

# Energy System of the Future

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New Thinking For Energy



# Energy System of the Future – technology challenges

- Energy systems are changing rapidly
  - Its economics is changing
  - Its characteristics is changing
  - The old norms cannot be relied on anymore ie baseload
  - A new mind set is needed
- While this many seem unnerving for some it also offers new opportunities as well as fulfilling the needs of EP
- Good governance is needed to make this change occur most effectively
- Research and Innovation Should Focus on the Direction of Travel

# The energy system is changing rapidly

- The energy system is changing rapidly, particularly within electricity, as costs of RE come down and as new means of operating the system because of ICT capabilities alter the economics of the system

# The characteristics of the energy system are changing

- The characteristics of the energy system are changing
  - It is decentralising
  - Scale is becoming smaller
  - Integration between heat, transport and electricity is greater
  - Issues such as flexibility are becoming more important
- The old 'norms' can no longer be relied on – for example the need for baseload
- A new mind set is required for all system stakeholders – whether governments, regulators, businesses and so on

# It is a time of opportunities which also fulfils EP goals

- While this many seem unnerving to some, it also offers new opportunities
- It helps with the broad requirements of EP
  - Environment
  - Security
  - Affordability concerns

# Good governance is needed to enable this most effectively

- For this change to happen seamlessly, effective governance has to keep up with these changes so that institutions, rules and incentives are there to encourage it rather than undermine or block it
- This governance has to link the local to the regional (ie Europe way)
  - To ease investment
  - incorporate the demand side
  - Connect individuals and communities

# Research and Innovation Should Focus on the Direction of Travel

- As the SET plan does
  - RE
  - EE
  - Demand side within markets
  - Storage materials etc
- Reducing energy has to be at the centre of EU EP
- Governance (ie the social and policy) enabling of this has to be recognised as being as important as the technological and economic issues

- Thankyou
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