

# Cost-reflective pricing and the electricity distribution networks

Rita Shaw

Electricity North West / University of Surrey

Mike Attree – Electricity North West

Tim Jackson – University of Surrey



# Outline of presentation

- Framework for DNO prices
- Charging principles
- Cost-reflectivity
- Examples and insight related to low-carbon DG



# Role of a DNO

Generation



Transmission

National Grid 275/400 kV

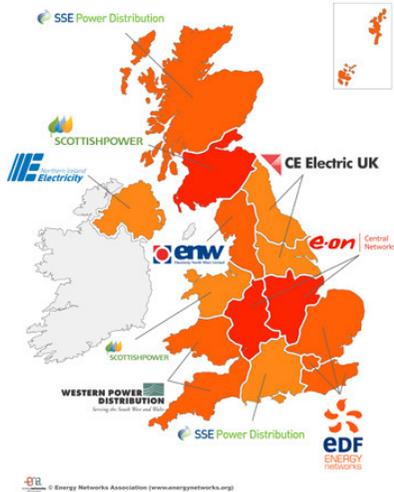


Distribution

DNOs 132kV – 230V



Supply / Retail



# Role of pricing

- Allowed income – prices to network users
- Regulator sets overall income, but not the individual prices or tariffs
- Each DNO prepares its methodology, Ofgem approves or vetoes



# DNO charging methodologies

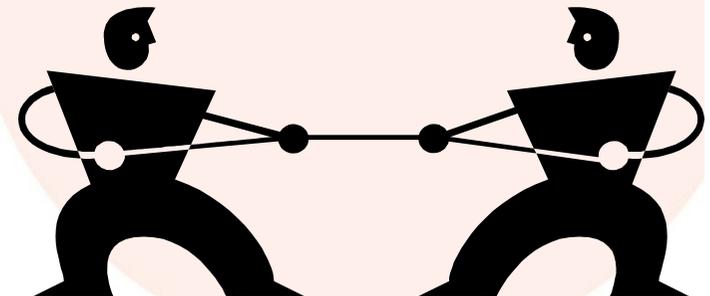
Connection charges (initial)

versus

Use-of-system charges (ongoing)

# Charging principles

- 5 high-level principles
  - Cost-reflectivity, simplicity at point of use, transparency, predictability, facilitating competition
- Licence conditions on DNOs
- Longer-term approach
  - Forward-looking costs, incentivise efficient use and development of network, allow introduction of generator use-of-system charges



# Why be cost-reflective?

- Cost-reflectivity is a requirement that prices and charges signal the cost of an activity
- Users exposed to consequences of their actions
- Depend on location, time, pattern of network use, existing network, other network users.
- Allocative efficiency
- Response of user depends on how much they value using the network in that way

# Which costs to reflect?

- A. The direct costs of providing the network (the cost of the DNO service),
- B. The indirect costs/benefits of the network to third parties (not to the DNO),
- C. The direct costs of the network user, and
- D. The indirect costs/benefits of the network user to third parties (not to DNO)

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# Reflect environmental benefit instead of network costs?

- Example - discount or zero charge for low-carbon generators
- Loses the network cost signal and efficiency benefit
  - To still recover total DNO income, distorts charges for DG and others
- Higher network cost for generation in Scotland & N England
- SDC review suggestion – remove locational TNUoS from CHP
- Provides more support to generators in most expensive locations, rather than more for greater environmental benefit
- Better to provide greater support for CHP overall, to reduce costs to generators, encourage innovation

# Set prices to reflect network costs?

- Customers drive network costs based on contribution to peak power flow (kW)
- Cost-reflective price depends on kW and kWh, but more on kW
- ‘discriminate against sites with distributed generation’? - no
  - Example – switch to a per-kWh charging basis for CHP
  - Loses signal for allocative efficiency
  - Does not acknowledge argument for reflecting network costs
  - CHP already reduces both network charge (kW and kWh) and energy supply charge (kW and kWh)

# Cost-reflectivity for local generation

- A real potential benefit to generators

## IMPLEMENTATION ISSUES

- Removing regulatory barriers
- Redeveloping charging models and methodologies



# Arguments for less cost-reflectivity

- Practice in Germany
  - set use-of-system charges for generators to zero
  - potential benefits?
- Any value to signalling network costs if need to connect *all* possible generation?
- A realistic extreme, connecting at any cost?



# Conclusions

- DNO charging – future framework
- Arguments for a clear understanding of framework, rationale and benefits of cost-reflective pricing
- Network efficiency
- Benefits for DG – limits to this?