



Trends in electricity storage

Anthony Price

The Electricity Storage Network
& Swanbarton Limited

The Electricity Storage Network

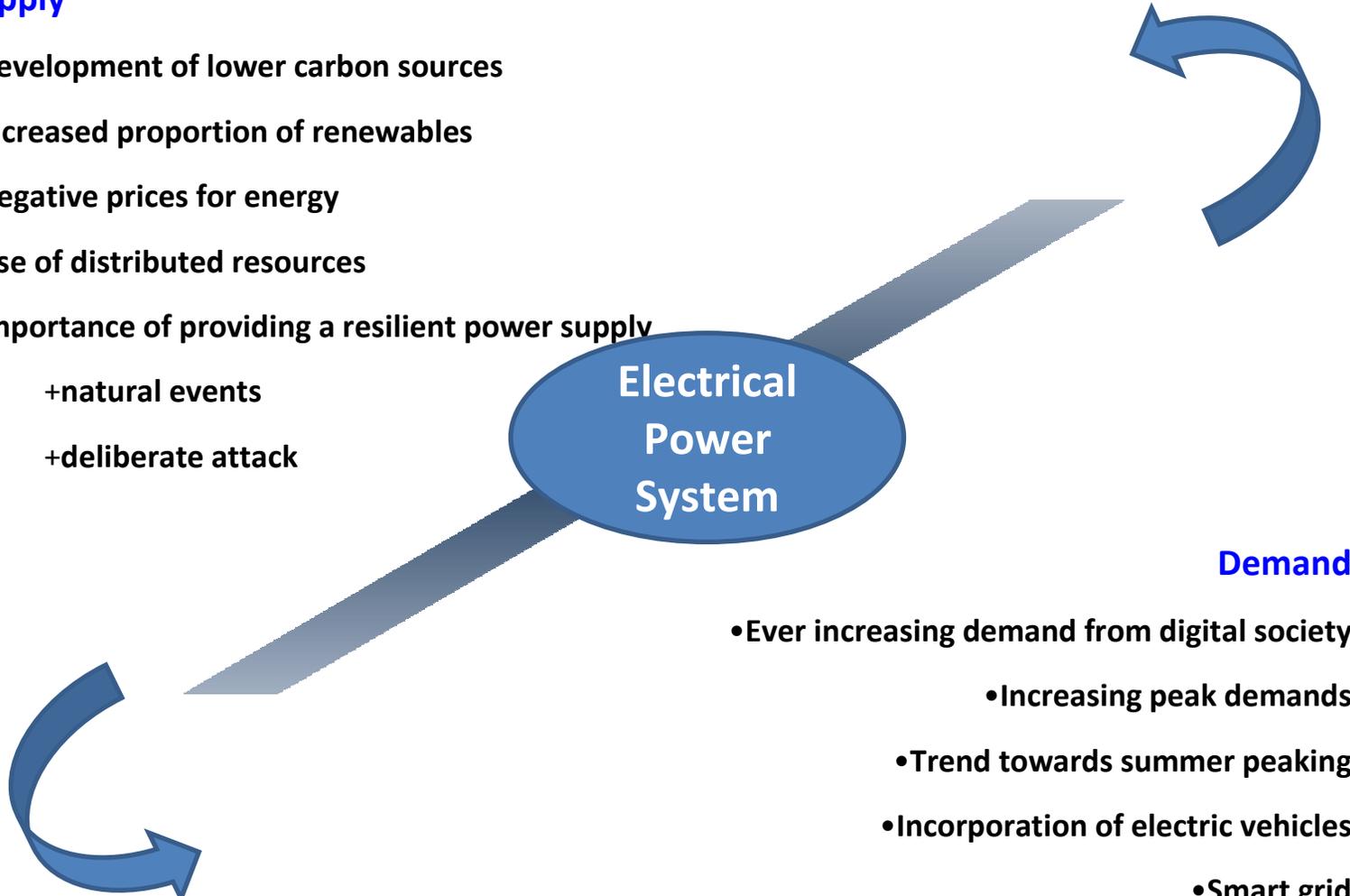
- Formed in 2011 in order to link together developers and promoters of electricity storage in the UK
- To become a group supporting the practical deployment of electricity storage in the UK
- Members include individual manufacturers and developers of storage, (potential users) and others interested in storage deployment

Changes to supply and demand

Supply

- Development of lower carbon sources
- Increased proportion of renewables
- Negative prices for energy
- Use of distributed resources
- Importance of providing a resilient power supply
 - + natural events
 - + deliberate attack

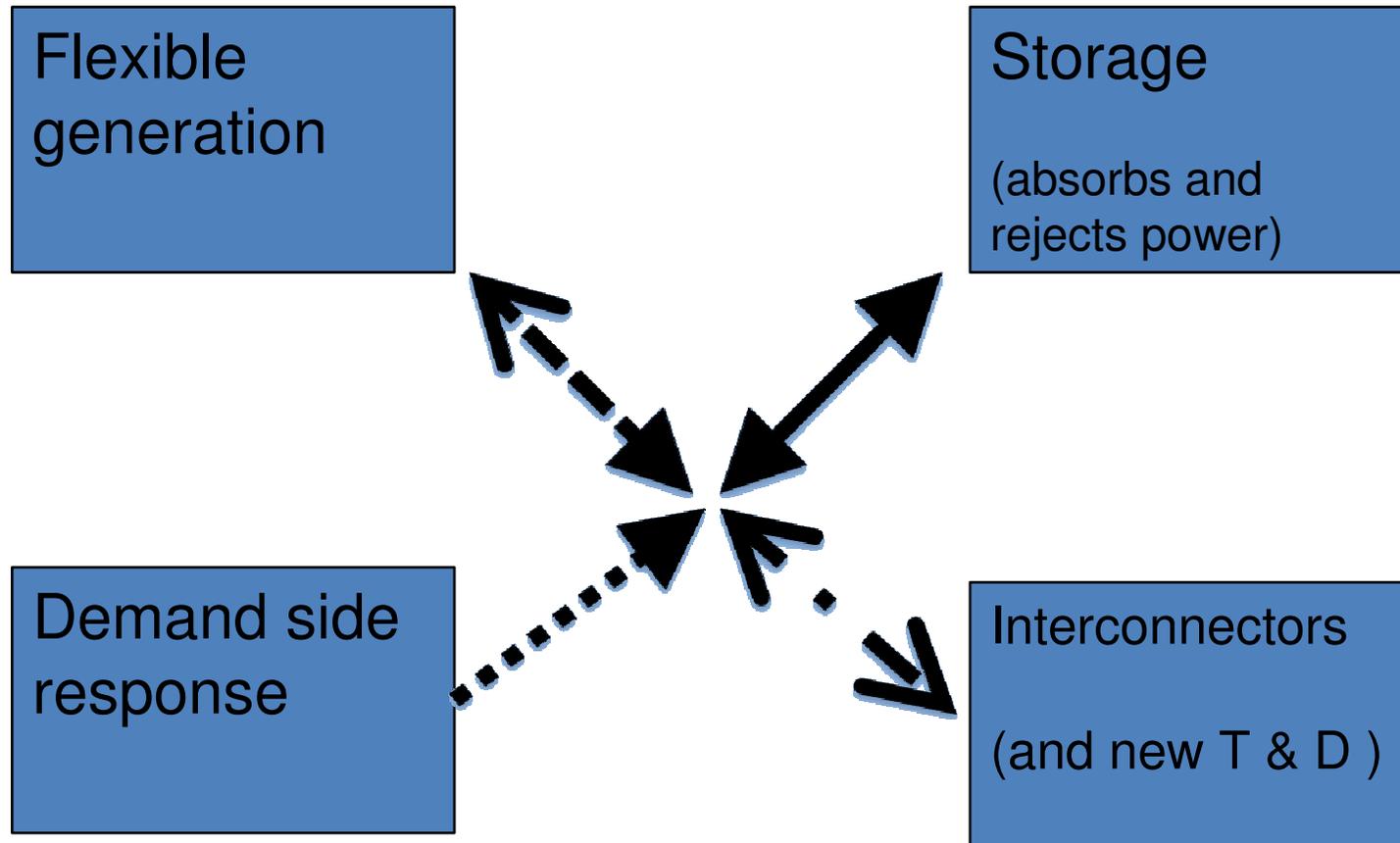
Electrical
Power
System



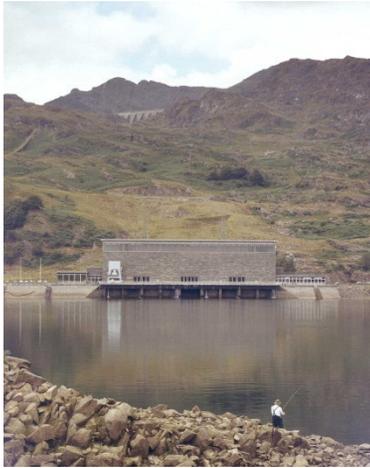
Demand

- Ever increasing demand from digital society
 - Increasing peak demands
 - Trend towards summer peaking
- Incorporation of electric vehicles
 - Smart grid

The four tools for balancing



Trends in electricity storage



Trends in electricity storage

- **Technology:**
 - Traditional → advanced
 - Demonstration → deployment
- **Applications:**
 - Ancillary services, energy and network management
- **Outlook**
 - Increased interest, international, EU, national, entrepreneurial
- **Benefits:**
 - Focus on whole system value

Summary

- Various technologies now ready for deployment: a successful transition from demonstration to implementation
- Storage applicable in range of sizes from kW & kWh to 100+ MW & multi MWh
- Initial projects directed towards high value applications – future deployment will seek system value