MANIFESTO Circular Construction Economy 2050

The positive impact of the circular economy is unmistakable. With the exciting opportunities this presents for innovation and sustainable growth, we are at the dawn of a promising future in the construction industry. The Transition Team has drawn up an inspiring vision for the future, guided by several crucial recommendations for the change that is needed, as a guiding principle in this respect.

Read the entire vision for the future and our extensive recommendations at
https://circulairebouweconomie.nl/manifesto

System changes

We see that the greatest challenges posed by the transition are not so much technical; rather, they are embodied in standards, values and regulatory instruments. The process of transitioning from a linear to a circular economy requires robust measures at government level, taxation, economics and legislation:

Taxation as an accelerator

Fiscal policy makes circular applications more economically attractive, for example with true pricing and reducing the costs of labour.

The Netherlands setting the tone in Europe

The Netherlands has the right starting position to move to the head of the field in terms of circular construction.

CO_2 budgets as a steering mechanism

The use of ecological budgets - comparable with financial budgets - steers organisations towards investments that reduce their CO_2 emissions and contributes to socially-responsible business operations.

Circularity is an integral part of policy

Consider the impact of circular measures in all areas of public policy, processes and decisions, and look for common ground with other transitions and social challenges.

Preconditions

In addition to the system changes referred to above, there are also a number of preconditions required to lay the foundations of the circular construction economy. Extra effort is needed for:

Materials hubs

These make it possible to store construction materials temporarily reusing them in the best possible way, so that they retain their value. The government has a leading role to play in this.

Digitisation

The government must stimulate the use of digital solutions (such as AI) to develop smart, sustainable construction processes that perfectly align with each other.

Scan the QR code & add your support to the manifesto!

The Circular Construction Economy Transition Team is made up of representatives from government agencies, businesses and the research world. With the help of 20 experts, we have developed scenarios for the vision for the future, envisaging a complete and functional circular construction economy. A large-scale systemic change costs a great deal of time and there is thus considerable urgency to undertake action in 2024. We are calling on those involved - businesses, government agencies, research institutions and others - to support the manifesto.

The circular construction economy

Contents

Introduction 3

Approach 4

Systemic changes 6

- Taxation as an accelerator for the circular economy
- Introduction of CO_2 budgets as a steering mechanism at organisation level
- The Netherlands setting the tone in Europe
- Circularity as an integral part of all public policy areas, processes and decisions

Preconditions 12

- Materials hubs
- Digitisation

Introduction

It is the Government's ambition to transform the current, linear economy into a fully-circular economy. By 2030, 50 per cent of the ultimate goal must have been achieved. The Circular Construction Economy Transition Team (CCE) has translated and operationalised these aims to make a roadmap of recommendations, which formed the input for the National Circular Economy Programme (NCEP). There is widespread support for this within government agencies, the business community, science and education.

The task of creating a circular construction economy by 2050 is considerable.
The transition will only be successful if a number of significant challenges are resolved. These include challenges in relation to use of materials, financing and legislation.

Various studies have made it painfully clear that we will not be able to meet the current challenge facing construction (residential and non-residential building, new-build projects, refurbishment and civil engineering) within the framework of the Paris climate agreements.
We need to redouble our efforts in respect of circular strategies and to improve efficiency within industry.

We see that the greatest challenges posed by the transition are not so much technical by nature; rather, they are systemic. Resolving systemic sticking points (such as legal, economic and financial issues) is crucial to achieve the required scale in the transition to a circular economy. The Integrated Circular Economy Reports published by the Netherlands Environmental Assessment Agency (PBL) conclude that to date, we have tended to force circular measures into a linear system. To make actual progress towards changing a linear economy into a circular economy, it is precisely system changes that are important.

Approach

For the past six years, the Circular Construction Economy Transition Team (CCE) has shaped the Circular Construction Economy Transition Agenda's **Implementation programme**[1]. The team is made up of representatives from government agencies, construction companies and the civil engineering sectors. These professionals are personally involved.

Within the Transition Team, the long-term/system changes work group designed a vision for the future, a vision of what things would look like in 2050. To do this, they used the Future Design method (see Figure 1). This method employs a creative process to position yourself in the desired vision of the future, in this case a fully-circular construction economy by 2050, and see which steps you have to take to get there. The vision for the future was inspired by the PBL's **Spatial Exploration 2023**[2] scenario study. With the help of 20 experts, these scenarios have been further developed for the future vision of a complete and functional circular construction economy.

The resulting vision for the future was used as the starting point for the exploration of the measures that must at least be in place in order to achieve a circular construction economy by 2050. The experts initially examined the potential obstacles, before translating them into effective measures and incentives for the desired final scenario.

An extensive long list of measures was drawn up with a clear vision for the future and the challenges to be faced on the way. The working group then carried out a stress test based on the PBL's scenario studies. This has resulted in a selection of measures that are described below. The selection is made up of measures that will make a significant contribution to making the circular construction economy a reality in all scenarios of the Spatial Exploration 2023.

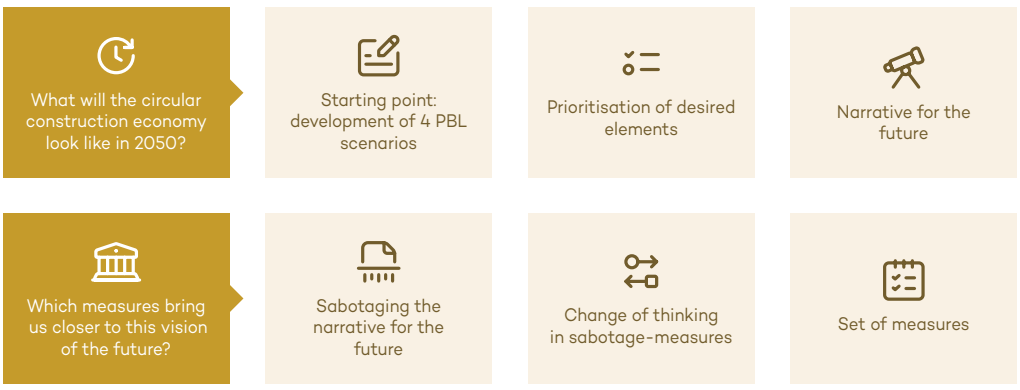

Figure 1 | Future Design process

[1] https://circulairebouweconomie.nl/uitvoeringsprogramma
[2] https://www.pbl.nl/publicaties/vier-scenarios-voor-de-inrichting-van-nederland-in-2050

The current system will have to be radically changed if the objective is to be achieved. Robust measures are needed at government level, fiscal policy, economics and legislation. A large-scale system change will cost a lot of time. This emphasises the urgency to focus on those measures necessary to achieve these changes starting form 2024.

Systemic changes

Taxation as an accelerator for the circular economy

An important systemic change is in the tax system. Tax measures may help to stimulate circular applications, for instance by off-setting the external costs to the environment and society in the price. On the other hand, measures may be used to reduce the high labour costs, which would make reuse a more economically-attractive alternative. In this way, both craftsmanship and social security can once again make their presence felt in the economy. It is important that these measures are implemented at the same time, so that the transition is not only 'green', but also inclusive and social. These measures, together, transfer the tax burden in what is known as a 'tax shift'. Over the past few years, much time has been given over to studying the **macro-economic effects of a tax shift**[3], but also to the effects on **construction projects**[4] (circular and otherwise).

The measures set out below will accelerate the transition to a circular economy, in which material reuse and craftsmanship are the focal points, and in which they are valuable and economically feasible.

Vision for the future of true pricing: the actual costs are incorporated in the price of materials, products and services. This means that circular materials can compete on the same level as linear alternatives and that they will be widely used.

What do we need to achieve this?

I. In future, the market price of goods and services will account for their environmental and external costs. The basic tools to do this already exist in the construction sector, namely calculating environmental costs (ECI), a database showing the environmental impact of materials (Dutch Environmental Database, NMD) and an **Environmental Prices handbook**[5] from CE Delft. To bring external costs into the real economy, it is necessary for:
    a. the Ministry of Infrastructure and Water Management, together with the Ministry of Finance and the Ministry of Economic Affairs & Climate Policy to undertake research into the social and economic impact of environmental pricing;
    b. experiments to be carried out in combination with the tax authorities (Belastingdienst) to work out how to actually apply external costs to projects (construction and otherwise) to get an idea of the impact of putting a measure of this kind into practice. This could, for example, be carried out in an innovation promotion zone in Flevoland, which forms part of the current 'Regional Deal' (Regiodeal) between central government and the Province of Flevoland.

[3] https://ex-tax.com/
[4] https://www.copper8.com/wp-content/uploads/2022/02/Circulair-Bouwen-Hoe-Reken-je-het-Rond_def.pdf
[5] https://ce.nl/wp-content/uploads/2023/03/CE_Delft_220175_Handboek_Milieuprijzen_2023_DEF.pdf

c. a clear pathway to be outlined so that environmental pricing can be introduced by the Ministry of Finance/Belastingdienst. A pathway of this kind offers opportunities for the business community.

II. Environmental costs will be a significant aspect in decisions on investment. In this respect, too, the basic range of tools is available. The recommendation in terms of investment decisions is to use higher environmental costs in calculations: for instance, the Province of Utrecht is already using an internal CO_2 price of €875. The following is necessary to implement this:
   a. the Ministry of Infrastructure & Water Management and/or Rijkswaterstaat must evaluate the experiences of government agencies that have worked with environmental costs in investment decisions;
   b. the Ministry of Infrastructure & Water Management must issue an indicative price that government agencies can implement in their investment decisions.

The first step is to develop standards and guidelines for the construction industry that enjoy broad-based support. Civil engineering pilot projects in which the ECI is added to the tender price may be carried out, building on experiences from ECI-Value (ECI incorporated in the price). Knowledge and experiences must also be shared at European level.

Vision for the future of reducing the costs of labour: in a fully-circular economy, use of primary materials is discouraged and it pays to invest time in up-cycling materials and products for high-value reuse. The rate of VAT has already been reduced for activities such as repair of shoes, textiles and bicycles, as a result of which these repairs have become cheaper and more attractive in economic terms. Reducing the costs of labour will also have the knock-on effect of people once more being able to ply their trade in an employment relationship, giving them access to social security schemes.

What do we need to achieve this?

I. In future, the costs of labour-intensive processes will be lower at national level. The following is necessary to achieve this:
   a. the Ministry of Finance and the Belastingdienst must study the recommendations described in the **Making Work Pay Off**[6] report in greater depth, focusing on the extent to which the Netherlands can implement the specified tax measures autonomously;
   b. b. the Ministry of Finance must outline a route to lower (step-by-step) the tax burden on labour, giving employers options.

II. In future, there will have been a shift in the tax burden at European level from work to resources. To initiate a shift of this kind at European level, a study will have to be carried out with other EU member states (e.g. via the DGBC network for residential

[6] https://ex-tax.com/wp-content/uploads/2023/11/Werk-moet-lonen_de-taxshift-in-actie_The-Extax-Project-def.pdf

and non-residential building, and Rijkswaterstaat's network for civil engineering) into the effects of a reduction in the tax burden on labour in supply chains for building materials, possibly via an Interreg application (an EU subsidy scheme for spatial planning and regional development).

The first step is to form a consortium of EU member states that is willing to carry out a joint study into the effects of a tax shift in (building and other) material supply chains.

Introduction of CO_2 budgets as an instrument at organisation level

Ecological budgets, such as those for CO_2[7], are fundamental to the choices that are made in a circular construction economy. This gives organisations a framework in which to account for their investment decisions and operations within their budgetary resources. The financial department can ensure that there is no budget overrun. Circular strategies, such as Refuse (R0) and Reduce (R2), can be rewarded by implementing CO_2 budgets.

Science shows that an excess of CO_2 in the atmosphere has an irreversible impact on the climate and, as a result, on the liveability of the planet. According to the Stockholm Resilience Centre, there are another eight planetary limits that we need to adhere to besides CO_2. The concept of the CO_2 budget was most recently calculated by the **Science-Based Targets initiative**[8] (SBTi), among others, so it can also be translated to organisation level. Policy also focuses on the role of emissions budgets in terms of the **Climate Plan 2024**[9].

Various policy developments are well suited to the concept of CO_2 budgets:

- The EU ETS emissions trading system also makes actual use of the concept of CO_2 budgets. Although EU ETS is an important resource in the context of the sustainability challenge, we believe that more is needed to keep within CO_2 budgets. As EU ETS budgets are linked to European production and many materials (including construction materials) are imported, emissions are still too high. While these imported materials certainly have a tariff under the terms of the CBAM they do, in fact, lead to a budget overshoot.
- The EU Corporate Sustainability Reporting Directive (CSRD) requires organisations to report their CO_2 emissions. Within the frame of reference of this Directive organisations must specify in terms of 'climate' how they intend to meet the 'Paris Goals'. In that sense, a CO_2 budget is an effective way of helping organisations that have CSRD obligations.

Vision for the future of CO_2 budgets: In future, all organisations will work with both a financial budget and an ecological budget (e.g. a CO_2 budget). Internally, organisations will have to account for investments that exceed a fixed threshold for CO_2 costs.

---

[7] Where we talk about CO_2 budgets we do, of course mean CO_2-eq.
[8] https://sciencebasedtargets.org/
[9] https://open.overheid.nl/documenten/e8cf45cb-c348-4b4e-8f13-9b1da812343f/file

What do we need to achieve this?

I. To target CO_2 budgets, the government must develop a uniform methodology for Dutch organisations in tandem with the market (front-runners) with which (scope 1, 2 and 3) CO_2 budgets can be determined in a way that is transparent and dynamic.

The first step is to develop a construction sector-wide model (e.g. by MVO Nederland and DGBC), in which greenhouse gas emissions and social costs and benefits are used to determine specific budgetary resources.

The Netherlands setting the tone in Europe

Neither the construction industry, nor the circular economy, cease to exist beyond the borders of the Netherlands. A significant part of the policy and regulatory instruments is determined at EU level. To accelerate the European processes (and so as not to be held back), and to ensure that policy and standardisation match Dutch practice, it is of great importance for the Netherlands to take an active role as a country setting the tone in Europe.

Vision for the future of the Netherlands setting the tone: From its position as a front-runner, the Netherlands must assume an active role as a country setting the tone in Europe. It must share its know-how and expertise in relation to circular construction with other member states, and contribute to the uniformity of legislation, simplifying international collaboration.
In this way, the Netherlands can accelerate the European processes and ensure that policy and standardisation properly match Dutch practice. At the same time, the Netherlands must not be afraid of assuming a front-runner position in order to 'raise the bar' for specific subjects.

What do we need to achieve this?

I. The Ministries of Economic Affairs and Climate Policy, the Interior and Kingdom Relations and Infrastructure and Water Management will establish active knowledge-sharing in relation to fully-developed calculation methods (such as ECI and Environmental performance in construction works).
II. At European level, the Ministry of the Interior and Kingdom Relations will initiate.
III. Top executive (DG) Construction industry consultations and the Ministry of Infrastructure & Water Management a similar forum for Civil Engineering, to share know-how.

The first step is to contribute the many experiences gleaned in the Netherlands with the MPG (Environmental Performance - Buildings, residential and non-residential construction) and ECI (Civil Engineering) to the Construction Products Regulation (CPR) and the CPR-Acquis process.

Circularity is an integral part of all fields of policy, processes and decisions

To promote circularity, close links to other transitions is a pre-requisite; these include the energy transition, climate adaptation and the 'water en bodem sturend' (water and soil leading) principle. It must be an integral part of policy and social challenges, such as residential construction and spatial planning. The necessity of integration of this kind is emphasised by the Integrated Circular Economy Report (ICER) by the PBL and the NCPE.

The recent geopolitical developments make the future uncertain. Circularity offers opportunities in this respect (e.g. greater security of supply), although direction is needed to make strategic choices. It is important to get an idea of the (future) risks facing security of supply for construction materials. Rijkswaterstaat has already **carried outa study**[10] into the security of supply of a number of strategic construction materials, which could serve as an example for a wider study.

Vision for the future in which circularity is fundamental: circularity is a central principle within all fields of policy, processes and decisions, and is applied in an integrated way to people, the environment, soil and water. The actual price is an important component of this.

What do we need to achieve this?

I. The Ministries of Economic Affairs and Climate Policy, Infrastructure and Water Management, and the Interior and Kingdom Relations must formulate a strategic vision for the future of the construction sector (among others) in the Netherlands, which analyses the origin of materials needed from the perspective of current and future risks. What is the route to a circular economy (in construction) for the Netherlands, in terms of the various materials streams?

II. II. The assessment framework created by the Netherlands Environmental Assessment Agency, the PBL (see below), is used to make decisions (at policy level) and to make assessments regarding sustainability and economics.

The first step is that there must be an interdepartmental consultation with top executives (DG) on circularity and achieving the policy targets and ambitions.

Vision for the future of an integrated consideration framework for spatial planning: When configuring land use areas in the future, circularity will be an integral part of decisions as part of the soil, water, nature system. The design for buildings and structures will have an area's long-term challenges as a starting point.

[10] https://open.rijkswaterstaat.nl/open-overheid/onderzoeksrapporten/@264406/risico-effecten-verminderde/

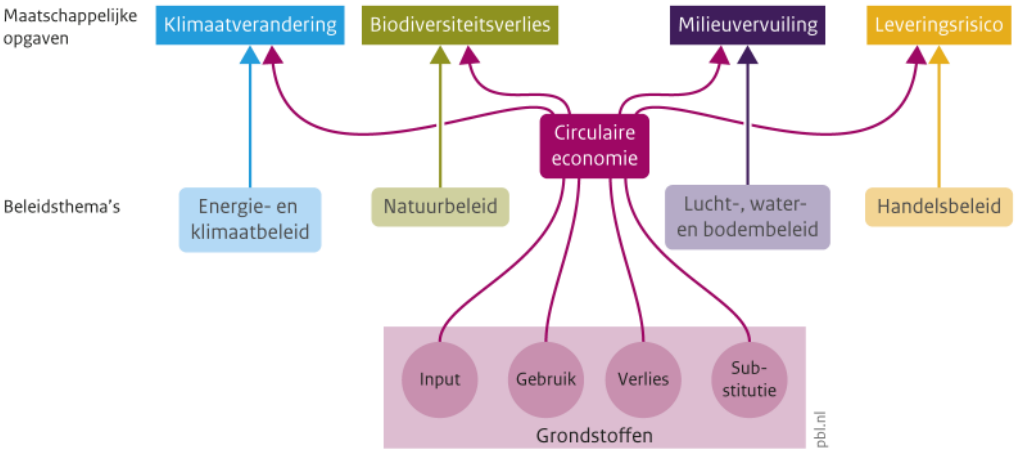

Figure 2 | Circular Economy consideration framework (source: PBL)

What do we need to achieve this?

I. The Ministries of the Interior and Kingdom Relations, and Infrastructure and Water Management must - together with executive parties, such as provinces, municipalities and housing corporations - develop guidelines that provide assistance in the evaluation of the impact of circularity in relation to spatial planning, development and urban renewal in the context of sustainable decision making. We must avoid 'passing on' the problems and challenges to:
    1. other areas,
    2. other sectors,
    3. other functions of the soil-water system and
    4. future generations.

The first step is to establish a framework for assessing and incorporating circular strategies in an area-specific approach. It is important that this approach is based on a joint understanding of the soil-water-nature system and has a sound knowledge base. At that point, the practical implementation will be a logical consequence.

Preconditions

In addition to the systemic changes referred to above, there are a number of preconditions that have to be met in order to enable the circular construction economy. We view the following as important preconditions, where extra effort is required:

Materials hubs

Physical materials hubs are a highly efficient manner of balancing demand and supply in material loops; they fulfil a central role in the shaping of construction plans. They make it possible to store materials temporarily, to optimise reuse and to ensure that materials retain their value. Digitisation also makes it possible to optimise use of the materials that are stored in the physical hubs.

What do we need to achieve this?

I. The Ministry of Infrastructure and Water Management will commission an analysis of the experiences gained in pilot projects with physical materials hubs.
II. The Ministry of Infrastructure and Water Management will conduct reconnaissance to determine the best locations for the materials hubs. This reconnaissance will consider variables such as material streams, efficient transportation routes and connection to the required infrastructure networks, such as inland waterway transportation and the energy network.

The first step is to coordinate publicly-financed materials hubs at the identified sites. A number of pilot projects can be implemented under a programme at national level.

Digitisation

Digitisation and AI can help with the development of smart and efficient (in terms of materials) construction processes that fit together seamlessly and facilitate increasing sustainability (on the building site).

What do we need to achieve this?

I. The area data will have to be put in order. One option would be to investigate the way in which this could best be done, for instance via licensing and, at a later stage, making this mandatory. The Ministries of Infrastructure and Water Management, and the Interior and Kingdom Relations could, perhaps, be the initiators of this project.
II. The Ministry of the Interior and Kingdom Relations will have an analysis carried out into the digital tools that have been developed, are currently in development and any gaps that remain. As part of this analysis a decision must then be made on the gaps that can be plugged with commercial or public intervention, so that the competent authority can also take on a controlling role in the digital domain.

III. Focus on the opportunities and innovations made possible by the development of digitisation in the construction sector. This is where we look into options relating to parametric design, stock control technology for material streams, a set of agreements on data sharing, construction (and building) passports, and university research programmes.

A first step is to strengthen the contact and collaboration with DigiGo, the signposting of important developments and enabling/encouraging these where necessary.

The circular construction economy

Publisher's details
Published by the Netherlands Enterprise Agency (RVO), on behalf of the Circular Construction Economy Transition Team.

Maart 2024