

The cost of electricity distribution losses

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Estimating the cost of losses

- **Why?**

cost of losses provides a guide to benefits from loss-reduction
incentive should drive cost-effective activity

➔ understanding cost is important in setting incentive

- **What?**

interested in avoidable costs
not just use retail price

- **How?**

set out an estimate in January document

- gathering further data
- improvements
- limitations

Estimate in January document

- HH data from one DNO (June 01 – May 02)
- **Wholesale price** loss weighted UKPX 1.79 p/kWh
- **Transmission** demand charge 0.15 p/kWh
- **Distribution** DuoS unit charges 0.56 p/kWh
- **Environment** £81/tC 0.46 – 1.12 p/kWh
2.96 – 3.62 p/kWh

Key principles

- **avoidable costs**

- marginal v average

- **cost-reflectivity**


- differentiation
- trade-off with simplicity
- difficulties

eg time, types of losses

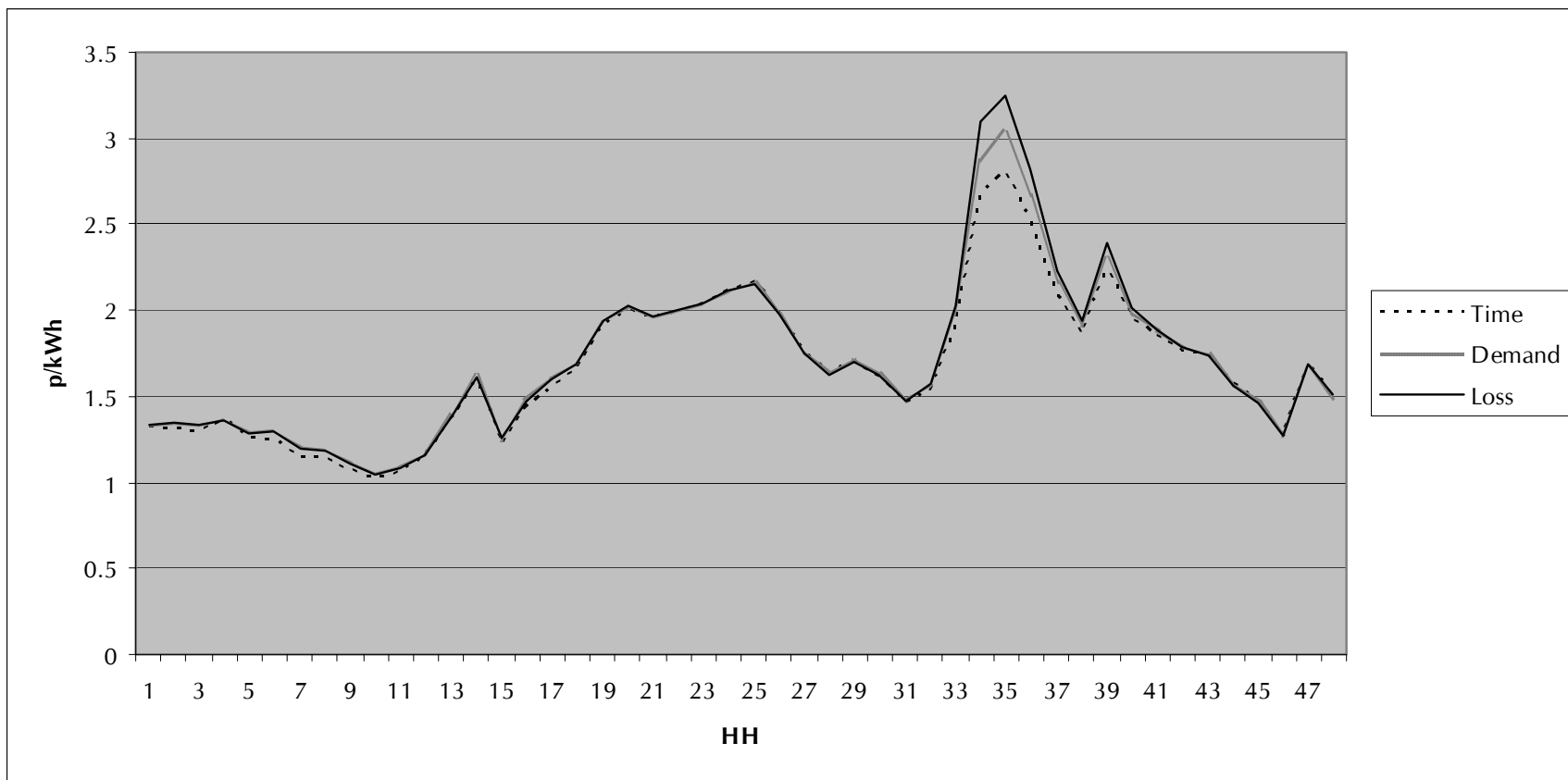
- **components**

- energy
- transportation
- environmental

Energy

- **prices**
 - market-clearing
 - system-balancing
- **time periods**
 - HH  5 year
- **possible weightings of average**
 - time
 - demand
 - loss

Average wholesale prices (June 01- May 02)



Transportation - transmission

- TNUoS charges
 - Demand Charge: average HH metered units in Triad
 - Energy Consumption Tariff: NHH metered units (1600-1900)

- Annual v HH
 - how allocate over HH profile?
 - what drives costs?

Transportation - distribution

- **Difficulties**

- where is unit lost?
- several tariffs

- **Several tariffs**

- demand weighted?
- loss weighted?



average estimate for each HH

- use LLFs to divide into HV and LV

- **Annual average**

- demand-weighted?
 - volumes
 - costs

information from annual price control returns
revenue driver

Environmental

- Should it be included?
 - no?
 - yes, but only for certain types of losses?
 - NTL v TL - indirect v direct effects
 - yes, for all losses?

 - Valuation method
 - consistency
 - ETS
 - regulatory instruments
 - uncertainties
 - range of estimates
- what is expected value?
ROCs; CCL
- document: 0.46-1.12p/kWh
sensitivity analysis: £35-140/tC

Summary

- Building robust incentive requires understanding of cost
- costs may not be accurately reflected by retail prices
- simplicity - accuracy trade-off?
- what are the appropriate components?

A large, central version of the ofgem logo, with the lowercase letters 'ofgem' in white on a red rounded rectangular background. The background of the slide features a faded image of electrical components, including a three-pin plug and a circuit breaker panel.

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