

**energy  
made  
better**

# **Energy made cleaner and smarter**

November 2008

# Constraints in a future energy world

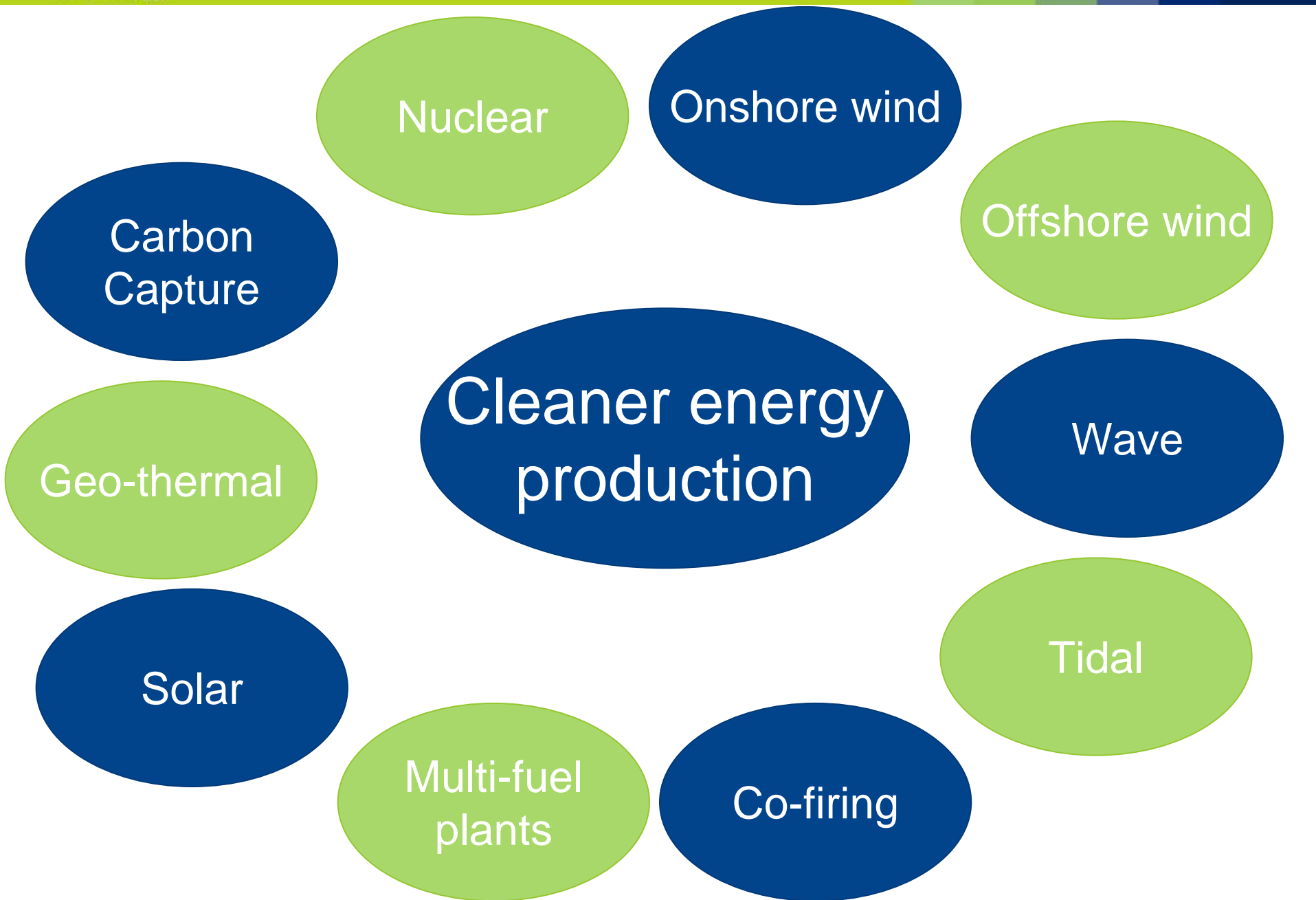
- Reducing carbon emissions
- Replacing ageing assets
- Securing fuel supplies
- Making prices affordable

## **The solutions will involve...**

- Cleaner energy production
- Smarter energy consumption

## **Both of these will need...**

- New technology
- New business models



Nuclear



Onshore wind



Offshore wind



Carbon Capture



Cleaner energy production

Geo-thermal



Wave



Solar



Tidal

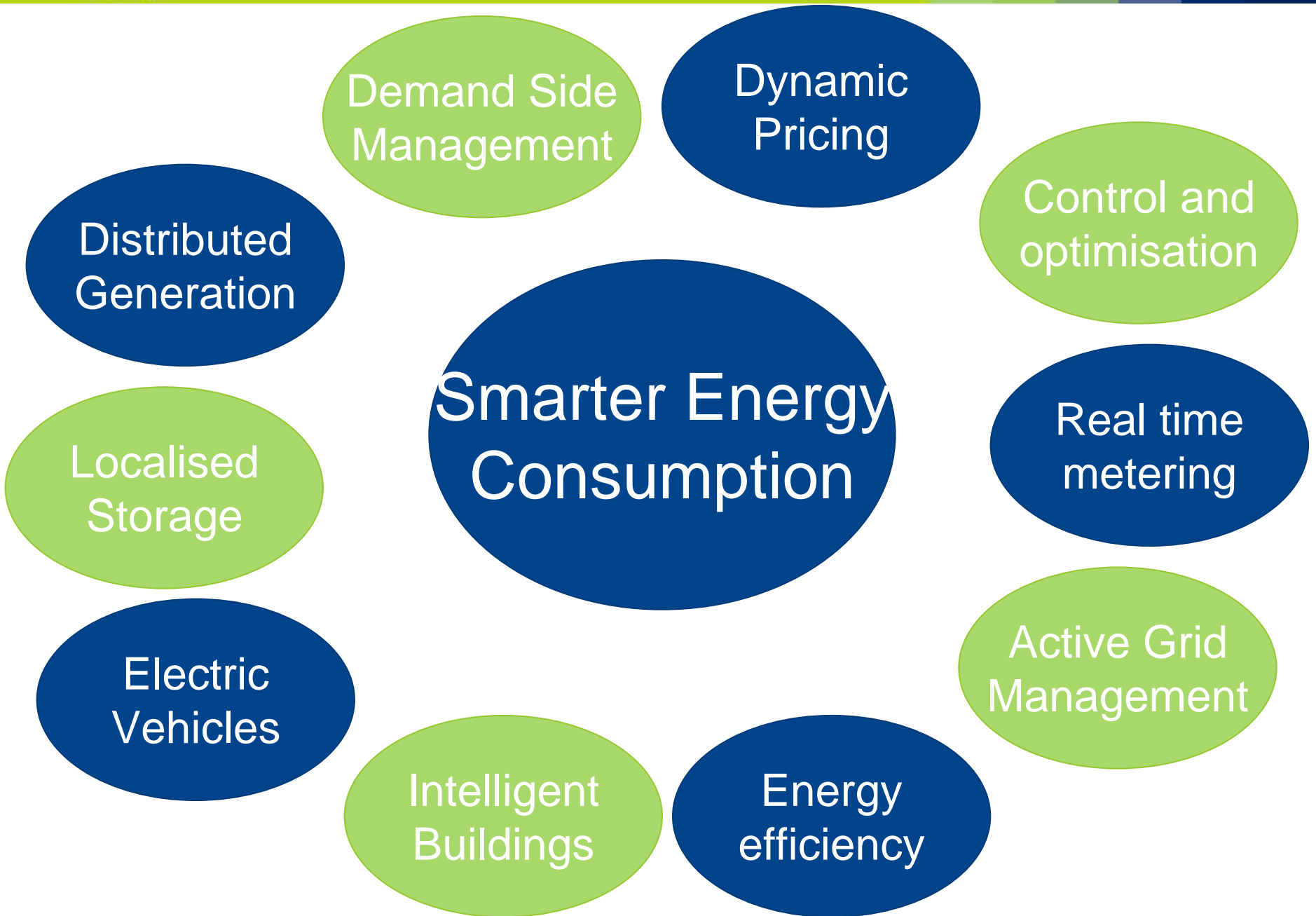


Multi-fuel plants



Co-firing





Distributed  
Generation

Demand Side  
Management

Dynamic  
Pricing

Control and  
optimisation

Smarter Energy  
Consumption

Real time  
metering

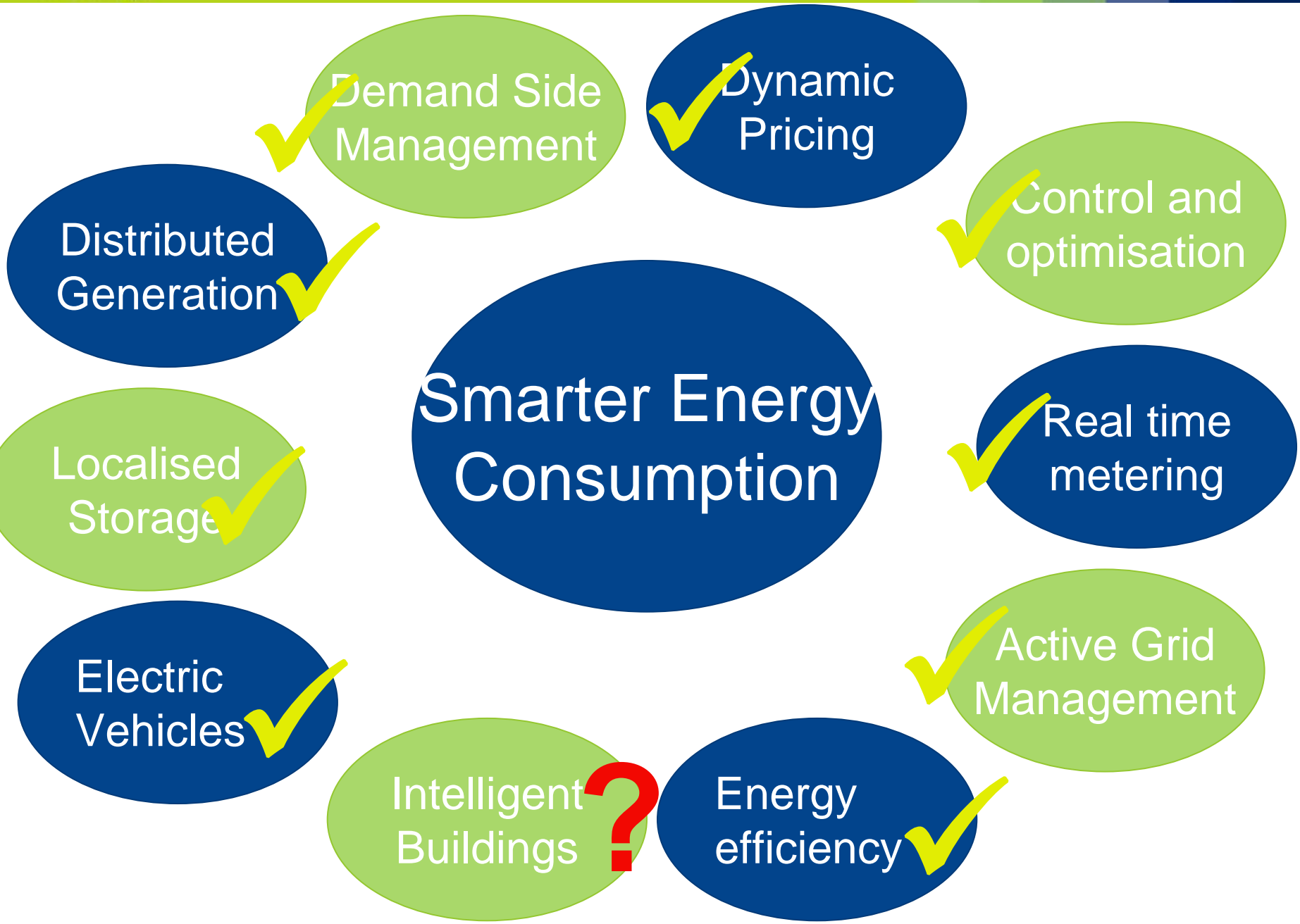
Localised  
Storage

Active Grid  
Management

Electric  
Vehicles

Intelligent  
Buildings

Energy  
efficiency

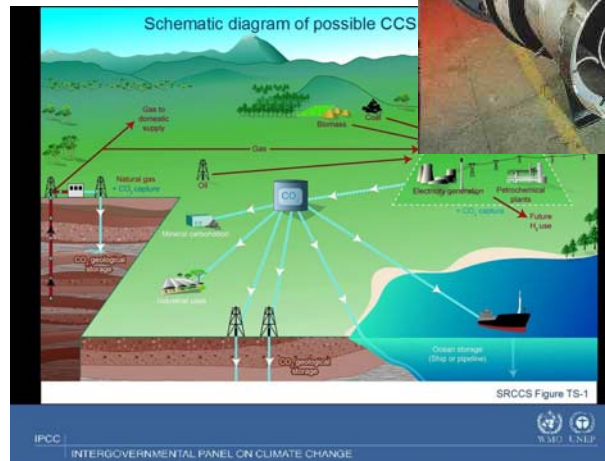


## How does a utility respond given that...

- Up until recently we spent nothing on R&D
- Our business model has been largely unchanged for 100 years
- A lot of our work precludes innovation



# Innovate Mainstream activities and investments



## Portfolio of venture investments

- SSE Ventures set up 18 months ago
- Minority stakes in emerging and/or disruptive technology and business
- Money and...
  - Engineering
  - Routes to market
  - Procurement
  - Management support
- Both direct and indirect stakes

# SSE Ventures – Existing Direct Investments



# SSE Ventures – Existing In-direct Investments



Sigma Sustainable Energy Funds I and II



VANTAGEPOINT  
CLEANTECH PARTNERS II, L.P.



St Andrews Fuel Cells Ltd



better place



## What differentiates SSE?

### **SSE's asking the right questions:**

- How do we make energy production cleaner?
- How do we make energy consumption smarter?

### **SSE's delivering the right answers:**

- Innovative mainstream activities
- Portfolio of venture investments
- We need all the answers to be able to respond to the constraints we are facing