

# IMPORTANCE OF CIRCULAR ECONOMY AND GREEN SKILLS TO RADIOTHERAPY PROFESSIONALS: AN EUROPEAN SURVEY

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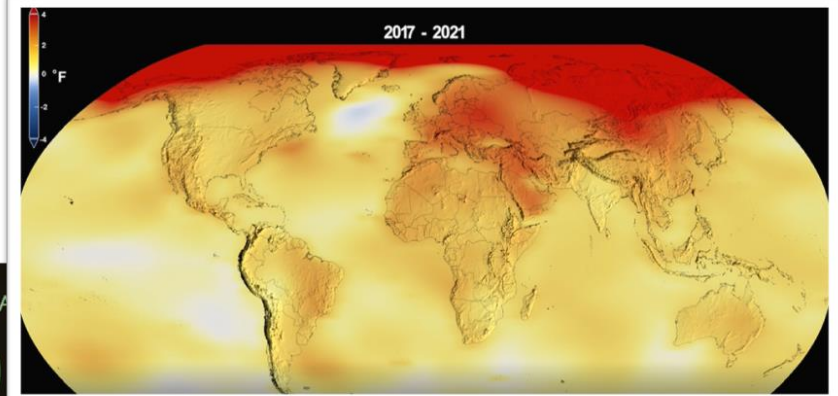
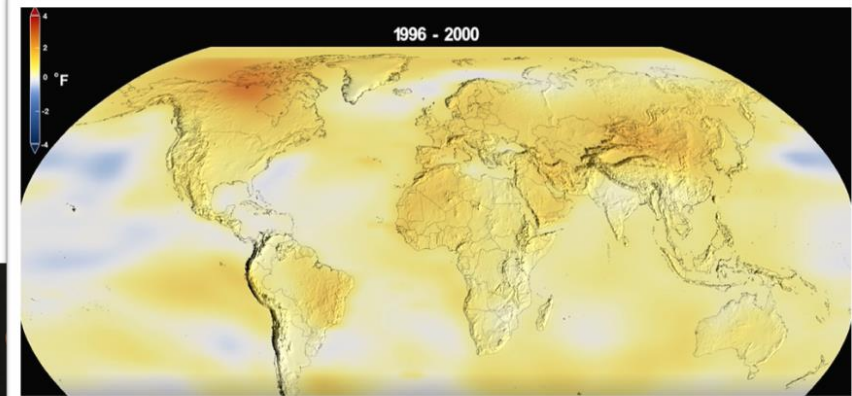
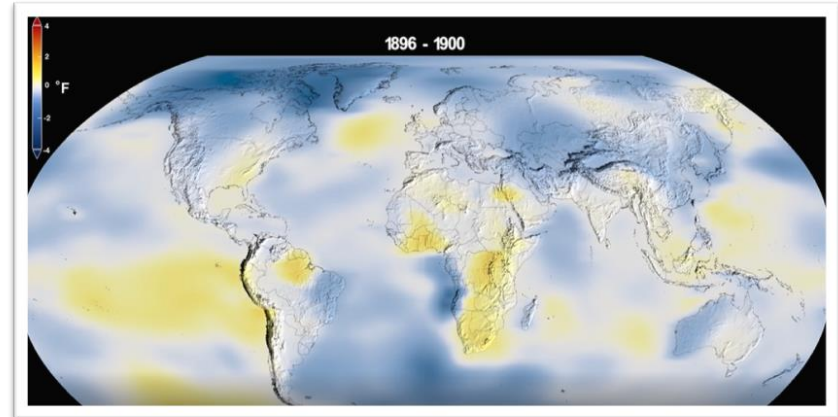
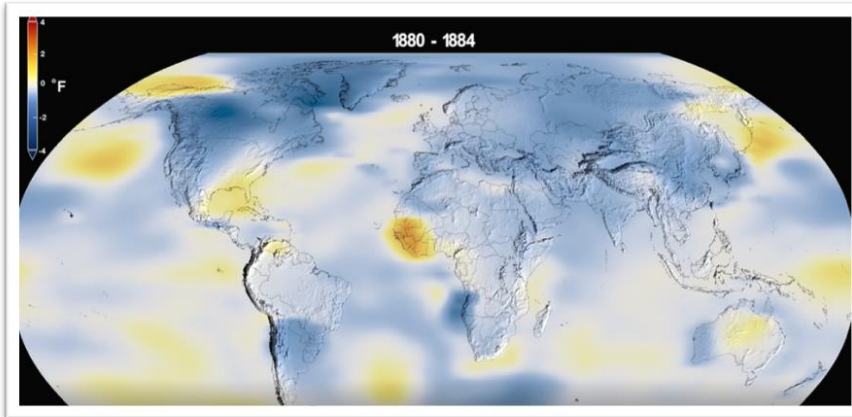


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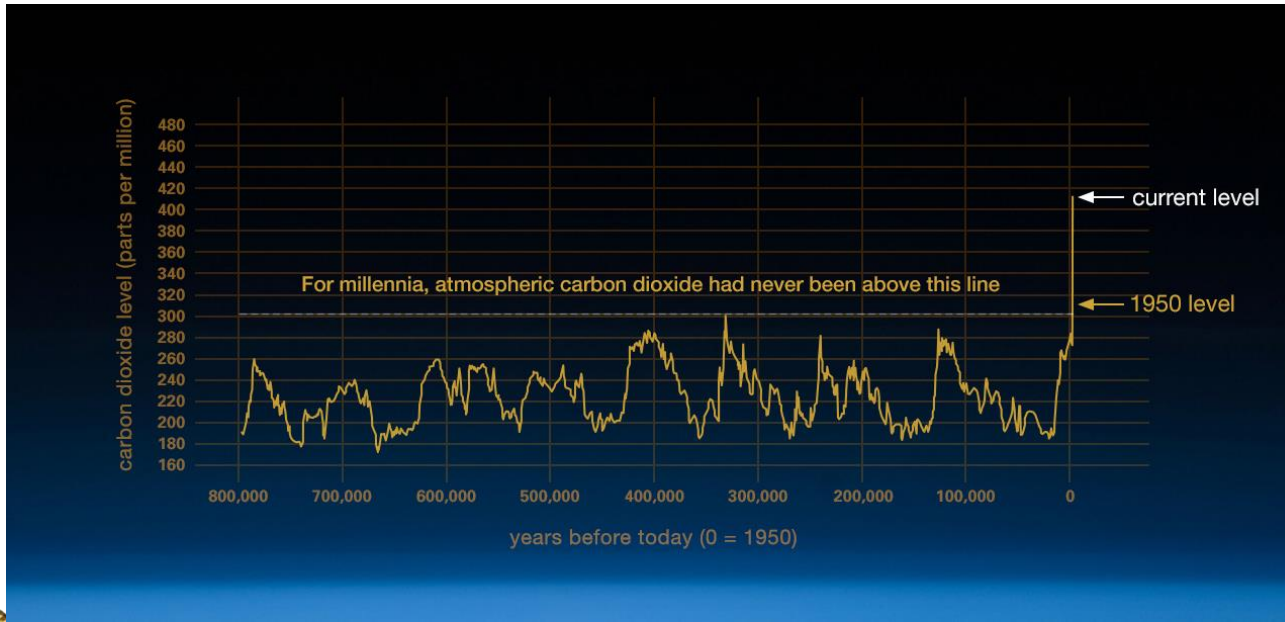
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# Climate changes and Global Warming (GW)



# Green-House Gases emission



Carbon Dioxide CO<sub>2</sub> emissions

Source: <https://climate.nasa.gov/evidence/>



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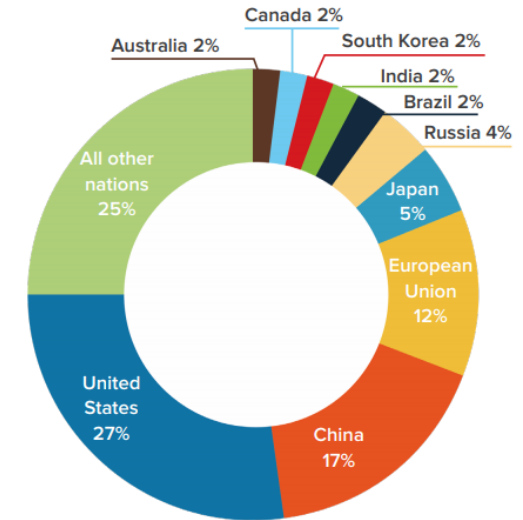
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# Climate and healthcare / Carbon footprint

- The healthcare sector:
  - one of the largest industries worldwide;
  - **4.4% of global net emissions.**
- **Top 3** emitters contribute to 56% of healthcare footprint
  - U.S., China, and EU

Top 10 emitters as a percentage of global healthcare footprint



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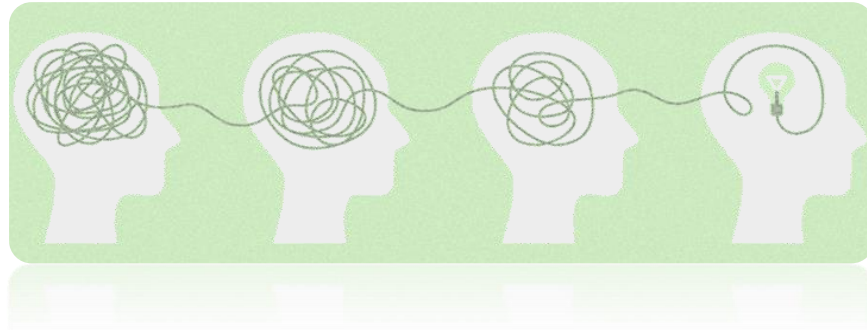
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SOURCE: Bousgoun A. Climate crisis: healthcare is a major contributor, global report finds. BMJ. 2019 Sep 13;5560.  
HCWH. Anap. Health care climate footprint report [Internet]. 2019 Sep [cited 2020 Sep 8]. Available from: <https://noharm-uscanada.org/ClimateFootprintReport>

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# Aims

- Evaluate the knowledge/perception/attitudes of RT professionals
  - Environmental-friendly practices
  - Circular Economy
  - Green Skills

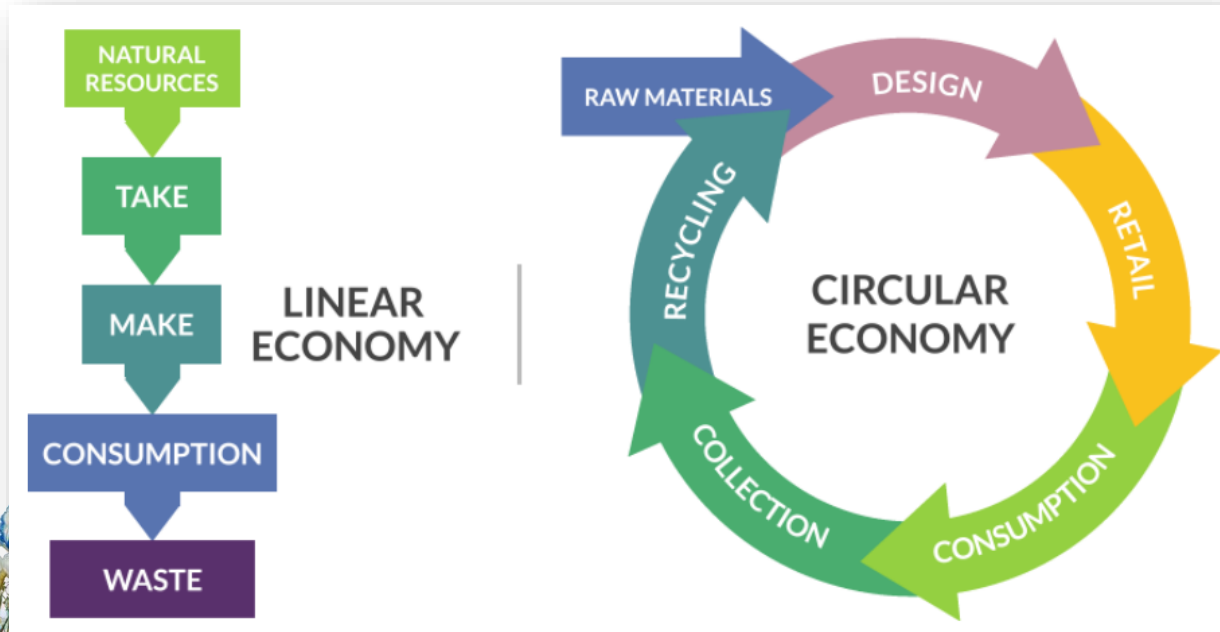


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# Circular economy (CE)



SOURCE: <https://endofwaste.com/individuals>

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# What are green skills?



***“the knowledge, abilities, values and attitudes needed to live in, develop and support a sustainable and resource-efficient society”.***

*OECD/Cedefop 2014*



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# Method

- Survey
  - Demographics
  - Knowledge/perceptions/skills about environmental practices
    - Likert scales (mostly)
    - Open questions (some)

I – Socio-demographic evaluation

II – Green skills – Knowledge

III – Green skills – Personal/Individual attitudes

IV – Green skills – TR/RTT attitudes within the working environment/Group attitudes

V – Perception of the importance of circular economy

VI – Green management and TR/RTT engagement in circular economy improvements at hospital

Please select your level of agreement with the statements below, between "Completely disagree" and "Completely agree".

Mark only one.

37. \*

Completely disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Completely agree
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TR/RTT are engaged to solve environmental problems in the hospital, related to their daily practice/routine.



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# Method

- Survey
  - Demographics
  - Knowledge/perceptions/skills about environmental practices
    - Likert scales (mostly)
    - Open questions (some)
- Participants: European TR/RTTs
- Recruitment: SAFE EUROPE partners
- Oct 2021 – Feb 2022



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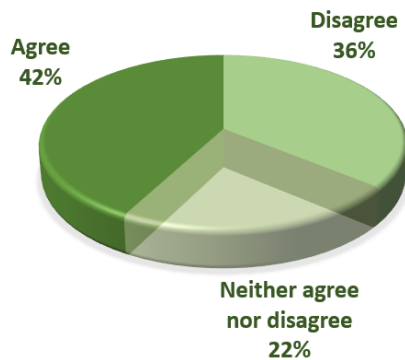
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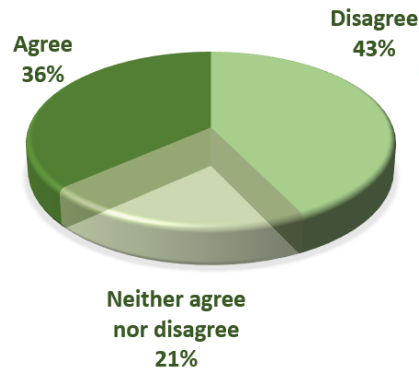
220 responses received  
31 countries

# Results – Knowledge of CE and GS

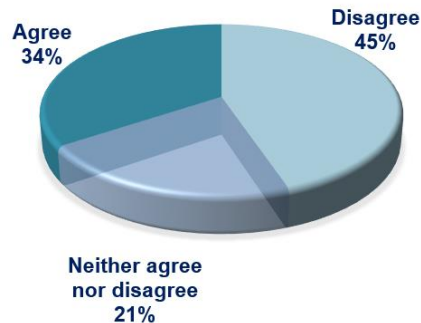
## Circular economy



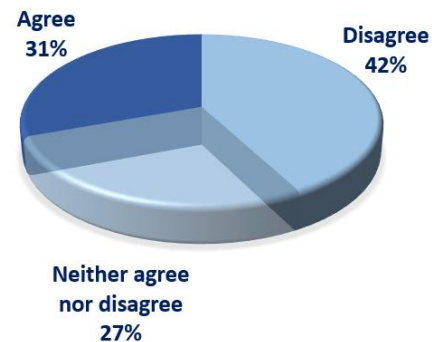
## Green skills



## National policies



## Department policies



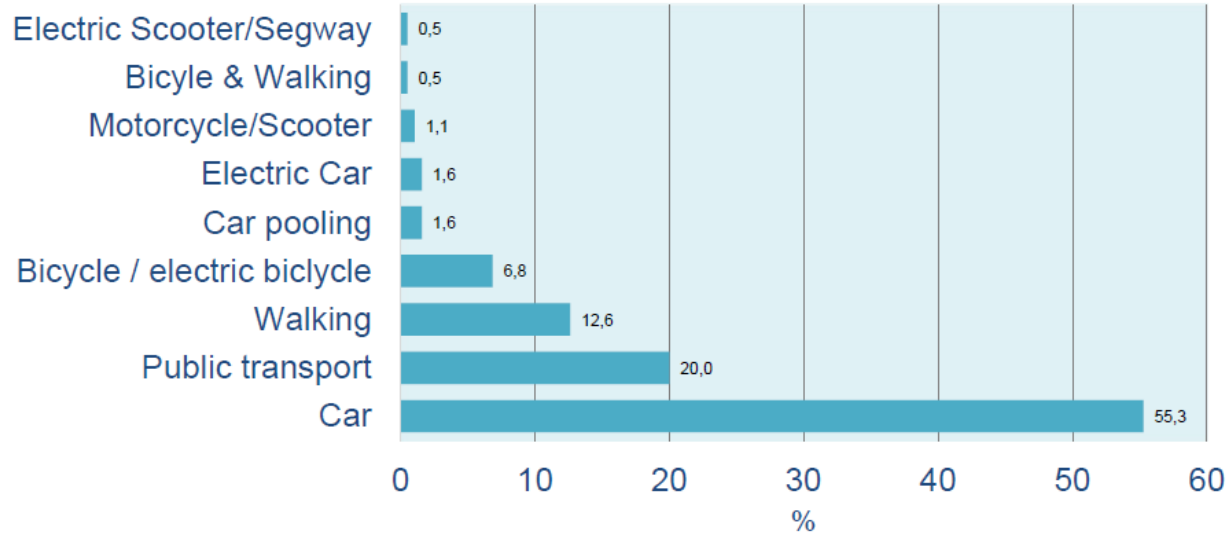
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# Personal attitudes

*Main mode of transportation?*



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# Personal attitudes

- CE practice in daily routine, mostly:
  - Waste separation
  - Recycling
  - Reuse



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# RT professionals attitudes

*“RT professionals advocate CE practices”*

Agree	49,5
Neither agree nor disagree	21,6
Disagree	28,9



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# RT professionals attitudes

- Mostly:
  - Waste separation;
  - Paperless;
  - Reuse of RT equipment (e.g. bolus);
  - Glass cups or reusable cups.

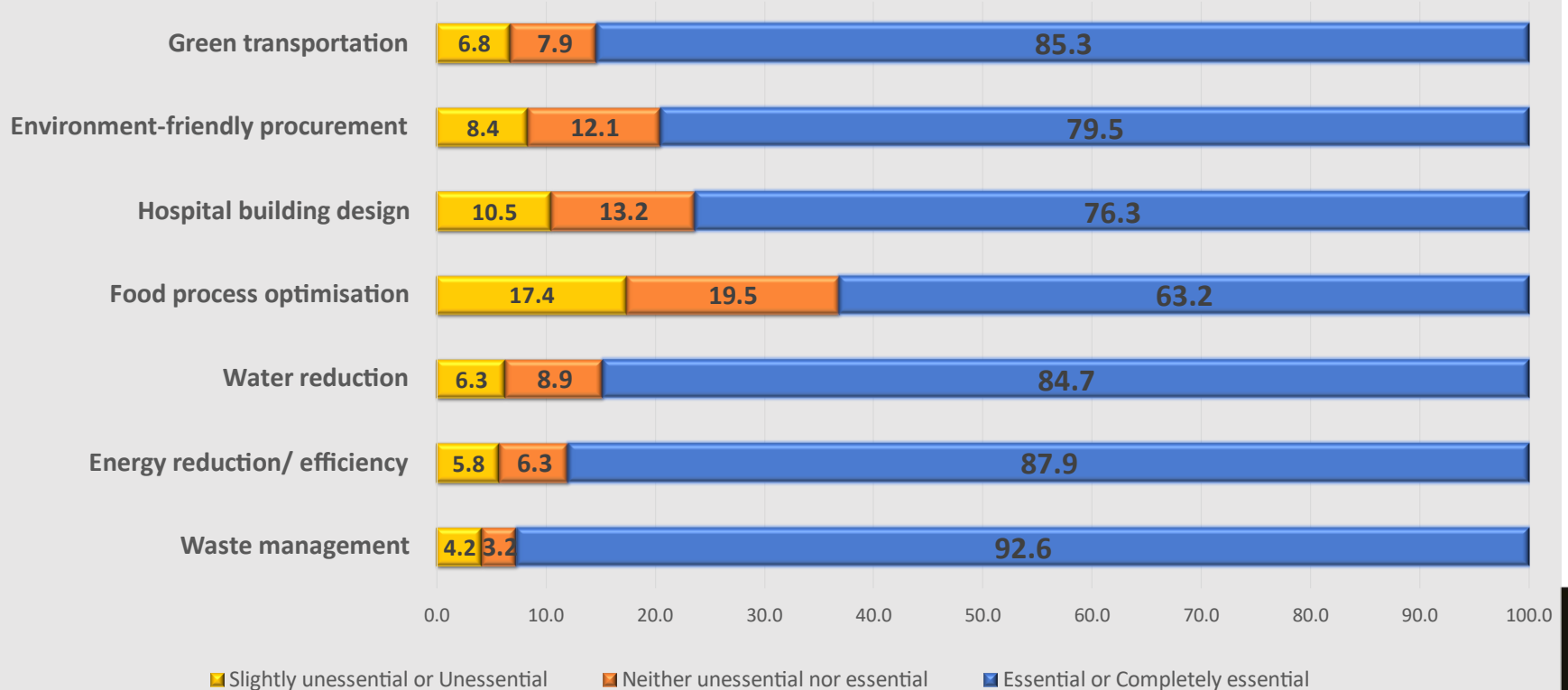


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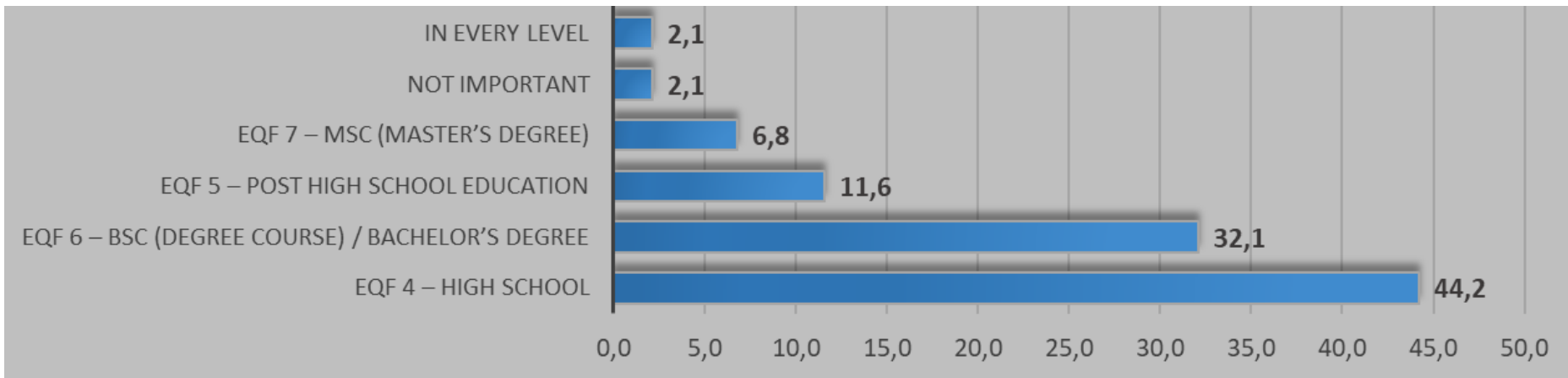
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# Educational needs





# When should CE and GS be taught?





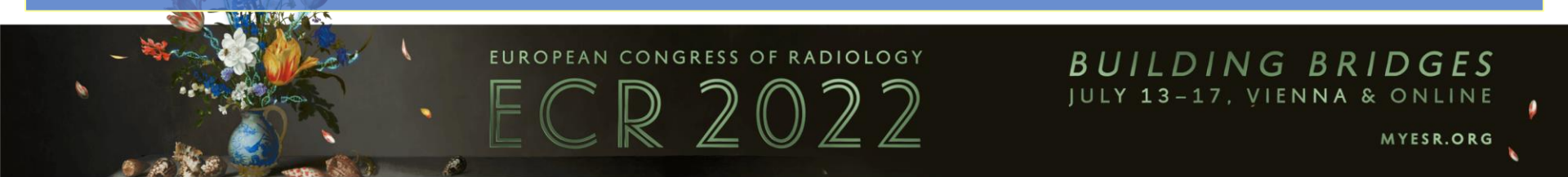
# Take home messages

- **Educational needs**

- **knowledge and awareness of environment practices:**
  - Incomplete
  - Considered essential
- **Top 4 topics to be developed:**
  - Waste management
  - Energy reduction/efficiency
  - Green transportation
  - Water reduction

- **Academic level**

- High school and the Bachelor 's degree





# Thank you for your attention!

## Importance of Circular Economy and green skills to Radiotherapy Radiographers/Radiation Therapists: An European Union survey

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