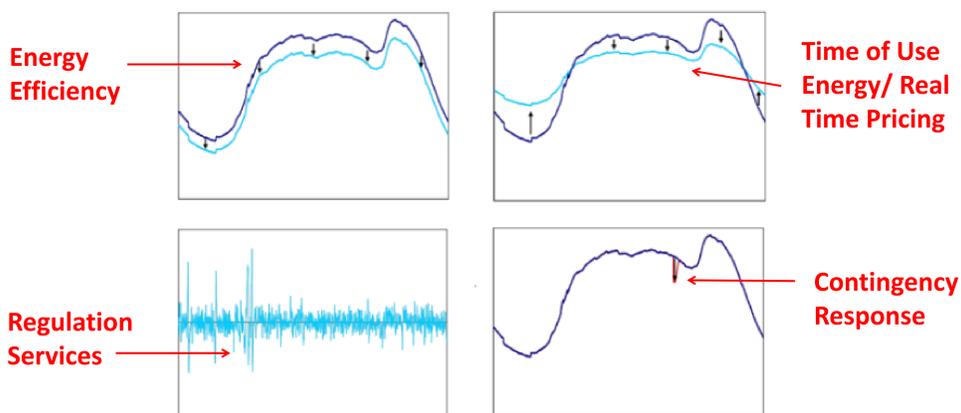
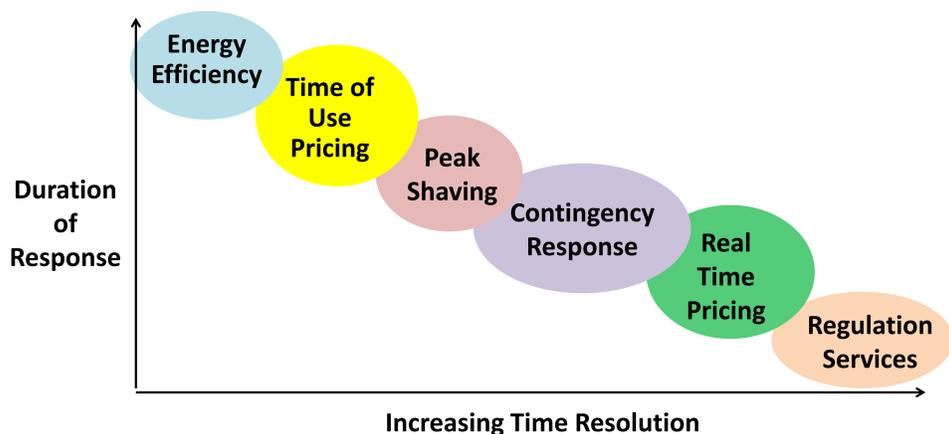


INTRODUCTION

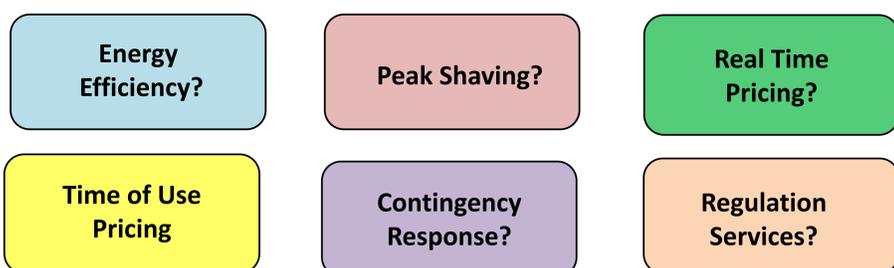
- **Demand response (DR) definition:** changes in electrical energy usage by end-use customers from their normal consumption patterns in response to changes in the price of electricity over time or to incentive payments or signals from the system operator
- DR is in a prime position to provide reliability services to the power system
- Technically feasible to employ DR in order to facilitate greater renewable generation
- Many DR **programs**: Many **applications**.



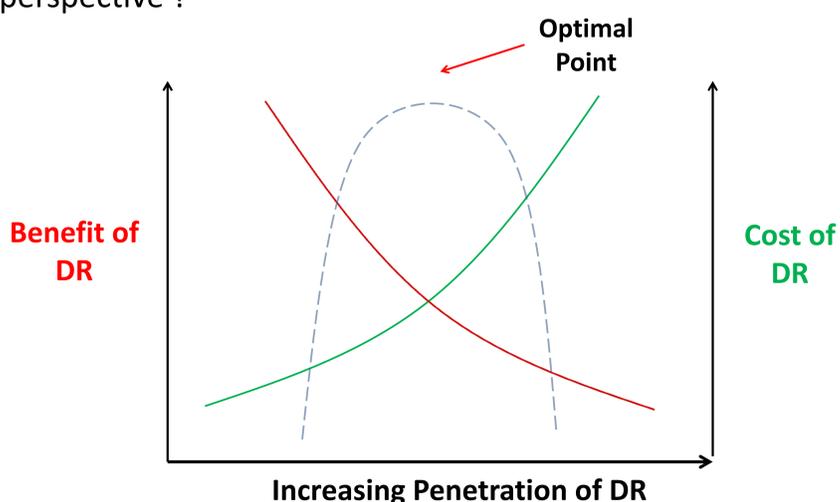
- These applications operate over **different time scales** and for **different durations**



- Where does the **value of DR** lie?



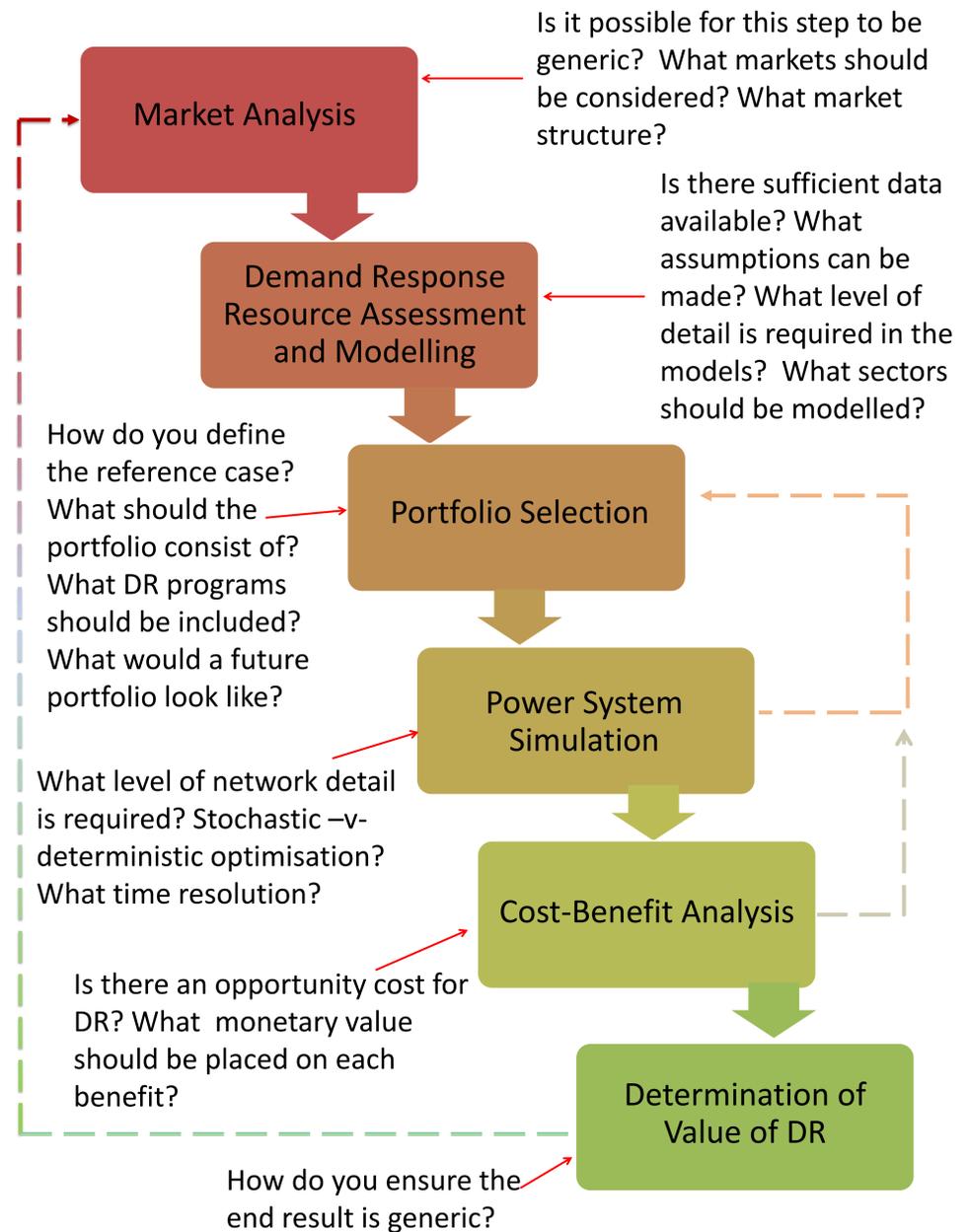
- What is the **optimal penetration** level of DR from a system perspective ?



Objectives:

- **Develop a methodology for estimating the value of DR**
- **Determine the range of optimal penetration levels of DR for different future portfolios**

PROPOSED METHODOLOGY AND CHALLENGES



RESEARCH QUESTIONS

- What is the integration cost of DR?
- Is there an integration cost or is it purely a benefit?
- What is the market value of DR?
- What would the market value need to be to make DR viable?
- If DR does have significant value, what policies are required to exploit the DR resource?
- What is the optimal level of DR for the Irish power system?

NEXT STEPS

- Selection of generic system types for consideration
- Determination of simplifying assumptions for first pass, minimising loss of generality
- Validation of all assumptions.

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