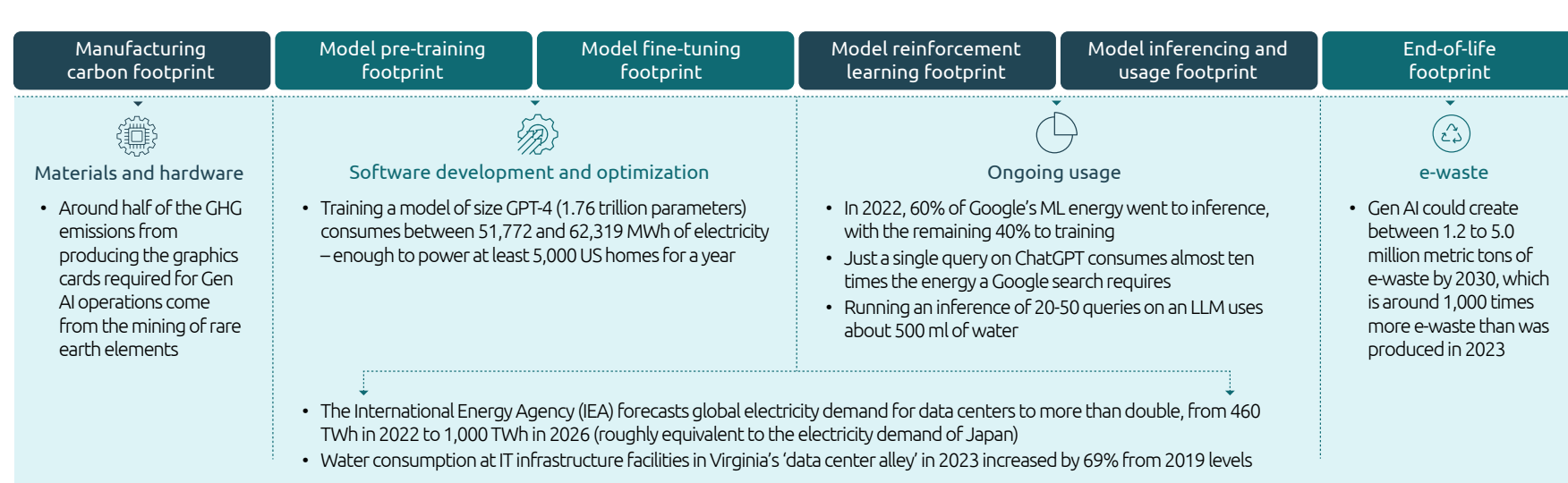


# Developing sustainable Gen AI

## Gen AI has a significant environmental impact

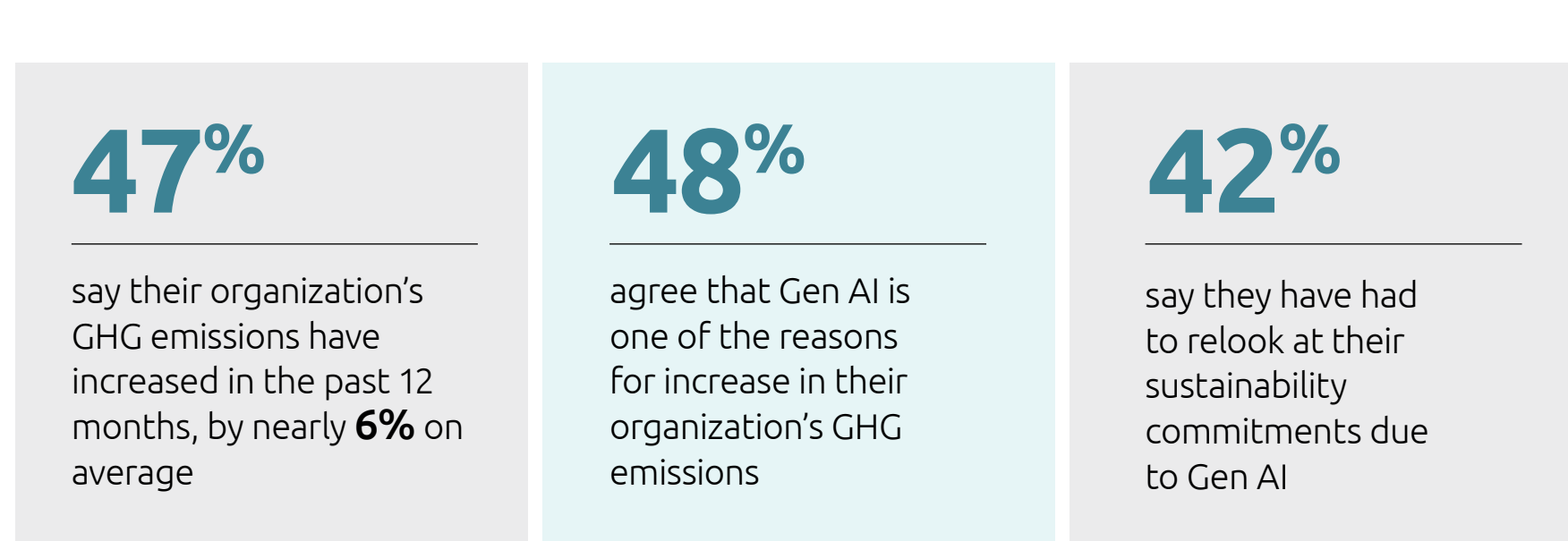
### Gen AI consumes vast quantities of resources and leaves notable financial and environmental footprints



Source: Capgemini Research Institute analysis, Harvard Business Review, "How to make generative AI greener," July 2023, IEA, Electricity 2024: Analysis and forecast to 2026, January 2024, Financial Times, "US tech groups' water consumption soars in 'data centre alley,'" August 2024, Vox, "AI already uses as much energy as a small country. It's only the beginning," March 2024, OECD, "How much water does AI consume? The public deserves to know," November 2023, ARXIV, "The carbon footprint of machine learning training will plateau, then shrink," April 2022, Frontline Magazine, "E-waste from AI computers could 'escalate beyond control': study," October 2024.

- Gen AI's hardware requirements put a strain on natural resources and habitats
- Gen AI models are energy-hungry and water-thirsty
- Gen AI training and inferencing drive-up energy requirements in data centers
- Widespread Gen AI adoption will see e-waste levels shoot up

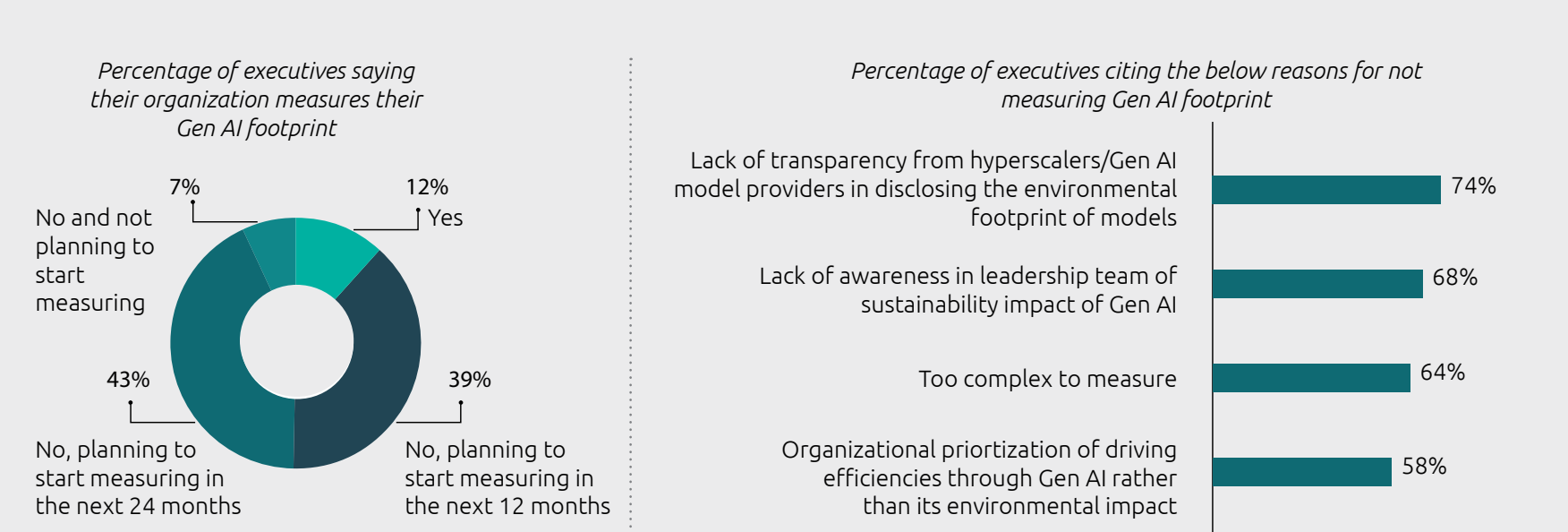
## Gen AI is one of the reasons for the rise in GHG emissions in nearly half of the organizations



## The sustainability of Gen AI remains a low priority

### Most organizations fail to measure the impact of Gen AI

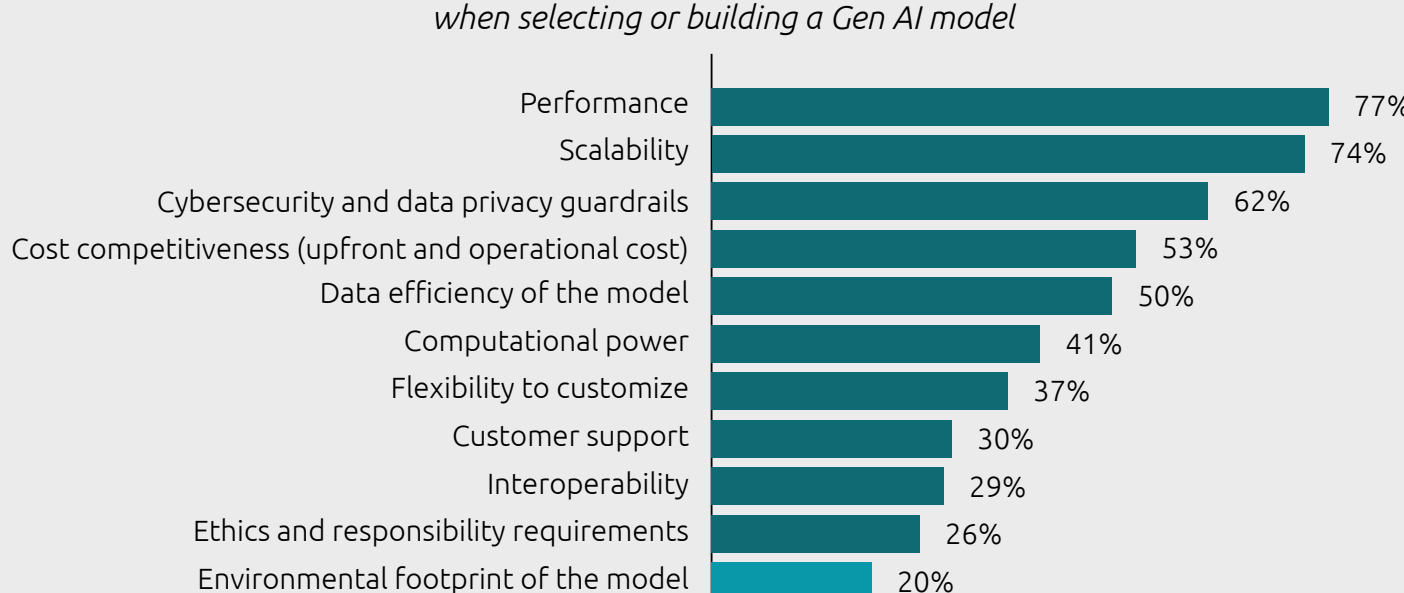
- Only 12% of organizations measure environmental impact of Gen AI
- 74% say a lack of transparency from Gen AI providers makes measurement challenging
- Organizations look to the tech sector to drive sustainable Gen AI



Source: Capgemini Research Institute, Gen AI and Sustainability survey, August-September 2024, N = 2,000 executives from organizations that are working on Gen AI Initiatives.

## Sustainability isn't a consideration during Gen AI model evaluation

### Percentage of executives ranking the below among the top five factors taken into consideration when selecting or building a Gen AI model



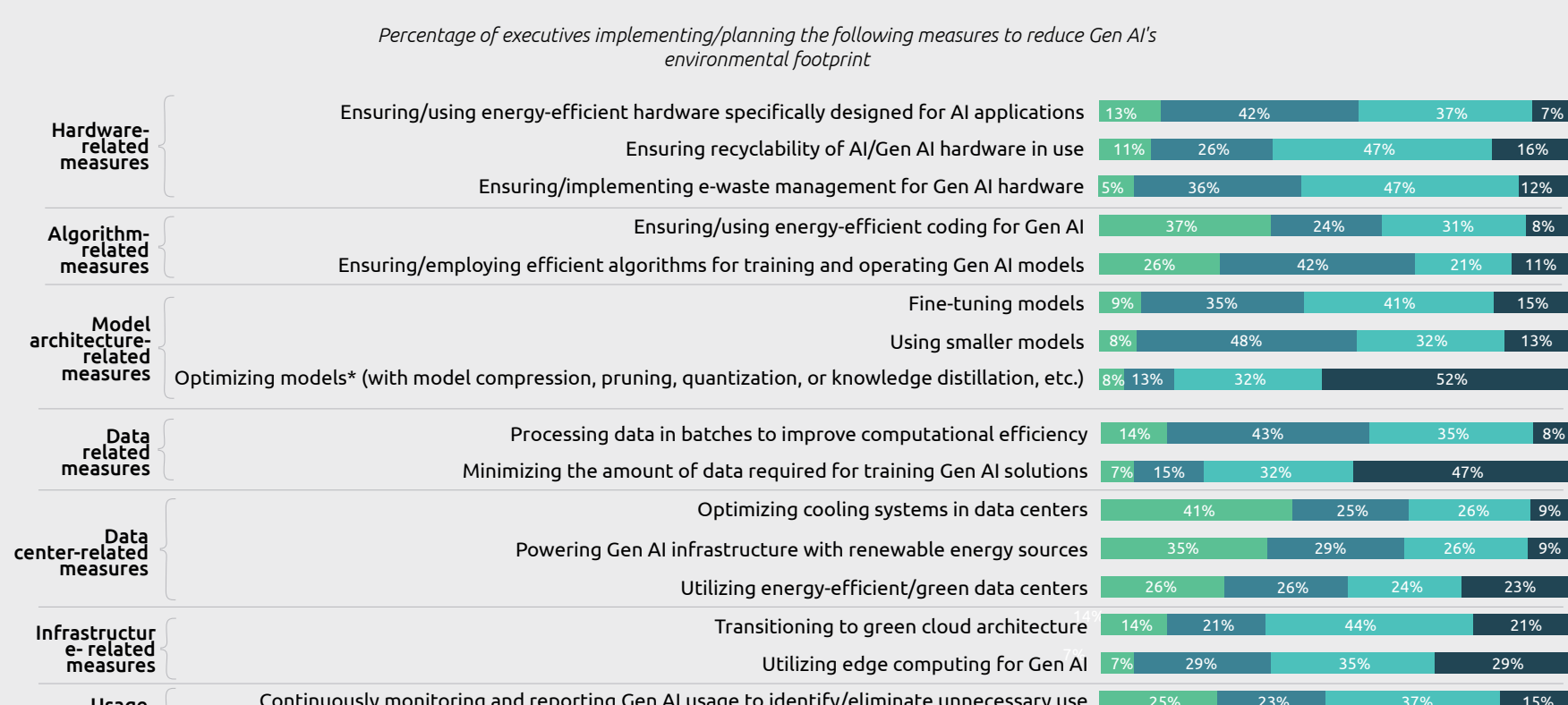
Source: Capgemini Research Institute, Gen AI and Sustainability survey, August-September 2024, N = 2,000 executives from organizations that are working on Gen AI Initiatives.



## Organizations are just beginning to incorporate sustainability measures throughout the Gen AI lifecycle

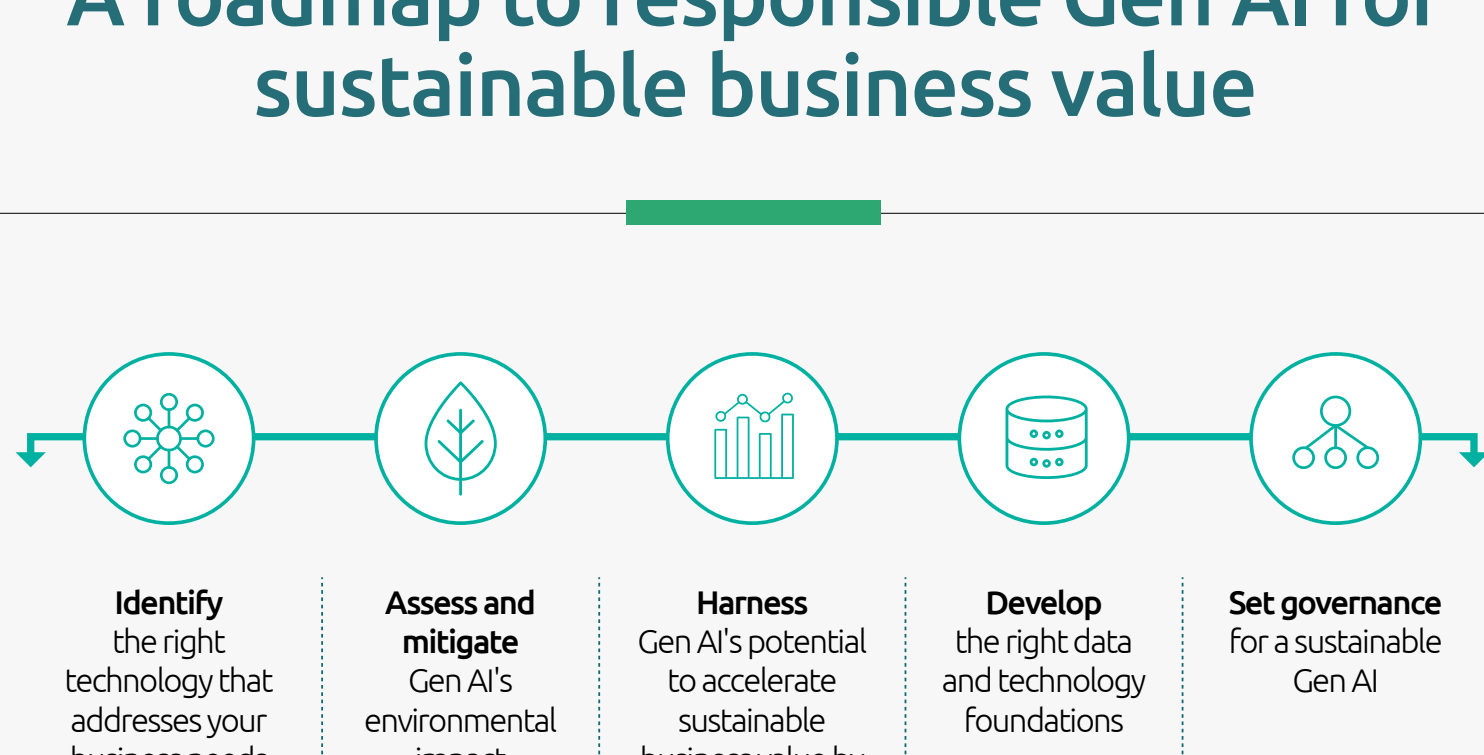
### Organizations are at the early stages of reducing Gen AI's environmental impact

Percentage of executives implementing/planning the following measures to reduce Gen AI's environmental footprint



Source: Capgemini Research Institute, Gen AI and Sustainability survey, August-September 2024, N = 660 technology executives from organizations that are working on Gen AI Initiatives.

## A roadmap to responsible Gen AI for sustainable business value



Source: Capgemini Research Institute analysis.

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