

## Valuing Natural Capital in Low Carbon Energy Pathways

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Increasing emphasis on sustainable development



## Energy Act 2004

- Ofgem's duty to have regard to the need to contribute to the achievement of sustainable development first introduced

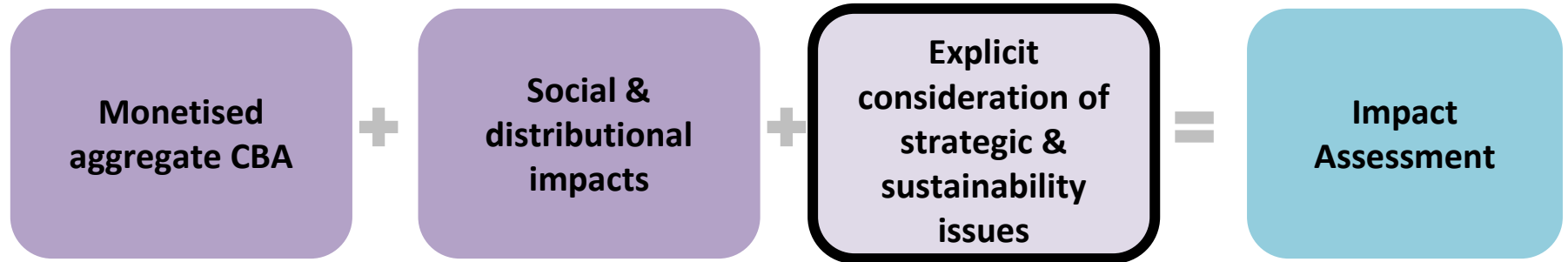
## Energy Act 2008

- SD placed on equal footing with the Ofgem's duties to meet reasonable demand and financing authorised activities + clarification that Ofgem's principal objective is to protect the interests of **future** as well as existing consumers

## Energy Act 2010

- Principal objective amended to make it clear that the interests of consumers include their interests in the reduction of emissions of greenhouse gases and their interests in security of supply

# Improving our decision making

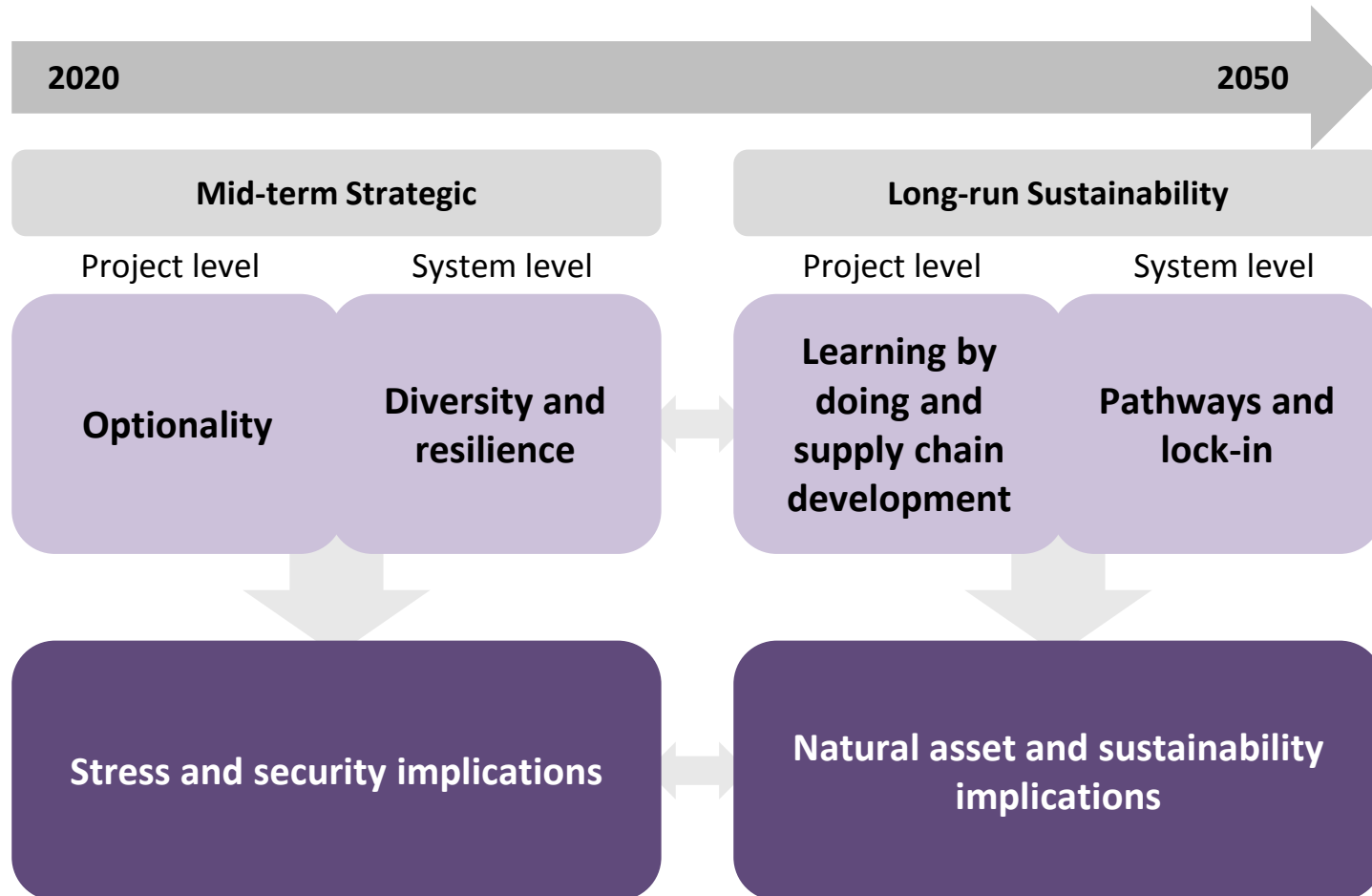


Strengthening analysis of these issues is designed to more systematically represent issues related to the interest of future consumers, complementary to a monetised CBA

↓  
Improved consistency

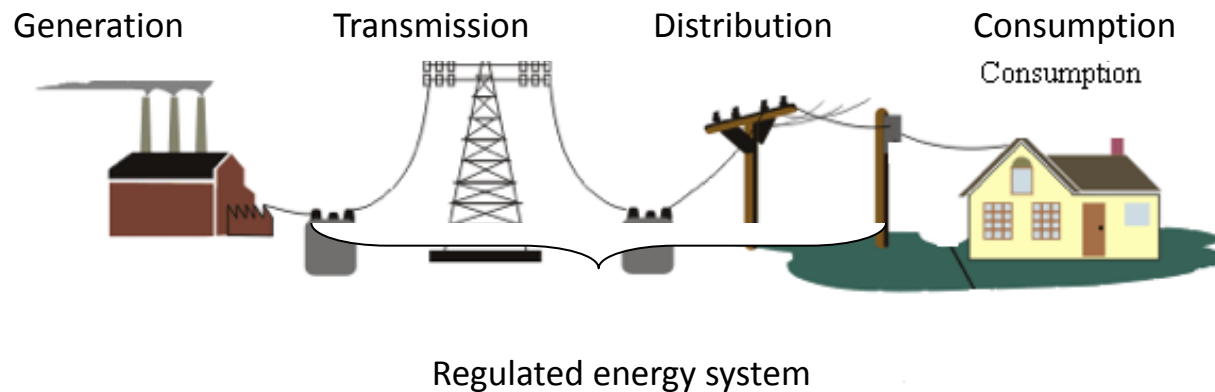
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Increased transparency

# Hard-to-monetise considerations



# Current evidence base

- Systematic review to characterise the impacts of the GB regulated energy system (primarily transmission and distribution) on the natural environment



- A suite of evidence bases has been produced focusing on the following specific issues:
  - Air quality
  - Biodiversity
  - Geodiversity (geological conservation and safeguarding of minerals)
  - Landscape
  - Land use
  - Soils
  - Water

## Initial ranking of impacts on water (electricity transmission)

Driver: Electricity transmission	Impact								
Issue: Water	Surface-water flows and availability	Groundwater abstraction and recharge	Flood frequency, intensity, risk	Point-source pollution	Diffuse pollution	Groundwater contamination	Marine pollution and impacts	Cumulative effects	
Pressures									
New transmission lines – Overhead	M	M	H	H	H	H		H	
New transmission lines – underground	H	H	M	M	M	M	M	H	
New distribution lines				L	L	L		H	
New/extended substations	H	L	H	H	H	H		M	
New marine interconnection							M		
Marine interconnection – land base connection	L	L	L	L	L	L	L	L	
Marine sub-sea lines							M		
Marine sub-stations							M		
Series compensation installations									
Electricity storage – hydro	H	M	H	L				H	
Electricity storage – compressed air		L					L	L	
Electricity storage – batteries	L		L	L	L	L		L	
Electricity storage – cryogenic systems	L		L	L	L	L		L	
Smart grids	M +ve	M +ve						L	

## Next steps:

- Operationalise the current evidence within our impact assessment process
- Extend our understanding and evidence around environmental assets
  - incorporate additional assets classes
  - ensure evidence remains consistent with new legal requirements
- Link to cross – Government initiatives e.g. Defra SPLiCE project, Natural Capital Committee work on national accounts
- Integrate evidence on natural capital effects into spatial models to understand impacts at a more localised level