

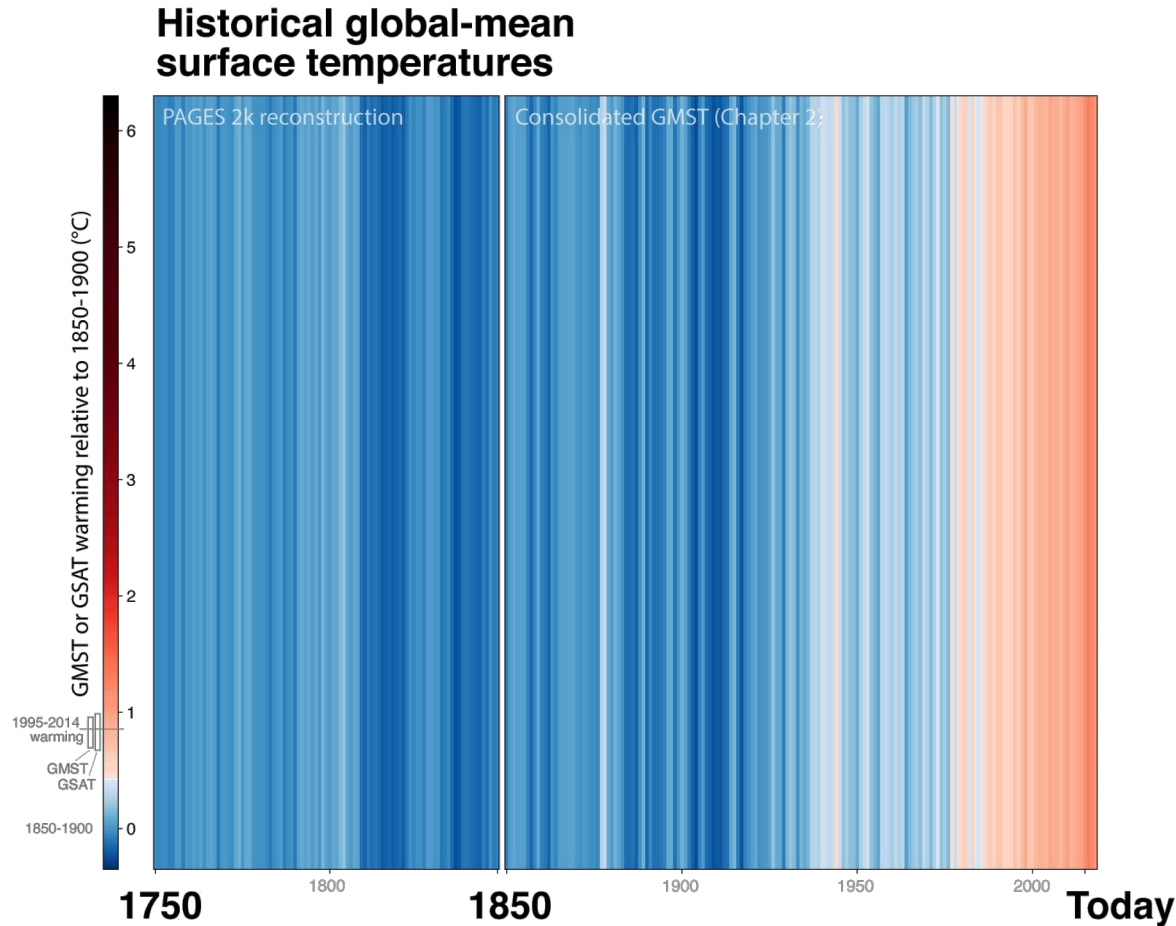
Exploring green technologies through patent data

François Perruchas – Universitat de València

Databeers VLC – July 6th, 2023

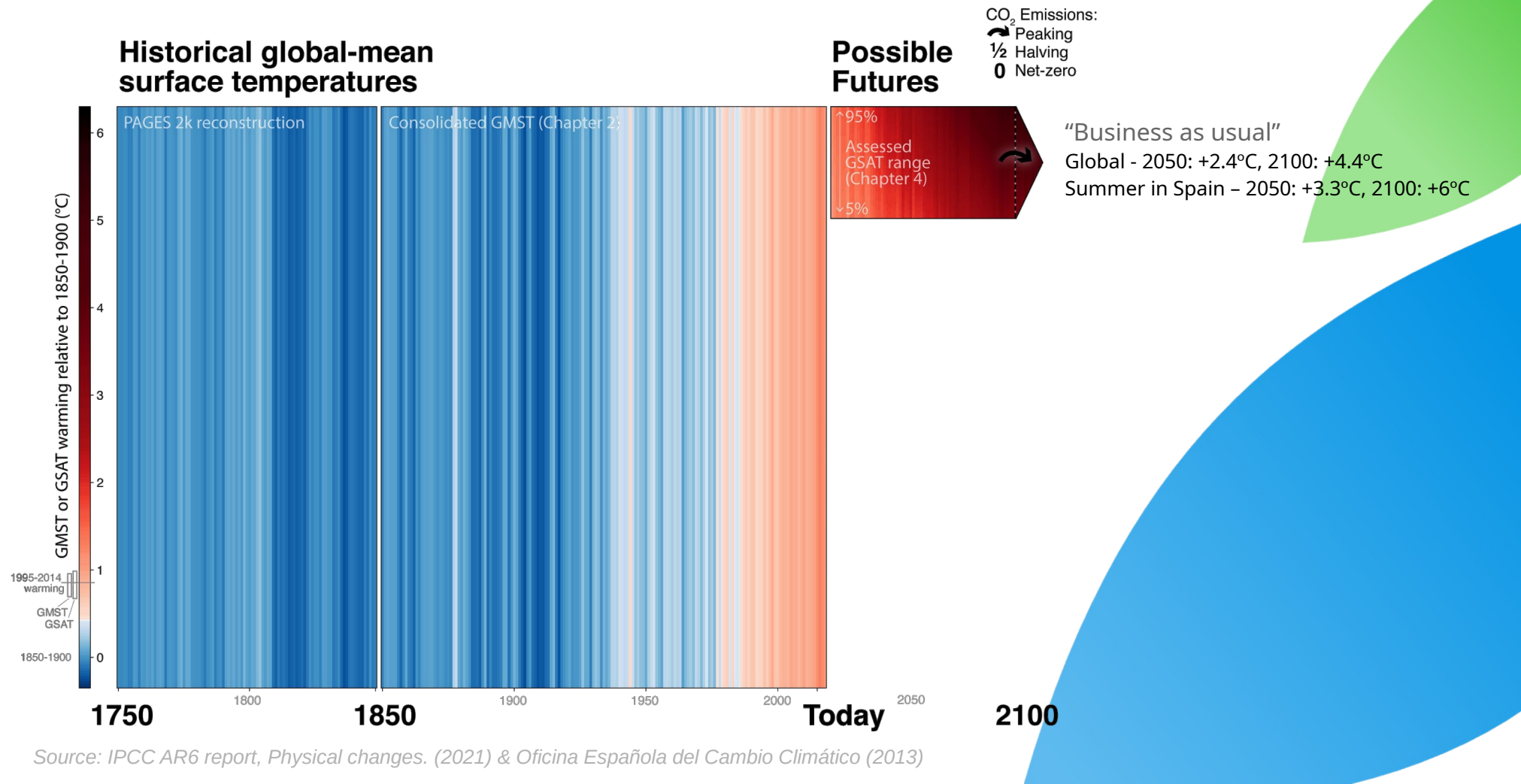


Motivation



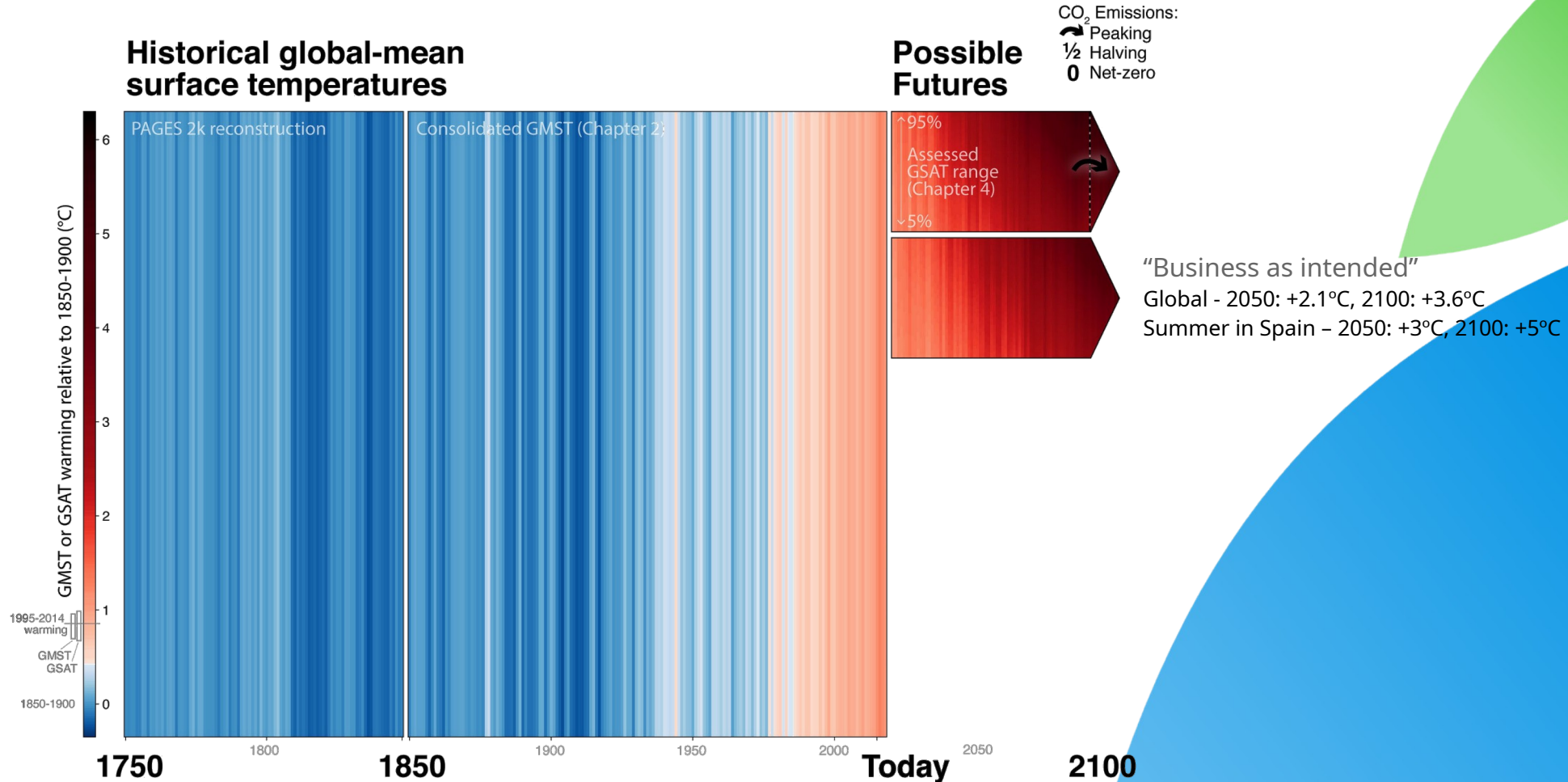
Source: IPCC AR6 report, *Physical changes*. (2021) & Oficina Española del Cambio Climático (2013)

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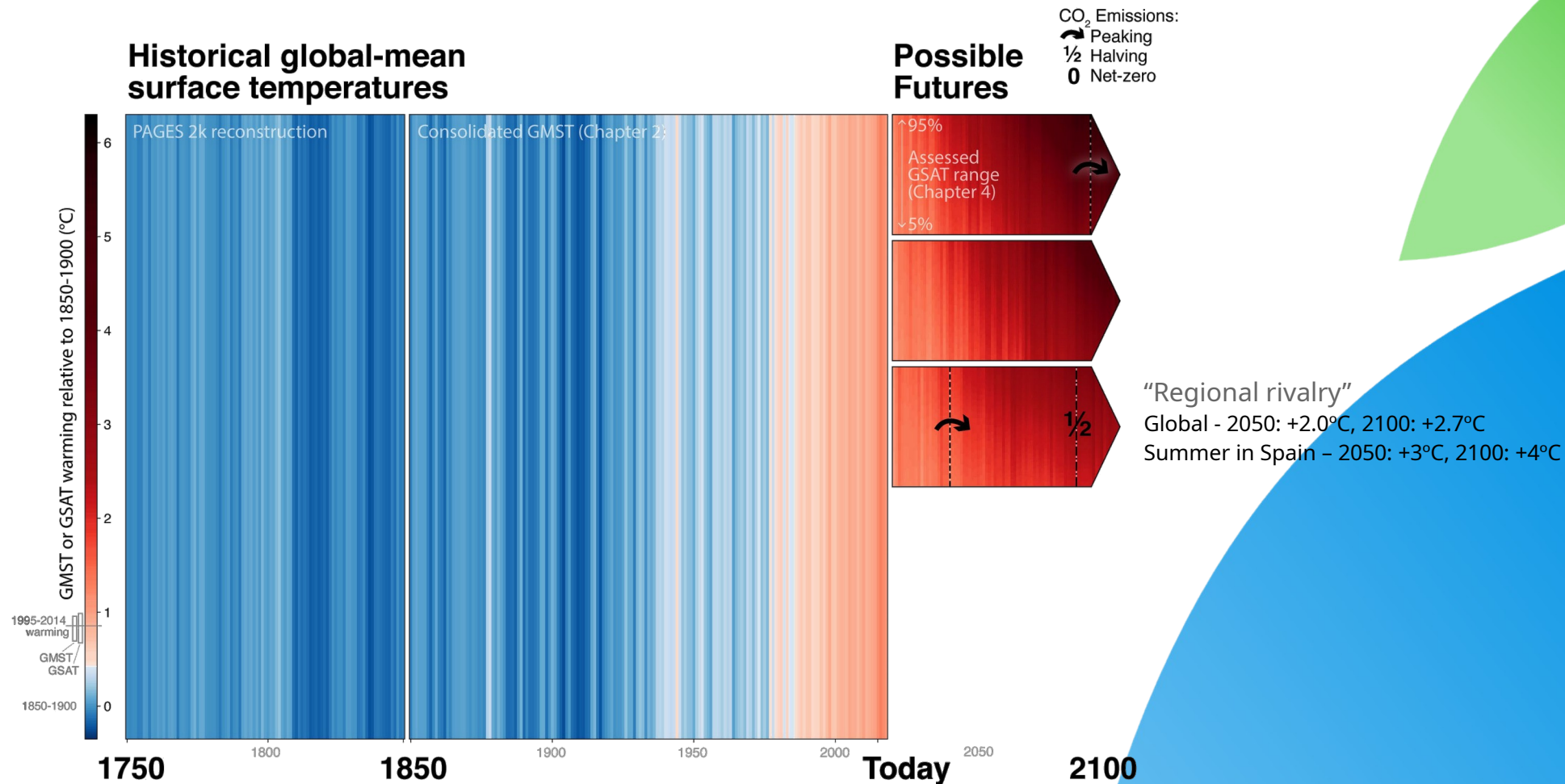
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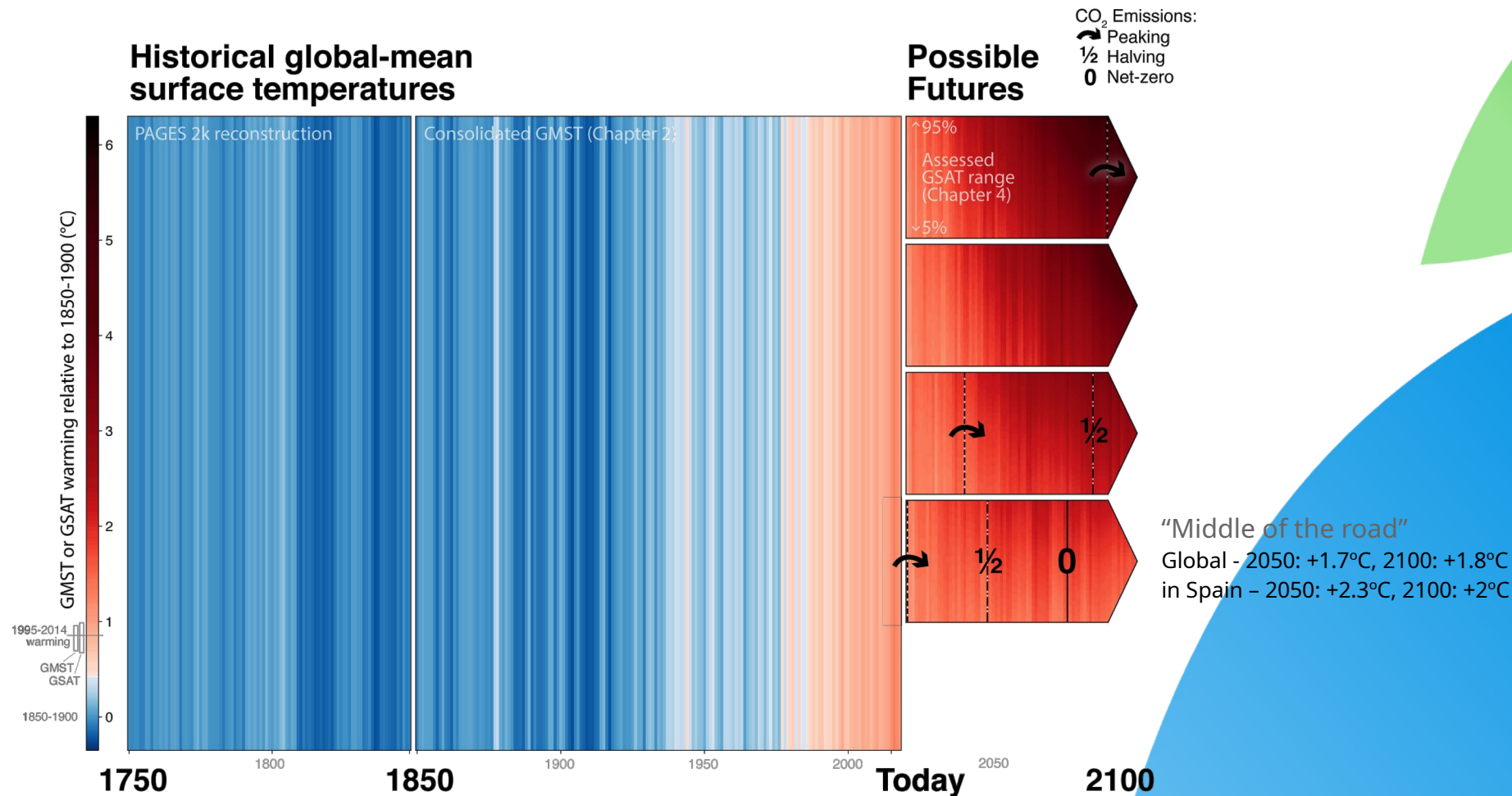
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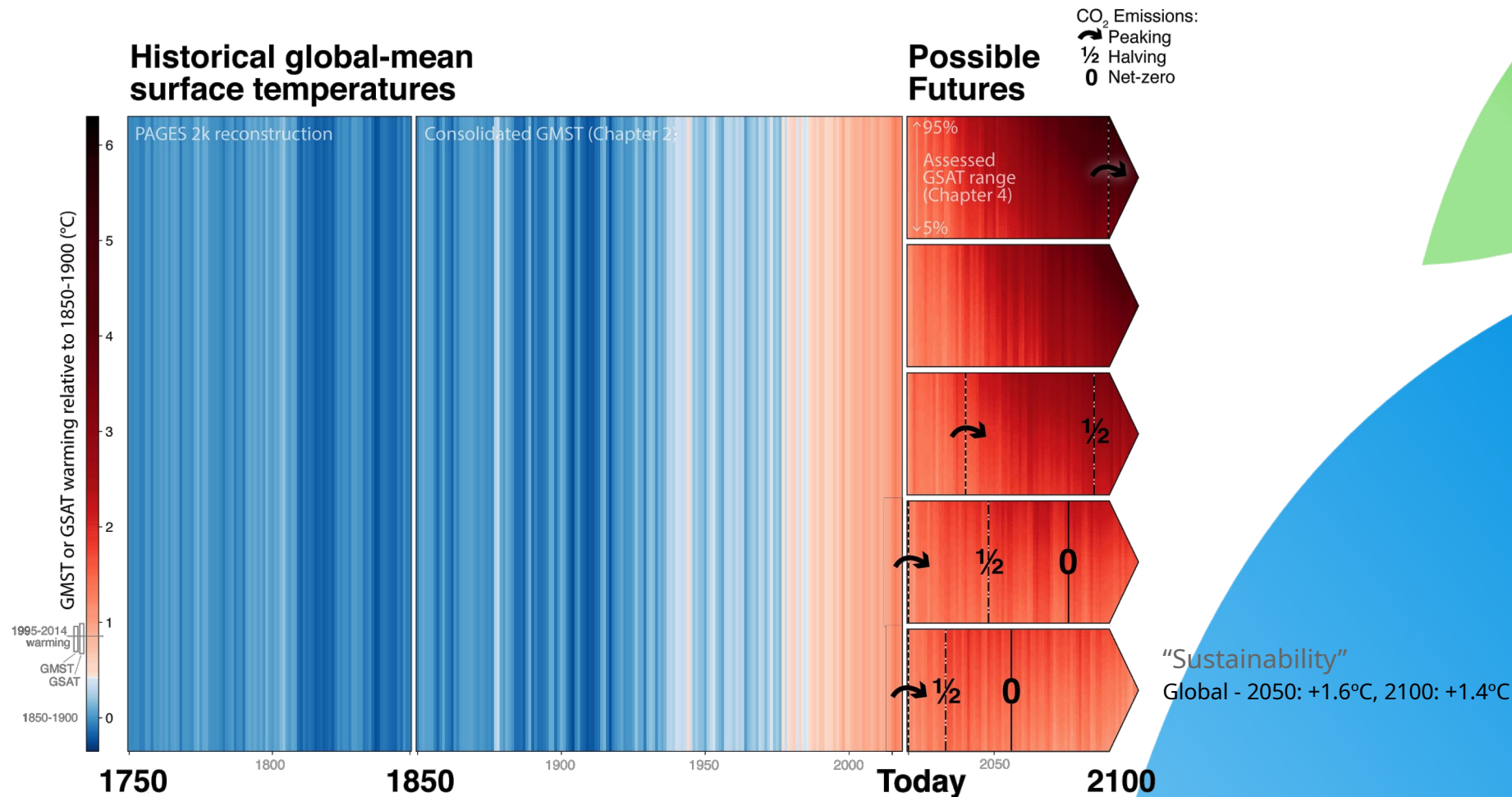
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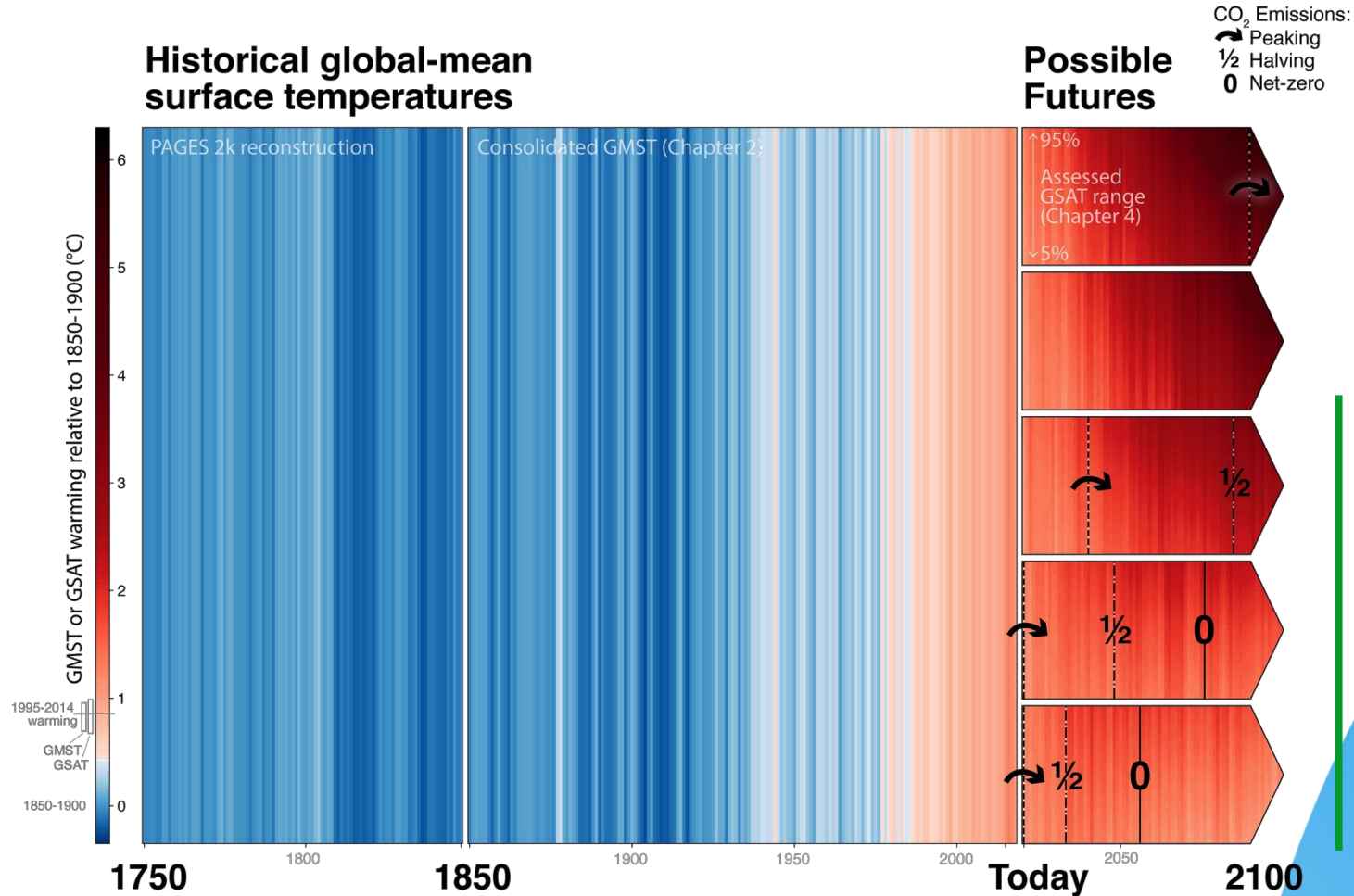
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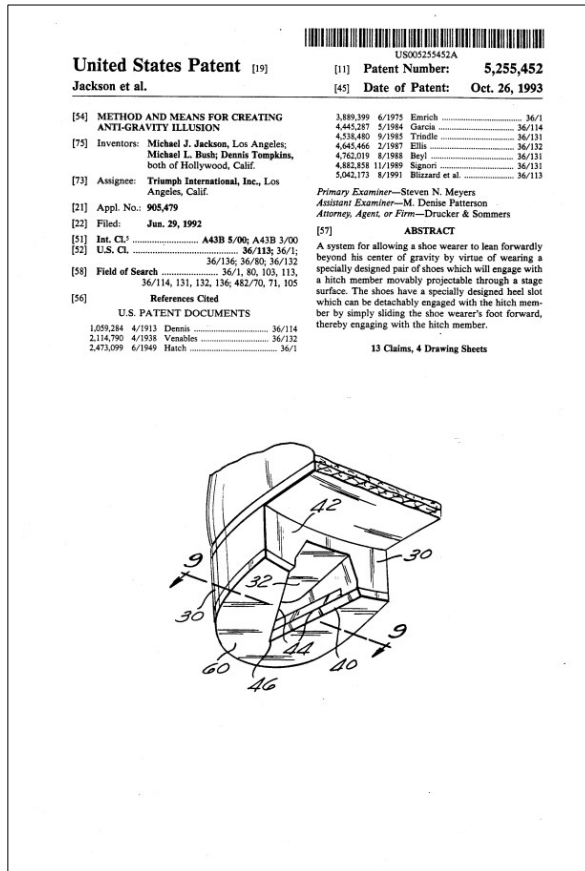
Motivation



**Green technologies
are required to
decrease emissions
in these scenarios**

Why use patents ?

- Legal document that gives exclusivity on an invention
- Public disclosure of the invention
 - *helpful to follow the development of technology*



Why use patents ?

United States Patent [19]
Jackson et al.

US005255452A
Patent Number: 5,255,452
Date of Patent: Oct. 26, 1993

[54] METHOD AND MEANS FOR CREATING ANTI-GRAVITY ILLUSION

[75] Inventors: Michael J. Jackson, Los Angeles;
Michael L. Bush; Dennis Tompkins,
both of Hollywood, Calif.

[73] Assignee: Triumph International, Inc., Los Angeles, Calif.

[22] Filed: Jun. 29, 1992

[51] Int. Cl.¹ A43B 5/00; A43B 3/00

[52] U.S. Cl. 36/113; 36/1

[58] Field of Search 36/136; 36/80; 36/132; 36/1; 80; 105; 113; 36/114; 131; 132; 136; 482/70; 71; 105

[56] References Cited

U.S. PATENT DOCUMENTS

1,059,284 4/1913 Dennis 36/114
2,114,790 4/1938 Venables 36/132
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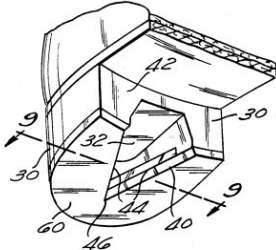
1,889,399 6/1975 Emrich 36/1
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4,882,858 11/1989 Sigson 36/131
5,042,173 8/1991 Blizard et al. 36/113

Primary Examiner—Steven N. Meyers
Assistant Examiner—M. Denise Patterson
Attorney, Agent, or Firm—Drucker & Sommers

[57] ABSTRACT

A system for allowing a shoe wearer to lean forwardly beyond his center of gravity by virtue of wearing a specially designed pair of shoes which will engage with a hitch member movably projectable through a stage surface. The shoes have a specially designed heel slot which can be detachably engaged with the hitch member by simply sliding the shoe wearer's foot forward, thereby engaging with the hitch member.

13 Claims, 4 Drawing Sheets



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→ Geographical information (coverage, applicants, inventors)

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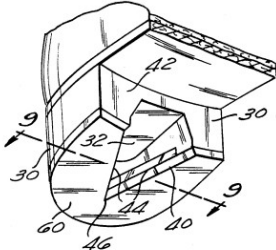
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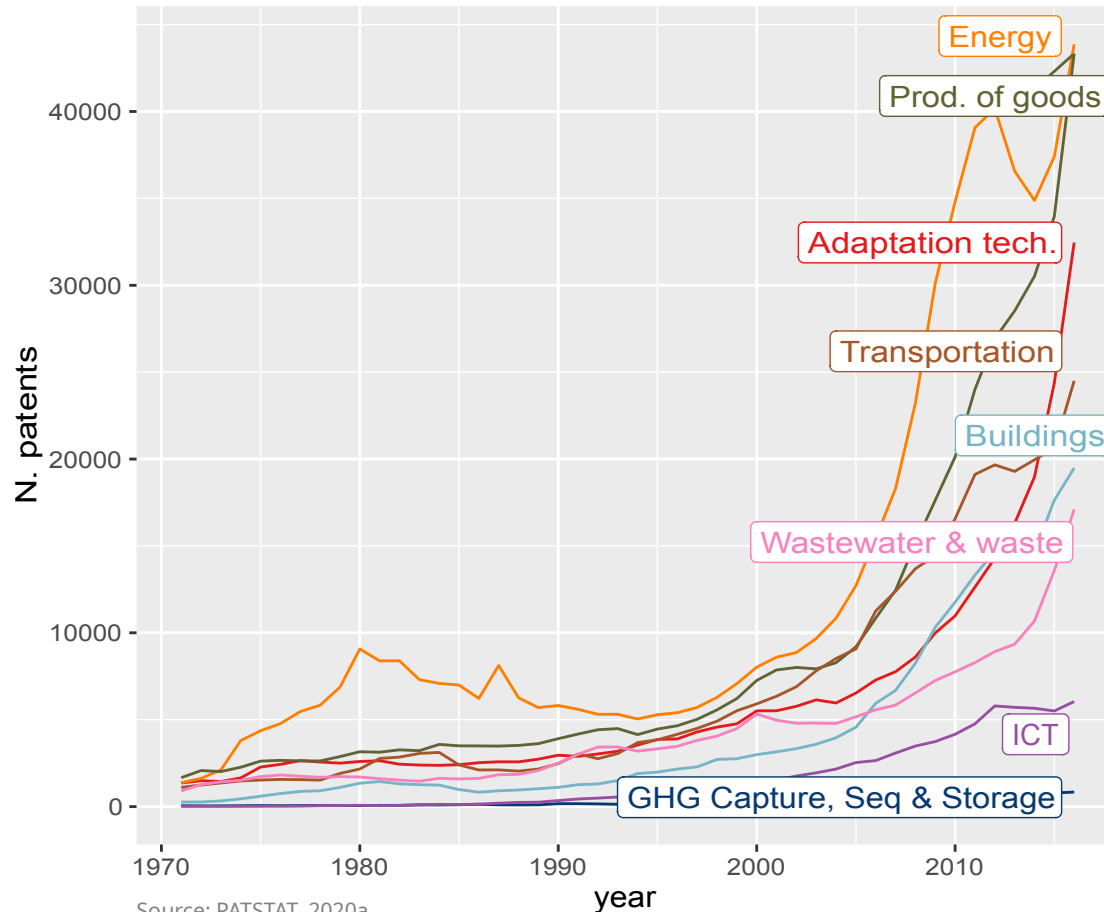
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→ Geographical information (coverage, applicants, inventors)

→ Classification of technologies

→ Textual information (title and description)

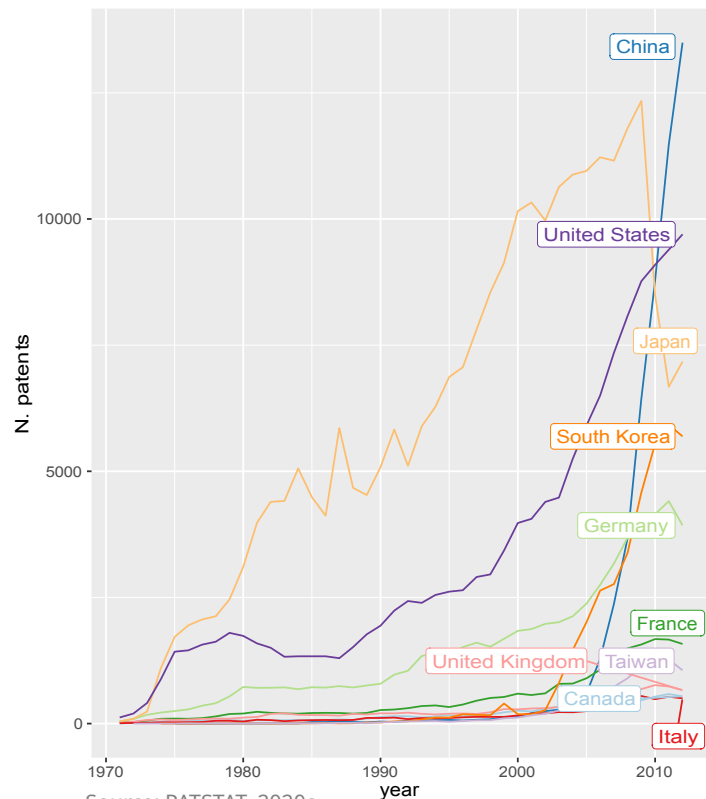
Evolution of green technologies



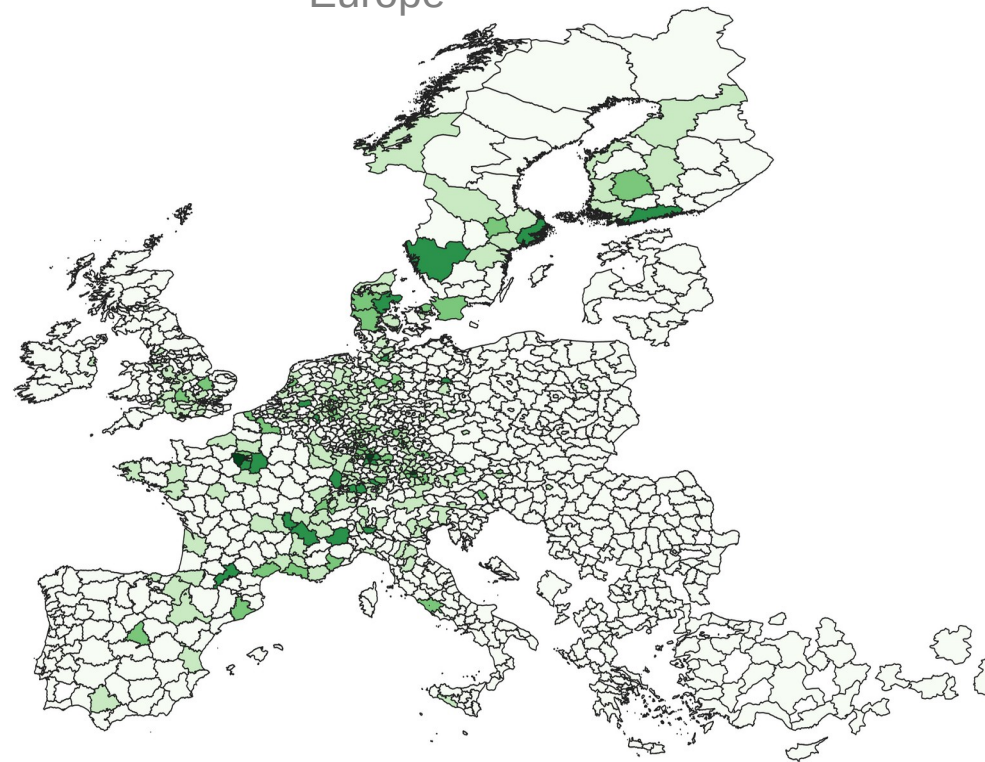
- Green technologies are aiming at **reducing** (mitigating) emissions or **adapting** to climate change.
- 8 groups
 - Adaptation tech.
 - Mitigation tech. in 6 different sectors (Energy, Prod. of goods, Transport, Buildings, Waste, ICT)
 - Capture, Sequestration & Storage of greenhouse gases

Where developments take place

Worldwide (top 10 countries)

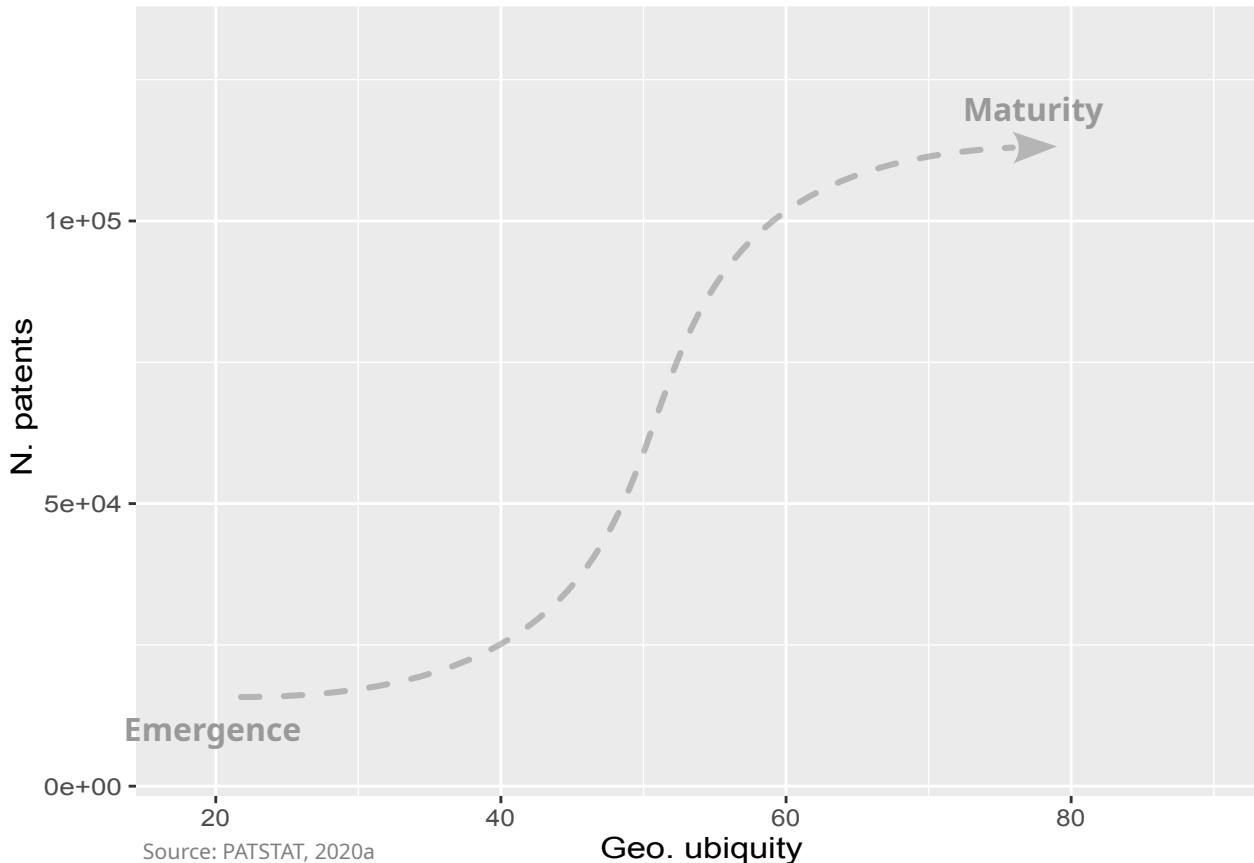


Europe



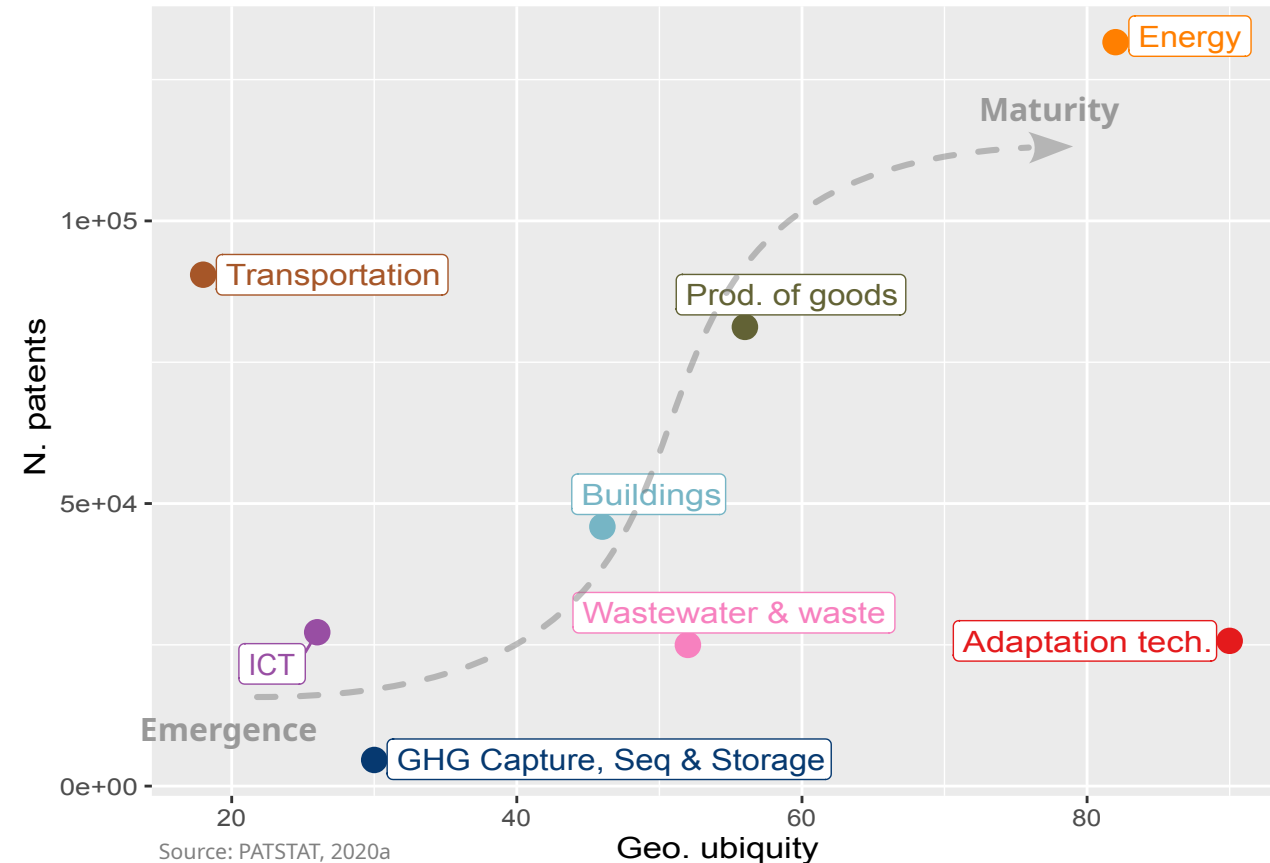
Source: PATSTAT, 2020a & EUROSTAT, 2016

Life cycle of green technologies



- Technology life cycle indicator based on 2 dimensions: **geographical diffusion & inventive activity**
- Emerging tech. → high potential and uncertainty
- Mature tech. → less potential of development but straightforward deployment

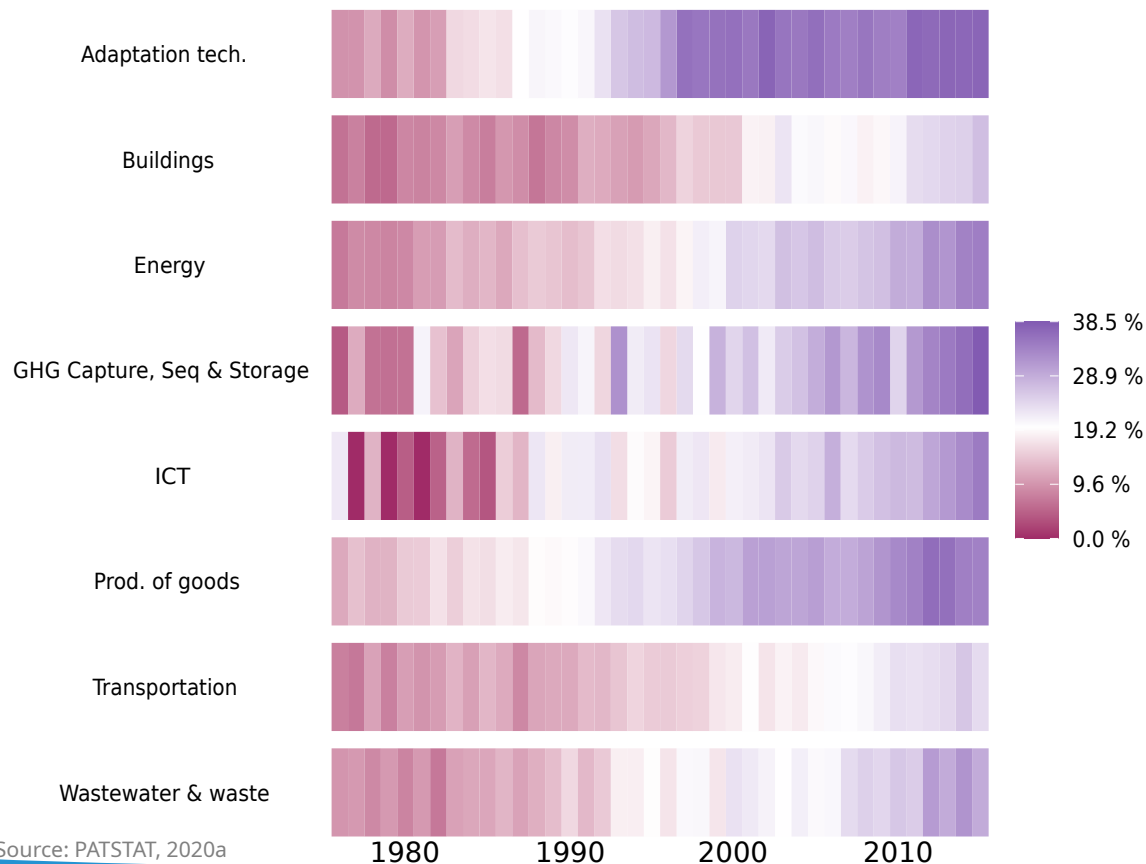
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Women in green technologies

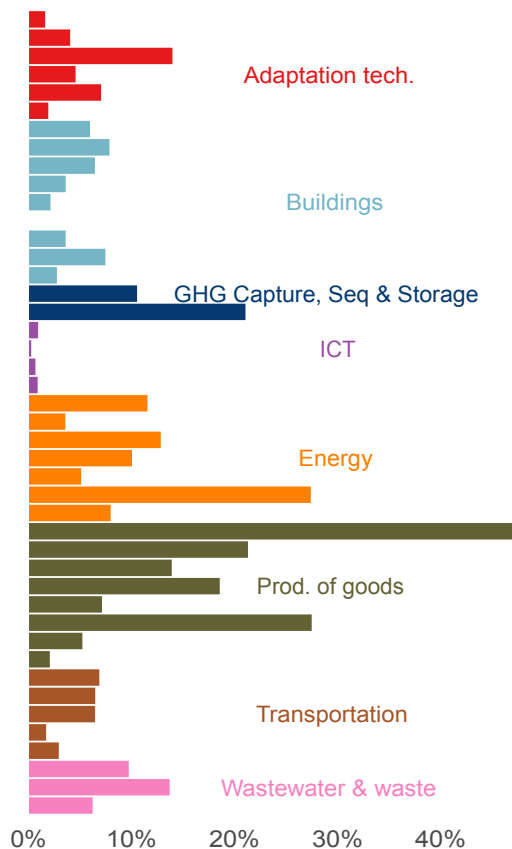
Share of patents with at least one woman among inventors



- Inventors names → detection of gender
- Participation of woman in green invention is increasing over time
- Important disparities among technologies

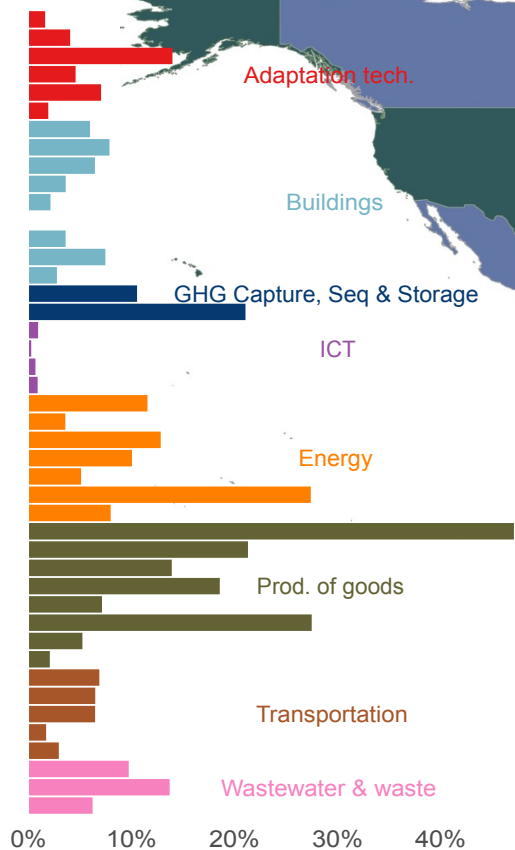
Critical raw minerals (CRM) required

Share of patents mentioning
at least 1 CRM

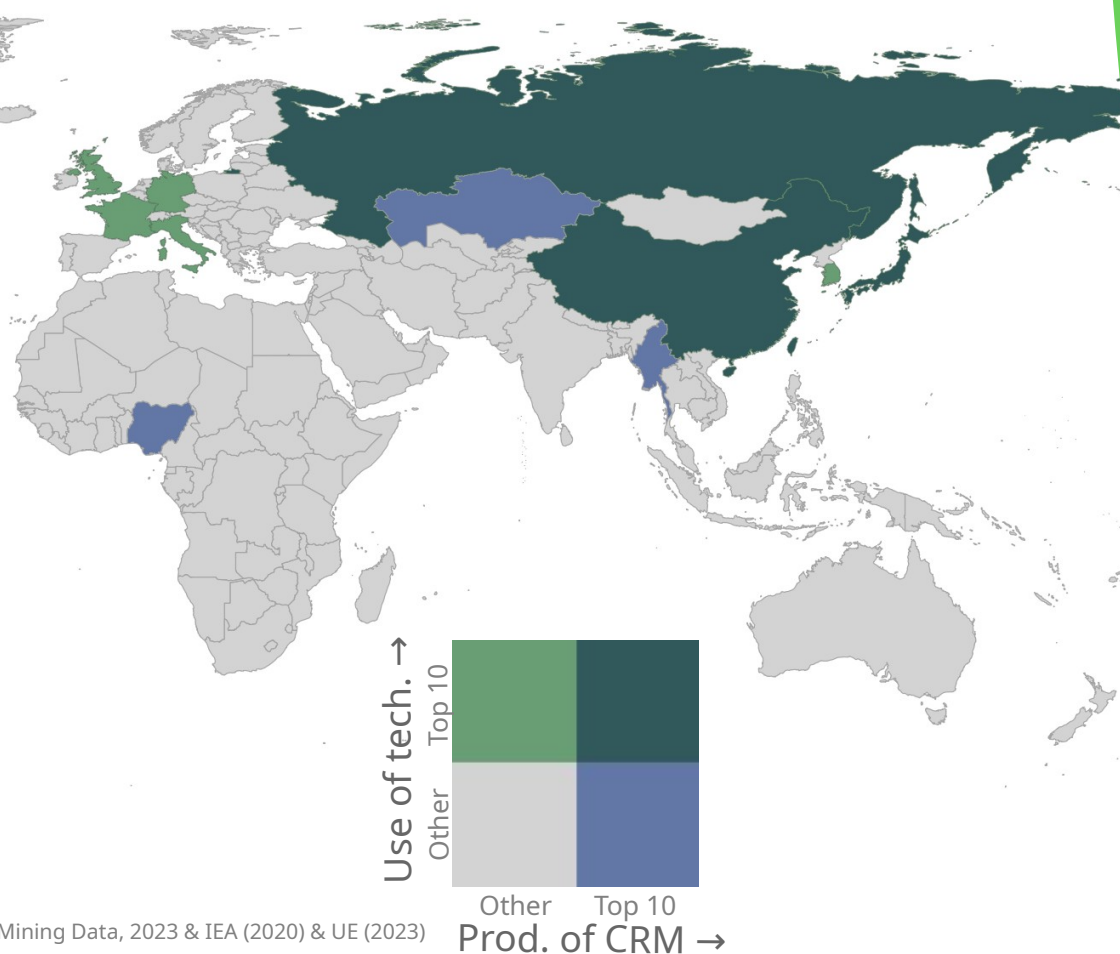


Critical raw minerals (CRM) required

Share of patents mentioning
at least 1 CRM



Source: PATSTAT, 2020a & World Mining Data, 2023 & IEA (2020) & UE (2023)





Thank you

<https://www.greentechdatabase.com>
francois.perruchas@uv.es