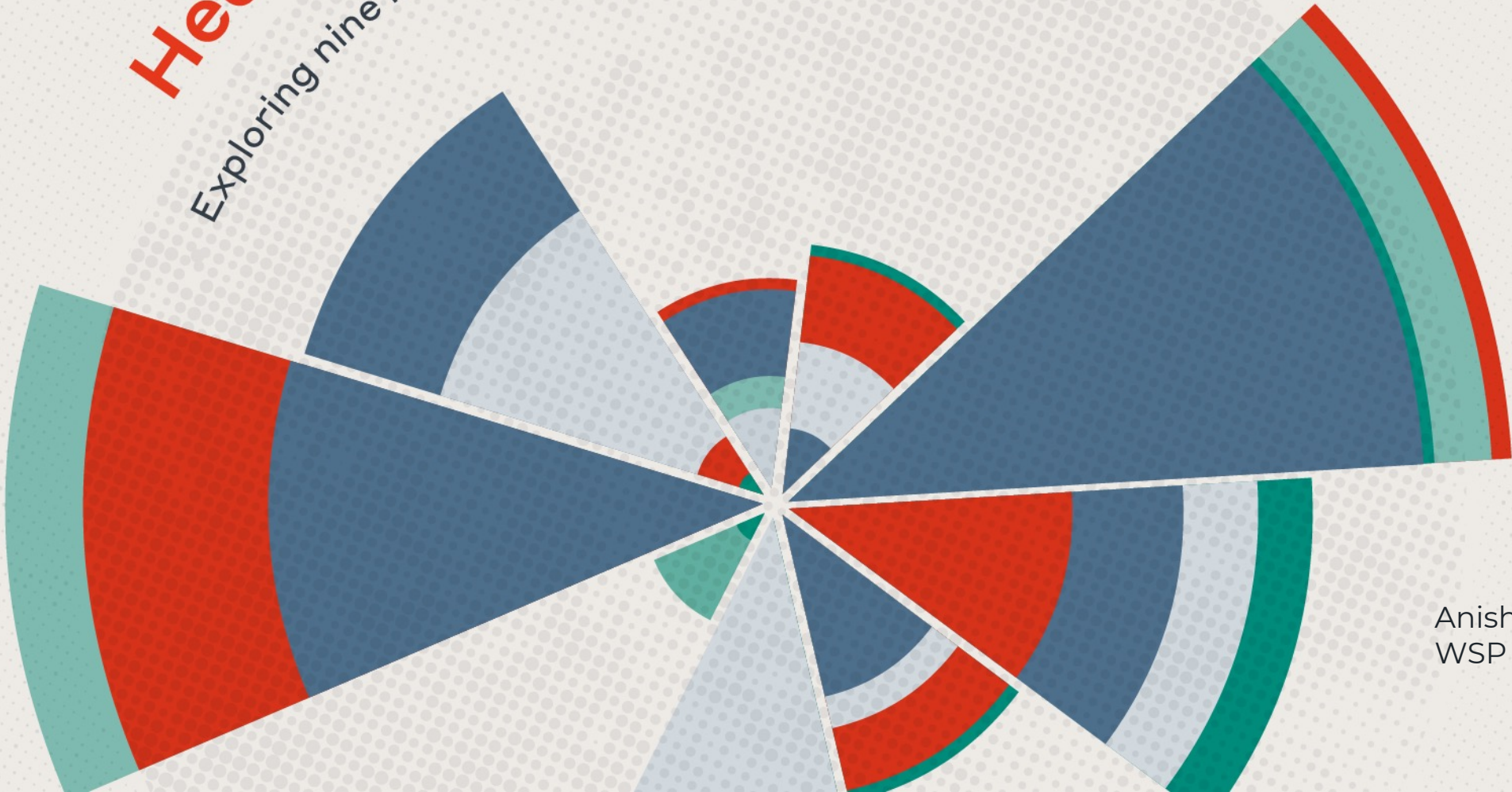


Healthcare beyond carbon

Exploring nine healthcare systems' journeys to net-zero

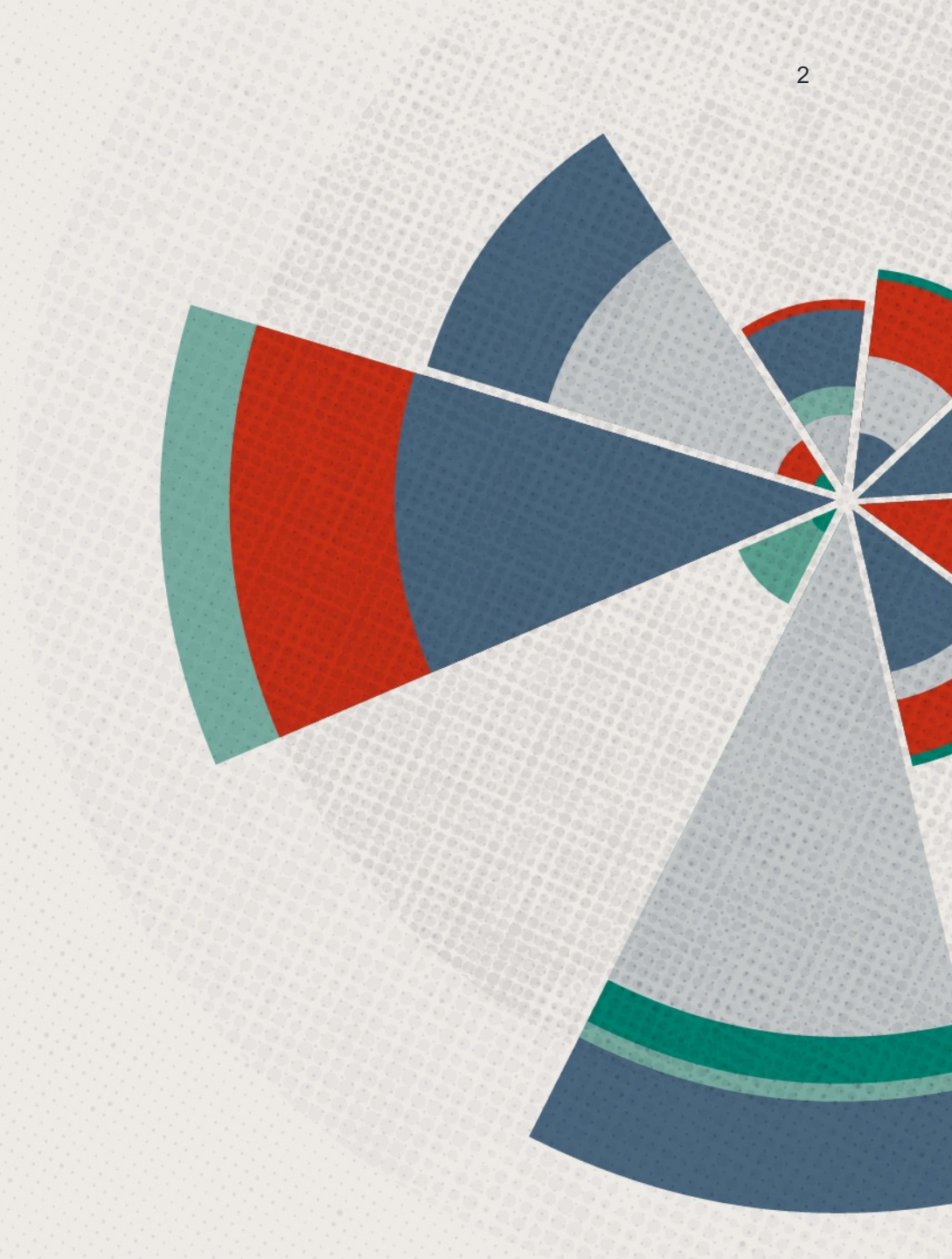


Anisha Mayor & Antoni Paleshi
WSP

Key drivers

- One single global mission
- Clients' feedback to share learnings from across the world
- How policy, economy, industry and environment influence the speed and degree of decarbonisation

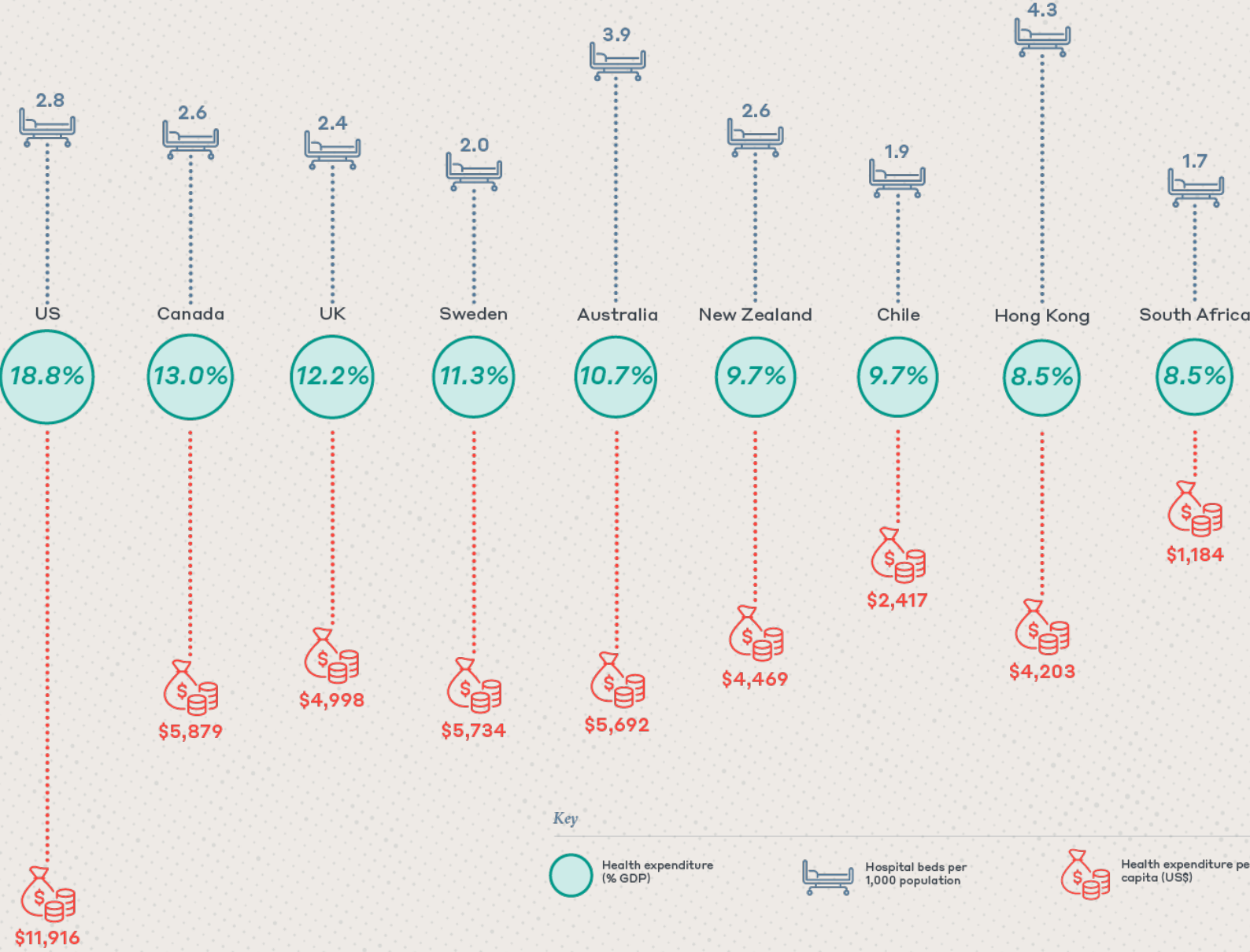
HOW CAN WE SUPPORT THIS CHALLENGING DECISION-MAKING PROCESS?



HEALTHCARE BEYOND CARBON

Exploring nine healthcare systems decarbonisation journey

What are they key metrics of a successful healthcare system?



Key

Health expenditure (% GDP)

Hospital beds per 1,000 population

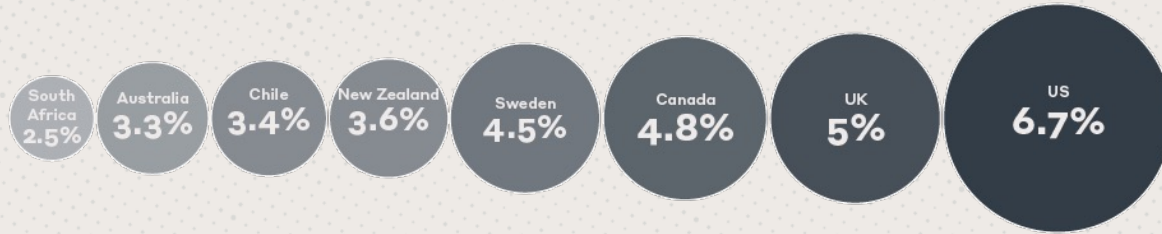
Health expenditure per capita (US\$)

HEALTHCARE BEYOND CARBON

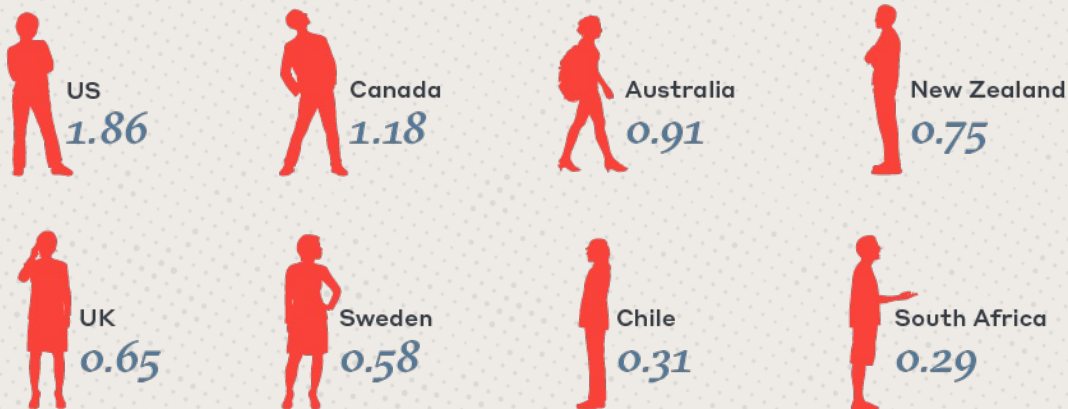
Exploring nine healthcare systems decarbonisation journey

How much does healthcare contribute to national emissions?

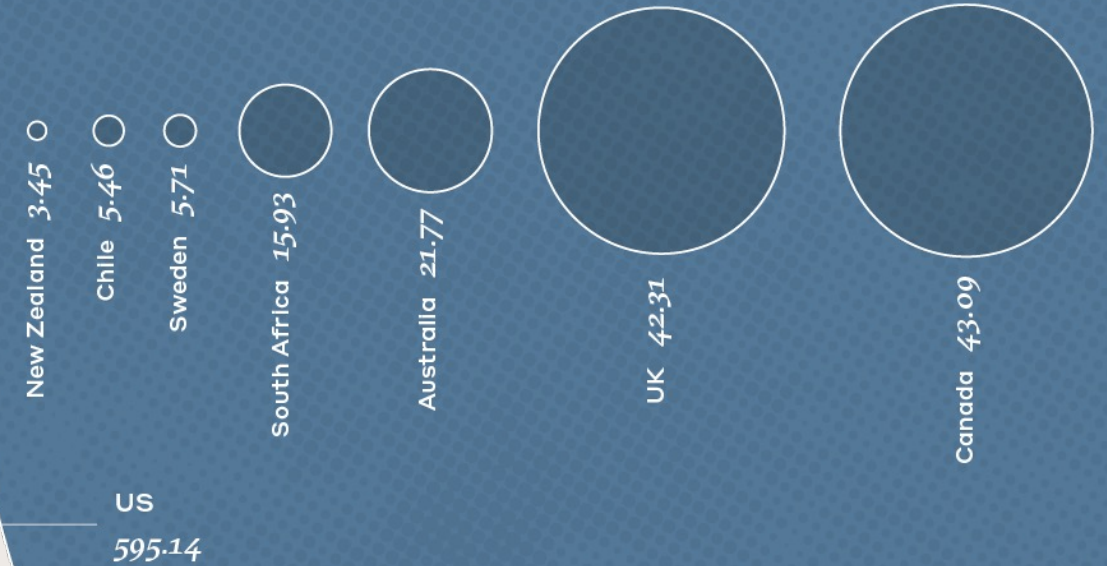
Healthcare greenhouse gas emissions as percentage of national emissions (% , 2015)



Healthcare emissions per capita (tCO₂e/yr, 2015)



Healthcare greenhouse gas emissions (MtCO₂e, 2015)















































Source: The Lancet Planetary Health. See page 70 for full details

HEALTHCARE BEYOND CARBON

Exploring nine healthcare systems decarbonisation journey

What energy sources do hospitals use?

	Heating & hot water (primary & back-up)	Electricity (primary & back-up)
UK	  	  
Sweden	 	 
US	 	  
Canada	 	  
Chile	 	 
South Africa	   	 
Hong Kong	 	 
Australia	 	 
New Zealand	   	 

Source: WSP



Coal



Combined heat and power systems



Diesel oil



Diesel generator



District heating



Grid electricity



Heat pump



Natural gas



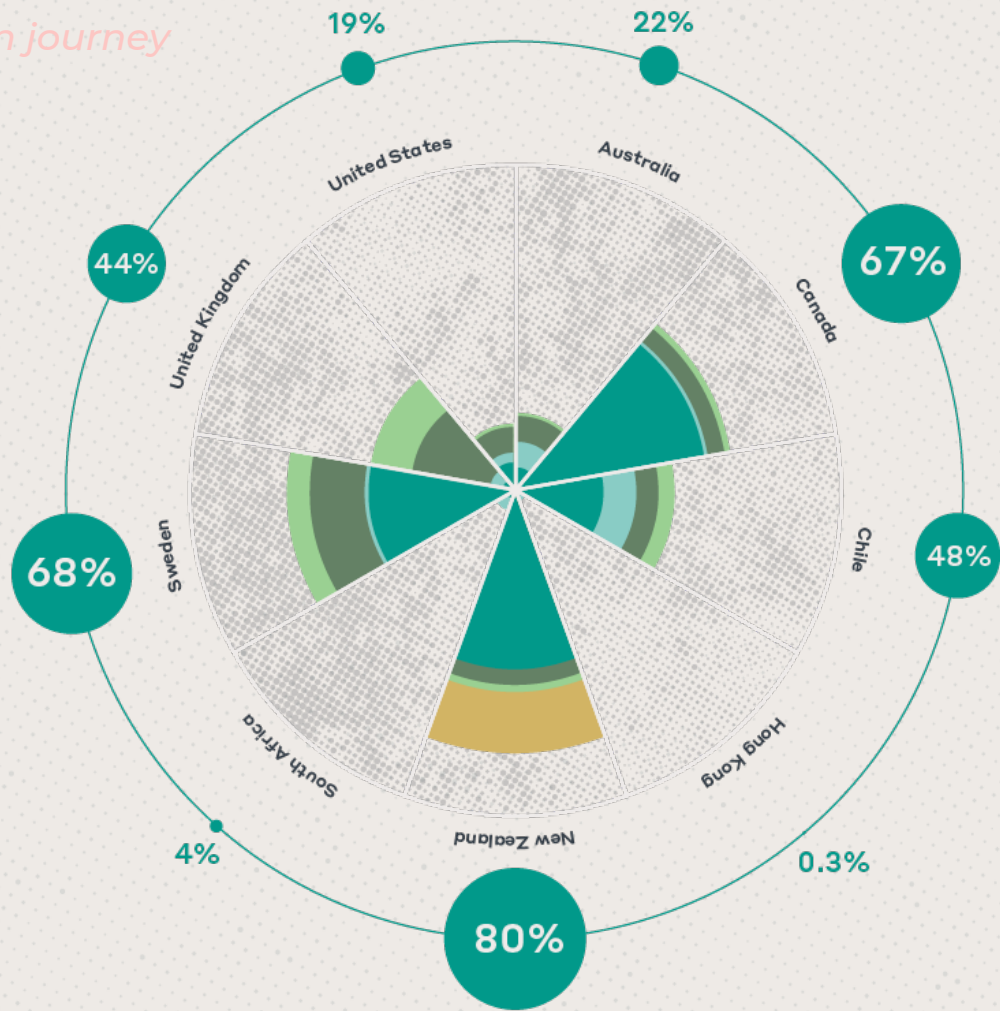
Town gas



HEALTHCARE BEYOND CARBON

Exploring nine healthcare systems decarbonisation journey

How fast are grids switching to renewables?



Type of renewable energy, % of generation



Percentage of grid electricity from renewables



HEALTHCARE BEYOND CARBON

Exploring nine healthcare systems decarbonisation journey

Deliver care where it is best received.

Create a portfolio approach

- **Do all healthcare services need to be housed in an acute hospital where EUI is high?**
- **Consider climate-related risks when planning the location of healthcare buildings and maximise renewable fuel sources where possible**



HEALTHCARE BEYOND CARBON

Exploring nine healthcare systems decarbonisation journey

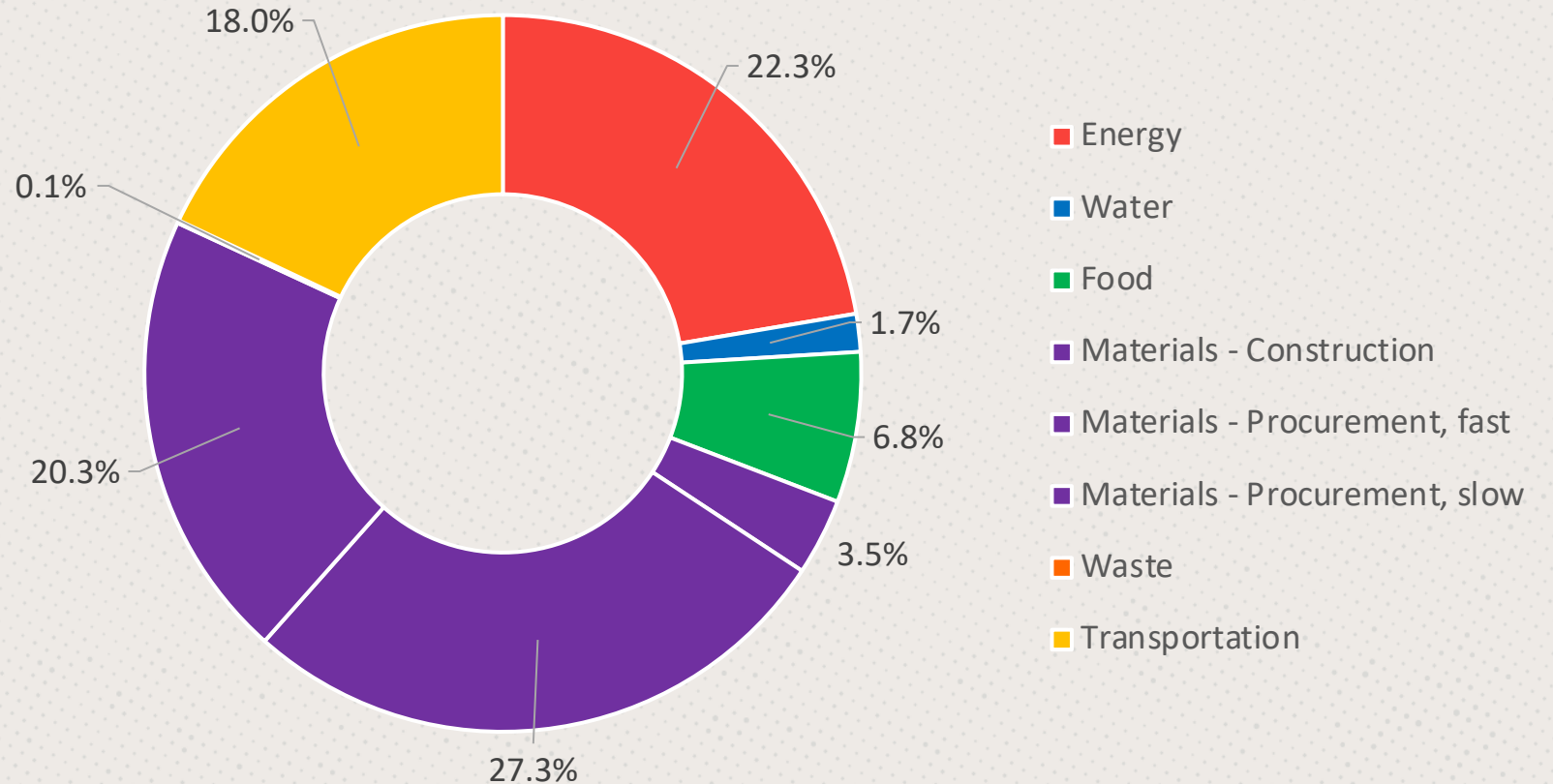
Campus-scale Opportunity: Electrification + Grid Stewardship.



Healthcare providers could become self-sufficient to the extent of becoming net exporters of energy

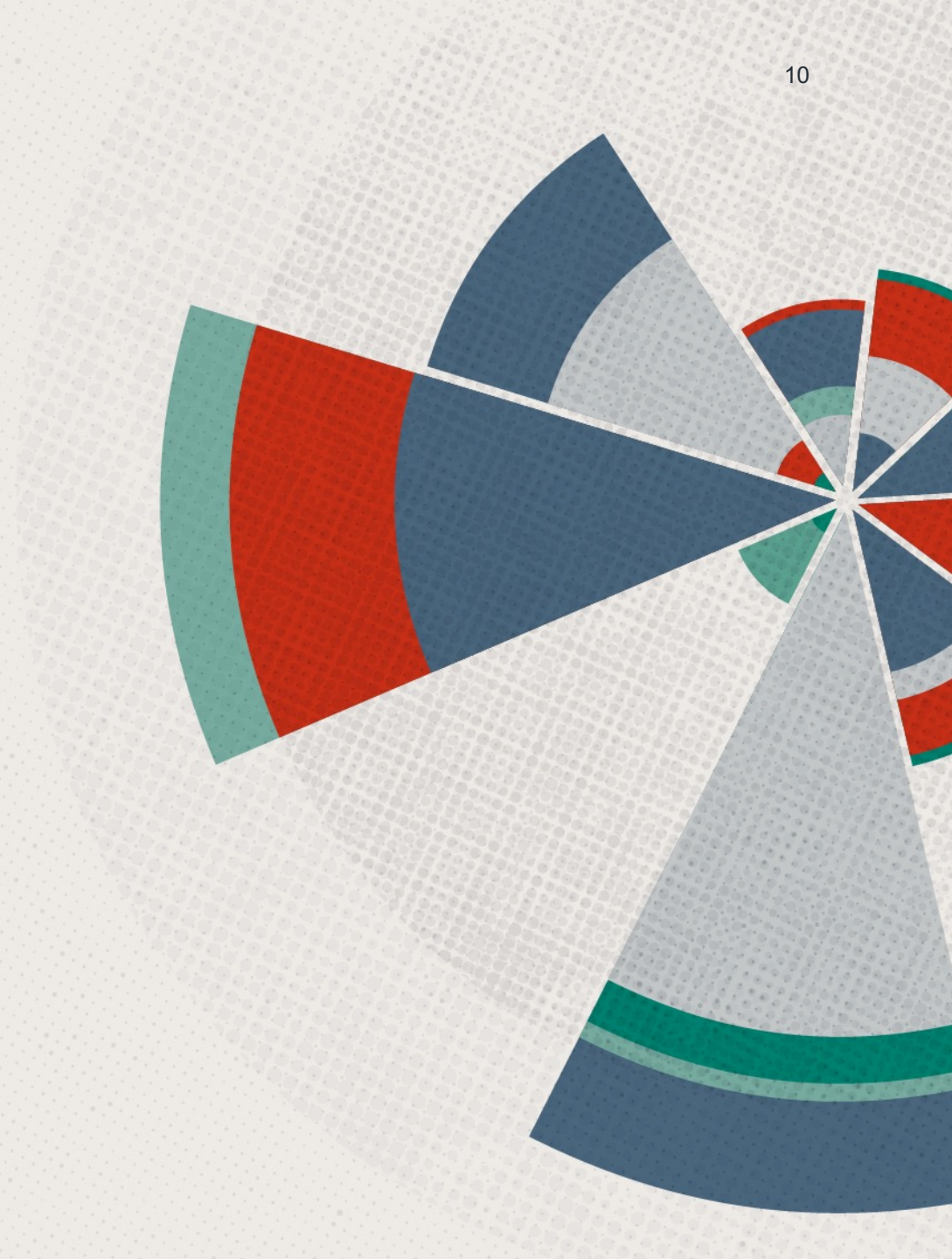
Life-cycle carbon thinking.

- Just over 20% falls into scopes 1 and 2 emissions.
- Scope 3 is where we move the dial faster on decarbonisation.
- Patient-centric design and Smart buildings can benefit GHGs, broader health outcomes while lowering cost.

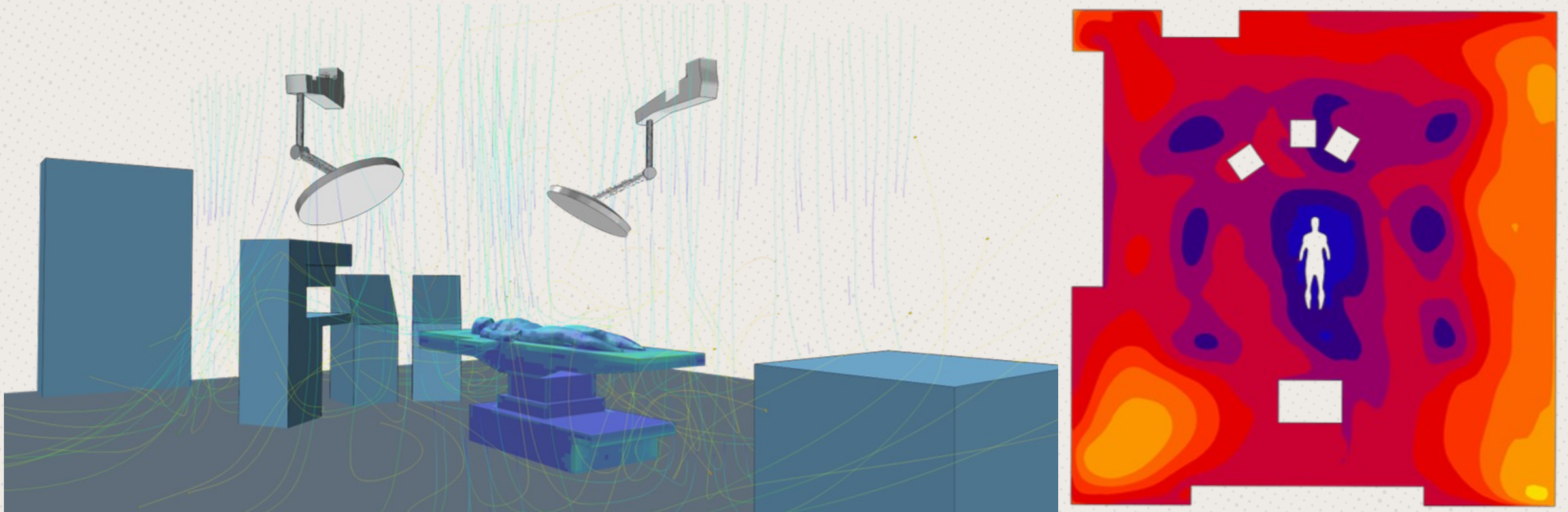


Funding routes – friend or foe?

- Public Private Partnership
- Compulsory vs. Voluntary
- Carrot & Stick



Healthcare priorities come first...



But how can infection control standards work together with decarbonisation?

HEALTHCARE BEYOND CARBON

Exploring nine healthcare systems decarbonisation journey

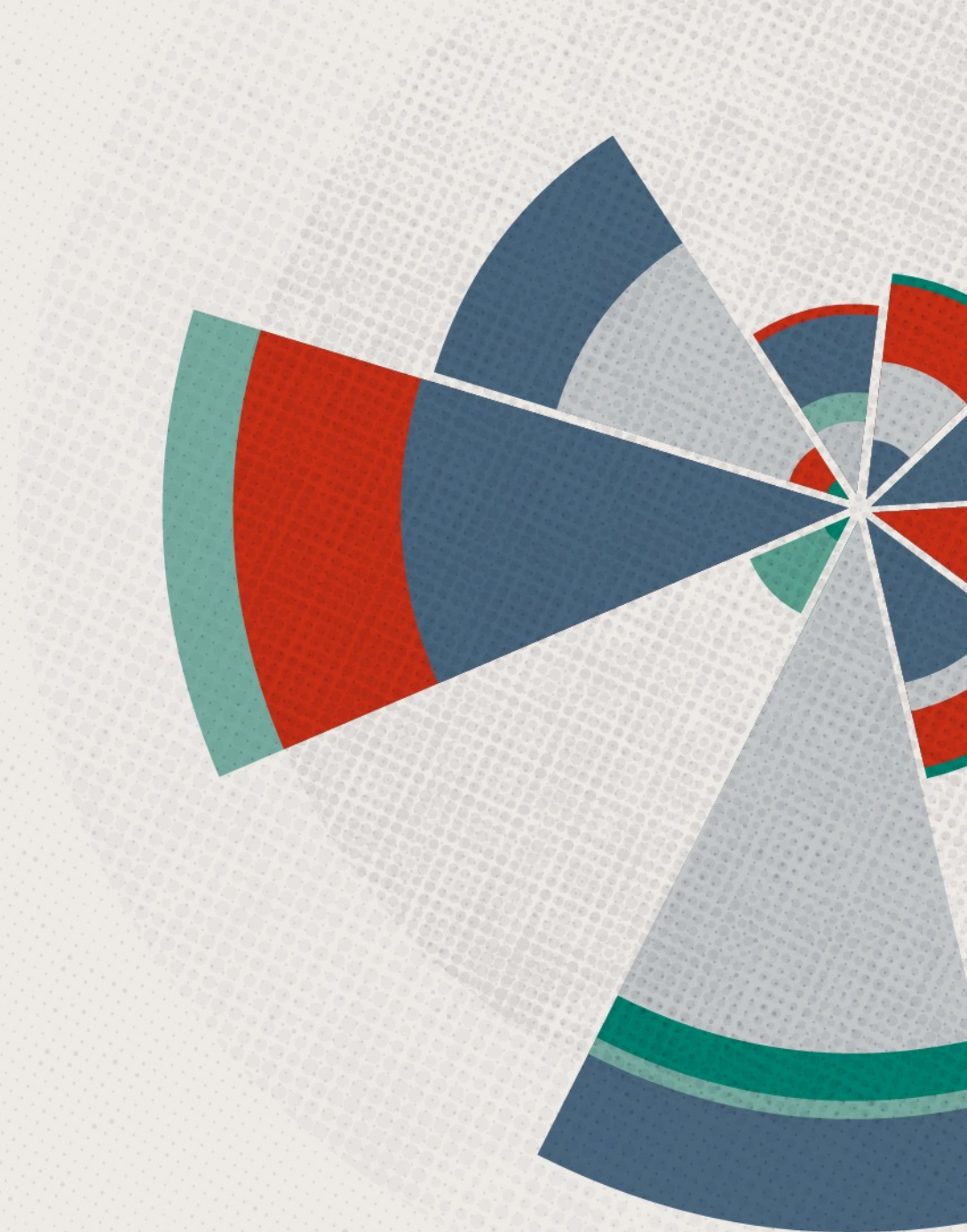
Looking ahead to 2050

NEW

Let's take a "long-life, loose fit" approach on our new facilities, investing more now to achieve longevity while being zero carbon on day 1.

EXISTING

Don't delay taking portfolio-wide approach – aligning planned investment and renewal with decarbonisation action to maximise cost-benefit.



HEALTHCARE BEYOND CARBON

Exploring nine healthcare systems decarbonisation journey

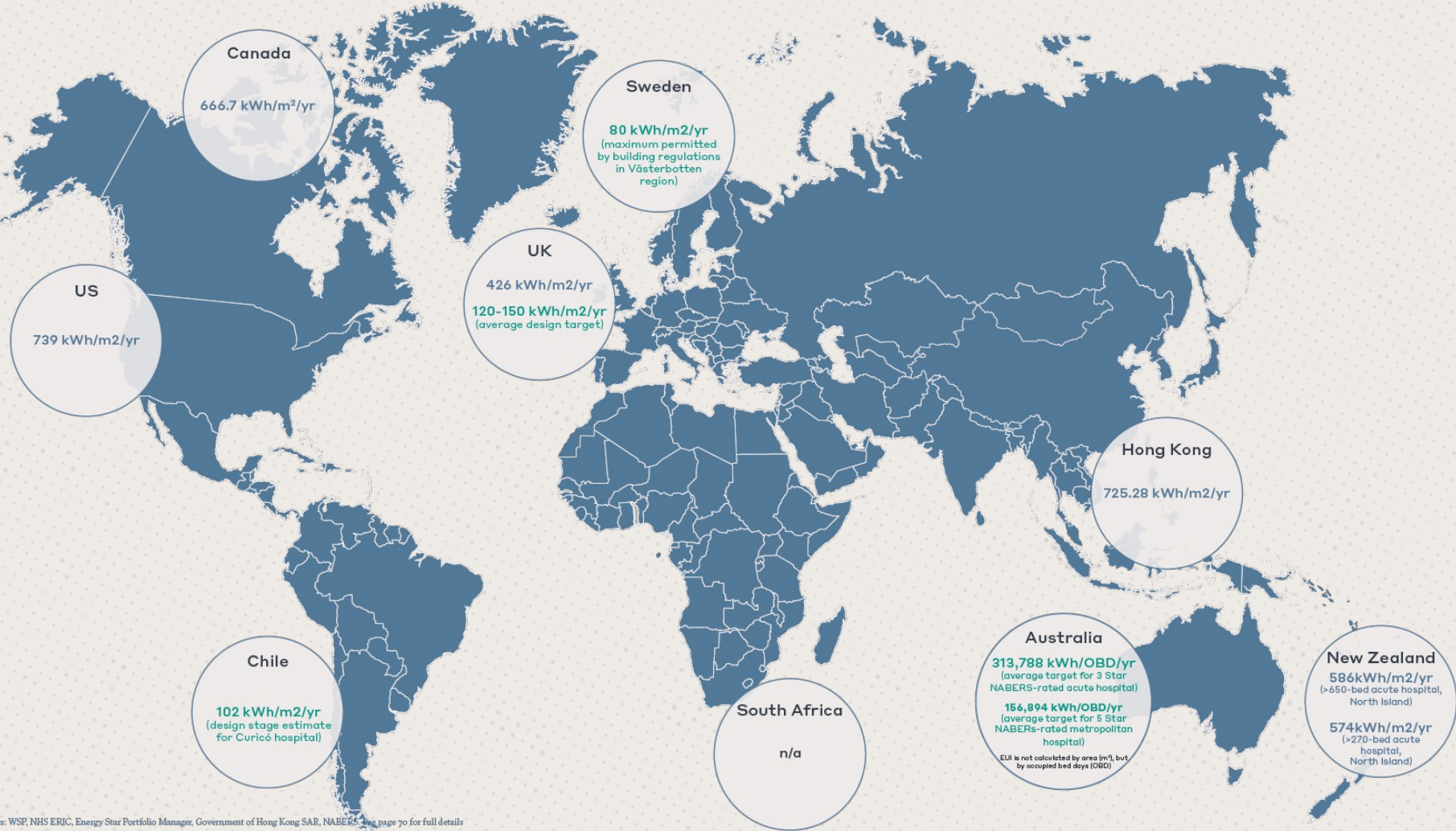
Energy use intensity is not measured in a consistent way across healthcare systems, but we have compiled a sample of actual and target EUI figures for acute hospitals

Where to start?

Sharing visions, policy, process and performance.

What are the key metrics of performance for healthcare decarbonisation?

How can we take a data-driven approach to promote sharing and accelerate action?



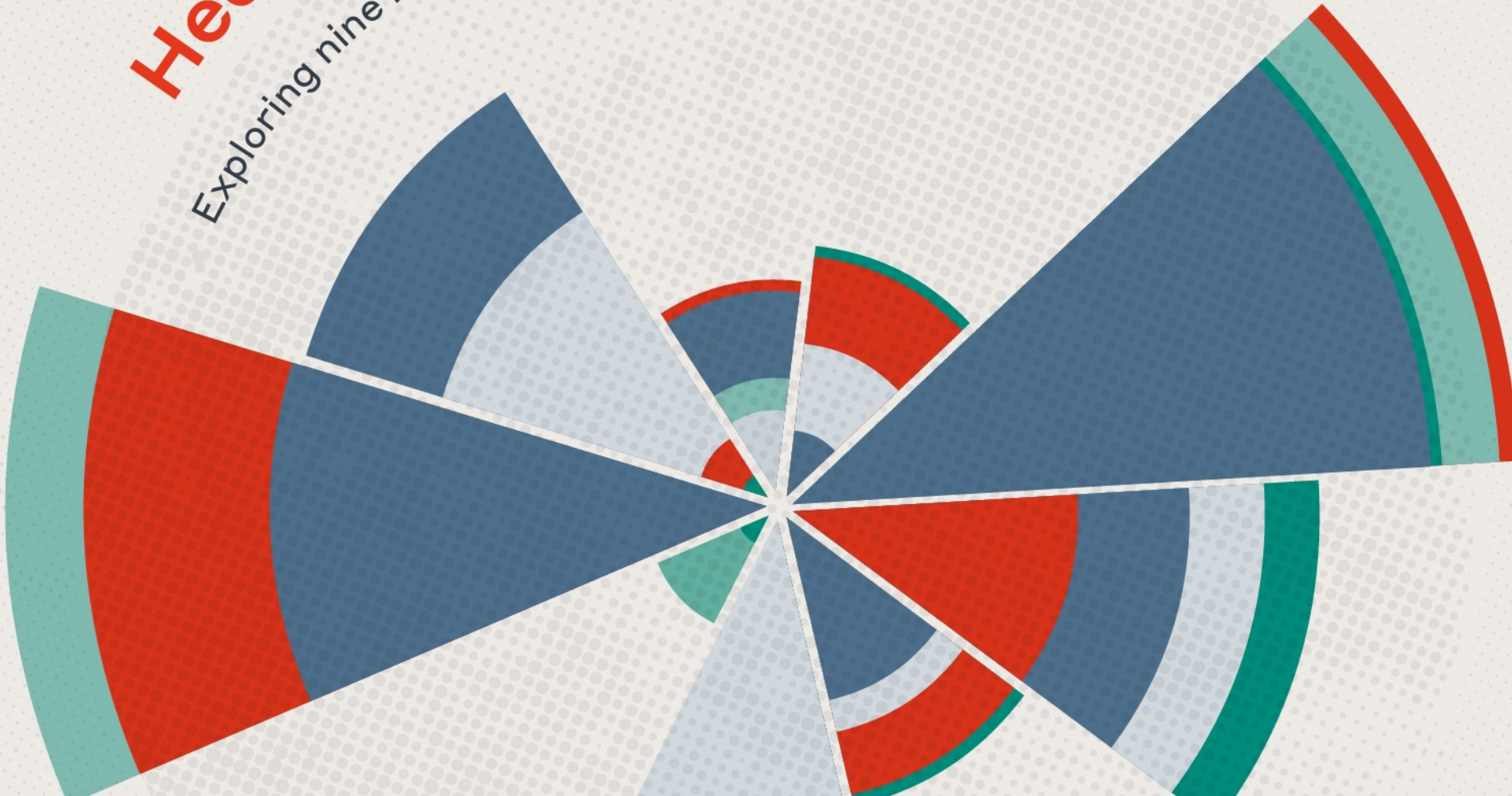
Sources: WSP, NHS ERIC, Energy Star Portfolio Manager, Government of Hong Kong SAR, NABERS. See page 70 for full details





Healthcare beyond carbon

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DOWNLOAD THE REPORT:

