



Shaping a Circular Sustainable Future

Module 11

Circular Economy Across the Value Chain

Circular Economy in the Construction Industry



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101033740

Summery



The trainee should gain an understanding of what is available to them in order to implement circular practices into both their company and their community. This should include Communication, Knowledge sharing, Integration, implementation, national and European guidelines. This module should also highlight the importance of each of these topics in Multi-functional Green Roofs Facades and Interior Elements.



Objectives/Learning Outcomes



- 32 - Facilitate discussions and meetings between internal team members to identify circular opportunities multifunctional roofs and façades
- 33 - Integrate circular economy thinking into employee evaluations that are linked to professional compensation
- 34 - Collaborate to apply and improve circular procurement processes of multifunctional green roofs, façades, and interior elements
- 35 - Collaborate with industry stakeholders to share best practices in circular multifunctional roofs and façades, and act together
- 37 - Work together with residents and users to jointly create multifunctional green roofs, façades, and interior elements fit for them



Objectives/Learning Outcomes



- 38 - Engage in discussions with construction customers to raise awareness of the circular economy and explore circular opportunities for multifunctional green roofs, façades, and interior elements together
- 39 - Engage in discussions with government bodies and policy makers to push for regulations that support the application of circular multifunctional green roofs, façades, and interior elements
- 40 - Participate in government programs that support and advance circular multifunctional green roofs, façades, and interior elements
- 41 - Work together with the (local) community and engaging them in the company operations



Objectives/Learning Outcomes



- 49 - Incorporate circular strategies, archetypal circular interventions and case studies into educational programs (in the construction value chain)
- 50 - Provide internal training about navigating in the value chain for circular multifunctional green roofs, façades, and interior elements
- 51 - Solidify definitions of circular construction by being consistent and using circularity frameworks
- 52 - Conduct research about circular construction strategies applied to multifunctional green roofs, façades, and interior elements
- 53 - Follow developments in the field of environmental costing models and CO2 taxes



Objectives/Learning Outcomes



- 55 - Raise awareness about recycled construction materials and reconstructed buildings
- 71 - Explain the benefits of green and/or multifunctional green roofs, façades, and interior elements in different contexts and situations (e.g. public/private, to building users, industry, or local community)
- 80 - Redefine building regulations to incentivise circular approaches to multifunctional green roofs, façades, and interior elements
- 81 - Comply design of multifunctional green roofs, façades, and interior elements with applicable (national/local/EU) legal requirements
- 82 - Organise and provide insurance and guarantees for reused materials to buyers



Content



- Collaboration and Knowledge sharing
- Integration and implementation of Circular Economy in the workplace
- Regulation and Definition
- Multi-functional Green Roofs Facades and Exterior Elements



Collaboration and Knowledge sharing



Collaboration and Knowledge sharing



At its core, “collaboration in construction” simply means that teams are working together towards one project goal. Everyone can access the main plans and goals of a project at any time, without having to rely on gatekeepers or slog to faraway offices in order to get the information they need.

When collaboration is strong, team members pool their resources and knowledge and prioritize meeting shared goals dictated by the timeline and budget of the entire process rather than their own goals. This, of course, is the ideal way to conduct projects.



Source: <https://constructionblog.autodesk.com/collaboration-construction/#:~:text=At%20its%20core%2C%20%E2%80%9Ccollaboration%20in,get%20the%20information%20they%20need.>

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Key Takeaways



- Collaboration in construction requires teams to work together toward a common goal.
- With collaborative construction, all stakeholders can access the main goals and plans at any time.
- Around 43% of the highest trust construction firms place collaboration as a central goal when working on a project.
- Collaboration can have challenges such as trouble with growing pains when getting used to a new system, changing job site and workplace culture, and the potential for higher upfront costs.
- The benefits of collaboration may include fewer changes and rework, a higher likelihood of an on-time delivery, higher profits, fewer wasted materials, and other important positives.



Source: <https://constructionblog.autodesk.com/collaboration-construction/#:~:text=At%20its%20core%2C%20%E2%80%9Ccollaboration%20in,get%20the%20information%20they%20need.>

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Key Takeaways



- Successful collaboration in construction builds trust, is seamless, is inclusive, defines clear roles and responsibilities, and prioritizes high-quality communication.
- Emphasizing collaborative communication between the key players in the design and preconstruction phases of a project has a positive impact on long-term results.
- Developing a more collaborative culture is possible by changing project delivery methods, starting with collaboration with the original contract, embracing diversity, using collaboration tools, encouraging accountability, and focusing on human interaction.
- Trust and collaboration go hand-in-hand. High-trust firms are half as likely to have problems linked to slow data exchanges and twice as confident about meeting their budgets and project schedules.



Source: <https://constructionblog.autodesk.com/collaboration-construction/#:~:text=At%20its%20core%2C%20%E2%80%9Ccollaboration%20in,get%20the%20information%20they%20need.>

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Collaboration and Knowledge sharing



<https://drive.google.com/file/d/1XKTqhfOypYgGWA10tnMHiNGacsAYEKX1/view>

Video - Importance of networking



Integration and Implementation of Circular Economy in the Workplace



How to Implement Circular Economy



To implement circular economy in the construction industry the gaps existing within your company must be mapped and education and upskilling must then follow in order to implement this.

It is not necessary for the every person to be an expert in every element of the circular economy, however, it is vital that every team has an expert on each element of the circular economy.



Source: <https://www.circle-economy.com/circular-economy/key-elements>



Useful Tools



Circularity Academy

"CAMY"

Closing the green skills gap* is crucial to enable a circular economy. Our gamified e-learning platform boosts mass adoption of these skills.

*Linkedin's Green Skills Gap report

Ganbatte powered by  **CIRCLE
ECONOMY**



What is Circularity Academy?

Left and right menu



For playing Tracks

From the menu on the left you can find all features for the players:

Account

change e-mail and other account settings

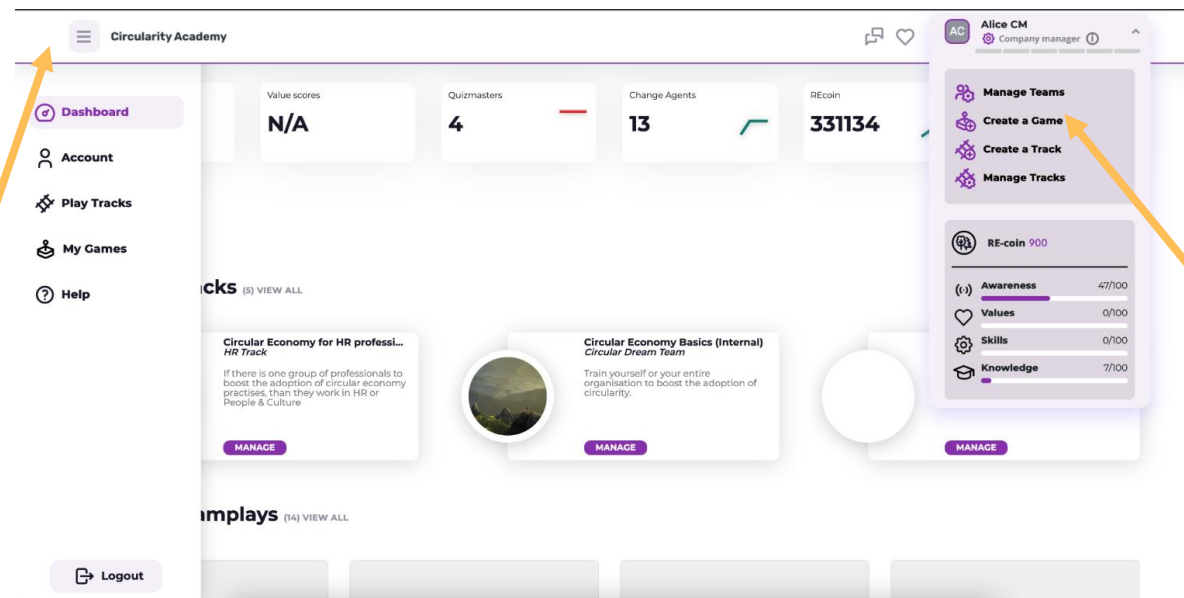
Tracks

Tracks are series of Games.

Unless it is an open track, all tracks are invite only. As a player you'll receive an invite from a Change Agent.

Games

Games are the central entity on the platform. They can be part of a track or can be played standalone. You can be invited for Teamply sessions by Quizmasters.



There are 4 roles on the platform

Players (a.k.a. learners)

Play games and tracks, can be certified after finishing tracks

Quizmasters (a.k.a. Game Guides)

Can guide the games in Teamply modus. It works like Kahoot or Mentimeter. You generate a teamply with a QR code which the players can scan. Now you can play the games as a group and discuss the outcomes

Change Agents (a.k.a. Educators)

Can setup and guide tracks, which are more in depth learning experiences distributed over several learning session. With the data dashboards you can measure progress over time

Company Managers (a.k.a. Mission Manager)

The Company Manager has all roles + the overview of progress on the entire cohort or organisation. It can boost progress by notifying other roles to take action.



What is Circularity Academy? Dashboard based on role

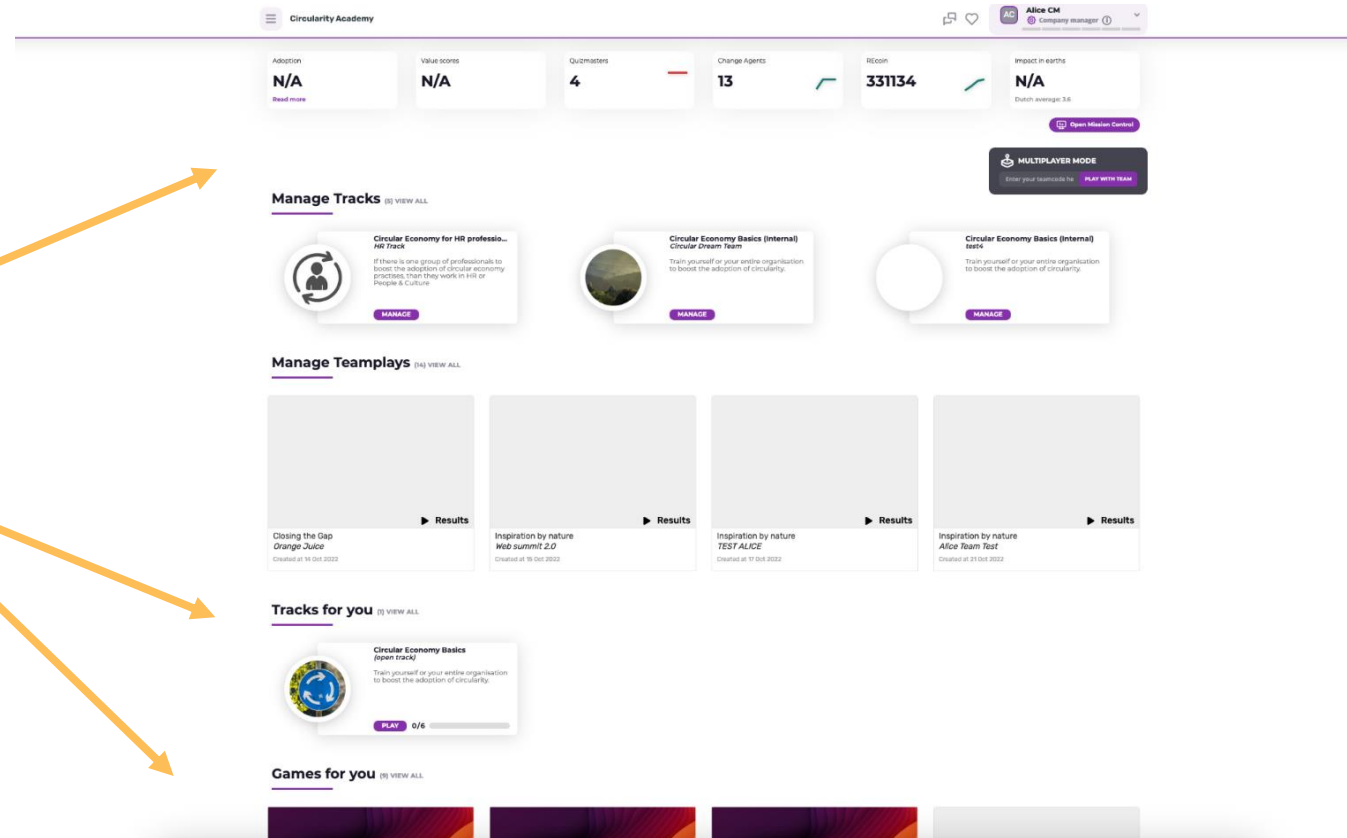


Dashboard

The dashboard is the landingpage of the academy once you are logged in.

Depending on your role (player, quizmaster, change agent or company manager) you will have a **different dashboard**.

As any role can also **just play** games and tracks, you will always find games and track for you on the bottom or in the left menu.



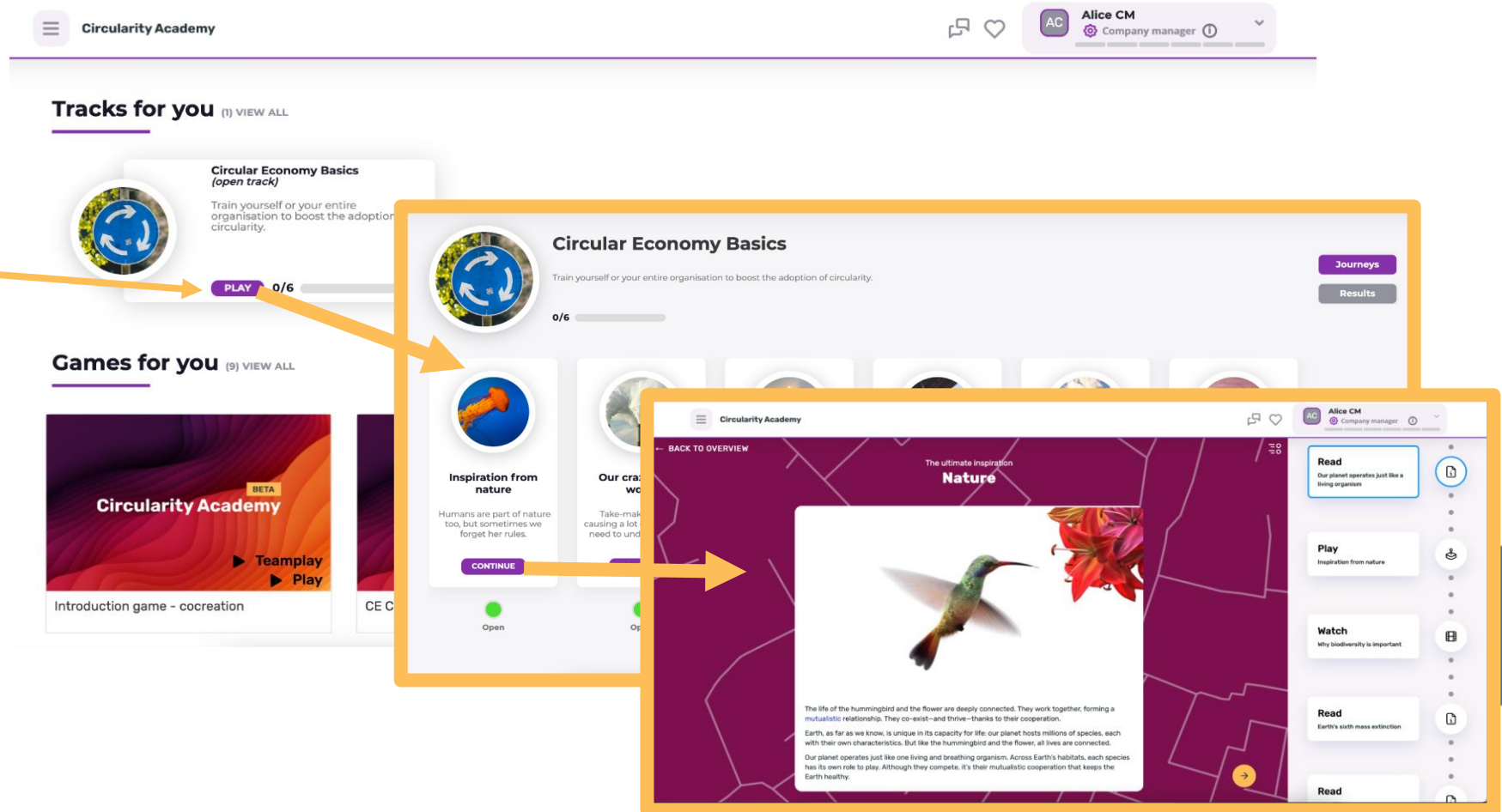
What is Circularity Academy? Playing games and tracks

Showcase a track (player perspective)

Scroll down to Tracks for you or click on play tracks in the left menu.

Now click play and the track will open and shows the games in the track.

NOTE: Don't get confused: games in a track are called journeys.



The screenshot displays the Circularity Academy user interface. At the top, the header includes the 'Circularity Academy' logo, a user profile for 'Alice CM' (Company manager), and navigation icons. The main content area is divided into two sections: 'Tracks for you' and 'Games for you'. The 'Tracks for you' section features a card for 'Circular Economy Basics (open track)' with a 'PLAY' button and a progress indicator '0/6'. An orange arrow points from this button to a larger, detailed view of the 'Circular Economy Basics' track. This detailed view shows the track title, description, and a 'CONTINUE' button. Another orange arrow points from the 'CONTINUE' button to a third screenshot showing the 'Nature' journey. This journey is a game titled 'The ultimate inspiration Nature' featuring a hummingbird and a flower. The game interface includes a 'BACK TO OVERVIEW' button, a 'Read' section with text about the mutualistic relationship between the hummingbird and the flower, and a 'Play' button. The right sidebar of the game interface contains a 'Read' section with the text 'Our planet operates just like a living organism' and a 'Watch' section with the text 'Why biodiversity is important'.



What is Circularity Academy? Guiding tracks



Showcase a track (Change Agent perspective)

If you are a Change Agent you can create, manage and guide tracks.

You invite a designated group of players (eg. your colleagues)

And you guide your team through a multi game track and tracks their progress and assess their awareness, knowledge, skills and values.

NOTE: Don't get confused: games in a track are called journeys.

The screenshot displays the Circularity Academy interface. At the top, it shows the user 'Alice CM' as a 'Company manager'. The main content area is titled 'Circular Economy Basics (Internal)' for the 'Circular Dream Team'. It features 'Challenge settings' and 'Invite' buttons, a score of '6888', and a 'Re' icon. Below this, there are tabs for 'Playerlist', 'Learning modules', 'Analytics', and 'All teams'. The 'Playerlist' tab is active, showing a table of players with their status, names, scores, and impact. The 'Analytics' tab is also visible, showing a progress bar for '38 modules finished' (63%) and a bar chart for 'Awareness, Knowledge, Skills, Values' with scores of 83, 55, 85, and 99 respectively. A 'Circular Dream Team' summary card shows an 80% completion rate.

Status	Players	Score	Impact	Progress
V	Alice Lunardelli	820	0	🟢🟢🟢🟢🟢🟢
V	Sreeja Raghunathan	1060	0	🟢🟢🟢🟢🟢🟢
V	Claudia Alessio Detto Grassi	1087	0	🟢🟢🟢🟢🟢🟢
	Hatty Cooper	0	0	🟡🟡🟡🟡🟡🟡
V	Mayya Saliba	1065	0	🟢🟢🟢🟢🟢🟢
V	Amy Kummertha	416	0	🟢🟢🟢🟢🟢🟢

rank	Players	Score	Awareness	Knowledge	Skills	Values	Progress
#1	C Claudia Alessio Detto Grassi	1087	85	69	100	95	🟢🟢🟢🟢🟢🟢
#2	M Mayya Saliba	1065	65	72	100	95	🟢🟢🟢🟢🟢🟢



What is Circularity Academy? Guiding games



Showcase a track (Quizmaster perspective)

If you are a Quizmaster you can create and guide games.

You generate a QR code and anyone who scans it can join your game without the need for an account or login.

1. select game
2. start teampay
3. share QR code
4. guide the game
5. discuss the results

The screenshot shows the Circularity Academy web interface. At the top, there is a navigation bar with a menu icon, the text 'Circularity Academy', and a user profile for 'Alice CM' with a 'Company manager' role. Below the navigation bar, there are two main sections: 'Games for you' and 'Latest Games'. The 'Games for you' section displays four game cards. The first card is titled 'Introduction game - cocreation' and has a 'Teampay' button. The second and third cards are titled 'CE Cities Track: Introduction game - Cocreation' and also have 'Teampay' buttons. The fourth card is titled 'HR Primary Track: Linearity' and has a 'Teampay' button. The 'Latest Games' section displays two more game cards. An orange box highlights the 'Teampay' button on the first card in the 'Games for you' section. An arrow points from this button to a modal window titled 'Generate a new teamcode'. This modal window has a text input field labeled 'Give your team a name!' and a blue 'Generate teamcode' button. Below the button, there is a QR code and the text 'test Introduction game - cocreation 2231 circularity.games'.



Become a climate resilient city through the circular economy

Explore data-driven insights, solutions, tools and practical examples of the circular economy that can help your city achieve its climate and sustainability goals.

6 0 0 0 cities

50 solutions

673 case studies

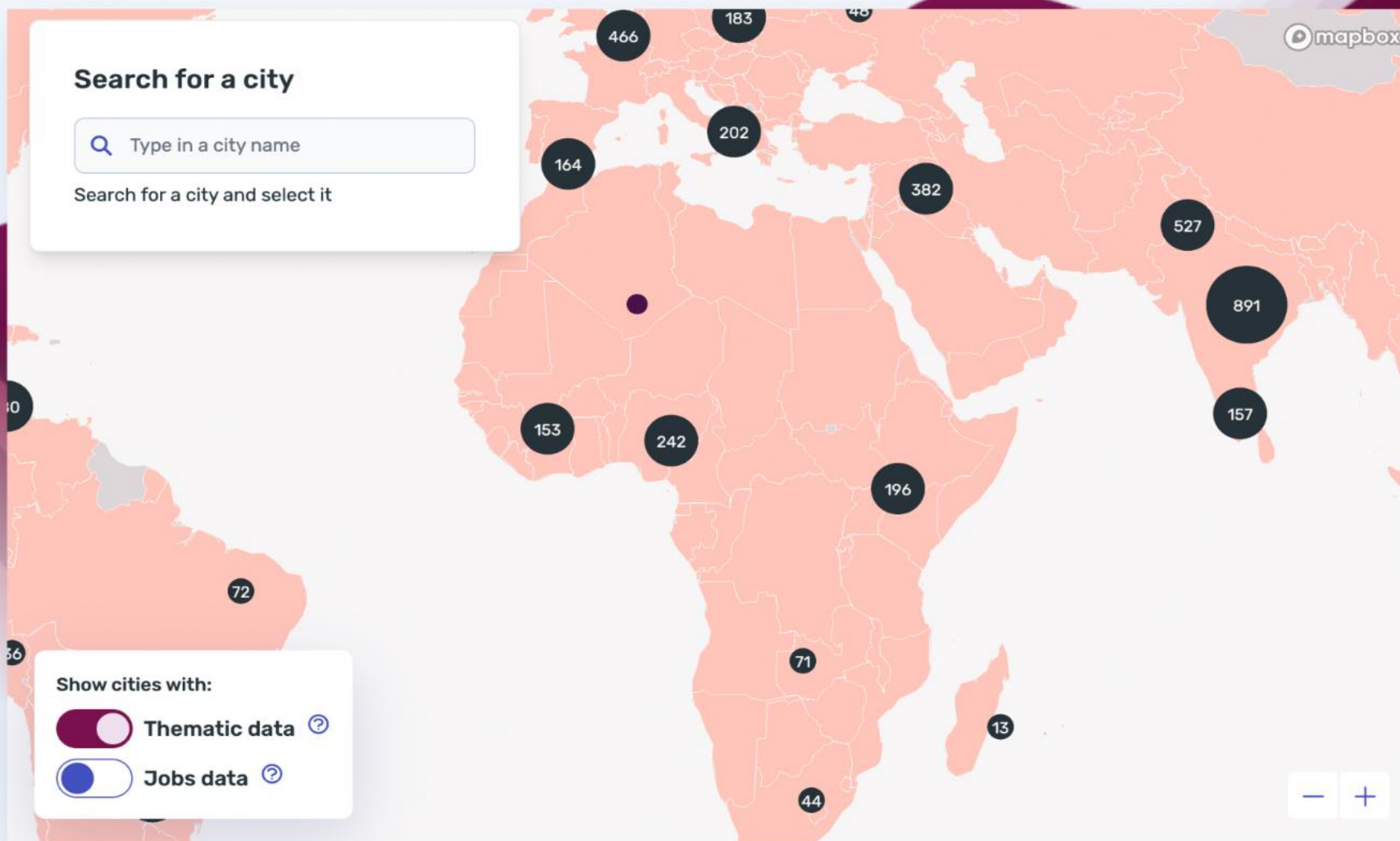


6 0 0 0 cities

Explore city data to discover circular opportunities

Gain insight on sectoral emissions, material use and jobs in cities around the world and identify opportunities for intervention.





50 solutions

Find practical solutions to make your city circular

Find ready-to-implement solutions from the Circular City Actions Framework, illustrated by city-driven case studies.

[Find solutions →](#)

surplus



Nature-based solutions for the urban built environment



Support local energy coop



6 7 3 case studies

Get inspired by these cities

Discover the Cities Collection, a repository of case studies that demonstrate the role of cities in the circular transition through policies, business cases and research articles.

The city of Sherbrooke is developing its first circular roadmap

📍 Sherbrooke

With urban populations climbing, infrastructures, products and therefore rising resource consumption is expected. Cities, such as Sherbrooke, can d...

[Read more](#) 

Giving a last chance to discarded food resources

📍 Laval

A local food network can tackle the food waste challenge while providing a wide range of environmental, social and economic benefits.

[Read more](#) 

Sharing goods between neighbors instead of buying new ones

📍 Montreal

The sharing economy has already proven a wide range of successful applications to be no longer limited to a theoretical concept. Providing environm...

[Read more](#) 



Contribute

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Discover and contribute practical examples of **the circular economy**

Search for case studies, organisations, strategies, policies



COOKIE SETTINGS

Explore



Create your own **library** on Knowledge Hub!

Join us in unsiloing knowledge by creating your curated collection of circular economy case studies on the Knowledge Hub!

(instead of spending money and effort on building your own website)

[Learn about collections](#)

[Request a Collection](#)



By researching and collecting circular economy case studies across Africa, we want to give exposure to entrepreneurs and to inspire other people on the African continent to join in the circular economy movement. We are sharing these cases on the Knowledge Hub because we believe it is better to build a rich, global library to advance knowledge



Knowledge Hub is the open-collaborative library for case studies about the circular economy.



Evidence is critical to inspire action. At the same time the circular economy field is still fragmented and knowledge often difficult to access. By making this knowledge openly accessible and enabling anyone who would like to support the transition towards a circular economy to contribute their know-how into one shared place, we aim to bridge this gap. This is what the Knowledge Hub is all about.

“ **Martijn Lopes Cardozo, CEO, Circle Economy.**

Questions?


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Part of  **Circle Lab**

Powered by  **CIRCLE
ECONOMY**

We are an impact organisation, founded to create prosperity for all within the limits of our planet.



[COOKIE SETTINGS](#)



Regulation and definition



What is a Circular Economy



A circular economy is a system which maintains the value of products, materials and resources in the economy for as long as possible, and minimises the generation of waste. This means a system where products are reused, repaired, remanufactured or recycled.



Source: <https://eur-lex.europa.eu/EN/legal-content/glossary/circular-economy.html>

Value & Governance Video



<https://drive.google.com/file/d/1keRvTmdEZRRvOA-m8hb2jIQaj7psD2P5/view>

Video - Importance of Value & Governance



Current Guidance Document Examples



The EU Green Deal - Circular economy action plan

https://environment.ec.europa.eu/strategy/circular-economy-action-plan_en

Public Procurement for a Circular Economy

https://ec.europa.eu/environment/gpp/pdf/Public_procurement_circular_economy_brochure.pdf

Circular Economy for the built environment: a summary

https://drive.google.com/file/d/1miNS6IYTeFNteZoil_vC0e8XtjGXwKDH/view

Roadmap Circular Land Tendering

https://www.metabolic.nl/wp-content/uploads/2019/02/roadmap_circular_land_tendering.pdf

Circular Economy Checklist Construction Designers

<https://southernwasteregion.ie/sites/default/files/Circular%20Economy%20Checklist%20Construction%20Designers.pdf>



Current Guidance Document Examples



LEVEL(S): A GUIDE TO EUROPE'S NEW REPORTING FRAMEWORK FOR SUSTAINABLE BUILDINGS

https://ec.europa.eu/environment/eussd/pdf/Level_publication_EN.pdf

EU Taxonomy

https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en

A Holistic Sustainability Framework for Waste Management in European Cities: Concept Development

https://drive.google.com/file/d/1Q9eLuKr4bI8YWLByPuAog5Kh3nMRsfv_/view



Overview of Policies for Circular Economy Video



<https://drive.google.com/file/d/15BeaLUm-U15OonovpzPIF17s7NhOHOyB/view>

Video - Overview of Policies for Circular Economy

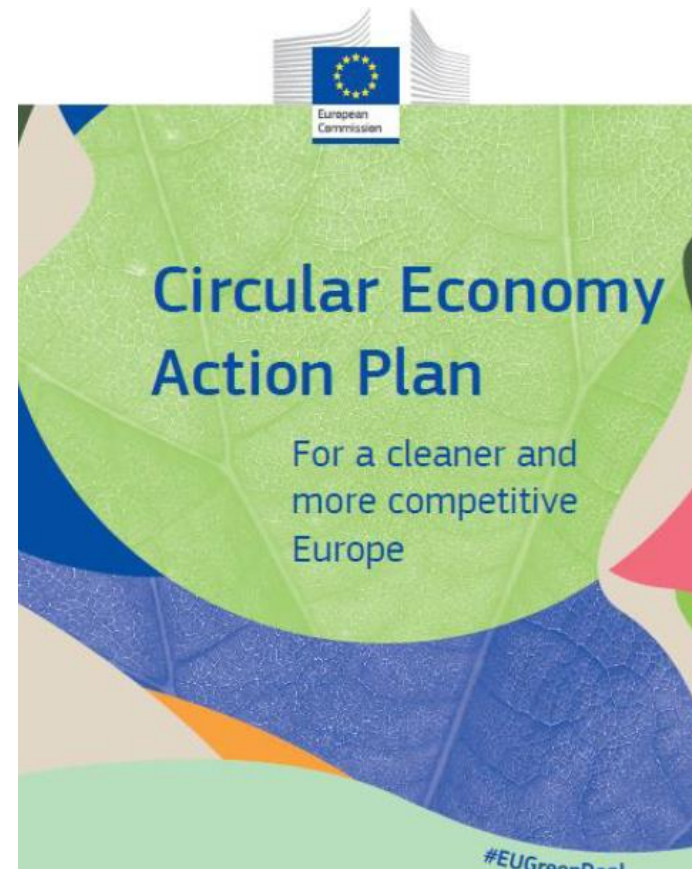


EU Green Deal



The Green Deal is a roadmap for achieving a sustainable, carbon-neutral, competitive and resource-efficient economy. Its objectives are:

- reduce net greenhouse gas emissions to zero by 2050
- Disconnecting idea of economic growth from resource consumption by promoting the circular economy
- improve the quality of life of all
- restore biodiversity and reduce pollution.



EU Green Deal- Action Plan for the Circular Economy



An initiative of the Green Deal Aims to modernise the European economy through a green and digital transformation

The Plan proposes measures to achieve:

1. That the products marketed in the European Union are sustainable
2. That consumers receive information on the durability and reparability of the products they purchase
3. Avoiding the production of waste, and converting the waste produced into secondary raw materials.



Irish Examples



Waste Action Plan for a Circular Economy

<https://www.gov.ie/en/publication/4221c-waste-action-plan-for-a-circular-economy/>

Circular Economy and Miscellaneous Provisions Act 2022

<https://www.oireachtas.ie/en/bills/bill/2022/35/>

Whole of Government Circular Economy Strategy 2022 – 2023 'Living More, Using Less'

<https://www.gov.ie/en/publication/b542d-whole-of-government-circular-economy-strategy-2022-2023-living-more-using-less/>



Circular Economy in Ireland



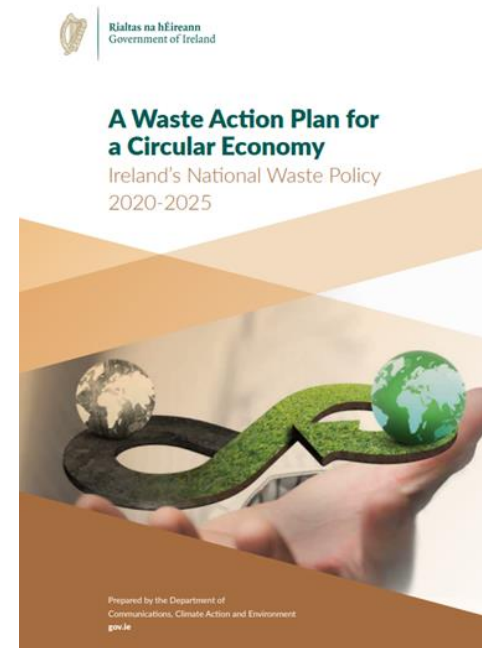
On the measure of circularity, Ireland currently lags behind its EU peers.

- In 2019, Ireland's circular material use rate (material recovered and fed back into the economy -saving extraction of primary raw materials) was the second worst in the EU according to Eurostat figures.
- Ireland's rate was 1.6%, compared to an EU average of 11.9%. The best performing EU Member State, the Netherlands, achieved a rate of 28.5%.
- Countries which have been most successful in moving towards circularity appear to benefit from having overarching national circular economy policies



Ireland: Circular Economy and Miscellaneous Provisions Act 2022

- Shifts Ireland away from a "take-make-waste" economy
- Incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging
- Moves Ireland closer to being among the first in the world to eliminate disposable drinks cups
- Tackles illegal fly-tipping and littering
- Signed into Law in July 2022



Multi-functional Green Roofs Facades and Exterior Elements



Multi-functional Green Roofs Facades and Exterior Elements



Green & Blue Roof Guide 2021

<https://www.dublincity.ie/sites/default/files/2021-12/dcc-green-blue-roof-guide-2021.pdf>

Green Roofs Guidance Document

<https://www.dlrcoco.ie/sites/default/files/atoms/files/appendix16.pdf>

A guide to GREEN roofs, walls and facades

https://2020vision.com.au/media/41918/growing_green_guide_ebook_130214.pdf



QUIZ/ASSIGNMENT/ACTIVITY



Assessment / Exam



EXTRA READING/STUDY



Activity



EXTRA READING/STUDY



For Further Case Studies and Training Material Please Follow the Link Below

https://docs.google.com/spreadsheets/d/1DTte4Ph8pQ4IKzYGFt2_S-d1Z_Rmd9-i/edit?usp=sharing&oid=112148808974461842163&rtpof=true&sd=true



EXTRA READING/STUDY



Green Transition Ireland

<https://www.enterprise-ireland.com/en/productivity/build-a-green-sustainable-business/>





<https://busgocircular.eu/>



Follow us



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<https://www.linkedin.com/company/busgocircular>



<https://www.youtube.com/channel/UCXu4Rjs5WDXBE-yqda5kt5A>



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Colophon

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Partners



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