may influence a firm's CSR orientation regarding the environment.¹⁰⁷ H&M group has taken a lead tackling the challenge of climate change. On the one hand, it improves energy efficiency by putting more specific demands on HVAC (heating, ventilation, air-conditioning) systems and replacing HID (high-intensity discharge) with LED lighting systems, which will help every store use 40% less energy per square meter and opening hour by 2030 than those in 2016.¹⁰⁸ On the other hand, it adopts the renewable fuel strategy which supports the use of electrical vehicles and second generation bio-fuels in transport operations.¹⁰⁹ It collaborates across sectors with governments to create a climate neutral supply chain as well.¹¹⁰

¹⁰³ World Resources Institute, ‘GHG Protocol Corporate Accounting and Reporting Standard’, revised edition.

¹⁰⁴ Laurens Ankersmit, *op.cit.*, 100.

¹⁰⁵ Keith Snidera, *op.cit.*, 102.

¹⁰⁶ Laurens Ankersmit, *op.cit.*, 100.

¹⁰⁷ Keith Snidera, *op.cit.*, 102.

¹⁰⁸ H&M Group Sustainability Report 2018, chapter 4.

¹⁰⁹ *Ibid.*

¹¹⁰ *Ibid.*

4. The application of environmental award criteria

4.1 Introduction

The legal framework and policies in EU motivate voluntary use of GPP in sectors where there are no mandatory harmonized procurement standards as well. During the award stage, the award of contract will be based on the tender which is most economically advantageous to the authority if the contract notice indicates to potential bidders.¹¹¹ This can however include assessment on the basis of price and cost as well as environmental requirements related to the contract.¹¹² The environmental aspects as possible criteria for evaluating the price-quality ratio shall consider the delivery, package and disposal of products, and in respect of work and service contracts, similarly waste minimization or resource efficiency will be assessed.¹¹³

The award criteria shall (1) not confer unrestricted freedom of choice; (2) ensure the possibility of effective competition; (3) allow the information provided by the tenderers to be verified (4) be linked to the subject-matter of the contract.¹¹⁴ Unlike technical specifications, which impose minimum measurable requirements for the procurement, award criteria may incentivize bidders to make a better offer to gain more points than minimum required level and help reach the right balance between different desired characteristics.¹¹⁵ On the other hand, obligatory requirements set out in the technical specifications are a certainty, whereas award criteria are an incentive, rather than a guarantee.¹¹⁶ This chapter will elaborate the application of

¹¹¹ Further Education Library of Procurement, Most economically advantageous tender (MEAT), <<https://www.felp.ac.uk/content/most-economically-advantageous-tender-meat>> accessed 5 May 2021.

¹¹² Ibid.

¹¹³ Public procurement and repealing Directive 2004/18/EC Text with EEA relevance [2014] OJ L 94/65, Recitals 97-99.

¹¹⁴ Article 67 of 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, OJ L94/65 of 28.03.2014.

¹¹⁵ Anna Lupi, 'The Use of MEAT', *Forum on the Competitiveness of the European Rail Supply Industry*, (Brussels, 5 October 2017).

¹¹⁶ Ibid.

environmental criteria through case law development, compare different stages and then analyze the use of award criteria in road construction.

4.2 The case law development

In the case *Gebroeders Beentjes BV v State of the Netherlands*,¹¹⁷ it is possible to exclude a tenderer on the basis of various qualitative criteria not expressly specified in the contract notice, in specific, the discretion which the authorities awarding contracts have in order to determine the most economically advantageous tender on the basis of objective criteria and thus does not involve an element of arbitrary choice. If the authorities awarding contracts do not take the lowest price as the sole criterion for the award of a contract but have regard to various criteria with a view to award the contract to the most economically advantageous tender, they are required to state those criteria in the contract notice or the contract documents. It is the first step where the lowest price is not the only criterion.

The environmental award criteria initially started in the case *Concordia Bus*.¹¹⁸ In accordance with Article 36 of *Directive 92/50*, the award criteria shall be on basis of “(a) where the award is made to the economically most advantageous tender, various criteria relating to the contract: for example, quality, technical merit, aesthetic and functional characteristics, technical assistance and after-sales service, delivery date, delivery period or period of completion, price; or (b) the lowest price only.” One issue that has been discussed is whether the concept of “quality” should also include “environmental quality”. In that way the environment would not be treated separately but would be seen as an important quality requirement that the supplier has to follow. The contracting authorities are free to choose the criteria to be used in awarding the contract which are related to identify the most economically advantageous tender, rather the ecological aim in Case *Gebroeders Beentjes* and Case *Evans Medical and Macfarlan Smith*.¹¹⁹

In *Concordia Bus*, environment management will be assessed as one of award criteria. Specifically, points were awarded *inter alia* for the use of buses with nitrogen oxide emissions below 4 g/kWh (+2.5 points/bus) or below 2 g/kWh (+3.5

¹¹⁷ Case 31/87 *Gebroeders Beentjes BV v State of the Netherlands*, EU:C:1988:422, [1988] ECR 4635.

¹¹⁸ C-513/99 *Concordia Bus*, [2002] ECRI-7213.

¹¹⁹ Case C-324/93 *Evans Medical and Macfarlan Smith* [1995] ECR I-563.

points/bus) and with external noise levels below 77 dB (+1 point/bus). Moreover, additional points were to be awarded for various certified quality criteria and for a certified environment protection program. Concordia argued the award of additional points was unfair and discriminatory, besides, no account can be taken of ecological factors which are not directly linked to the subject-matter of the tender. The Commission identified four conditions when assessing the economically most advantageous tender. They must be objective, apply to all the tenders, be strictly linked to the subject-matter of the contract in question, and be of direct economic advantage to the contracting authority. The Commission considers that it is legitimate to take environmental considerations into account if the organizer of the tender procedure itself benefits directly from the ecological qualities of the product and it is related to the subject-matter.

The environmental award criteria have been developed in case *EVN and Wienstrom*,¹²⁰ in other words, it can be established to pursue advantages which cannot be objectively assigned the direct economic value. If criteria comply with the requirements of Community law, contracting authorities are free not only to choose the criteria for awarding the contract but also to determine the weighting of such criteria, provided that the weighting enables an overall evaluation to be made of the criteria applied in order to identify the most economically advantageous tender. In addition, the Court specified that contracting authorities must both intend and be able to verify the accuracy of the information supplied by the tenderers when determining award criteria.

The defining factor for awarding scores on environmental policy has been questioned in case *Evropaiki Dynamiki v European Environment Agency (EEA)*.¹²¹ The third award criterion referred to the ‘General environmental policy of the company’ without further specification and the company which obtained the maximum score had a ‘certified environmental management scheme’ in place. Specifically, the submission of an appropriate certificate has been the only possible evidence of a general policy. Hence, the Committee decided that the certificate in question provided the most convincing evidence of one company’s general

¹²⁰ Case C-448/01 *EVN AG and Wienstrom GmbH v Republik Österreich*, ECLI:EU:C:2003:651.

¹²¹ Case T-331/06, *Evropaiki Dynamiki – Proigmena Systimata Tilepikoinonion Pliroforikis kai Tilematikis AE v European Environment Agency (EEA)*, ECLI:EU:T:2010:292.

environmental policy and so it awarded the maximum points to that company. Additionally, the award criteria have been clarified that if a certain number of points in the choice of the most economically advantageous tender will be granted to certain products with specific labels, the criteria should be listed and the tenderer ought to prove that the product satisfies those underlying criteria by all appropriate means.¹²²

4.3 Comparison at different stage

Environmental requirements can be adopted in public procurement processes at different stages. Technical specifications decide the obligatory requirements in details, including every technical prescription by the contracting authority, which defines the characteristics of a product, service or work subject to procurement, in a way to fulfil the use for which it is intended.¹²³ Many of the GPP criteria are appropriate for being directly consisted at this stage.¹²⁴ Technical specification requirements shall open up for public markets to competition and be explicitly stated in the tender notice.

Award criteria may be of qualitative (emission level for example) or economical nature (energy consumption for example), and they do not have to bring a direct advantage to the contracting authority itself.¹²⁵ However, they must be linked to the subject matter of the contract, expressly mentioned in the contract documents or tender notice, comply with the general Treaty principles and cannot give unrestricted freedom of choice to the contracting authority.¹²⁶

A contracting authority is also allowed to require that certain conditions shall be fulfilled after the contract has been awarded. These conditions are called contract performance conditions and may include requirements of the social and environmental nature.¹²⁷ Contract performance clauses are included specifically in

¹²² Case C-368/10, European Commission v Kingdom of the Netherlands, ECLI:EU:C:2012:284.

¹²³ Coordination of procedures for the award of public works contracts, public supply contracts and public service contracts [2004] OJ L 134/114, Annex VI, 1(a).

¹²⁴ European Commission, 'How can GPP Criteria be used at different stages of a tender procedure?' <https://ec.europa.eu/environment/gpp/faq_en.htm#use3> accessed 10 May 2021.

¹²⁵ Ibid.

¹²⁶ Ibid.

¹²⁷ Coordination of procedures for the award of public works contracts, public supply contracts and public service contracts [2004] OJ L 134/114, Article 26.

the conditions for the performance of contracts by public authorities,¹²⁸ which should be clearly related to the contract's execution and made known to tenderers during the procurement process.¹²⁹

When contracting authorities intend to purchase works, supplies or services with specific environmental characteristics, they may require a specific label in the technical specifications, the award criteria or the contract performance conditions as means of proof, provided that the requirements for the label are linked to the subject-matter of the contract.¹³⁰ It is essential that the label requirements are on basis of objectively verifiable and non-discriminatory criteria and are established in an open and transparent procedure which means they are accessible to all potential tenderers.¹³¹ In specific, if the subject matter and environmental criteria are not beneficial for particular bidders, it can be regarded the principle of non-discriminatory is satisfied.¹³²

For example, in the area of food and catering services, environmental criteria could be certificated organic food and associated environmental benefits, less meat, sustainable fishing or seasonal food.¹³³ These criteria can be adopted in technical specifications (certificated organic food could be considered as a minimal requirement); or award criteria (less meat and sustainable fishing could be taken as the preference); or contract performances (seasonal food could be specifically included in the contract).

There are two main differences between technical specifications and contract performance clauses. One is that technical specifications are more rigid than contract conditions, namely, they set rules and minimum requirements for all tenderers to afford equality.¹³⁴ The other is technical specifications act as pass or

¹²⁸ Public procurement and repealing Directive 2004/18/EC Text with EEA relevance [2014] OJ L 94/65, Article 70.

¹²⁹ European Commission, *op.cit*, 124.

¹³⁰ Where under the Directive 2014/24/EU the mentioning of specific labels is permitted, this was not so under the regime of Directive 2004/18/EC as interpreted by the Court of Justice in its judgement of Case C-368/10, *European Commission v. the Netherlands (Dutch coffee case)*.

¹³¹ Koninck, C., Ronse, T., & Timmermans, W. (2015). *European Public Procurement Law: The Public Sector Procurement Directive 2014/24/EU Explained through 30 Years of Case Law by the Court of Justice of the European Union* (2nd ed.). Wolters Kluwer Law & Business.

¹³² European Commission. *Buying green! A handbook on green public procurement* (3rd ed.). Publications Office of the European Union. (2016) <<https://doi.org/10.2779/246106>> accessed 15 May 2021.

¹³³ *Ibid.*

¹³⁴ *Ibid.*

fail requirements in the procurement, whereas contract clauses can only be enforced during the performance of the contract.¹³⁵

The public procurement directive states explicitly that enabling contracting authorities to distinguish between products on public interest grounds when they decide what they want to buy ('technical specifications') and how much value they place on environmental or social attributes of products ('award criteria').¹³⁶ Award criteria offer the fullest range of possibilities for involving environmental considerations in public supplies contracts generally, although they are not as determinative as technical specifications, since non-compliance with such criteria does not automatically lead to a rejection of a bid.¹³⁷

At the technical specification stage, as the minimum requirements have been settled, the question being answered is of the yes or no variety. For example, the EU Energy Star program is a voluntary energy labelling program, which asks public authorities to use energy efficiency criteria no less demanding than those defined in the Energy Star program when purchasing the covered categories of office equipment.¹³⁸ Technical specifications are minimum mandatory requirements that must be applied to all bidders when the environmental externalities are essential and relatively known for the contract.¹³⁹

Whereas the qualitative assessment should be taken into consideration at award criteria stage -- how well does the product demonstrate performance against the criteria set out? At the same time, contracting authorities are supposed to exercise the discretion and take into account the merits of the evidence submitted.¹⁴⁰ Environmental performances can be taken into consideration by distinguishing tenders where the minimum or maximum levels are not known in advance.¹⁴¹

¹³⁵ Ibid.

¹³⁶ Public procurement and repealing Directive 2004/18/EC Text with EEA relevance [2014] OJ L 94/65, Recitals 74 and 75, Article 42.

¹³⁷ Laurens Ankersmit, 'The contribution of EU public procurement law to corporate social responsibility' [2020] 26(1-2) European Law Journal-Review of European Law in Context 9-26.

¹³⁸ European Commission, Energy Star, <https://ec.europa.eu/energy/topics/energy-efficiency/energy-efficient-products/energy-star_en> accessed 15 May 2021.

¹³⁹ Abby Semple, Specifications, Selection, and Award Criteria. in Mark Cook (ed), A Practical Guide to Public Procurement (Oxford University Press 2015) 188.

¹⁴⁰ European Commission, 'Evaluation of tenders and award' in *Public Procurement Guidance For Practitioners* (EU 2018)

¹⁴¹ Ibid.

In addition, authorities are obligated to verify that tenders comply with their requirements, whereas award criteria are not subject to the same degree of regulation.¹⁴² Hence, if the most effective means of delivering and verifying the desired outcome is not known in advance of publishing tender documents, award criteria might be more appropriate for addressing environmental considerations.¹⁴³

4.4 Award criteria for road construction

To curb carbon consumption and production, there are various award criteria in the scope of road construction materials. First, the assessment of life-cycle costing requires bidders to evaluate the life-cycle impacts of the main road elements, including CO₂ emissions; Second, carbon footprint criteria demand that bidders evaluate the life-cycle global warming potential associated with the extraction, manufacturing, and transport of the materials for constructing the main road elements; Third, recycled and re-used content criteria require that bidders use materials that contain a minimum amount of recycled and/or re-used content for main road elements; Fourth, reduced emissions criteria for transport of heavy materials reward low CO₂ emissions resulting from transportation of aggregates used for main road elements.¹⁴⁴ GPP award criteria formulate a Bill of Quantities for a reference road should be provided to bidders as a basis for comparison, which includes key assumptions and results such as techniques applied, recycled or re-used content and by-products, CO₂ emissions per ton of transported materials from production site to the worksite and maintenance activities and frequency.¹⁴⁵ Bonus would be awarded considering the lowest life-cycle costing or the highest improvement of the road's carbon footprint.¹⁴⁶

¹⁴² Ibid.

¹⁴³ Ibid.

¹⁴⁴ Hasanbeigi, A., Becque, R., Springer, C. 2019. Curbing Carbon from Consumption: The role of Green Public Procurement. San Francisco CA: Global Eciency Intelligence. European Commission 2016.

¹⁴⁵ Ibid.

¹⁴⁶ Ibid.

5. The balance of ecological and economic goals

5.1 Introduction

Whichever mandatory obligations or award criteria are applied in the public procurement contracts, economic elements are unavoidable. The Preamble to *Directive 2014/24/EU* states that "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."¹⁴⁷ One crucial objective in the new public procurement directive is to maintain the balance of ecological and economic goals.

Contracting authorities have to base the award of public contracts on the most economically advantageous tender. The MEAT principle shall be identified on the basis of the price or cost, using a cost-effectiveness approach, such as life-cycle costing, including qualitative, environmental and social aspects, linked to the subject-matter of the public contract.¹⁴⁸ To break down the “economic growth dogma” which aims to optimize economic growth in short term, the application of mandatory obligations or innovative criteria for awarding contracts to acknowledge the environmental quality of the products and services offered would be an effective tool to achieve the balance of ecological and economic goals.

The most economically advantageous tender can *inter alia* be identified using life-cycle costing. Life-cycle costing covers (1) costs borne by the contracting authorities, such as costs relating to acquisition, costs of use, maintenance costs and end-of-life costs¹⁴⁹ and (2) costs imputed to environmental externalities linked to the product, service or works during its life-cycle; such costs may include the cost

¹⁴⁷ Public procurement and repealing Directive 2004/18/EC Text with EEA relevance [2014] OJ L 94/65, Recital 91.

¹⁴⁸ Public procurement and repealing Directive 2004/18/EC Text with EEA relevance [2014] OJ L 94/65, Article 67, para.1&2.

¹⁴⁹ Purchase price and all associated costs (delivery, installation, insurance, etc.) Operating costs, including energy, fuel and water use, spares, and maintenance; End-of-life costs (such as decommissioning or disposal) or residual value (i.e. revenue from sale of product).

of emissions of greenhouse gases and of other pollutant emissions and other climate change mitigation costs.¹⁵⁰ When externalities are included, life-cycle costing becomes ‘an environmentally-relevant methodology’ as a tool to evaluate the costs of a good or service not only for economic benefits.¹⁵¹

In the Green-7 countries¹⁵² where 50% public purchases are green on average, the financial impact of GPP in 2006/2007 was approximately -1.2%,¹⁵³ illustrating that GPP will benefit reducing costs. GPP takes efforts to influence the public consumption and production procedures so as to mitigate the damage caused to the environment while maintaining an economic equilibrium at the same time. For instance, the National Public Procurement Policy of Sweden has formulated clear policy objectives for its procurement strategy: “public procurement as a strategic tool for doing good business; effective public purchasing; legally certain public procurement; environmentally responsible”.¹⁵⁴ The Swedish government has set mandatory rules and developed criteria on GPP use to achieve these aims. This chapter will clarify how to reach the balance between environmental and economic goals with obligatory regulations or award criteria.

5.2 With mandatory obligations

The Action Plan for Sustainable Consumption and Production and Sustainable Industrial Policy (SCP/SIP)¹⁵⁵ has concluded that “stimulus is needed to promote the uptake of environmentally performing products, whilst avoiding internal market distortions which may result from purely national incentives for GPP. It therefore proposes mandatory measures for public procurement”.¹⁵⁶

GPP incorporates standard-setting through environmental and technical criteria, information disclosure through labelling and accompanying standards, and market-

¹⁵⁰ Public procurement and repealing Directive 2004/18/EC Text with EEA relevance [2014] OJ L 94/65, Article 68, recital 95&96.

¹⁵¹ Bengt Steen, 'Environmental costs and benefits in life cycle costing' [2005] 16(2) Management of Environmental Quality An International Journal 107-118.

¹⁵² Austria, Denmark, Finland, Germany, the Netherlands, Sweden, and United Kingdom.

¹⁵³ European Commission, op.cit, 17.

¹⁵⁴ National GPP Action Plans (policies and guidelines), March 2021, <https://ec.europa.eu/environment/gpp/pdf/210303_GPP%20NAPs_March%202021.pdf> accessed 5 May 2021.

¹⁵⁵ COM/2008/0397 final.

¹⁵⁶ Section 6, COM/2008/0400 final.

based mechanisms in terms of measuring and pricing the environmental externalities of production and consumption.¹⁵⁷ The regulatory methods can be classified into six categories—information, standard-setting, bans, market-based, infrastructure, and public awareness and pollution prevention,¹⁵⁸ which draw on routines from United States.¹⁵⁹ These regulatory options are supposed to function and interact comprehensively aiming to abate climate change.

First, informational regulation will encourage the society to abate pollution. EU energy label is a successful example to achieve the balance of environmental and economic benefits, “not only motivating companies to invest into research and offer more efficient products, but saving an average household in Europe several hundred euros per year for the energy bills”, from Commissioner for Energy, Kadri Simson.¹⁶⁰ Additionally, it will help customers cut their carbon footprint and reduce greenhouse gas emissions.

Second, effects-based or technology-based standards will set a specific threshold or require certain technologies to reduce harm. For example, eco-labels in public procurement will help the purchaser define the technical requirements. In addition, any organization can run an environmental management system (EMS) to screen the technical ability, which may request certification under the ‘Eco-management and audit scheme’ (EMAS) or the European/international standard on environmental management systems (EN/ISO 14001).¹⁶¹

Third, regulations can formulate prohibitions on harms for tackling climate change like plastic bags and smoking in public places. Internationally, EU as one of signatories of the Stockholm Convention on Persistent Organic Pollutants, agreed to outlaw “chemical substances that persist in the environment, bioaccumulate

¹⁵⁷ Czarnezki, Jason J., Green Public Procurement: Legal Instruments for Promoting Environmental Interests in the United States and European Union (December 13, 2019). <<http://dx.doi.org/10.2139/ssrn.3504676>> accessed 10 April 2021.

¹⁵⁸ Czarnezki, J. J. (2014). New York City Rules - Regulatory Models for Environmental and Public Health. *Hastings Law Journal*, 66(6), 1621–1660.

¹⁵⁹ Czarnezki, Jason J. *op.cit.*, 157.

¹⁶⁰ New EU energy labels applicable from 1 March 2021. (2021). European Commission. <https://ec.europa.eu/commission/presscorner/detail/en/IP_21_818> accessed 5 May 2021.

¹⁶¹ The EMAS scheme is primarily used by organisations with a site in the EU or in the European Economic Area, although it can also be used by organisations and sites located elsewhere (but is always verified under the control of a European Accreditation Body). The ISO scheme is open to organisations across the globe.

through the food web, and pose a risk of causing adverse effects to human health and the environment.”¹⁶²

Fourth, the EU Emissions Trading System (EU ETS) is a pioneer on market-based regulations to combat climate change and it is the key tool for reducing greenhouse gas emissions cost-effectively. The main policy instrument applicable to most companies in the energy and manufacturing sectors is by setting a price on carbon through ETS.¹⁶³ The flexible and business-friendly approach promotes toward a low-carbon economy with emission limitation on around 10,000 installations in the power sector and manufacturing industry, as well as airlines, which is mandatory for companies in these sectors to participate in the EU ETS.¹⁶⁴ Within the cap-and-trade permitting system, installations buy or receive emissions allowances, attempting to harness market forces to reduce emissions and promote low-carbon technologies.¹⁶⁵

Fifth, regulatory methods on infrastructure that improves environmental outcomes including mass transit, bike lanes and parks. Since 1 February 2009 all automobiles purchased or leased by the Swedish government agencies must be green cars, including those ordering taxis or hire cars, which have been laid down in an ordinance.¹⁶⁶ Additionally, agencies must ensure that cars use renewable fuels to the greatest possible extent, which might best alleviate climate crisis.¹⁶⁷

Sixth, public awareness and pollution prevention are regulatory and complementary tools for reducing environmental harms. Public service advertisements are good examples to raise awareness whereas composting and recycling programs are important in assessment of public procurement.¹⁶⁸

Mandatory obligations are always used in areas which have larger impacts on climate change and fewer negative impacts for economic as a leverage to maintain

¹⁶² Stockholm Convention on Persistent Organic Pollutants. (2001). Stockholm Convention. <<http://www.pops.int/TheConvention/Overview/tabid/3351/Default.aspx>> accessed 5 May 2021.

¹⁶³ EU Emissions Trading System (EU ETS). (2017, February 16). Climate Action - European Commission. <https://ec.europa.eu/clima/policies/ets_en#tab-0-0> accessed 6 May 2021.

¹⁶⁴ Ibid.

¹⁶⁵ Ibid.

¹⁶⁶ Sverige. Naturvårdsverket (2009) Green public procurement in Sweden. Swedish Environmental Protection Agency.

¹⁶⁷ Ibid.

¹⁶⁸ Czarnezki, Jason J. op.cit, 157.

the balance. For instance, requirements for vehicles with eco-friendly fuels will decrease GHG emissions and encourage suppliers to innovate green products or technologies as well, which will promote economic prosperity and provide more job opportunities.

5.3 With award criteria

Increasingly strict environmental legislation and ambitious targets require giving a monetary value to environmental externalities, such as CO₂ emissions, resource use or local air pollutants referred to LCC calculation.¹⁶⁹ Life-cycle means all consecutive and/or interlinked stages, including research and development to be carried out, production, trading and its conditions, transport, use and maintenance, throughout the existence of a product or works or the provision of a service, from raw material acquisition or generation of resources to disposal, clearance and end of service or utilization.¹⁷⁰

When the GHG emissions are valued, they can be regarded as one of parameters for LCC calculation and help to assess bidders. For example, public authorities are requested to take energy and emissions into account while procuring road transport vehicles in *Directive 2009/33/EU* and the directive has provided a method for attributing costs to emissions. Contracting authorities may use these costs or factors up to two times higher than the values set out in the Annex to calculate LCC. To meet requirements, technical specifications for energy and environmental performances shall be set or include them as award criteria. Where award criteria are adopted, certain emissions like CO₂ and the energy or fuel costs of vehicles during their operational lifetime can be monetized.¹⁷¹

LCC is always put forward at the evaluation stage to make hidden costs¹⁷² and externalities¹⁷³ visible. Life-cycle costing often focuses on selected external cost

¹⁶⁹ Clement, Watt, Semple, THE REAL COSTS OF PROCUREMENT, The Procura+ Manual, A Guide to Implementing Sustainable Procurement, 3rd Edition (ICLEI – Local Governments for Sustainability, European Secretariat 2016) P76.

¹⁷⁰ Bovis, C. H. (2018). Life-Cycle Costing in the New EU Public Procurement Directives. *European Procurement & Public Private Partnership Law Review (EPPPL)*, 13(3), 169–170.

¹⁷¹ Clement, Watt, Semple, op.cit, 169.

¹⁷² Hidden costs are costs which affect the contracting party.

¹⁷³ Externalities are costs that affect a party who did not choose to incur them.

types (like environmental emissions) when their monetary value can be determined and verified.¹⁷⁴

LCC is straightforward to calculate financial impact of GPP, which can be applied as part of the contract award criteria. LCC for green products is more cost-effective compared with non-green products, in specific, less energy and raw materials consumed and less waste generated lead to lower associated production costs,¹⁷⁵ therefore, LCC calculation can be considered as an essential indicator for economic profits of green products.

In the assessment of LCC, GPP can reduce costs of each procurement stage. For technical specifications, standard-setting determines the most efficient means to achieve the desired outcome, such as energy/ fuel efficiency specifications could reduce operational costs.¹⁷⁶ Quality criteria on energy/fuel efficiency and disposal aspects may lead to reduced operational or disposal costs, which is mutually beneficial for the environment and economics.¹⁷⁷ LCC is typically used at two stages: one is planning stage where to assess the real cost impact of alternative options to determine the scope of a call for tender, such as comparing alternative vehicle fuels for the mass transit call for tender; the other is for tender evaluation, which directly compares the life cycle costs of different bids.¹⁷⁸

To evaluate total purchases made from the framework contract for energy efficient IT equipment and services in Finland, GPP 2020 Calculator¹⁷⁹ provides an access to estimate the energy consumption, operating costs of office equipment and the savings with Energy Star. The calculation compares differences between the solution chosen in the previous tender and in the low-carbon tender. In the case of Helsinki City Council procurement, the low-carbon tender is expected to yield energy savings of 27% and cost savings of €72,000 over the lifetime of the products

¹⁷⁴ Czarnezki, Jason J. op.cit, 157.

¹⁷⁵ European Commission, op.cit, 132.

¹⁷⁶ Czarnezki, Jason J. op.cit, 157.

¹⁷⁷ Ibid.

¹⁷⁸ European Commission, op.cit, 132.

¹⁷⁹ 'Measuring savings' (GPP 2020-procurement for a low-carbon economy, 2020) <<https://gpp2020.eu/low-carbon-tenders/measuring-savings/>> accessed 30 April 2021.

– offsetting a total of 172 tones of CO₂ equivalents.¹⁸⁰ In other words, GPP is an efficient tool for both ecological and economic goals.

5.4 How does GPP help to reach the balance?

GPP can be instrumental to achieve environmental goals. First, environmental problem can be addressed in some extent. For instance, through the purchase of wood and wood products from legally harvested and sustainably managed forests, deforestation will be controlled; The purchase of products and services with a lower CO₂ footprint throughout their life-cycle might would decrease greenhouse gas emissions; a large level of waste could be avoided by specifying processes or packaging which generates less waste or encouraging reuse and recycling of materials; and procurement for organically produced food to reach sustainable agriculture.¹⁸¹ Second, green purchasing has set an example to private consumers and positive results will motivate private sector organizations to use green criteria for their own procurement.¹⁸² Third, GPP will raise awareness of environmental issues by identifying the negative impacts of particular product or service and providing information on the benefits of greener alternatives.¹⁸³

GPP will save money and resources when life-cycle costs are considered. For example, energy-efficient equipment could use lower electricity and lead to saving in the long run. What's more, GPP gives important incentives for industry to develop green technologies or products and promote them in the market place.¹⁸⁴ Meanwhile, significant financial benefits of winning the bid in public procurement contract will attract new entrants in the field of environmental technologies and products, thus giving rise to increased competition and reduced price.¹⁸⁵

¹⁸⁰ European Commission, “GPP in practice” (Issue no.59 March 2016) <https://ec.europa.eu/environment/gpp/pdf/news_alert/Issue59_Case_Study120 ICT_Helsinki.pdf> accessed 30 April 2021.

¹⁸¹ Benefits of GPP <https://ec.europa.eu/environment/gpp/benefits_en.htm#1> accessed 10 May 2021.

¹⁸² Ibid.

¹⁸³ Ibid.

¹⁸⁴ Ibid.

¹⁸⁵ European Commission, Public Procurement in *European Semester Thematic Factsheet*. (EU 2017)

GPP has conformed with the internal market objective in the *Europe 2020 strategy*, where it is defined as an efficient market-based instrument¹⁸⁶ tool to reach both economic and environmental goals of EU. When a new green policy instrument launches, transaction costs or national budgets will increase inevitably in a short term. That is because resources and investments are needed when using GPP to require suppliers to conform to certain environmental standards, especially if this standard goes beyond what is typically required in the market.¹⁸⁷ However, with more narrowing gap between green and non-green products' price and more energy savings, GPP attains economic profits in a long term as well. GPP has been gradually endorsed for its potential ability from practices to produce both ecological and economic benefits.

GPP can be characterized as an administrative instrument as well as an economic one. If a public authority has set environmental award criteria for tenders to attain additional bonus or purchasers seek to procure products bearing a certain eco-label, such as in the Dutch Coffee case, and include this in their technical specifications, then GPP acts as the role of an administrative instrument.¹⁸⁸ GPP is categorized as an economic instrument when contractors are financially rewarded on the basis of the technology used in production¹⁸⁹ or the benefits for environmental protection can be monetarized.

It is not mandatory for economic actors to participate in a procurement process and comply with environmental criteria of the relevant process. The two-way selection of public purchasers and economic operators is aiming to keep the balance. Companies can determine freely whether it is economically advantageous to participate in a procurement process.¹⁹⁰ If the costs of adapting production processes in a sustainable direction outweighs the expected economic benefits of

¹⁸⁶ Market-based instrument has been defined by the Organisation for Economic Cooperation and Development (OECD) as 'instruments that affect costs and benefits of alternative actions open to economic agents, with the effect of influencing behaviour in a way favourable to the environment'.

¹⁸⁷ Lundberg, Sofia & Marklund, Per-Olov, 2012. "Green Public Procurement as an Environmental Policy Instrument: Cost Effectiveness," Umeå Economic Studies 847, Umeå University, Department of Economics.

¹⁸⁸ Abby Semple, 'Grounds for change: ECJ judgment in Dutch coffee case points to need for reform of procurement rules' (2012) <<https://www.procurementanalysis.eu/>> accessed 12 May 2021.

¹⁸⁹ Goda affärer - en strategi för hållbar offentlig upphandling, SOU 2013:12, <<https://www.regeringen.se/49bb4f/contentassets/94c3a7f86d2f4784b126e16c6f4ec3a4/goda-affarer---en-strategi-for-hallbar-offentlig-upphandling-hela-dokumentet-sou-201312>> accessed 7 May 2021.

¹⁹⁰ Lundberg, Sofia & Marklund, op.cit, 187.

being awarded with a public contract,¹⁹¹ such as investments potential tenderers have to take on innovative technologies are more than proceeds to reach requirements of technical specifications, they will not plan to participate. Economic actors hence have leeway to make a decision whether they will align with environmental criteria in the procurement process otherwise suffering the economic loss of not being awarded with a public contract.

However, the voluntary element of GPP is countervailing the environmental objective of GPP as the largest polluters may not be embraced by GPP regulation. Stringent environmental criteria will deter potential tenderers from participating into the contract for the costly investments to meet the requirements of GPP. Especially for companies with large amounts of negative externalities, the government needs to make more obligatory policies in specific areas aiming at the sustainable product processes and environmental benefits.¹⁹²

Another problem comes when the demand for green products increases of public authorities. Public purchasers will have environmental preferences for procurement, which leads to higher price of green products with higher demand. Price of conventional products will then drop and the demand of private consumers grows. That would be the counteract of GPP policy.

Hence, to promote the positive effects of GPP, the key is increasing the supply of green products without significant price raises. The concern of suppliers might be high marginal costs for developing green technologies to reach environmental requirements. The government can formulate policies combining with environmental taxes or subsidies to motivate economic actors to promote sustainable production processes with lower costs. Under the Just Transition Mechanism, EU will provide financial support and technical assistance to help those that are most affected by the move towards the green economy.¹⁹³ For companies and sectors which are active in or comprising carbon-intensive industries, the mechanism will support them by providing loans and financial

¹⁹¹ Sofia Lundberg and Per-Olov Marklund, 'Public Procurement or Poor Green Deals? A Report on Environmental Policy Ambitions to the Expert Group on Public Economics'(2013:10) <<https://eso.expertgrupp.se/rappporter/offentlig-upphandling-och-miljohansyn-2/>> accessed 6 May 2021.

¹⁹² Czarnecki, Jason J. op.cit, 157.

¹⁹³ A European Green Deal--Striving to be the first climate-neutral continent <https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en> accessed 10 May 2021.

backing to low-carbon technologies and economic diversification based on climate-resilient investments and jobs.¹⁹⁴ For Member States and regions with high dependence on fossil fuel and carbon-intensive industries, the mechanism will invest in renewable energy sources and improve energy infrastructure, district heating and transportation networks.¹⁹⁵

In addition, public contracts are always associated with substantial economic value in fact, which will encourage firms, especially enterprises with major environmental impact, to participate in green procurement as the economic benefits will outweigh the costs of altering production processes in a sustainable direction.¹⁹⁶ Therefore, GPP is a cost-efficient market-based tool to achieve the balance of ecological and economic aims. From the perspective of consumers, they care about the price more than the environmental quality. How to raise the awareness of climate change and protect price stability of green products or even lower price is the challenge for policy-makers.

Meanwhile, formulating general GPP criteria¹⁹⁷ may help alleviate the financial strain for authorities of developing such criteria individually. Common voluntary GPP criteria have been developed to avoid distortion of the European single market, enhance EU-wide competition, trigger new green markets, stimulate development of new environmental technologies and greener products and services as well.¹⁹⁸ Besides, there are similar LCC methodologies in various sectors, hence common and justifiable environmental criteria can be used for contracting authorities in the procurement process to reduce costs.

Another method to decrease costs and maintain the balance is centralized purchasing activities and joint purchasing.¹⁹⁹ Centralized purchasing bodies are

¹⁹⁴ The Just Transition Mechanism: making sure no one is left behind <https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/actions-being-taken-eu/just-transition-mechanism_en> accessed 9 May 2021.

¹⁹⁵ Ibid.

¹⁹⁶ Czarnetzki, Jason J. op.cit, 157.

¹⁹⁷ A preliminary set of common GPP criteria has been established in the framework of a recently developed Training Toolkit on Green public procurement. GPP Training Toolkit (2019) <http://ec.europa.eu/environment/gpp/toolkit_en.htm> accessed 7 May 2021.

¹⁹⁸ Hasanbeigi, A., Becque, R., Springer, C. 2019. Curbing Carbon from Consumption: The role of Green Public Procurement. San Francisco CA: Global Eciency Intelligence.

¹⁹⁹ Public procurement and repealing Directive 2004/18/EC Text with EEA relevance [2014] OJ L 94/65, Art. 37&38.

contracting authorities installed voluntarily by member states which provide centralized purchasing activities and possible ancillary purchasing activities.²⁰⁰ The activities include the acquisition of supplies and/or services intended for contracting authorities and the award of public contracts or the conclusion of framework agreements for works, supplies or services intended for contracting authorities.²⁰¹ Joint procurement is defined as an agreement between two or more contracting authorities to perform certain specific procurement jointly.²⁰²

For the purpose of GPP, the rationale of centralized purchasing activities and joint procurement is to generate cheaper prices for large volumes of environmentally friendly and innovative products, as the numbers of public purchasers and their demands are concentrated in one procurement process.²⁰³ Transaction costs can be reduced as well since contracting authorities do not need to initiate procurement independently, which will incentivize contracting authorities that lack knowledge or support for GPP.²⁰⁴ Moreover, centralized and joint purchasing allow the expertise in GPP to be concentrated, thus facilitating the use of environmental criteria in procurement.²⁰⁵

A good performer to attain the balance in the GPP processes is importing waste as fuel for incinerators producing heat and electricity in Sweden. The public procurement for waste from other countries minimizes the amount of waste being disposed of at landfills, and greenhouse gas emissions from landfills have been reduced as a result.²⁰⁶ Waste incineration replaces the need for fossil fuels and can be used as the virgin material in the production process.²⁰⁷ Besides, waste import bill is more cost-effective than purchases for many other fuels.

²⁰⁰ Ibid.

²⁰¹ Public procurement and repealing Directive 2004/18/EC Text with EEA relevance [2014] OJ L 94/65, Art. 2(14)(16).

²⁰² Public procurement and repealing Directive 2004/18/EC Text with EEA relevance [2014] OJ L 94/65, Recital 71 & Article 38.

²⁰³ Peter Kunzlik, 'Green Public Procurement--European Law, Environmental Standards and 'What To Buy' Decisions' [2013] 25(2) Journal of Environmental Law 173-202.

²⁰⁴ Ibid.

²⁰⁵ Ibid.

²⁰⁶ Emma Bergman, 'Why Does Sweden Import Waste from Other Countries?' (International Observers, 26 July 2019) <<https://rioonwatch.org/?p=54109>> accessed 10 May, 2021.

²⁰⁷ Hughes, R.: The EU circular economy package – life cycle thinking to life cycle law? Proc. CIRP 61, 10–16 (2017).

6. Conclusion

Negative effects and human causes of climate change demonstrate green public procurement is necessary to survive the climate crisis. Green public procurement is a publicly induced private environmental governance model that incorporates standard-setting through environmental and technical criteria, information disclosure through labelling and accompanying standards, and market-based mechanisms in terms of measuring and pricing the environmental externalities of production and consumption.

Governments are major buyers and can significantly impact market demand for responsible and sustainable business practices, hence the application of GPP would be the stimulus for eco-innovation and resource-efficient economy. Clear and verifiable mandatory obligations or award criteria for combating climate change are conducive to both ecological and economic goals. The common practices in EU aim to address a range of environmental concerns from mitigating climate change, reducing GHG emissions, and promoting energy efficiency to protect soil, water, biodiversity and health, maintaining economic profits at the same time.

Mandatory obligations are always used in areas which have larger impacts on climate change and fewer negative impacts for economic as a leverage to maintain the balance. Meanwhile, if the most effective means of delivering and verifying the desired outcome is not known in advance of publishing tender documents, award criteria might be more appropriate for addressing environmental considerations, since the public authorities will possess more discretion.

GPP criteria are composed of environmental and technical criteria or core and comprehensive ones, which are applied at different stages as different formulations. Readily accessible tools are required for environmentally compliant procurement as well, such as the stipulation of policies for higher requirements, improving eco-friendly skills, efficient and simple purchasing toolkit and continuous follow-up.

The causes of climate change provide impetus for shaping legal framework and policies, thus public purchases stipulate environmentally compliant policies, in specific, requirements for green public procurement. In order to mitigate negative effects from climate change, organizations should first of all stipulate environmental requirements on the basis of certain prioritized areas, such as the construction sector, transportation and food products. The new public procurement has set general mandatory obligations for economic actors and practices in Denmark and Sweden have manifested positive results of obligatory rules in sectoral-specific areas.

For suppliers who want to pursue public contracting opportunities, they must meet specific mandatory requirements related to CSR principles mostly. Besides, CSR will ensure that environmental interests are protected without undermining the economic benefits of suppliers for the most part.

Through the evolving development of environmental award criteria in case law, ecological considerations like carbon dioxide emissions have caused for concern in public procurement processes. Award criteria can be applied in different stages: non-compliance with specific requirements will lead to a straightforward rejection of a bid at the technical specification stage; award criteria have wider range of possibilities for involving environmental factors as a preference; as for contract performance conditions, it is binding only during the performance of the contract, but the requirements can be more targeted in a specific contract.

LCC can be taken as an award criterion favoring the tender with the lowest cost, instead of the tender with the lowest price. It emphasizes on monetary value rather purchase price in the whole life-circle procedure, more precisely, from purchase price, usage cost to disposal costs considering environmental externalities, which will help public demanders to make more cost-efficient and eco-friendly decisions.

Undoubtedly, GPP is an essential tool for environmental goals. It will also save money when considering LCC and requirements for green technologies since it could decrease energy consumption in a longer term. Meanwhile, substantial economic value of green procurement contracts attracts more potential tenderers which would promote competition and thus reducing price for greener products.

More policies should complement GPP activities to guarantee the supply of eco-friendly products and avoid significant price raise.

Common EU GPP criteria and life cycle costing methodologies both serve the purpose of providing clear and simply applicable standard to be used in GPP thus alleviating financial strain and decreasing the transaction costs. As a result, the fact that environmental measures can be economically profitable in the long run shall be taken into consideration.

Centralized and joint purchasing will also provide a solution to keep the balance. As the demands of public purchasers are concentrated, it is helpful to improve the conditions for formulating environmental criteria and decrease the transaction costs as well.

GPP is considered as a policy instrument with a limited scope of application as it only applies to suppliers who choose to participate in the procurement process, which differentiates GPP from other traditional economic policy instruments such as environmental taxes that apply to all economic actors operating in a particular market. Moreover, collaboration among public authorities with private economic actors and other stakeholders is also an instrumental part to develop efficient green solutions to mitigate the climate change.

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