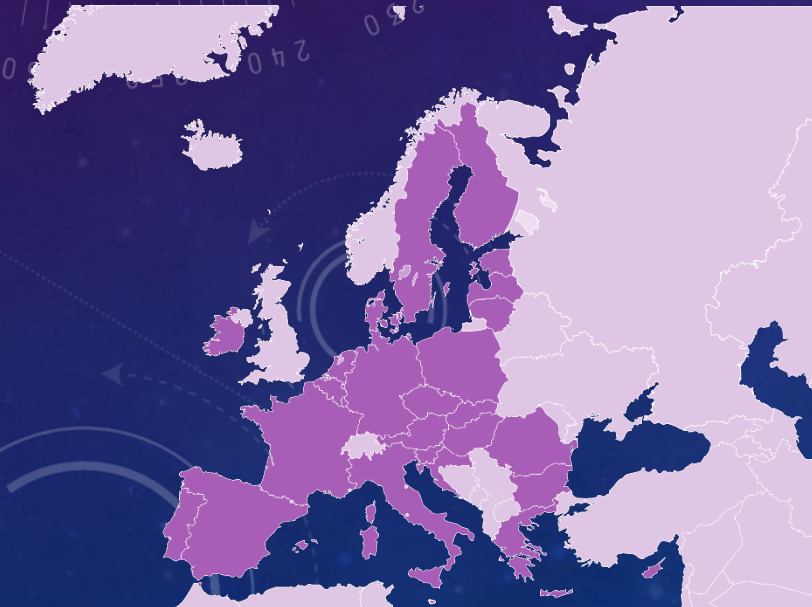


THE EUROPEAN SUSTAINABILITY STRATEGY



EUROPEAN UNION

European Citizenship Project

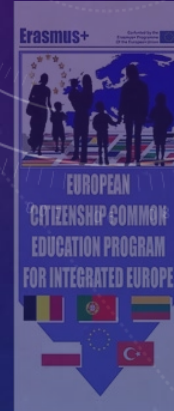
LTTA Brussels

22/08/2022 – 26/08/2022

THE BEGINNING OF ENVIRONMENTAL ISSUES



University of Cambridge. (2017, 12 10). *Industrial Revolution: damaging psychological 'imprint' persists in today's populations*. Retrieved from Research: <https://www.cam.ac.uk/research/news/industrial-revolution-damaging-psychological-imprint-persists-in-todays-populations>



THE BEGINNING OF ENVIRONMENTAL ISSUES

'Silent Spring' Is Now Noisy Summer

*Pesticides Industry
Up in Arms Over
a New Book*

By JOHN M. LEE

The \$300,000,000 pesticides industry has been highly irritated by a quiet woman author whose previous works on science have been praised for the beauty and precision of the writing.

The author is Rachel Carson, whose "The Sea Around Us" and "The Edge of the Sea" were best sellers in 1951 and



*Rachel Carson Stirs
Conflict—Producers
Are Crying 'Foul'*

fending the use of their products. Meetings have been held in Washington and New York. Statements are being drafted and counter-attacks plotted.

A drowsy midsummer has suddenly been enlivened by the greatest uproar in the pesticides industry since the cranberry scare of 1959.

Miss Carson's new book is entitled "Silent Spring." The



'72 STOCKHOLM CLIMATE CONFERENCE

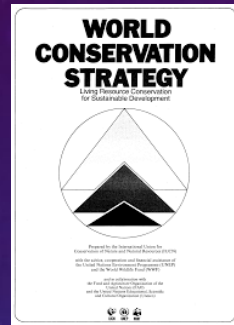
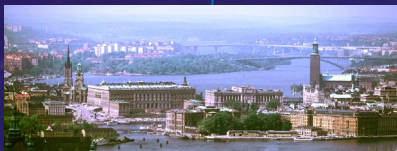


Nagata, Y. (1972, 05 06). UN Photo Digital Asset Management System. Retrieved from United Nations: https://dam.media.un.org/CS.aspx?vp3=DamView&VID=2AV094381809&P=N=1&WS=SearchResults&FR_=1&W=1422&H=1281



50 YEARS OF POLICIES

UN
Conference
1972



1980
"Sustainable
development"

Brundtland
Report
1987



1993
Treaty of
Maastricht



50 YEARS OF POLICIES

Kyoto Protocol
1997



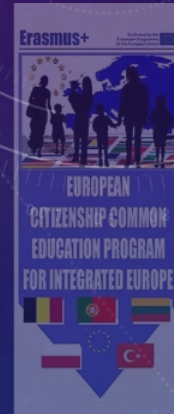
Lisbon Treaty
2009



2012
UNCSD
Conference



1999
Treaty of
Amsterdam



THE EU STRATEGY | 2030 - 2050

European Commission Priorities



European Green Deal



Economy that works for people



Europe fit for the digital age



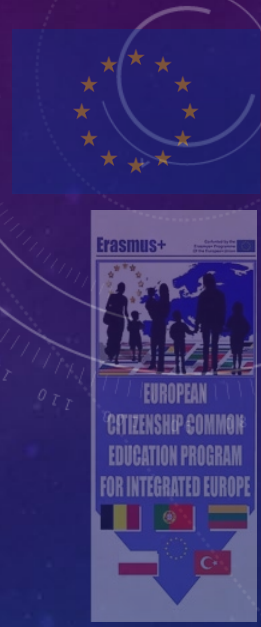
European way of life



Stronger Europe in the world

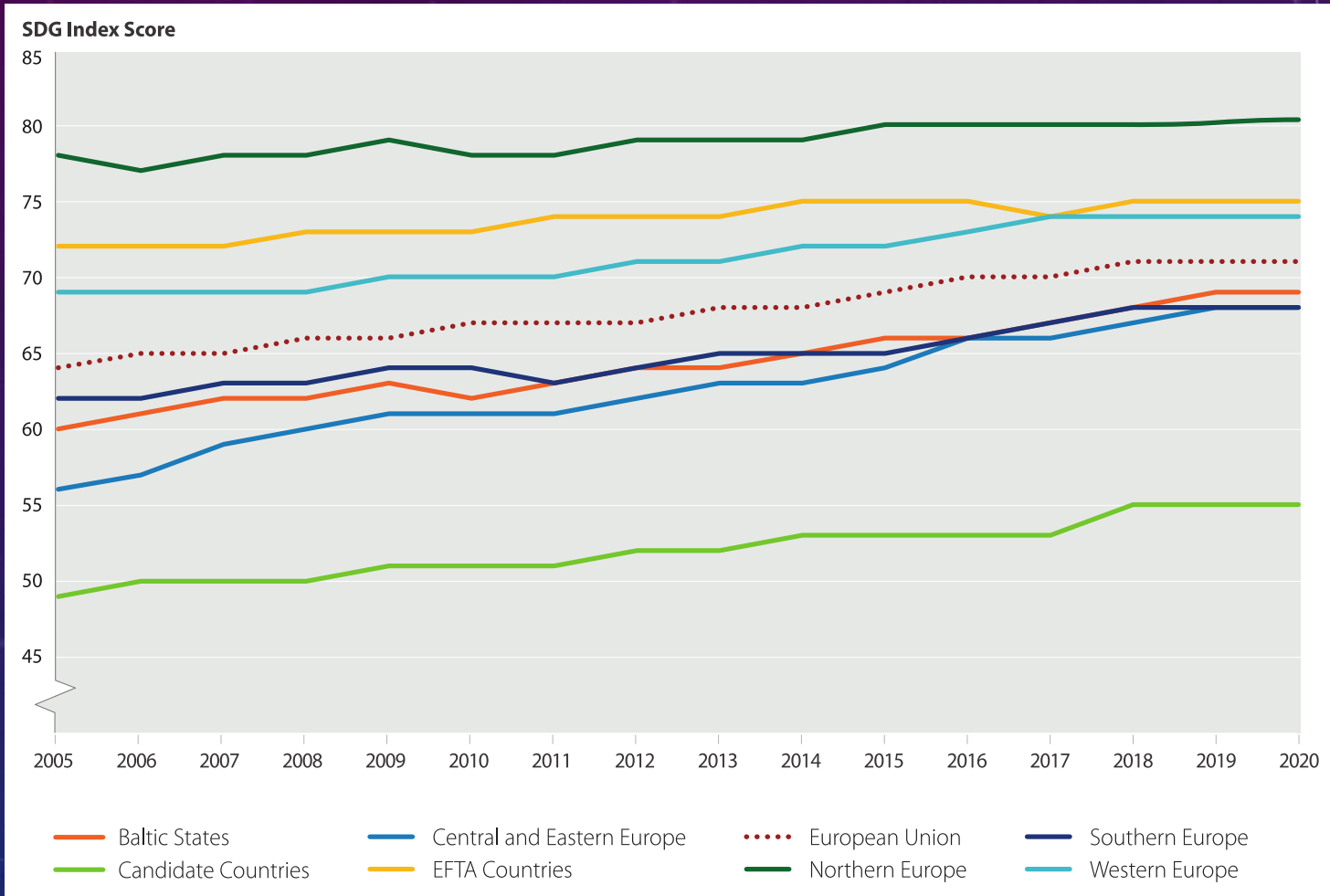


European Democracy



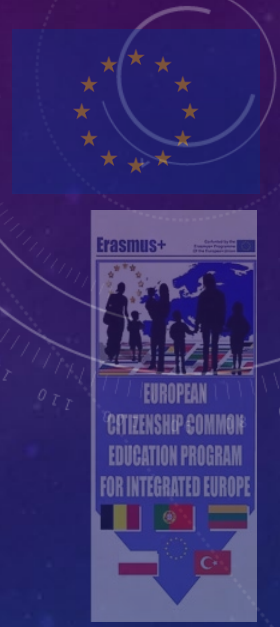
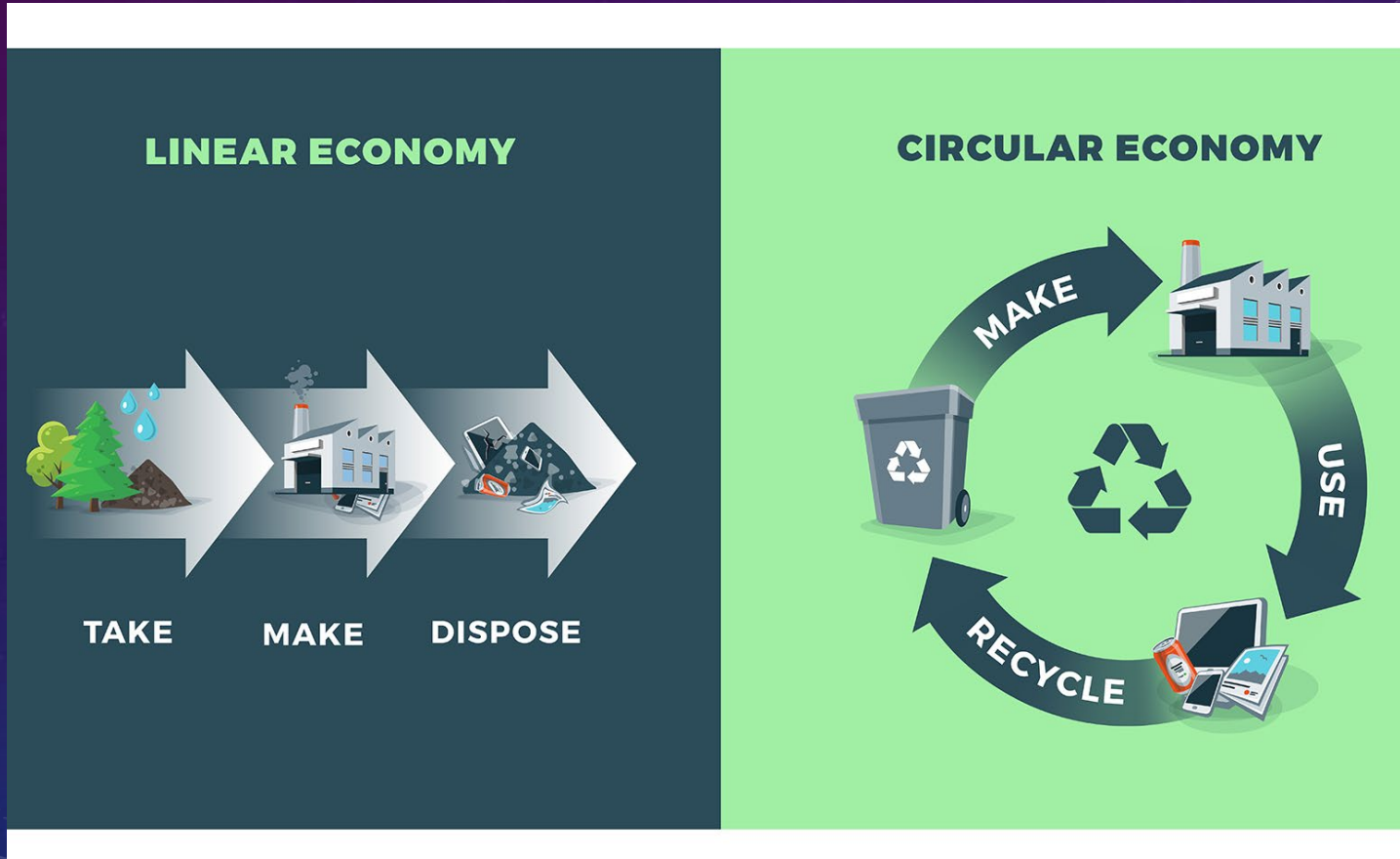
European Commission. (2022, 07 18). The Commission's holistic approach for sustainability and the SDGs. Retrieved from EU holistic approach to sustainable development: https://ec.europa.eu/info/strategy/international-strategies/sustainable-development-goals/eu-holistic-approach-sustainable-development_en

SDG STAGNATION?



Lafontaine, G., Cortes Puch, M., Mosnier, A., Fuller, G., Riccaboni, A., Klocke-Lesch, A., ... Oger, A. (2021). *Europe Sustainable Development Report 2021: Transforming the European Union to achieve the Sustainable Development Goals*. Paris: European Union.

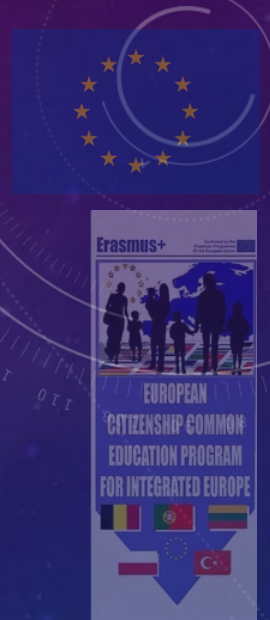
FROM LINEAR TO CIRCULAR ECONOMY



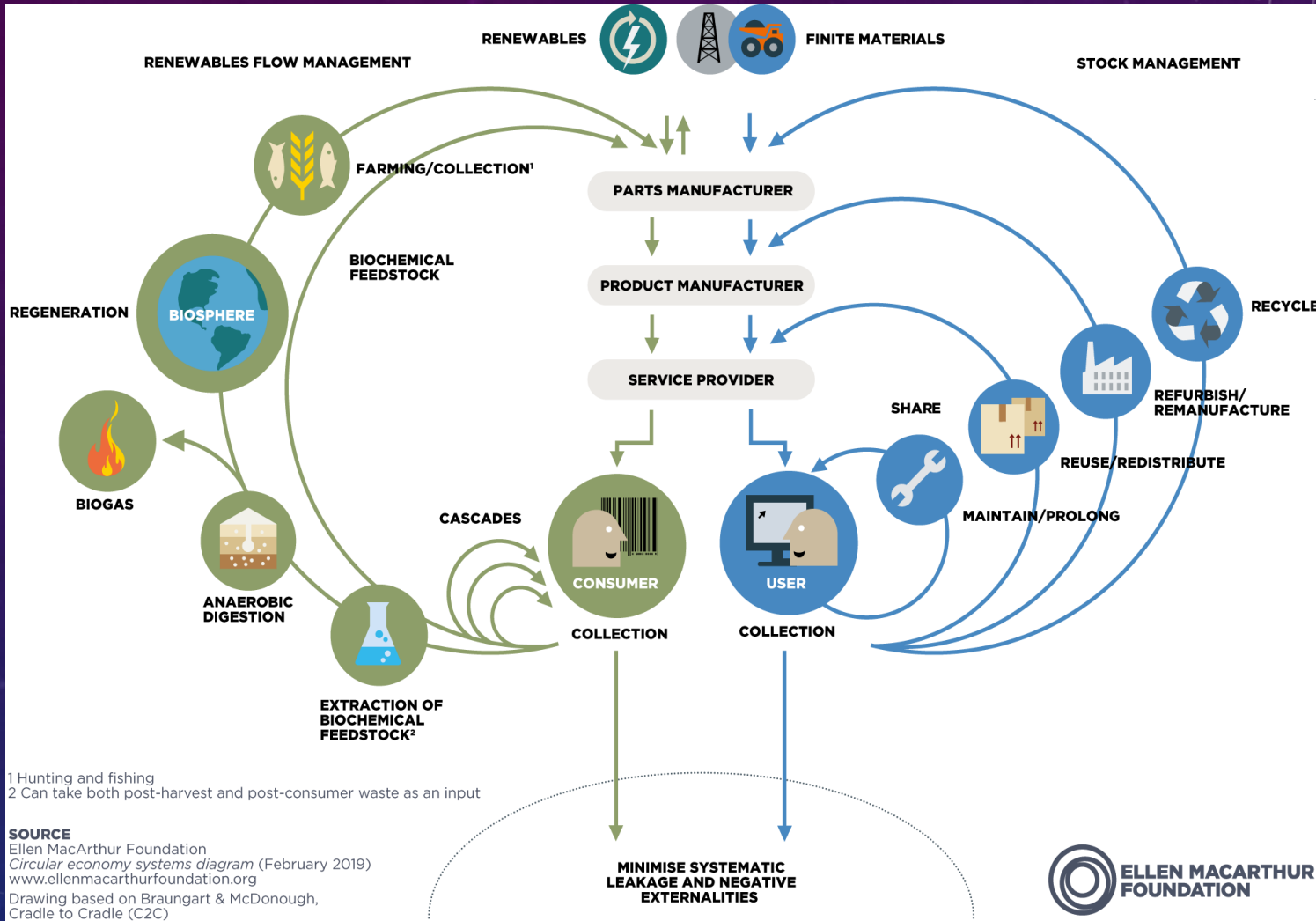
Weresch, S. (2021, 08 11). *Industrial Ecology: circular economy in practice*. Retrieved from Cozero: <https://cozero.io/blog/industrial-ecology/>

A NEW SYSTEM

ELLEN MACARTHUR FOUNDATION. (2022, 07 18). *The Circular Economy In Detail*. Retrieved from ELLEN MACARTHUR FOUNDATION | Archive: <https://archive.ellenmacarthurfoundation.org/explore/the-circular-economy-in-detail>

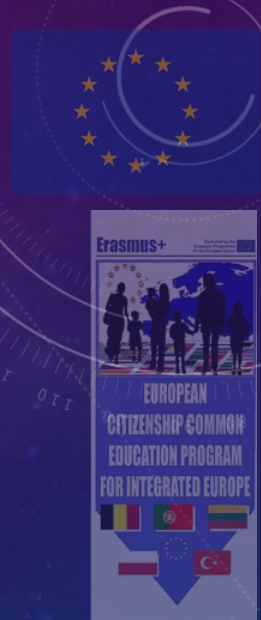


CIRCULAR ECONOMY AS A BUTTERFLY



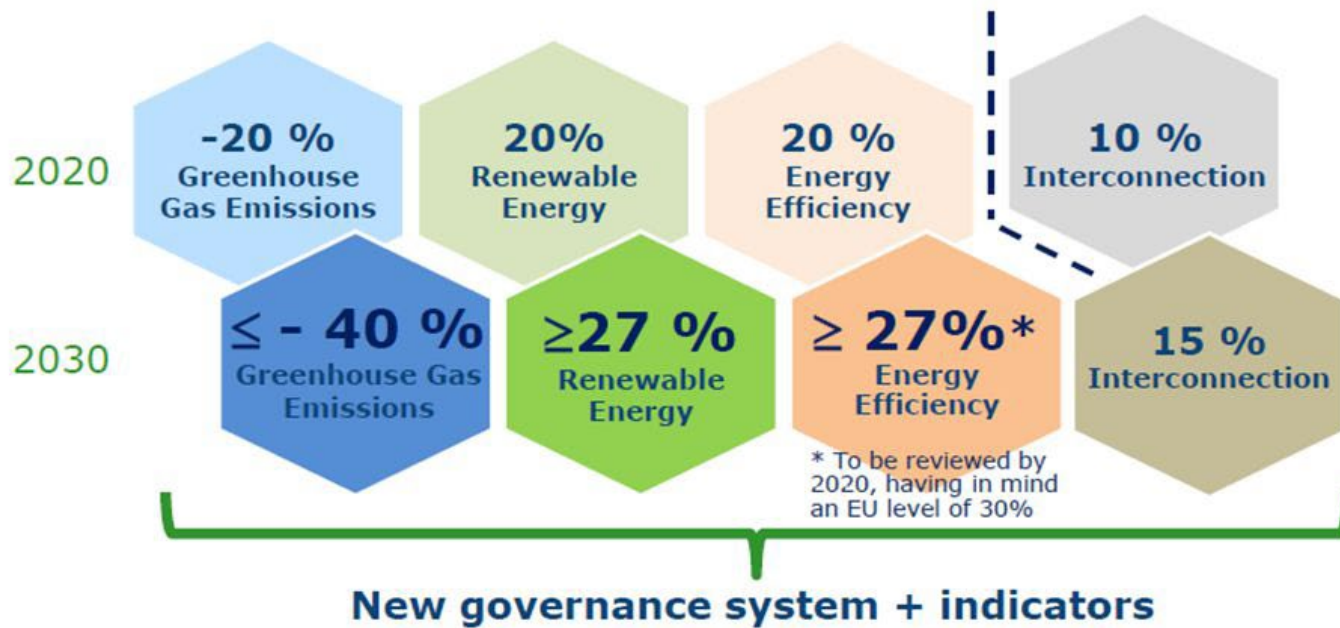
2019 – EUROPEAN GREEN DEAL

European Commission. (2021, 03 05). *Shaping ambitious partnerships in line with the European Green Deal*. Retrieved from NEWSROOM: <https://ec.europa.eu/newsroom/intpa/items/700379/en>



ENERGY & CLIMATE FRAMEWORK

The 2030 Framework for Climate & Energy: Agreed Headline Targets



E3G

Ref: European Commission

ENERGY & CLIMATE FRAMEWORK



European Commission. (2012). Energy roadmap 2050. Luxembourg: European Union.



THE EUROPEAN GREEN DEAL



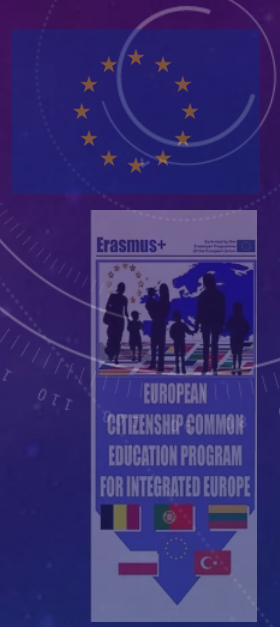
THE EU & ASEAN. (2022, 07-18). EU Green Deal. Retrieved from EU-ASEAN Strategic Partnership 2022. <https://euinasean.eu/eu-green-deal/>

THE EUROPEAN GREEN DEAL



RESEARCH & INNOVATION TO DRIVE THE **GREEN DEAL**

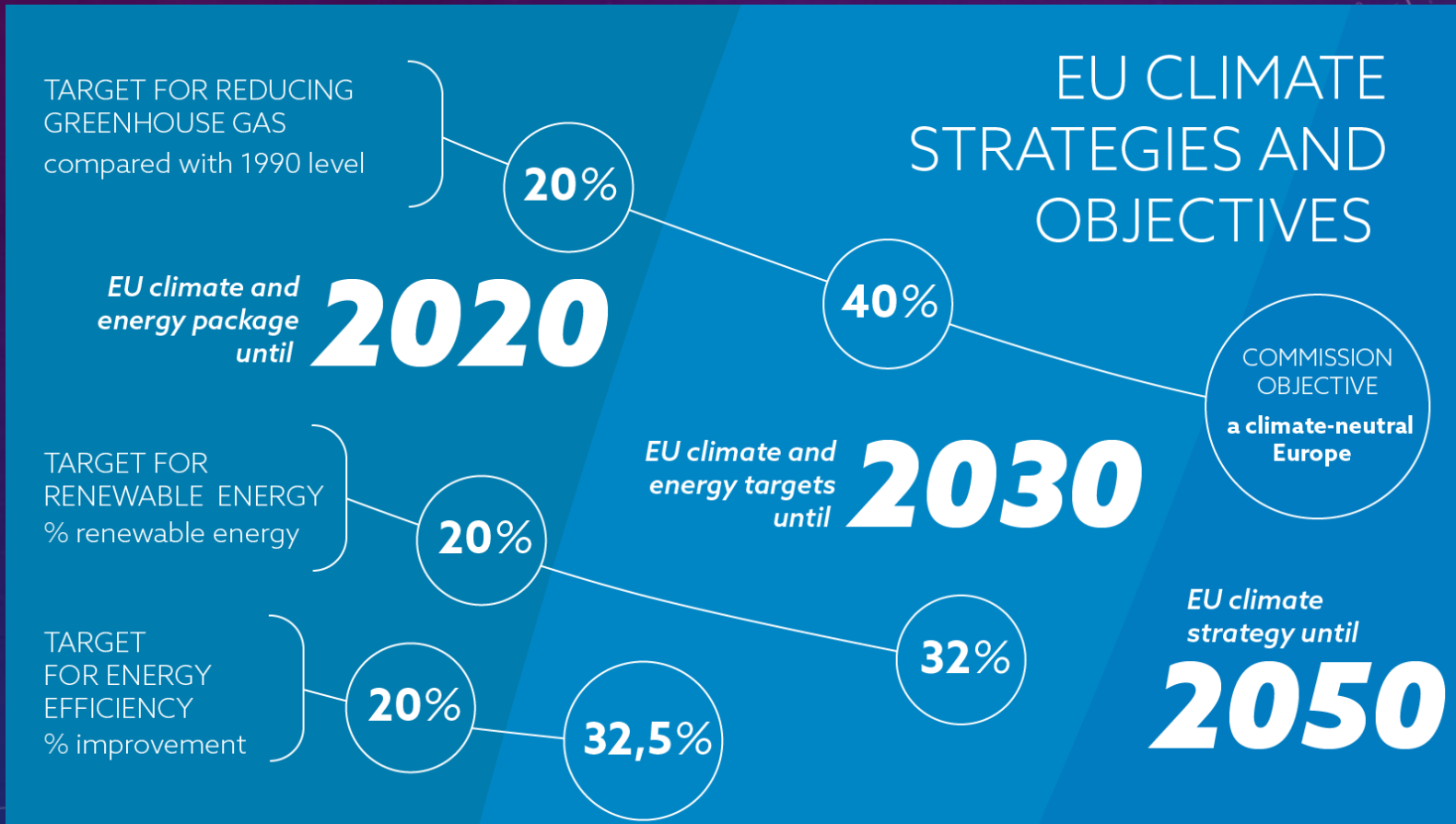
#EUGreenDeal
#ResearchImpactEU



© European Union, 2019. Image © MicroOne, #3055385384, 2019. Source: Shutterstock.com

European Commission. (2020, 09 22). *European Green Deal Call: €1 billion investment to boost the green and digital transition*. Retrieved from EURAXESS: <https://euraxess.ec.europa.eu/worldwide/brazil/european-green-deal-call-%E2%82%AC-billion-investment-boost-green-and-digital>

STRATEGY + OBJECTIVES



European Commission. (2020, 09 22). *European Green Deal Call: €1 billion investment to boost the green and digital transition*. Retrieved from EURAXESS: <https://euraxess.ec.europa.eu/worldwide/brazil/european-green-deal-call-%E2%82%AC-billion-investment-boost-green-and-digital>

CONSEQUENCES OF CONSTRUCTION

Annual construction waste is expected to reach **2.2 BILLION TONS** globally by 2025.

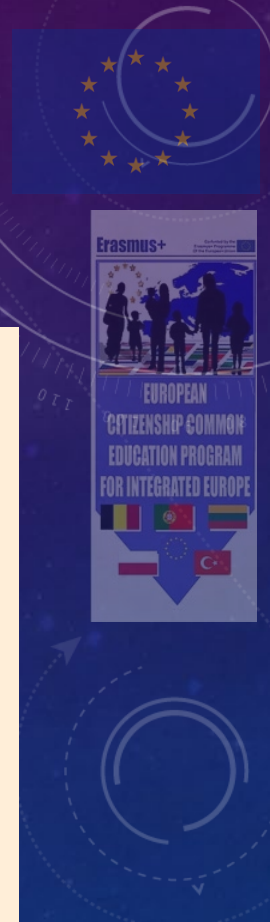


CONSEQUENCES OF CONSTRUCTION



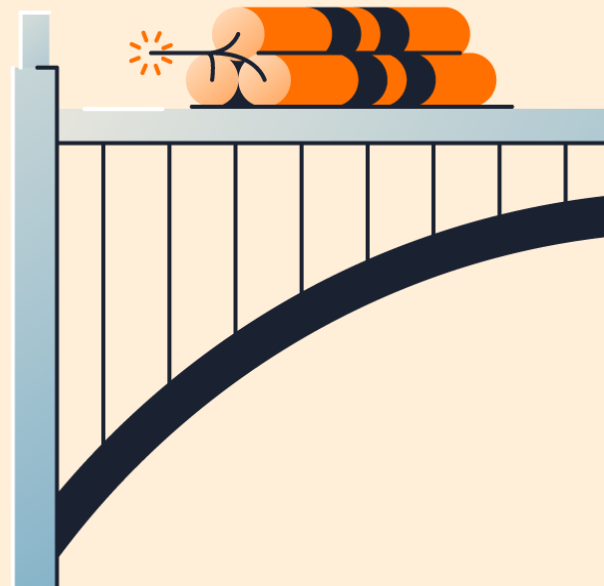
30%

of building materials delivered to a construction site can end up as waste.



CONSEQUENCES OF CONSTRUCTION

Demolition of roads and bridges generated **43% MORE WASTE** than building demolition.



EUROPEAN SOLUTION



Level(s)

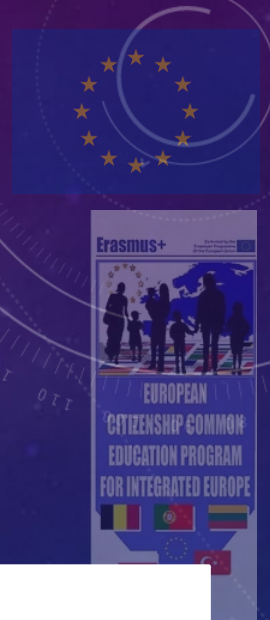
European framework for sustainable buildings

#BuildCircular



WHO IS IT FOR?

ITeC. (2020, 12 01). *Level(s), the European framework for sustainable buildings that drives the circular economy*. Retrieved from ITeC: <https://en.itec.cat/infoitec/sustainability-en/levels-the-european-framework-for-sustainable-buildings-that-drives-the-circular-economy/>



Planning

Public authorities,
Political advisors and national
level procurators,
Regional and local level



Project

Architects, designers,
engineers, and
quantity inspectors



Financing

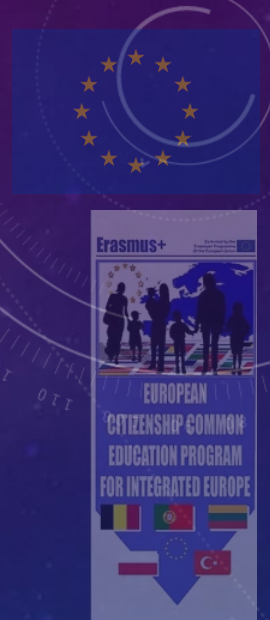
Clients and Investors,
Including construction
owners, and business
developers



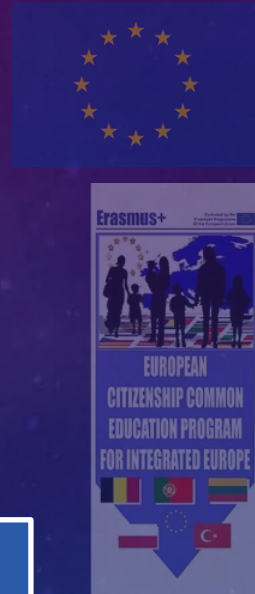
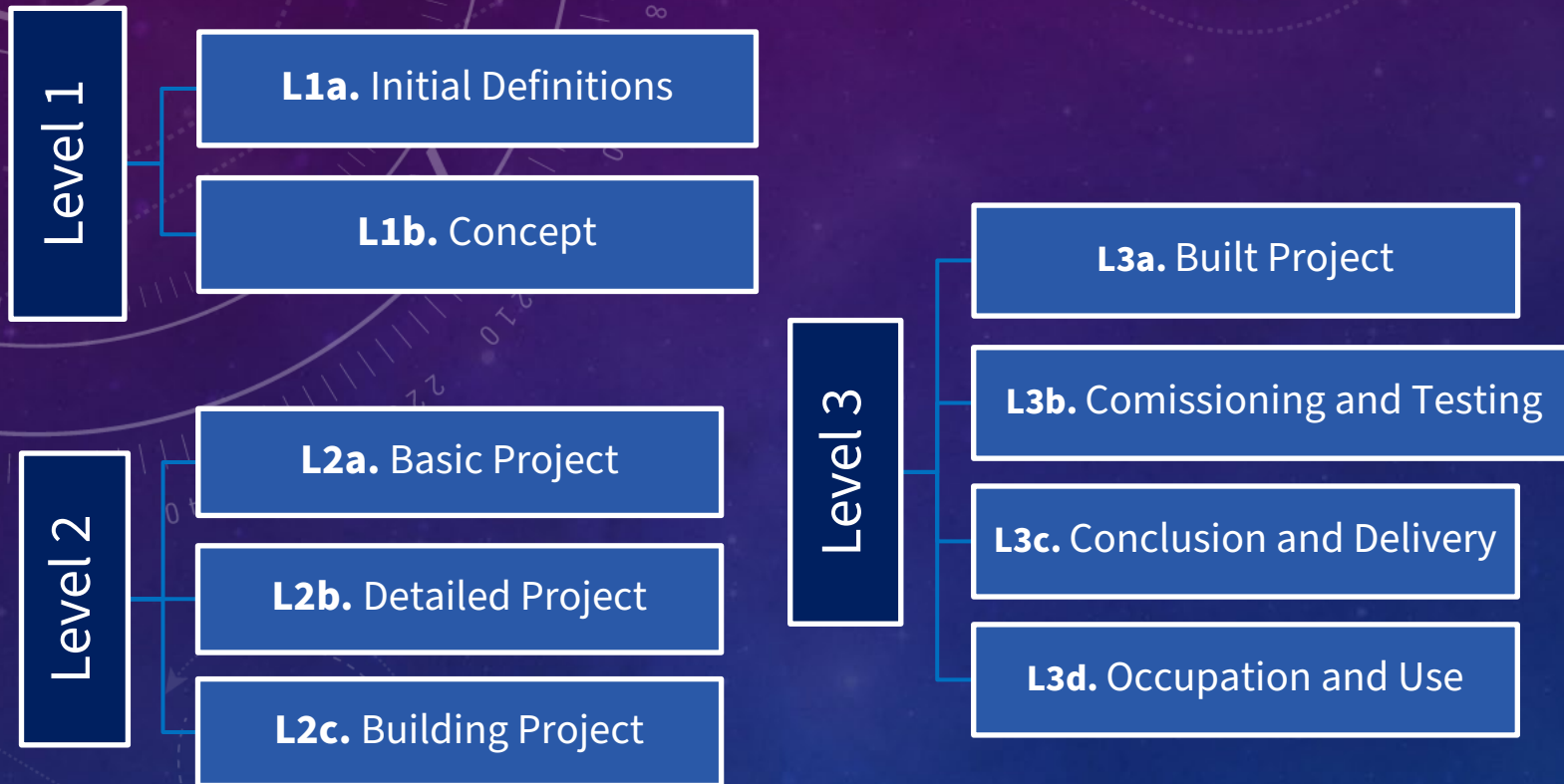
Execution

Construction companies and
contractors, manufacturers,
asset managers and occupants

WHO IS IT FOR?

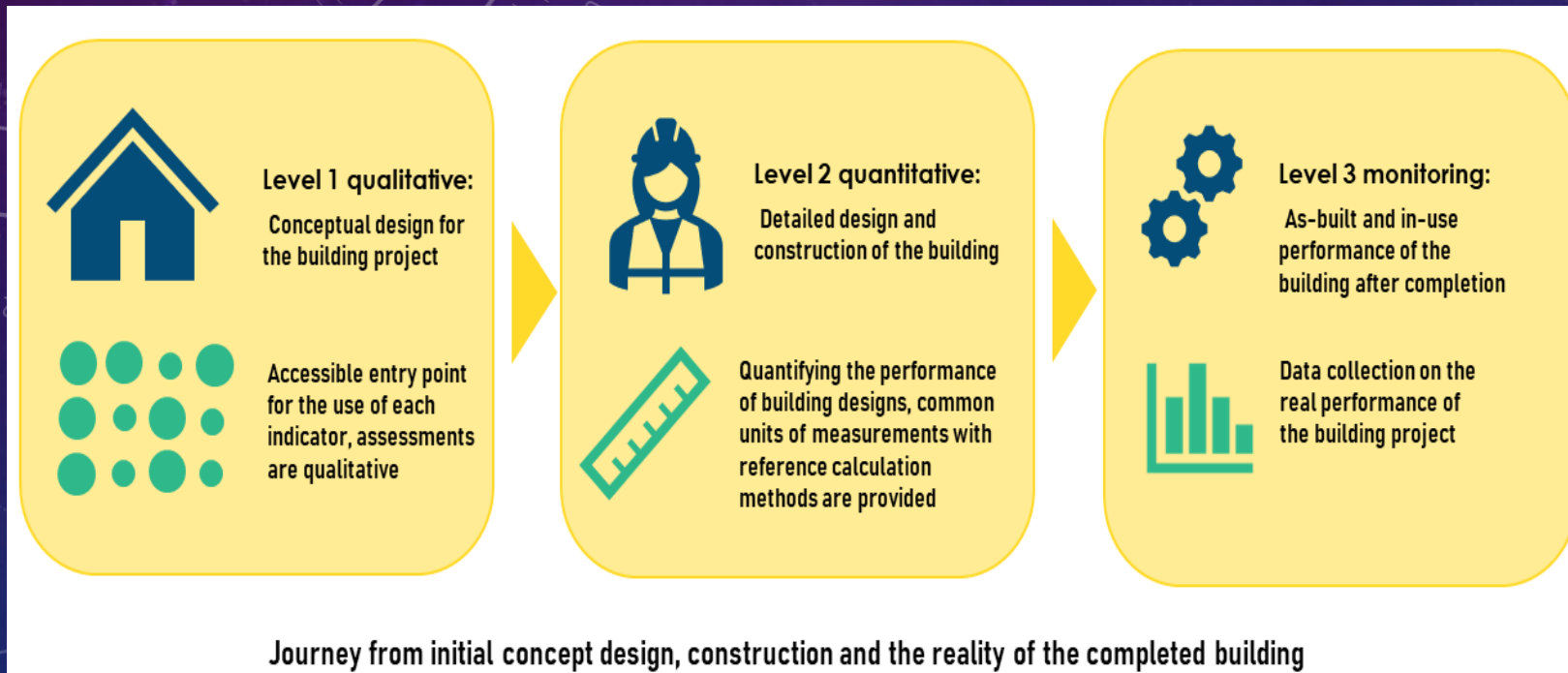


DOCUMENTATION & STRUCTURE



FOR ALL PROJECT PHASES

IGBC. (2022, 07 14). Level(s) - EU Sustainable Buildings Framework. Retrieved from IGBC - Irish Green Building Council: <https://www.igbc.ie/certification/levels-eu-sustainable-buildings-framework/#what-level-jump>









FOR ALL PROJECT PHASES



IGBC. (2022, 07/24). Level(s) - EU Sustainable Buildings Framework. Retrieved from IGBC - Irish Green Building Council: <https://www.igbc.ie/certification/levels-eu-sustainable-buildings-framework/#what-level-jump>

Level(s) Key indicators

	1	Green house gas emissions along a building's life cycle	1.1 Use stage energy performance kilowatt hours per square metre per year [kWh/m ² /yr]	1.2 Life cycle Global Warming Potential kgCO ₂ equivalents per square metre per year		
	2	Resource efficient + circular material	2.1 Bill of quantities Unit quantities mass + years	2.2 Construction + demolition waste + materials kg of waste + materials per m ²	2.3 Design for adaptability use Adaptability score	2.4 Design for deconstruction, reuse + recycling Deconstruction score
	3	Efficient use of water resources	3.1 Use stage water consumption m ³ /yr water per occupant			
	4	Healthy + comfortable spaces	4.1 Indoor air quality Parameters for ventilation, CO ₂ + humidity Target list of pollutants: TVOC, formaldehyde, CMR, VOC, LCI ratio, mold, benzene, particulates, radon	4.2 Time outside of thermal comfort range % of the time out of range during the heating and cooling seasons	4.3 Lighting + visual comfort use Level 1 check list	4.4 Acoustics + protection against noise Level 1 checklist
	5	Adaptation + Resilience	5.1 Protection of occupier health + thermal comfort Projected % time out of range in the years 2030 and 2050 [see also 4.2]	5.2 Increased risk of extreme weather events Level 1 checklist [under development]	5.3 Increased risk of flood events Level 1 checklist [under development]	
	6	Optimised life cycle cost and value	6.1 Life cycle costs Euro per square metre [€/m ² /yr]	6.2 Value creation + risk exposure Indoor air quality Level 1 checklist		



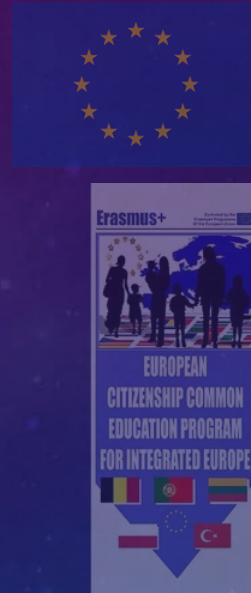
1 | Greenhouse emissions



- 1.1 Use stage energy performance (kWh/m²/yr)
- 1.2 Life cycle Global Warming Potential (CO₂ eq./m²/yr)

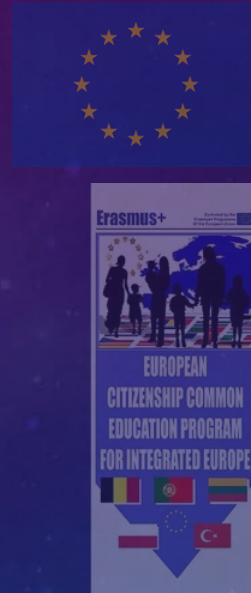


2 | Resource efficient and circular material life



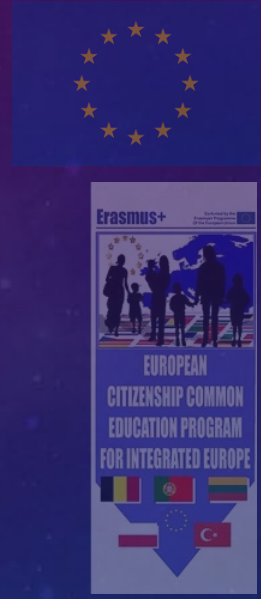
- 2.1 Bill of quantities, materials and lifespans
- 2.2 Construction & Demolition waste and materials
- 2.3 Design for adaptability and renovation
- 2.4 Design for deconstruction, reuse and recycling

3 | Efficient Use of Water Resources



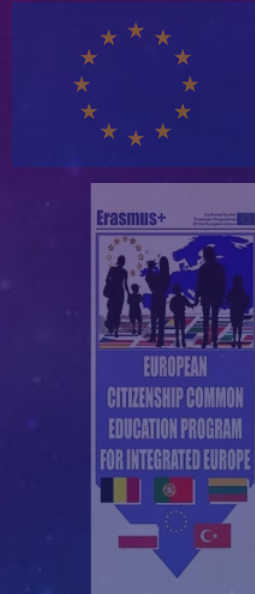
3.1 Use stage water consumption ($\text{m}^3/\text{occupant}/\text{yr}$)

4 | Healthy and comfortable spaces



- 4.1 Indoor air quality
- 4.2 Time outside of thermal comfort range
- 4.3 Lighting and visual comfort
- 4.4 Acoustics and protection against noise

5 | Adaptation and resilience to climate change



- 5.1 Protection of occupier health and thermal comfort
- 5.2 Increased risk of extreme weather
- 5.3 Sustainable drainage

6 | Optimized life cycle cost and value



- 6.1 Life cycle costs (€/m²/yr)
- 6.2 Value creation and risk factors

LIFE CYCLE ASSESSMENT

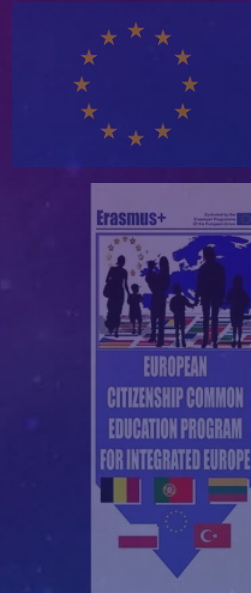
Macro-objectives 1-3: Full Life Cycle Assessment (LCA)



Cradle to grave Life Cycle Assessment (LCA)

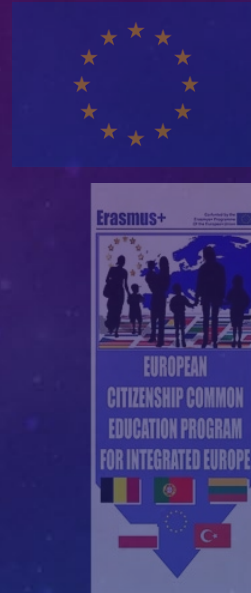
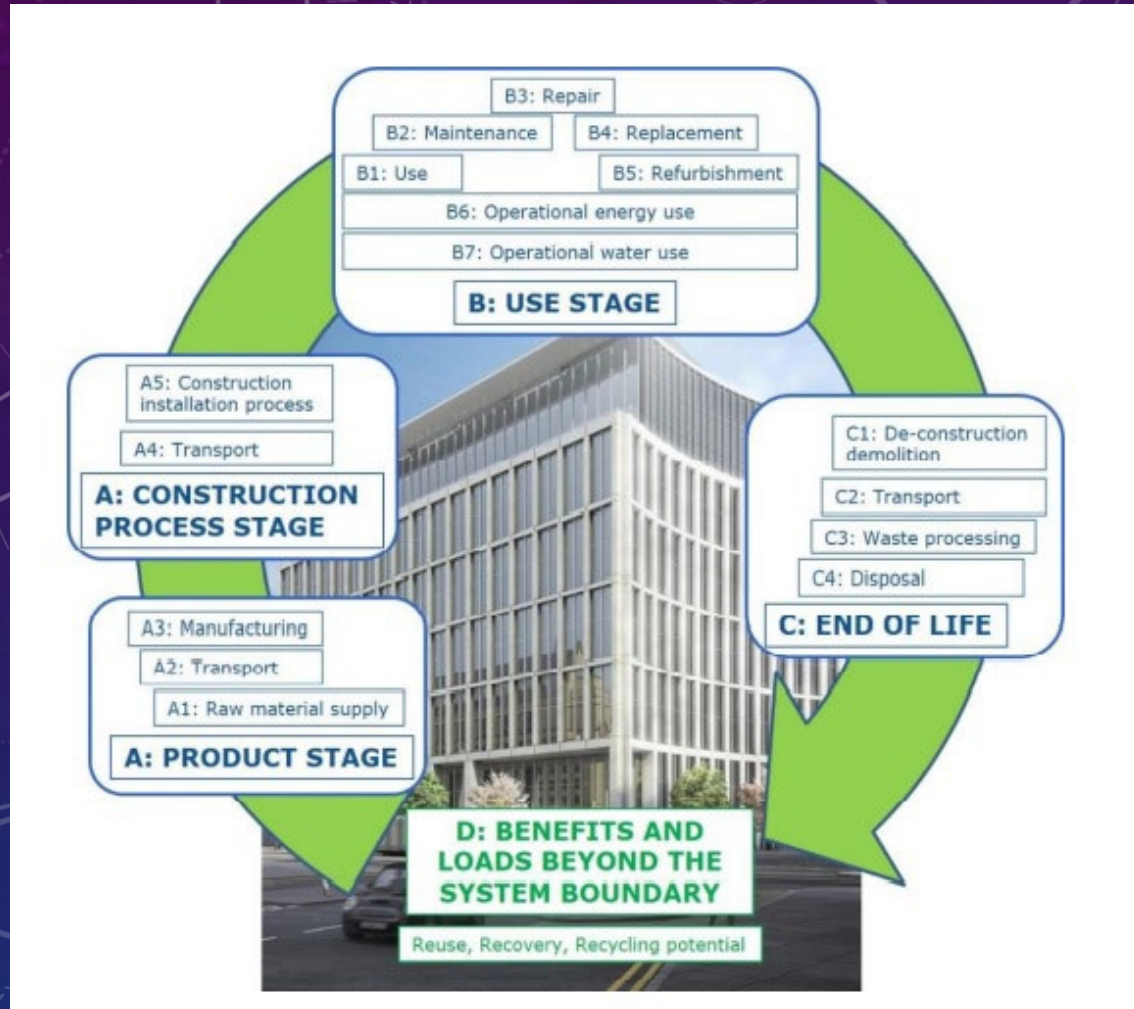
Impact categories:

- Climate change
- Ozone depletion
- Acidification
- Eutrophication aquatic freshwater
- Eutrophication aquatic marine
- Eutrophication terrestrial
- Photochemical ozone formation
- Depletion of abiotic resources - minerals and metals
- Depletion of abiotic resources – fossil fuels
- Water use



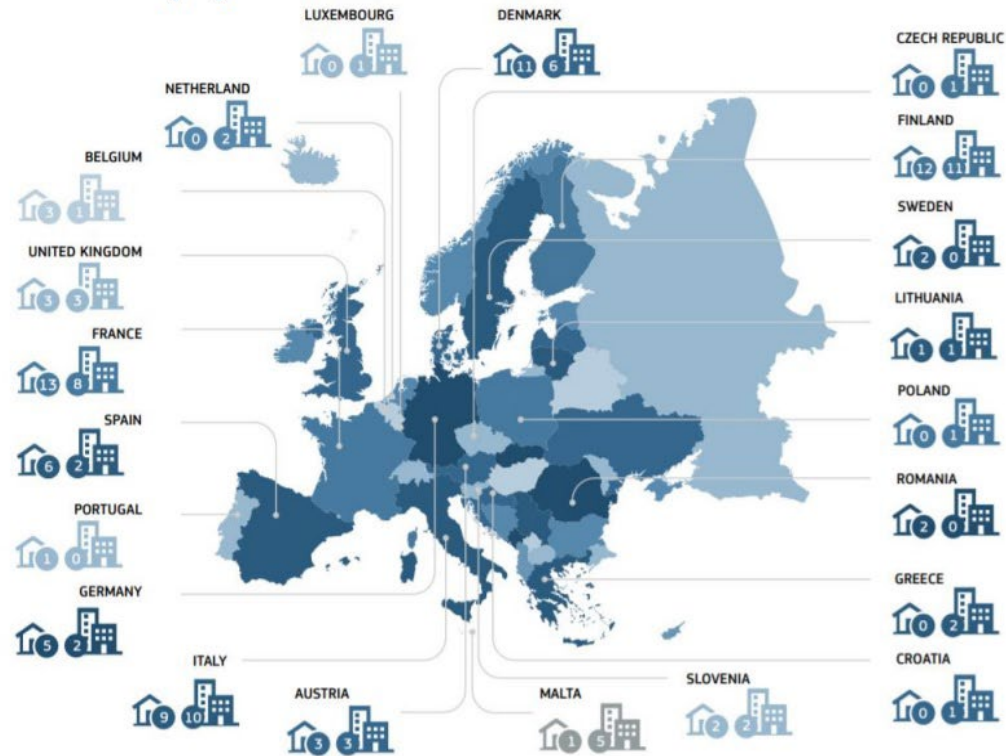
LIFE CYCLE ASSESSMENT

Doady N., Donato M., S. & Cordella, M. (2020). Level(s) - A common EU framework of core sustainability indicators for office and residential buildings. Style: European Commission.



LIFE CYCLE ASSESSMENT

Development of Level(s)

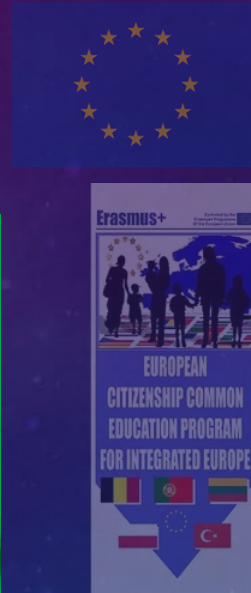


ITeC (2020, 12 01). Level(s), the European framework for sustainable buildings that drives the circular economy. Retrieved from ITeC: <https://en.itec.cat/infoitec/sustainability-en/levels-the-european-framework-for-sustainable-buildings-that-drives-the-circular-economy/>

IS IT SUSTAINABLE?

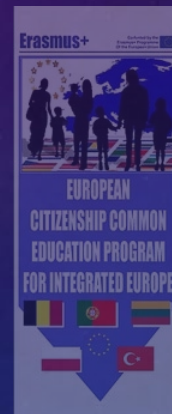


LIFE Level(s). (2020, 10 16). *Official launch of Level(s) by the European Commission*. Retrieved from LIFE Level(s): <https://lifelevels.eu/official-launch-of-levels-by-the-european-commission/>



THE EUROPEAN SUSTAINABILITY STRATEGY

THANK YOU



EUROPEAN UNION

European Citizenship Project

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22/08/2022 – 26/08/2022