

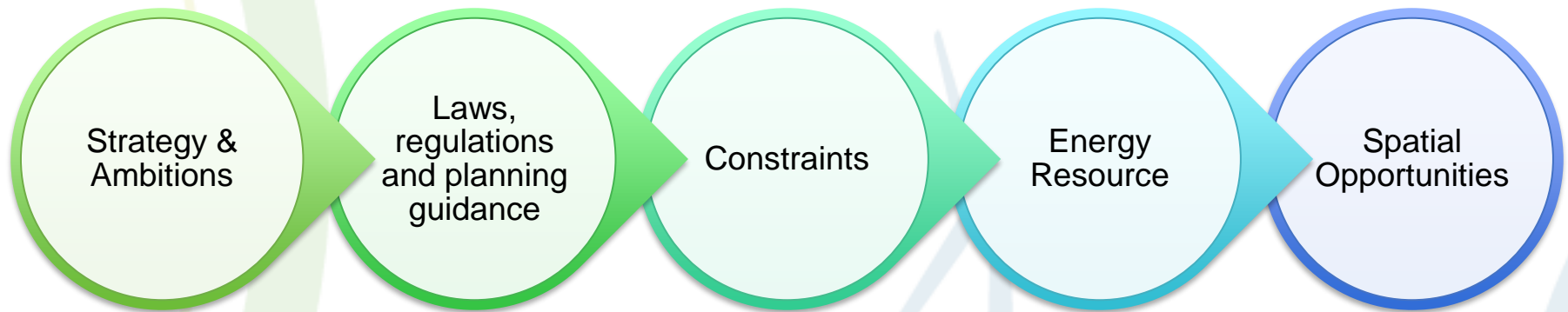
Spatial Energy Assessment – Replication Toolkit

Sandy Robinson

SCENE



“a methodological framework for assessing the spatio-technological feasibility of energy transition targets at the local and regional scale”



Why conduct a spatial assessment?

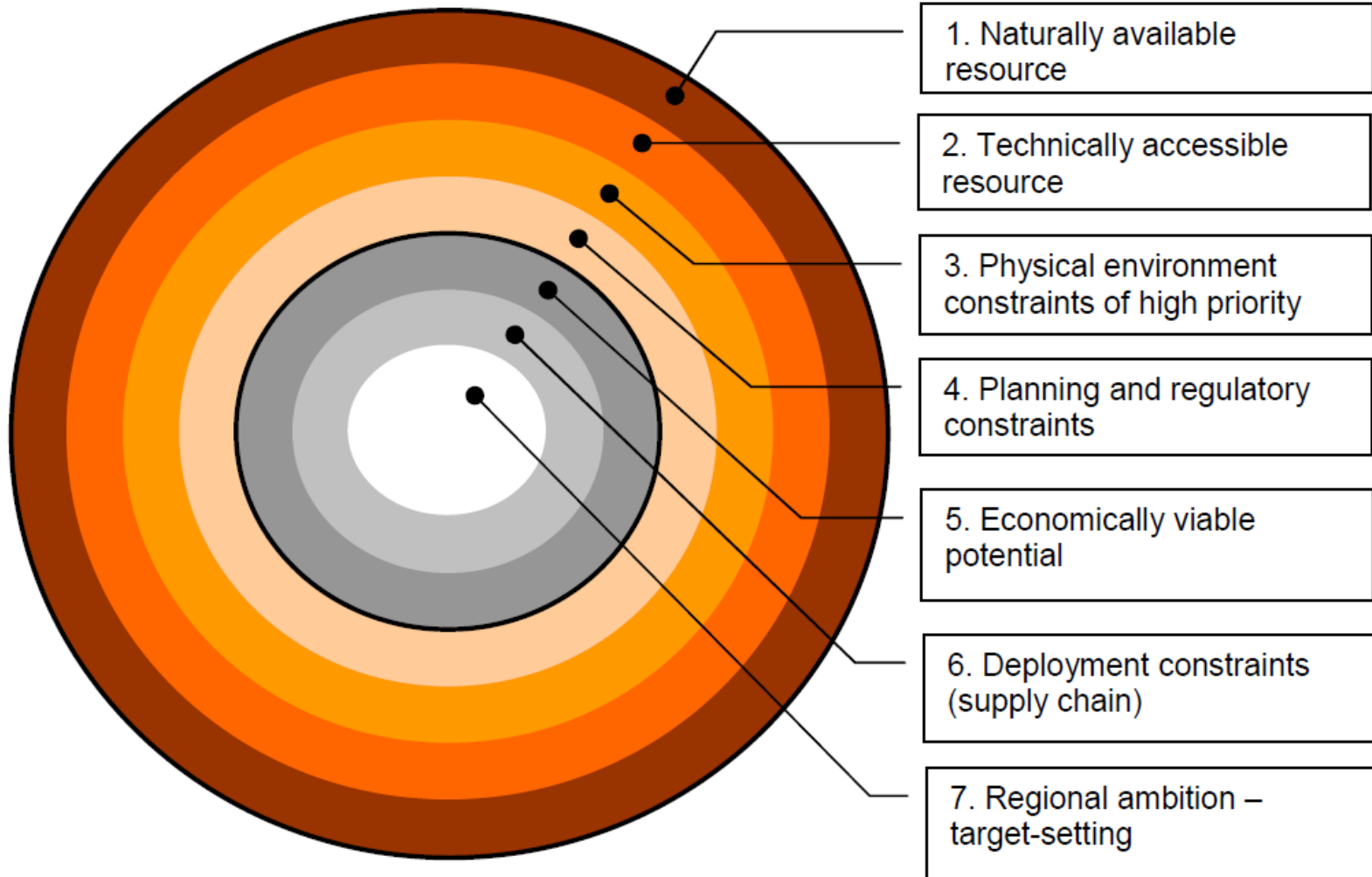
Evidence base
for policy and
planning

Consistent &
Comparable

Identifying
Opportunities

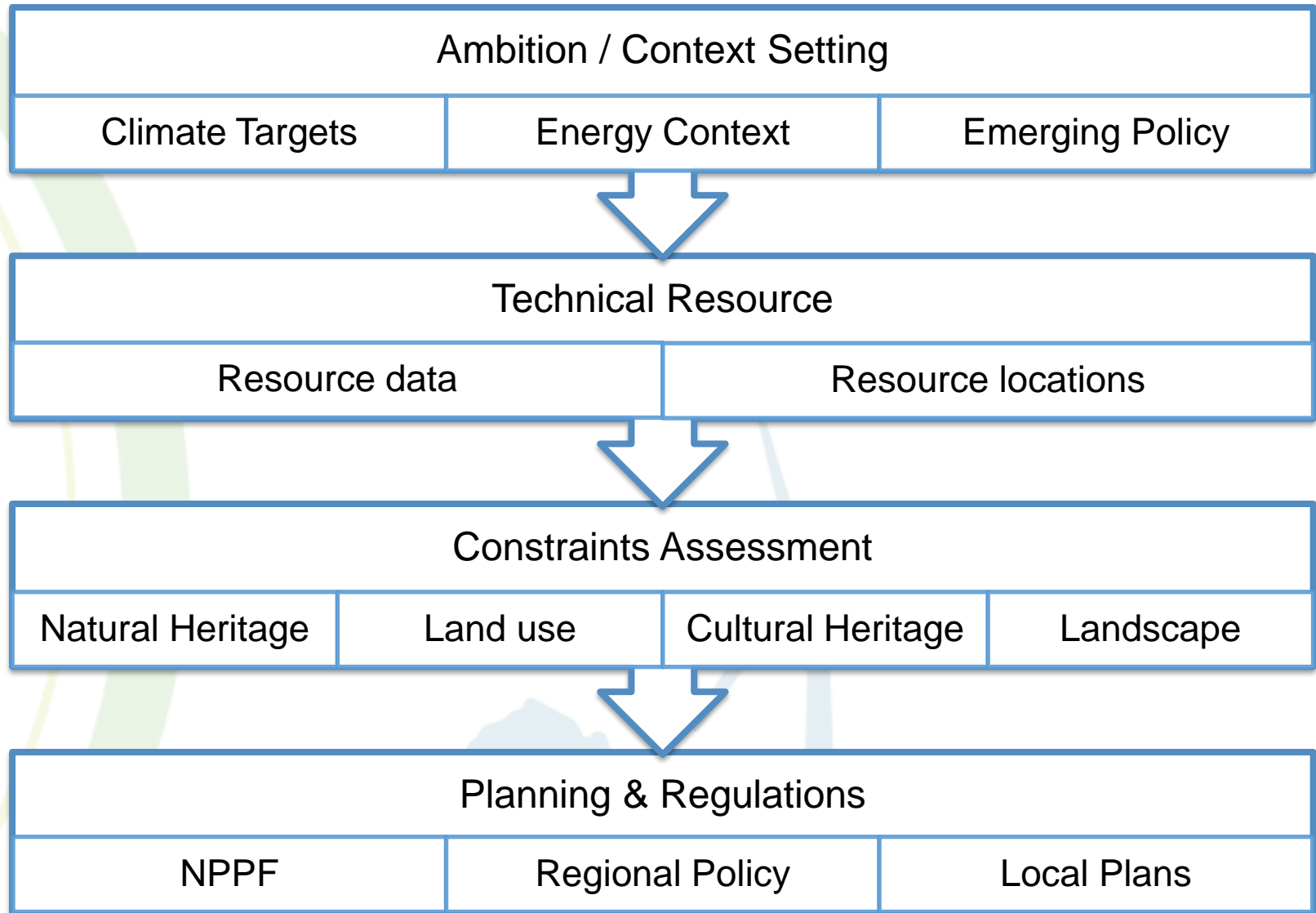
Meeting Climate
Commitments

Simplifying
Decision Making



DECC (2010)

Technology	Scales				
Wind	<15m	15 – 50m	51 -80m	81 – 120m	>120m
Solar PV (Ground-mounted)	1MW	1 - 5MW	6 - 20MW	20 - 50MW	50MW
Hydropower	<5kW	5 - 25kW	26 – 100 kW	>100kW	
Biomass	Domestic	Commercial			
Anaerobic Digestion	-				
Energy from Waste (EfW)	<5 MW	6 – 20 MW	>20 MW		
Solar PV / Thermal (Rooftop)	Domestic	Commercial			
Heat Pumps	Domestic	Commercial			
District Heat Networks (DHN)	-				
Low Carbon Mobility	-				



Data Sourcing

- Public data
- OS Maps
- Regional Data
- Energy resource datasets

Tools

- GIS
- Resource model
- Financial Model

Display

- GIS
- Model outputs

Solar Insolation

Global Horizontal Insolation

Source: NREL

Highly Constrained

Peak District NP

Built Environment

High value agricultural land

Sites of national
environmental & cultural
important

Potentially Constrained

Tranquillity Mapping

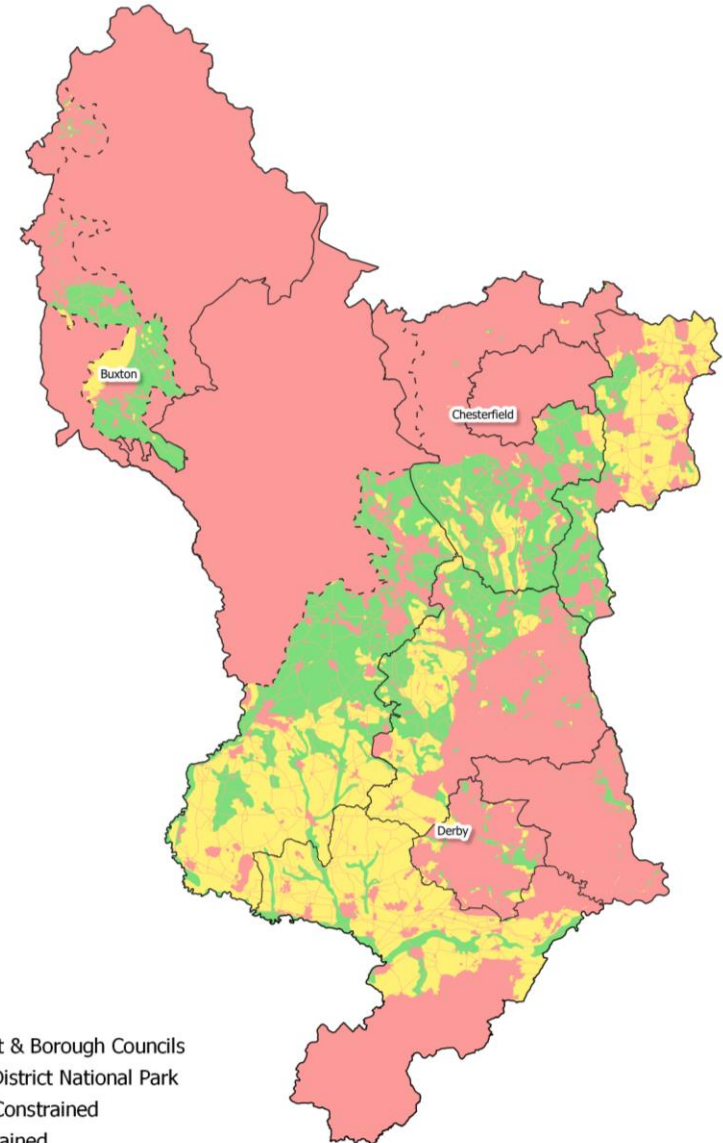
Landfill Sites

Quarries

Environmentally sensitive
areas (ESA)

Ground-mounted Solar PV 6 – 50 MW

0 3 6 mi



- District & Borough Councils
- Peak District National Park
- More Constrained
- Constrained
- Less Constrained



Ground-mounted Solar PV (> 5 MW)

Spatial Energy Assessment Replication Toolkit

Natural Heritage

- Ancient Woodlands
- Local Nature Reserves
- Local Wildlife Sites
- Ramsar Sites
- Regionally Important Geological Sites (RIGS)
- Sites of Special Scientific Interest (SSSI)
- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)

Environmentally Sensitive Area

Land Use

Built Environment



Landfill Sites
Quarries

Landscape Designations

- Community Forest
- Green Belt
- National Park
- National Forest

Tranquility Mapping

Cultural Heritage

- Archaeological Sites
- Conservation Areas
- Historic Battlefields
- Historic Environment Record
- Listed Buildings
- Registered Parks & Gardens
- Scheduled Monument
- World Heritage Sites



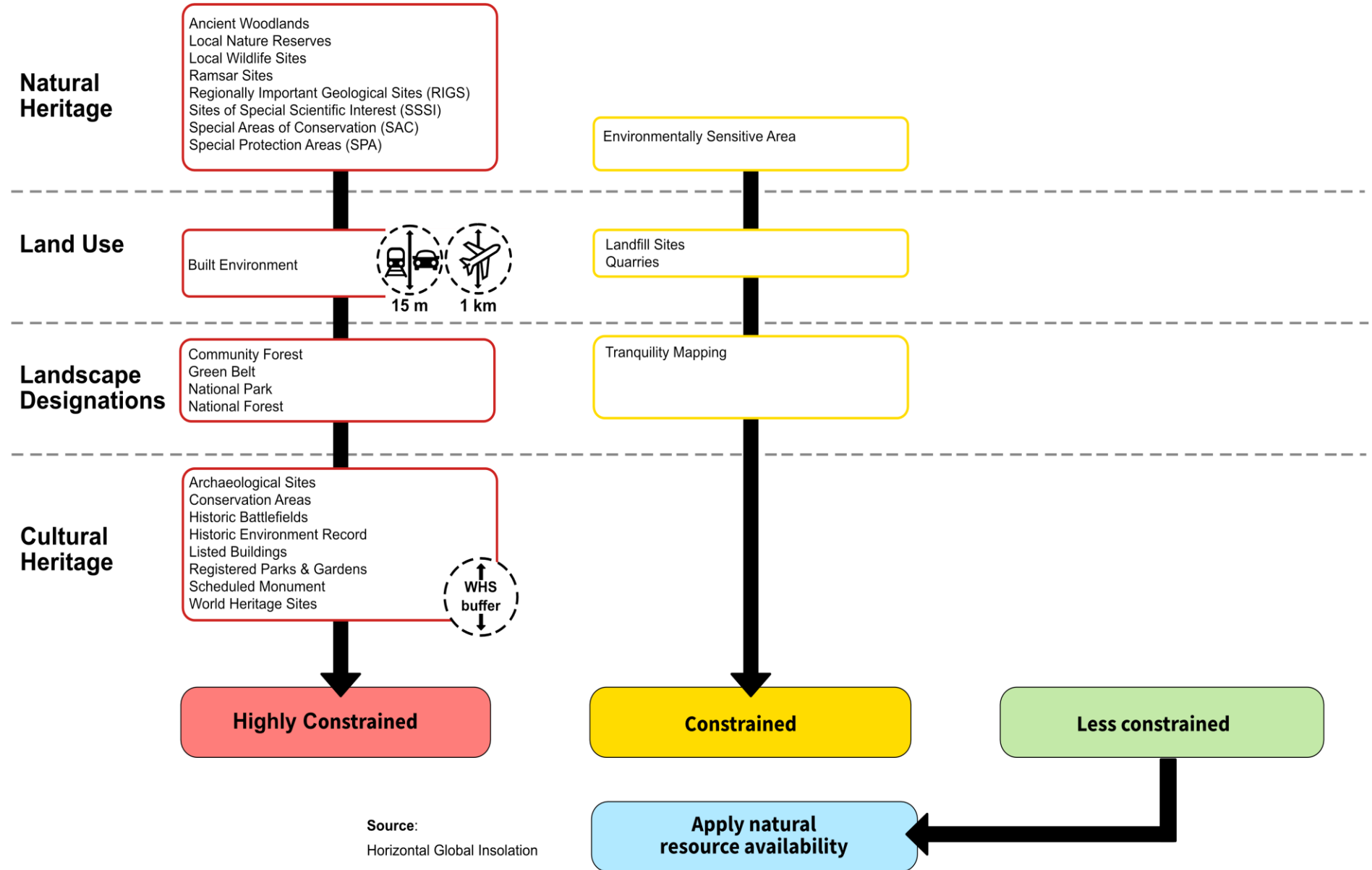
Highly Constrained

Constrained

Less constrained

Apply natural resource availability

Source:
Horizontal Global Insolation



Informing Planning and Policy

- Energy and climate change policies and guidance
- Local Plan evidence base
- Engaging with developers

Support Mechanisms

- Better targeting of funding programmes and investment

Opportunity Identification

- Specific locations where energy development should be supported
- Regional / local government opportunities

Target Setting

- Carbon targets
- Energy security (e.g., demand reduction)
- Energy costs

QUESTIONS

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