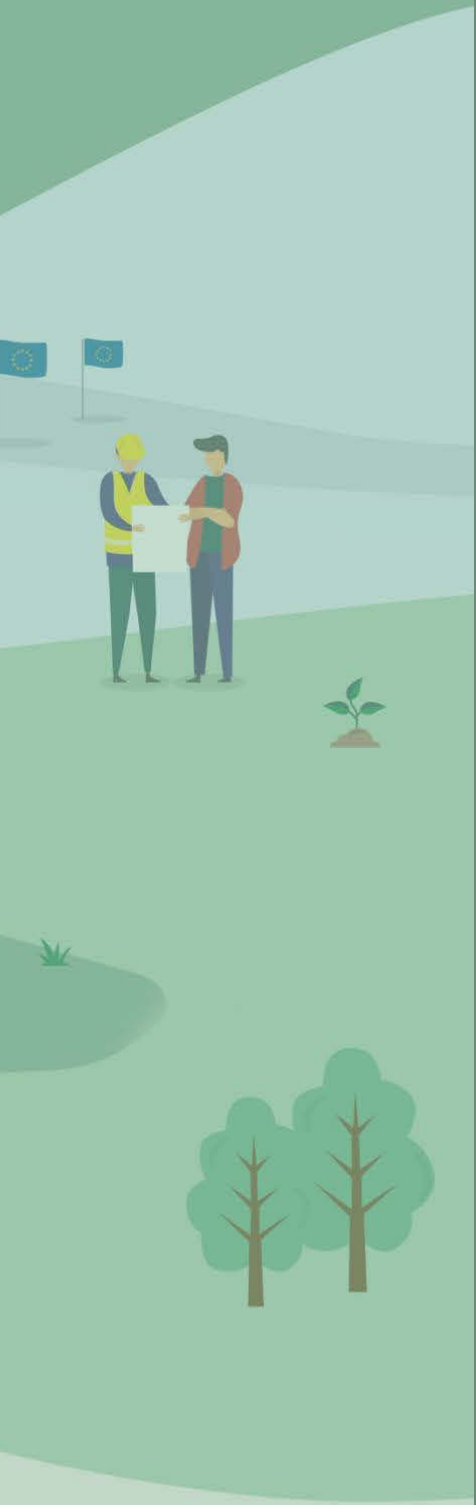


The European Union & Circular Bio-based Construction

September 3, 2020 | The Hague



A product of

Commissioned by



Content

INTRODUCTION	4
INFOGRAPHIC	4
EU PUBLIC PROCUREMENT AND CIRCULAR BIO-BASED CONSTRUCTION	7
Policy	8
Public procurement for a better environment	8
EU 2020 Strategy	8
Innovating for Sustainable Growth: A Bioeconomy for Europe	8
A sustainable Bioeconomy for Europe updated bioeconomy strategy	9
Circular Economy Action Plan 'Closing the loop'	10
A new Circular Economy Action Plan for a cleaner and more competitive Europe	10
Legislation	11
Treaty on the Functioning of the European Union	11
The Public Procurement directives	11
Sector specific legislation	14
Guidance & Reports	15
EU Green Public Procurement Criteria	15
Level(s)	16
Buying Green! - A Handbook on green public procurement	16
Guidance on bio-based products in procurement	16
Sustainable Timber Action	17
Public procurement for a circular economy (good practice and guidance)	17
Green Public Procurement: A collection of good practices	17
Networks	18
SCI-Network	18
Procura+	18
BUILDING	19
Policy	20
Green Deal	20
Strategy for a Sustainable Built Environment	20
The Renovation Wave Initiative	20
Strategy for the sustainable competitiveness of the construction sector and its enterprises	21
Legislation	21
Energy Performance of Buildings Directive	21
Energy Efficiency Directive	22

Guidance & Reports	22
Commission Recommendation (EU) 2019/786 of 8 May 2019 on building renovation	22
EU Construction and Demolition waste management protocol	22
EU Building Stock Observatory	23
Building sustainability performance - Level(s)	23

Networks	23
ICLEI – Local Governments for Sustainability	23
European Circular Construction Alliance	23

PRODUCT **24**

Policy	25
Green Deal	25
Circular Economy Action plan 2020	25
Sustainable Products Initiative	25
Action Plan 2015	26
Bioeconomy strategy	26
Plastics strategy	26

Legislation	27
Ecodesign Directive	27
Energy Labelling Regulation	27
Construction Products Regulation	27
Waste Framework Directive	28

Guidance & Reports	29
Communication on resource efficiency opportunities in the building sector	29
Resource Efficient Use of Mixed Wastes	29
Final Report - Bioeconomy Strategy	29
Development and implementation of initiatives fostering investment and innovation in construction and demolition waste recycling infrastructure	30
Implementation report Circular Economy Action Plan 2015	30

Networks	30
URGE – Circular Building cities	30
European Circular Construction Alliance	30
Circular Europe Network	31
Construction Blueprint	31

NEW & ANNOUNCED INITIATIVES **32**

Introduction

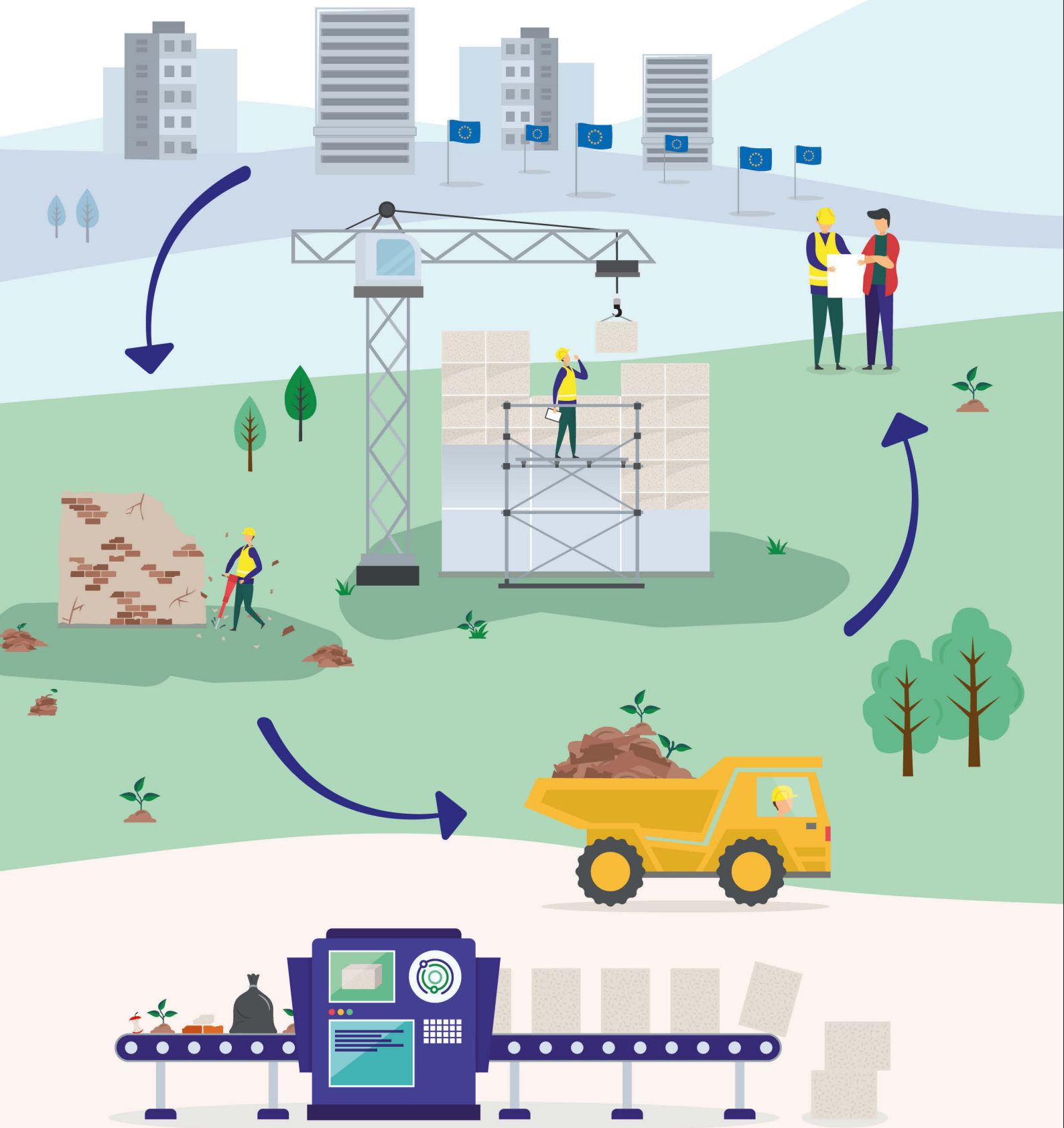
Circular Bio-based Construction Industry – Interreg 2 Seas

This report was commissioned by the province of Zeeland in the context of the Circular Bio-based Construction Industry project under the Interreg 2 Seas programme. EU law and policy center Europa decentraal was commissioned to provide a comprehensive overview of EU law and policy in the area of circular and bio-based construction.

This report is split into three different chapters: procurement, building and product. Each of these chapters represents an integral yet different part of circular bio-based construction.

Every chapter is split up into different sections, which gives information and insight into EU policy, legislation, guidance & reports and networks on circular bio-based construction.

The European Union and **Circular Bio-based Construction**



PUBLIC PROCUREMENT

Policy

- Green Deal
- Circular Economy Action Plan 2020
- Bioeconomy for Europe 2012

Legislation

- Treaty on the Functioning of the European Union
- Directive 2014/24/EU on Public Procurement
- Sector specific legislation

Guidance

- The EU Green Public Procurement (GPP) criteria
- Guidance on bio-based products in procurement
- Buying Green! - A Handbook on green public procurement

Networks

- SCI-Network
- Procura+

BUILDING

Policy

- Green Deal
- Strategy for a Sustainable Built Environment (To be expected in 2021)
- Strategy for the sustainable competitiveness of the construction sector and its enterprises

Legislation

- Energy Performance of Buildings Directive
- Energy Efficiency Directive

Guidance

- Commission Recommendation on building renovation
- EU construction and demolition waste management protocol
- EU Building Stock Observatory

Networks

- European Circular Construction Alliance
- ICLEI

PRODUCT

Policy

- Green Deal
- Circular Economy Action Plan 2020
- Bioeconomy Strategy 2018

Legislation

- Construction Product Regulation
- Ecodesign Directive
- Waste Framework Directive

Guidance

- Communication on resource efficiency opportunities in the building sector
- Resource efficient use of mixed waste

Networks

- European Circular Construction Alliance
- Circular Europe Network

EU public procurement and circular bio-based construction

In this chapter, EU policy, legislation, guidance and networks related to circular bio-based public procurement in the construction sector will be discussed. Section 1 will provide an overview of EU policy in the field of green public procurement, with a specific focus on the recent developments in the context of the Green Deal. Thereafter, section 2 will set out the current EU legislative framework on public procurement, which is built upon the Treaty on the Functioning of the European Union (TFEU), the EU Public Procurement Directives and sector-specific legislation. After briefly exploring the fundamental principles of EU-law, it will analyse how the current legislation enables circular and bio-based public procurement. Subsequently, Section 3 will set out the EU non-legislative instruments, such as guidance and reports, which promote circular and bio-based procurement. Finally, section 4 will give an overview of existing networks in the field of circular and bio-based procurement.

Policy

Legislation

Guidance & Reports

Networks

The promotion of green public procurement has been on the European Commission's agenda since the beginning of the 21st century and has become an increasingly important instrument to achieve environmental and climate goals (see the Commission communication on [Integrated Product Policy](#) and the interpretive communication on [integrating environmental considerations into public procurement](#)). In order to enable green public procurement, the legislative framework has been restructured, as we will describe below. In recent years, circular procurement has gained a prominent position on the EU agenda.

Public procurement for a better environment

In [the Public procurement for a better environment](#) communication, which was introduced in 2008, the Commission recommended the creation of common green public procurement (GPP) criteria. More information on existing GPP criteria can be found in the section on guidance & reports.

EU 2020 Strategy

On 3 March 2010, the European Commission launched [the Europe 2020 strategy](#): *A European strategy for smart, sustainable and inclusive growth*. The strategy mentions stimulating green public procurement in some of its flagship initiatives, such as the initiative for a resource efficient Europe.

Innovating for Sustainable Growth: A Bioeconomy for Europe

[The 2012 Bio Economy strategy](#) aimed to pave the way for a more innovative, resource efficient and competitive society that reconciles food security with the sustainable use of biotic renewable resources for industrial purposes, while ensuring environmental protection. The strategy identified five objectives to which the strategy were to contribute: (1) ensuring food security, (2) managing natural resources sustainably, (3) reducing dependence on non-renewable resources, (4) mitigating and adapting to climate change, and (5) creating jobs and maintaining EU competitiveness. These five objectives were addressed via the strategy's Action Plan, that

focused on 3 areas of action with a total of 12 actions, subdivided into 54 sub-actions.

With regard to public procurement, this strategy stipulates that support is needed for the expansion of new markets by developing standards and standardised sustainability assessment methodologies for bio-based products and food production systems, and supporting scale-up activities. It also recommends to facilitate green procurement for bio-based products by developing labels, an initial European product information list and developing specific trainings for public procurers. Moreover, The strategy emphasizes the importance of contributing to the long-term competitiveness of bioeconomy sectors by putting in place incentives and mutual learning mechanisms for improved resource efficiency.

A sustainable Bioeconomy for Europe updated bioeconomy strategy

The 2018 update of the Bioeconomy Strategy aims to accelerate the deployment of a sustainable European bioeconomy in order to maximise its contribution towards the 2030 Agenda and its Sustainable Development Goals (SDGs), as well as the Paris Agreement. The update also responds to new European policy priorities, in particular the renewed Industrial Policy Strategy, the Circular Economy Action Plan and the Communication on Accelerating Clean Energy Innovation, all of which highlight the importance of a sustainable, circular bioeconomy to achieve their objectives. The update proposes an action plan with 14 concrete measures to be launched in 2019, based on three key priorities: 1) strengthen and scale up the bio-based sectors, 2) unlock investments and markets, and 3) deploy local bioeconomies rapidly across the whole of Europe and understand the ecological boundaries of the bioeconomy.

In this Strategy, Green public procurement is mainly mentioned as an instrument to boost market uptake and consumer confidence: *“it is necessary to use multiple instruments. This requires the availability of reliable and comparable environmental performance information and their application to environmental oriented policy instruments (e.g. the EU Ecolabel and green public procurement), when proven beneficial from an environmental perspective.”* Accordingly, there is no clear focus on further developing public procurement of bio-based products.

Circular Economy Action Plan 'Closing the loop'

The European Commission's [first circular action plan](#), that was introduced in December 2015, aims to move the EU towards a lower carbon, resource efficient, sustainable economy through action at the EU-level. The plan recognises public procurement as a key driver in the transition towards the circular economy, and it sets out several actions which the Commission will take in order to facilitate the integration of circular economy principles in green public procurement. These include emphasising circular economy aspects in new or updated sets of EU GPP Criteria (see the guidance section of the chapter), supporting a higher uptake of GPP among European public bodies, and leading by example in its own procurement and in EU funding.

A new Circular Economy Action Plan for a cleaner and more competitive Europe

[The action plan](#) presents the way forward for the European Commission towards a circular economy in 2050. By decoupling economic growth from resource use, the EU will achieve its sustainability growth while still being prosperous.

In the plan, the Commission announces that it will propose minimum mandatory GPP criteria and targets in sectoral legislation and phase in compulsory reporting to monitor the uptake of Green Public Procurement (GPP) without creating unjustified administrative burden for public buyers. Furthermore, the Commission will continue to support capacity building with guidance, training and dissemination of good practices and encouraging public buyers to take part in a “Public Buyers for Climate and Environment” initiative, which will facilitate exchanges among buyers committed to GPP implementation.

Strategy for a Sustainable Built Environment (To be announced)

This Strategy will ensure coherence across the relevant policy areas such as climate, energy and resource efficiency, management of construction and demolition waste, accessibility, digitalisation and skills. It will promote circularity principles throughout the lifecycle of buildings.

The strategy will promote the use of Level(s) to integrate life cycle assessment in public procurement (See section 3 for more information on Level(s)).

Legislation

Treaty on the Functioning of the European Union

The Treaty on the Functioning of the European Union (TFEU) provides the basis for EU procurement regulation and sets out fundamental principles. In addition to the Procurement Directives, a number of other sources of EU Law govern public procurement, and thus affect the manner in which green public procurement should be implemented. The basic principles of free movement of goods, services, capital and people are set out in the Treaties*, along with a prohibition on discrimination based on nationality. From these basic principles, a number of more specific principles applicable in the field of procurement have been developed, primarily in the case law of the European Court of Justice. These are the principles of transparency, equal treatment, proportionality and mutual recognition. It is important to note that these principles are not only applicable to procedures which fall within the scope of the Directives, as procedures which are excluded from or fall below the thresholds of the Directives must also be awarded in accordance with the principles. Public authorities must observe these principles when implementing GPP, as in all areas of procurement. Similarly, public authorities should be aware of the EU rules governing State Aid and Competition when conducting any procurement process.

The Public Procurement directives

The current EU public procurement regime is laid down in three EU Directives:

- [Directive 2014/24/EU on public procurement](#)
- [Directive 2014/25/EU on procurement by entities operating in the water, energy, transport and postal services sectors](#)
- [Directive 2014/23/EU on the award of concession contracts](#)

Together, they set out the minimum harmonised rules for the purchase of goods, works and services by public authorities in the EU. These directives

were transposed into national legislation in 2016, with the main objective to create a level playing field for businesses across Europe. With the introduction of the new directives, another valuable aspect of public procurement became more pronounced: public buying can also be used as a strategic policy instrument to help implement policies directed at innovation and sustainability. The reform of EU public procurement has given EU contracting authorities the green light to commit to sustainable procurement. Thus, the EU directives on public procurement marked a major shift towards sustainability in the public procurement regime. For decentralized governments, Directive 2014/24/EU is the most important Directive. Therefore, the following paragraphs will focus on the relevant provisions of Directive 2014/24/EU.

Green public procurement provisions in Directive 2014/24/EU

The Procurement Directives provide contracting authorities with opportunities and tools to enable sustainable procurement. As a result, EU Member States and contracting authorities may explicitly take environmental considerations into account in their purchasing decisions. There are different ways in which environmental considerations are incorporated in the Procurement Directives. In the following paragraphs, the most relevant provisions for bio-based and circular procurement of the main Procurement Directive (Directive 2014/24/EU), will be discussed.

Compliance with mandatory environmental rules

In general, the public procurement principles require compliance with mandatory environmental rules (Article 18(2) Directive 2014/24/EU). Furthermore, public procurers have the possibility to exclude an undertaking for overriding reasons relating to the public interest (e.g. environmental protection), or to reject registration of an undertaking if it does not comply with mandatory environmental rules (Article 57(3) jo. (4a) and Article 69(2d) Directive 2014/24/EU).

Life-cycle costs

For bio-based and circular procurement, the possibility for contracting authorities to determine the most economically advantageous tender and the lowest cost using a life-cycle costing approach is exceedingly relevant (Articles 67(2) and 68 Directive 2014/24/EU). This means that the complete life-cycle costs of products or buildings can be taken aboard, from the extraction of raw

materials to the disposal phase. The following types of costs can be included: internal costs, development, production, transport, use, maintenance and end-of-life disposal costs. However, also external environmental costs, such as pollution caused by extraction of the raw materials used in the product or caused by the product itself or its manufacturing, provided they can be monetised and monitored (Consideration 96 Directive 2014/24/EU).

It is important to note that contracting authorities must establish their chosen methods for assessing external environmental costs in advance, in an objective and non-discriminatory manner, and make them accessible to all interested parties. These calculation methods can be established at different levels of government (local, regional, or national) and common methodologies must be developed at EU level for specific supplies or services (Consideration 96 Directive 2014/24/EU). Consideration 96 states that when such a common EU methodology is developed, its use should be made compulsory.

Environmental requirements in technical specifications

The technical specifications set out in the procurement documents lay down the characteristics required of a work, service or supply. The Procurement Directives enable the inclusion of environmental requirements in these specifications. In relation to circular procurement, it is thus possible to include characteristics related to the complete life-cycle of the work, service or product (Article 42(1) Directive 2014/24/EU). In that manner, the sustainability of the construction process can be ensured. Furthermore, contracting authorities are also allowed to use environmental considerations in the award criteria and the contract performance conditions (Consideration 97 Directive 2014/24/EU).

Eco-labels

The Procurement Directives allow for the use of environmental labels in the procurement process. These eco-labels can be used as a means of proof that works, services or supplies meet the required environmental characteristics. These labels can be used in the technical specifications, the award criteria, or the contract performance conditions (Article 43 Directive 2014/24/EU). They can be European, (multi-)national, or any other label, provided that the requirements for the label are linked to the subject-matter of the contract (Consideration 75 Directive 2014/24/EU).

More information about existing labels relevant for circular and bio-based procurement in construction can be found in *the assessment report of the*

current and future framework of product standards, policy and legislation in circular bio-based construction in the 2Seas-region.

Innovation Partnerships

When a contracting authority wishes to purchase works, goods or services, which are not currently available on the market, it may establish an innovation partnership with one or more partners. This allows for the research and development (R&D), piloting and subsequent purchase of a new product, service or work, by establishing a structured partnership (Article 31 Directive 2014/24/EU). This can be an interesting procurement procedure in the context of bio-based circular construction, as it enables the development of innovative solutions.

Sector specific legislation

As outlined in the section above, while the Procurement Directives create the possibility for green public procurement, it remains primarily a voluntary instrument. However, in existing sector specific legislation, the EU has set mandatory procurement requirements and/or targets for obtaining environmental and climate goals. These regulations and directives mostly deal with energy related works, products and services. In the new Circular Economy Action Plan, the Commission has announced that they will propose minimum mandatory green public procurement (GPP) criteria and targets in further sectoral legislation. This could possibly affect circular procurement practices in the construction sector, as the same kind of obligations could be created in sector-specific legislation in construction.

The following sector specific legislation includes mandatory GPP criteria and targets:

Regulation 106/2008/EU on a Community energy-efficiency labelling program for office equipment

[This Regulation](#) establishes the rules for the Union energy-efficiency labelling programme for office equipment.

Directive 2010/31/EU on the energy performance of buildings

Based on [this Directive](#), minimum energy performance standards apply to public buildings. Based on a common EU methodology, these standards are set at national level. From 1 January 2019, all new buildings occupied and owned by public authorities must be “nearly zero-energy buildings”.

Directive 2012/27/EU on energy efficiency

This Directive sets mandatory energy-efficiency requirements regarding the renovation of public buildings. Annex III of the Directive defines the measures which must be taken by central government authorities, and which can be voluntarily adopted by other public authorities.

Directive 2009/33/EC on the promotion of clean and energy-efficient road transport vehicles

This Directive contains mandatory obligations for the road transport vehicles sector. All contracting authorities must take the operational energy use and environmental impacts of vehicles into account, as part of the procurement process. A common methodology for calculating lifetime operational costs is provided. The Directive was revised in 2019, resulting in minimum procurement targets for clean vehicles, a broader scope, and clearer definition of what is considered a 'clean vehicle'. Moreover, it could provide an indication of the route the Commission is planning to take regarding further sectoral procurement legislation.

Guidance & Reports

As green public procurement is still primarily a voluntary instrument, there is a lot of guidance available for public buyers on how they can implement it. In this section an overview will be given of relevant guidance material, specifically focusing on bio-based circular procurement in construction.

EU Green Public Procurement Criteria

The EU Green Public Procurement (GPP) criteria have been developed to facilitate the inclusion of green requirements in public tender documents. Currently, 20 EU GPP criteria are available. Several of those can be relevant for the construction of a circular bio-based building, for example:

- Office building design, construction and maintenance

- Sanitary tapware
- Toilets and urinals
- Water-based heaters
- Paints, varnishes and road markings

Level(s)

Level(s) is a voluntary reporting framework to improve the sustainability of buildings. Using existing standards, Level(s) provides a common EU approach to the assessment of environmental performance in the built environment. The announced Strategy for a Sustainable Built Environment will promote the use of Level(s) to integrate life cycle assessment in public procurement. More information on Level(s) can be found in the [JRC Technical Report](#).

Buying Green! - A Handbook on green public procurement

Buying Green! is the European Commission's main guidance document to help public authorities to buy goods and services with a lower environmental impact. It is also a reference for policy makers, and companies responding to green tenders. A fully revised third edition (2016) was published in April 2016, which is fully compliant with the possibilities for including GPP under the 2014 public procurement legal regime. It also includes sector specific recommendations relevant for buildings.

Guidance on bio-based products in procurement

As part of the Commission's initiative to development of a [guidance document](#) for bio-based products in procurement (following the first bioeconomy strategy), this project was initiated. The guidance provides information on how the bio-based economy is linked to the circular economy and what kind of procurement procedures can be used to facilitate bio-based procurement. Furthermore, specific product groups relating to building construction suitable for bio-based procurement were identified: wooden-frame construction, bio-based insulation, decking, facade panels, bio-based painting and varnishes and various bio-based indoor products for buildings. For bio-based coatings [a factsheet](#) on how specific capabilities of coatings can be taken account for in procurement, is available (GHG emissions, No volatile organic compounds (VOCs) or reduced VOC content).

Sustainable Timber Action

[This guide](#) for public purchasers gives information on buying sustainable timber. Information can be found on recommended procurement criteria.

Public procurement for a circular economy (good practice and guidance)

[Guidance document](#) by the European Commission on circular procurement. Different models for circular procurement are discussed in the brochure and many different examples are given.

Green Public Procurement: A collection of good practices

Since January 2010, the European Commission has [published](#) on its website a series of examples of the implementation of GPP throughout different Member States. These examples shall illustrate how European public authorities have successfully launched 'green' tenders, and provide guidance for others who wish to do the same. This brochure includes a collection of some of the most interesting examples collected over the years.

SCI-Network

The SCI-Network connects public authorities looking to procure innovative and sustainable solutions within their construction projects. They published a guide on procuring innovative and sustainable construction solutions in 2012.

Procura+

The European sustainable procurement network (Procura+) is managed by ICLEI (Local Governments for Sustainability). They provide guidance, training, case studies and news on sustainable procurement. An interesting publication of theirs is the Procura+ manual, a comprehensive guide to implementing sustainable procurement. Construction is identified as one of the key sectors. In the guide is identified how to take a sustainable procurement approach in construction tender calls in different stages of the procurement process (exclusion, selection, technical specification, award criteria, contract performance). See pages 85-86 for more information.

Building

A significant amount of EU energy, resource and mineral-use goes towards buildings. For example, buildings account for up to 40% of our energy use. Therefore, the EU has high targets for renovation of the existing building stock. Increasing the renovation speed is one of the goals of the European Green Deal. Energy efficiency in the construction and renovation of buildings did not start with the Green Deal, but has some history within the EU. Moreover, considering the focus on recycling and reusing construction and demolition waste, it is important to note that the legislative acts and initiatives in the Green Deal on energy efficiency and renovation will most certainly involve aspects of circular bio-based building.

This chapter will elaborate on the different policies, legislation, guidances and networks which deal with buildings and circular and bio-based construction.

Policy

Legislation

Guidance & Reports

Networks

Green Deal

The Green Deal is one of the two main priorities of the new European Commission. It strives for full climate-neutrality in 2050 and advocates the circular economy. The latter is an integral part of thinking throughout the Green Deal. This means that, even if the main focus is on energy efficiency, circular construction is always part of renovation. Energy efficiency and renovation of building is therefore also relevant for circular & bio-based construction.

The European Commission wants **to start a 'renovation wave' in order to boost the annual renovation percentage**. Because buildings make up 40% of our energy use, better isolated homes are in all of our interest.

The Commission plans on strictly enforcing the Energy Performance of Buildings Directive (more on this directive below). Moreover, emissions of buildings might be incorporated in the Emission Trading System (ETS).

Strategy for a Sustainable Built Environment

The Strategy for a Sustainable Built Environment was first announced in the 2020 Circular Economy Action plan. The goal is **to ensure coherence across relevant policy areas like climate, energy and resource efficiency, management of construction and demolition waste, accessibility, digitalization and skills**. This strategy will announce new initiatives in the area of circular and bio-based construction. This strategy is expected in 2021.

The Renovation Wave Initiative

The Renovation Wave Initiative was first announced in the Green Deal. This initiative has to lead to **significant improvement in the energy efficiency in the EU, which will be implemented in line with circular economy principles**. Special focus will be given to **optimizing lifecycle performances and a longer life expectancy of build assets**. The Renovation Wave initiative is expected to be published in 2020.

Strategy for the sustainable competitiveness of the construction sector and its enterprises

The 2012 strategy for [sustainable competitiveness of the construction sector](#) aims for a more sustainable and energy efficient construction sector. The strategy identifies recycling and reuse as enablers of sustainable growth. Most of the recommendations or actions in this strategy have already been carried out and/or followed up by other more far going actions.

Legislation

Both the Energy Performance of Buildings Directive and the Energy Efficiency Directive are part of a legislative framework with the goal improve efficiency in the EU. They have both been reviewed and revised in 2018.

Energy Performance of Buildings Directive

Buildings use about 40% of the total energy use in the EU and emit about 36% of all greenhouse gasses. That's why buildings have a big energy saving potential and play a role in decreasing the dependency on energy and countering climate change.

The [Energy Performance of Buildings Directive](#) (2010/31/EU) (EPBD) states that **member states have to determine long term renovation strategies**. These strategies have to ensure that before the end of 2050 the national building stock (both public and private) are renovated into an energy efficient and carbon-free building stock. Moreover, it has to facilitate the transition of already existing buildings into near energy-neutral buildings.

In addition, **the EPBD contains minimum standards for the energy performance of buildings**. Some categories of buildings can be exempted from these standards. However, the following still counts:

After December 31st of 2020, all new buildings have to be near zero-energy. New government buildings have to comply with these standards since the 1st of January 2019.

When buildings undergo a substantive renovation, energy performance has to be upgraded in order to meet the minimum standards for energy performance.

The EBD also has specific demands for the following three sectors: charging points, meter systems and heating and cooling.

Energy Efficiency Directive

Improving energy efficiency are an important part of meeting the energy and climate goals. The [Energy Efficiency Directive](#) (2012/27/EU) states that **energy efficiency has to be improved by 20% in 2020 and 32% in 2030**. Buildings play an important role in this goal.

The EED states that annually 3% of the building stock of the government has to be renovated to improve energy efficiency, starting with those building with the worst energy performance. Moreover, there are obligations for smart and individual meters to show energy use in different energy situations.

Guidance & Reports

Commission Recommendation (EU) 2019/786 of 8 May 2019 on building renovation

The European Commission has made **several non-binding [recommendations on building renovation](#)** in the context of the abovementioned directives on energy efficiency. Recycling and reuse of waste are mentioned as ways to decrease landfilling which has **a positive impact on energy consumption**. Moreover, **circular construction is mentioned as one of the aspects which have to be taken into account in the future** of renovation.

EU Construction and Demolition waste management protocol

The [EU Construction and Demolition waste management protocol](#) was published in October 2016. Dissemination and communication actions on the protocol have been implemented in order to assist Member States, regional, local authorities and private practitioners in adopting it in their construction market. It is a set of **non-binding guidelines which aim to improve waste identification, waste logistics, waste processing, quality management and appropriate policy and framework conditions**.

EU Building Stock Observatory

The [EU Building Stock Observatory](#) (BSO) was founded in 2016 and aims to provide a better understanding of the energy performance of the building sector through reliable, consistent and comparable data. The BSO contains a database, a data mapper and factsheets for monitoring the energy performance of buildings across Europe. There are 250 indicators feeding into the BSO database.

Building sustainability performance - Level(s)

[Level\(s\)](#) is a **voluntary reporting framework to improve the sustainability of buildings**. Using existing standards, Level(s) provides a common EU approach to the assessment of environmental performance in the built environment. Currently in its testing phase, the final version is expected to go live in the autumn of 2020.

Networks

ICLEI – Local Governments for Sustainability

ICLEI is a **global network for local and regional governments on sustainable (urban) development**. One of the focusses of ICLEI is on sustainable infrastructure, buildings and construction. More information can be found [here](#).

European Circular Construction Alliance

The [European Circular Construction Alliance](#) (ECCA) is co-funded by the EU and is an EU wide network which seeks to support clusters and business network organization on circular construction matters.

Product

Products used in construction have to comply with EU legislation. Five to ten percent of all energy consumption in the EU goes towards construction products. Considering the goal to be climate neutral in 2050, construction products are one of the focusses of the European Commission to improve the sustainability of the construction sector. In this chapter the different EU policy, legislation, guidance and networks affecting bio-based and circular construction products are set out.

Policy

Legislation

Guidance & Reports

Networks

Green Deal

The [Green Deal](#) is one of the two main priorities of the new European Commission. It strives for full climate-neutrality in 2050 and advocates the circular economy. The latter is an integral part of thinking throughout the Green Deal. One of the action plans which was announced in the Green Deal is the Circular Economy Action plan. The EU aims to **stimulate development of circular products**, including in the construction sector. More on this action plan can be found below.

Another initiative in the Green Deal focusses on a circular plastics economy. The Commission will put forward **mandatory regulations for the degree of recycled material for construction materials**.

The **Construction Products Regulation (more on this regulation below) shall be revised** in order to ensure that new and to-be renovated buildings comply with all the demands of the circular economy.

Circular Economy Action plan 2020

The [2020 action plan](#) highlights the environmental impact of the construction sector on greenhouse gas emissions (5-12% of total emissions) and waste generation (35% of EU waste). More efficiency in resource management could cut 80% of the emissions. The Commission will **launch a strategy for a sustainable built environment**, in order to ensure coherence across policy field such as resource efficiency and the management of construction and demolition waste.

Moreover, sustainability performance of construction products will be addressed in the revision of the Construction Products Regulation, including the introduction of recycled content requirements for construction products.

Sustainable Products Initiative

This initiative, which is expected to be published as a directive in the fourth quarter of 2021, **aims to provide the basis for ensuring high environmental performance for all products**. Products placed on the EU-market should be more sustainable. Moreover, this initiative **will aim to address harmful**

chemicals in for example steel, cement and textiles. The Sustainable Products Initiative will **revise the eco-design directive** and propose additional measures and legislation if necessary.

Action Plan 2015

In this first [Action Plan](#), the Commission sets out several objectives for the circular use of construction waste. The Commission promised to take **a series of actions to ensure recovery of valuable resources and adequate waste management**. For the results of these actions, see the implementation report Circular Economy Action Plan 2015 below.

Bioeconomy strategy

The [bioeconomy strategy](#) was first published in 2012 and reviewed in 2017. For the findings of this review, see below.

The updated bioeconomy strategy of 2018 promotes the use of bio-based products and aims to accelerate the deployment of a sustainable European bioeconomy. This strategy **advocates the use of wood over concrete or other artificial materials**, because this would decrease carbon dioxide emissions.

Plastics strategy

The focus of the EU [plastics strategy](#) is on the reuse and recycling of plastic products such as packaging. Lack of information about the presence of ‘chemicals of concern’ is a significant obstacle in the reuse of plastics. The Commission therefore proposes **to accelerate work on ways to identify harmful chemicals in the plastic waste stream**.

One of the goals is to further integrate recycled plastics in the construction sector. The construction market is explicitly named for this, for example in insulation materials, pipes, etcetera. To promote this, the Commission will look into **rewarding the use of recycled content in the revised Construction Products Regulation** (more below).

Ecodesign Directive

The [Ecodesign directive](#) (2009/125/EC) provides rules for products to increase their environmental performance. The directive itself makes little mention of construction products/material, but does **set minimum standards for all kinds of products**. It does so through product-specific regulations. A list of these (implementing) regulations, including those set via the energy labelling regulation, can be found [here](#). Examples of European-wide regulated product groups are ventilation units and boilers.

Energy Labelling Regulation

The [energy labelling regulation](#) (2017/1369/EU) was created for individual product groups and already **applies to fifteen product groups**. They therefore require energy labels, indicating their energy performance. Some of these products are used in construction.

Construction Products Regulation

The [Construction Products Regulation](#) (2011/305/EU) lays down **harmonized rules for the marketing of construction products in the single market**. This means that construction products all have to adhere to the same (minimum) standards in order to guarantee quality of these products within the EU. This makes it possible to compare products from different manufacturers.

Under the CPR, national authorities can set performance requirements using the harmonized European standards.

The CPR has been identified as **one of the regulations which can be revised in order to boost the uptake of recycled content in construction products** and enhance the circular economy. This has been mentioned both in the Green Deal and the 2020 Circular Economy Action Plan.

The CPR has been evaluated in 2019, find the executive summary of the evaluation [here](#). An [inception impact assessment](#) (IIA) has been published in which the Commission sets out the initial impact of its plans. This IIA reveals that the **Commission wants to establish a comprehensive environmental footprint assessment system to contribute to the sustainability of construction work**.

Moreover, the Commission seeks to explore other opportunities to **'green' the sector via requirements for construction products.**

Waste Framework Directive

The [Waste Framework Directive](#) (2018/851/EC) sets out **the rules for basic waste management in all the member states.** Construction and demolition waste (CDW) is one of the largest waste streams in the EU. CDW is not defined as municipal waste in the WFD, but has its own definition. ("construction and demolition waste" means waste generated by construction and demolition activities;', article 3 WFD).

The WFD states that member states shall take measures to prevent waste generation which shall at least encourage the re-use of construction products and materials and aim for waste reduction (article 9) in the construction sector.

Moreover, member states **will take measures to promote selective demolition.** This way hazardous substances can be removed and re-use and recycling of high-quality materials can be facilitated. Sorting systems for CDW for, at least, wood, mineral fractions, metal, glass, plastic and plaster have to be set up.

By December 31st 2024, the Commission will consider setting targets for re-use and recycling for CDW and all its specific fractions. This initiative will be announced through a report to the European Parliament and Council and, if necessary, a legislative proposal.

When a product or material is (intended to be) discarded, it is considered to be waste in the current EU legislative framework. **When a producer prepares a product or material for reuse or recycles it, they have to comply with requirements** that are formulated in the Waste Framework Directive (WFD) when they want to bring it on the market. **The so called End-of-Waste criteria (EoW criteria) can be set on a case-by-case basis, or at the national or EU-level.**

In the present situation, EU wide EoW criteria have been set for a very limited number of secondary materials. Moreover, the development of EoW criteria at Member State level remains limited. If EoW criteria are formulated for secondary materials at a national level, other Member States do not necessarily recognize this material as not being waste.

The measures in this directive should be put into force **by July 5th 2020**, unless indicated otherwise.

Communication on resource efficiency opportunities in the building sector

The [Communication on resource efficiency opportunities in the building sector](#) of 2014 makes recommendations on resource efficiency in the construction sector. In total, **5-10% of all energy consumption in the EU is related to the production of construction products**. The recycling and reuse is therefore very important to reduce impact on the environment. The communication on resource efficiency makes numerous recommendations, including the establishment of a framework with core indicators on the environmental performance of buildings. This turned into Level(s), see more under 'buildings'.

Resource Efficient Use of Mixed Wastes

A specific [study](#) to analyze the current CDW management situation in EU Member States, identifying obstacles to recycling and potential deficiencies that could lead to non-compliance with EU waste legislation. Good practices in terms of creating conditions for increasing CDW recycling and for improving the quality of recycling and recovery were identified and a set of recommendations to address potential barriers formulated. Success stories of efficient CDW management were showcased in 6 case studies, illustrating key elements for success, as well as the necessary preconditions.

Final Report - Bioeconomy Strategy

In 2017, the bio economy strategy of 2012 was [reviewed](#) by the European Commission. The review concluded that the 2012 strategy delivered on key actions in the Action plan and contributed to increased visibility and possibilities of the bioeconomy sector. It, for example, successfully delivered on standards for bio-based products. But the review also identified several areas for further improvement of the Strategy and Action Plan. The report highlighted the importance of a circular bioeconomy, which was not addressed in the 2012 strategy.

Development and implementation of initiatives fostering investment and innovation in construction and demolition waste recycling infrastructure

The main objectives of the [study](#) were (i) to identify, list and analyse existing business models in the field of construction and demolition waste (CDW) recycling within selected EU countries and non-EU countries and (ii) to develop and elaborate a set of five business cases that are exemplary in their nature for the planning and design of new CDW recycling facilities.

Implementation report Circular Economy Action Plan 2015

The [implementation report](#) on the 2015 Circular Economy Action plan states that the **revised waste legislative framework has reinforced rules on separate collection of construction and demolition waste (CDW)**. Moreover, industry engagement with the circular economy and revised waste management has led **to the adoption of the EU Construction and Demolition Waste Protocol and Guidelines**, which seeks to increase confidence in the waste management process and in the quality of recycled materials in the sector.

Networks

URGE – Circular Building cities

[URGE](#) is an Action Planning network by URBACT which wants to develop knowledge and a plan on integrating circular building into the urban building sector. Lead partner is the city of Utrecht.

European Circular Construction Alliance

The [European Circular Construction Alliance](#) (ECCA) is co-funded by the EU and is an EU wide network which seeks to support clusters and business network organization on circular construction matters.

Circular Europe Network

The [Circular Europe Network](#) is set up by the Association for Cities and Regions. It aims to bring members of the ACR together and exchange good practices on the circular economy, including the construction.

Construction Blueprint

[Construction Blueprint](#) is not a network, but an Erasmus+ project focused on implementing a new strategic approach to sectoral cooperation on skills. A partnership of 24 partners, which seeks to establish a new strategy on construction skills in Europe.

New & Announced Initiatives

Renovation Wave initiative – *expected October 2020*

Strategy for a sustainable built environment – *expected 2021*

Environmental performance of products & businesses – *expected 2021*

Sustainable products Initiative - *expected 2021 Q4*

Revision Construction Product Regulation – *to be announced*

