

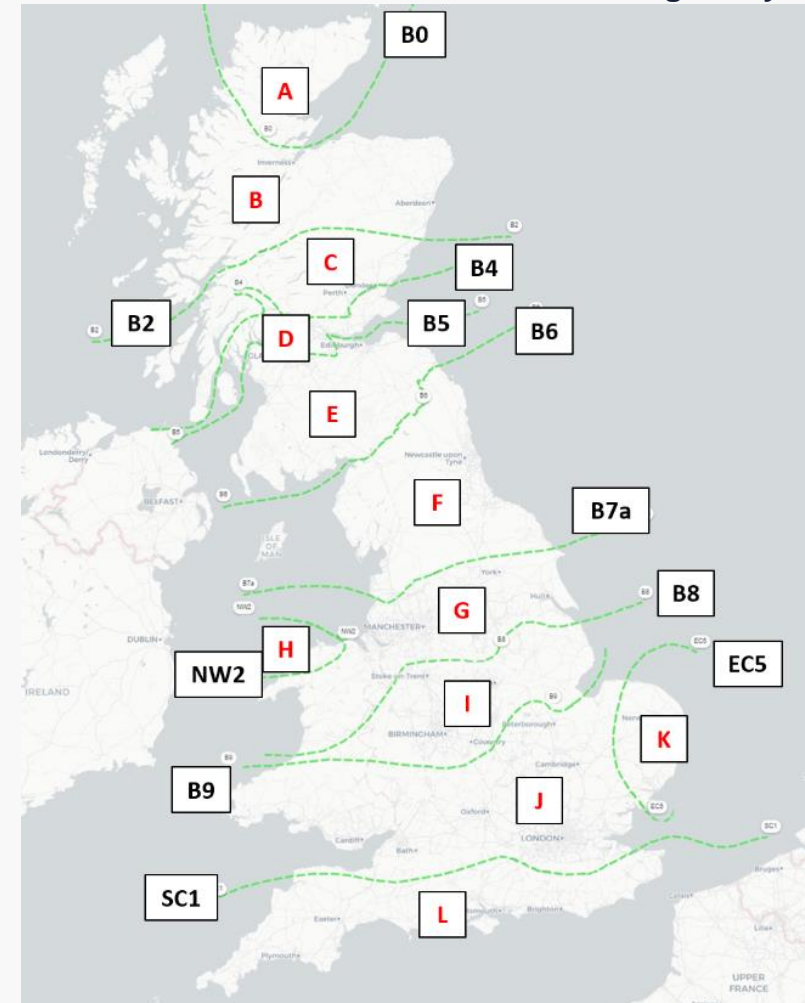
Zonal Pricing in Great Britain
Differences in regional wholesale electricity prices

Introduction

SSE have commissioned LCP Delta to understand how a move to zonal pricing would affect wholesale prices across the country

- In a zonal pricing market, electricity is priced based on the marginal cost of meeting demand at that location on the network leading to each defined zone within the market having a distinct price. Price differences between areas occur where there are transmission capability limitations between areas, resulting in network constraints.
- In Great Britain (GB), a zonal pricing model would lead to lower average wholesale prices in areas with higher renewable generation, such as Scotland, but higher average wholesale prices in high demand areas, such as the South of England, compared to national pricing.
- Using outputs from LCP Delta’s previous report for SSE to assess the impact of moving to zonal pricing under ‘Beyond 2030’ network plans under DESNZ’ Net Zero Higher Demand scenario, this analysis looks at how wholesale prices vary across the country under a zonal market and how this compares to prices in the national market.
- Insights are also provided on how exposure to various risks that could drive up wholesale prices would change under zonal pricing.

Zones used in LCP Delta Locational Pricing Study

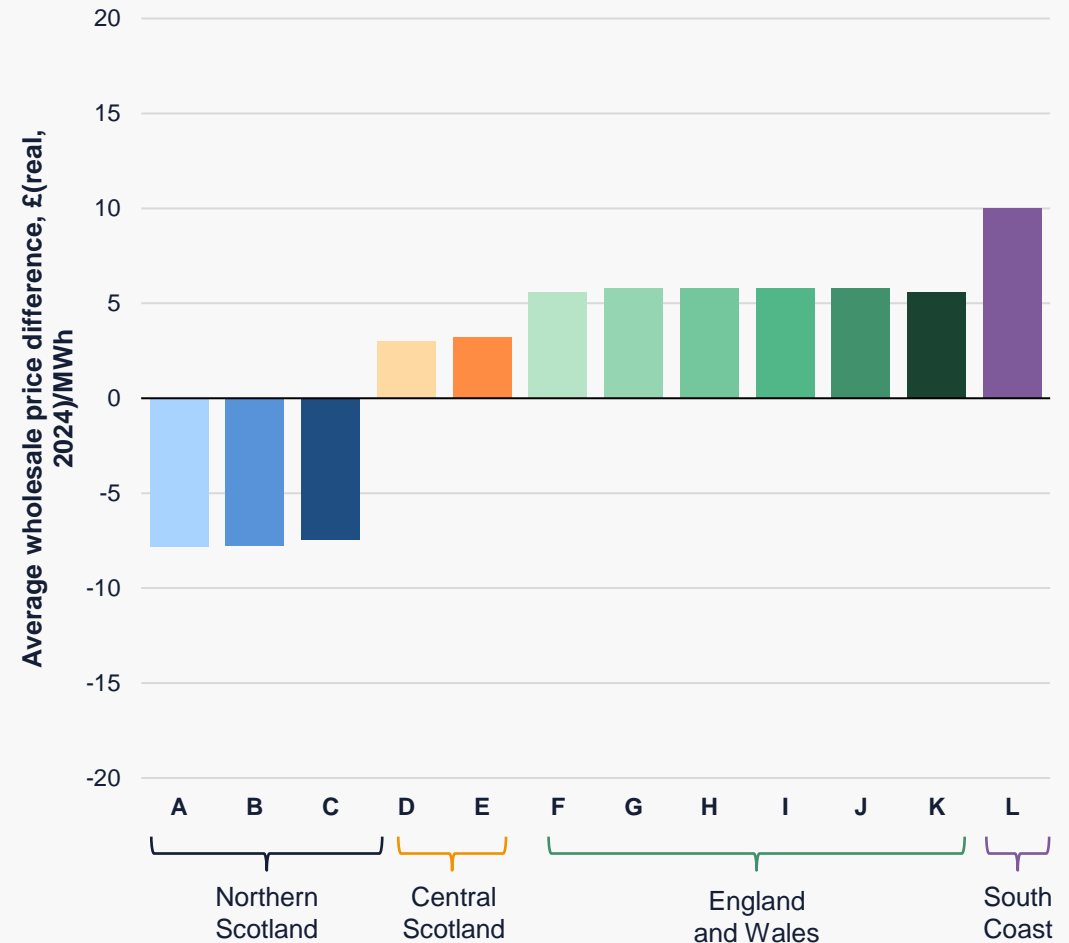


Impact on wholesale prices

Under zonal pricing, wholesale prices will be higher across most of the country as a result of factoring constraints into the wholesale price

- Under zonal pricing, average wholesale prices vary across the country. Zones with high levels of renewable generation will tend to have lower prices and zones with higher demand will tend to have higher prices.
- Compared to national pricing, LCP Delta modelling shows that wholesale prices in 2035 would be significantly lower in Northern Scotland (zones A, B and C) due to high renewable penetration and relatively low demand.
- In contrast, **average wholesale prices in the rest of the country are higher under zonal pricing compared to national pricing**. These can be grouped into 3 areas: Central Scotland where prices are on average £3/MWh higher, England and Wales where prices are £6/MWh higher and the South Coast where prices are £10/MWh higher.
- The higher price areas account for 97% of demand across the country meaning nearly all consumers will be paying increased wholesale prices for their energy.**
- Wholesale prices are only one part of the overall electricity bill for consumers. A move to zonal pricing would also impact other parts of consumer costs as well although the overall impact is uncertain given there are still various decisions DESNZ needs to take (e.g.: on allocation of congestion rents and extent of support for legacy assets). Constraint costs and network charges (including congestion rents) are likely to decrease under zonal pricing, but this could be offset by increased support for legacy assets and cost of capital impacts for new investments flowing through into CfD strike prices and Capacity Market clearing prices.

Price difference between zonal and national wholesale prices in 2035



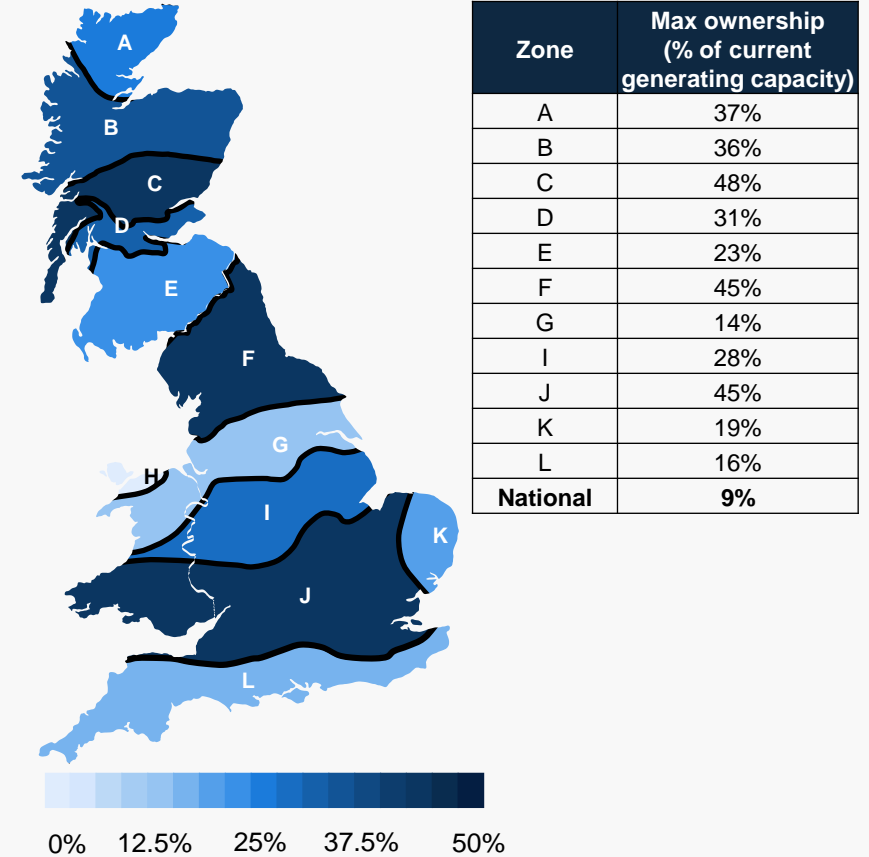
Risk exposure under zonal pricing

Under zonal pricing, certain zones could be exposed to increased risk of gas price shocks, changes in connected markets and market power issues

The recent energy crisis highlighted how GB energy prices are exposed to various risks that could drive up wholesale prices, including gas price risk, interconnector risk and scarcity pricing:

- Gas prices:** While a gas price shock will have a lower impact as the system decarbonises compared to the recent energy crisis, gas will continue to be a price setter in the GB power market to some extent (whether through unabated gas, gas CCS, hydrogen or interconnectors). This means the future system will still be exposed to gas price risk under both national and zonal pricing. Under zonal pricing, all zones apart from Northern Scotland will be more exposed to gas price risks as gas (or gas linked assets) will set the price on a more regular basis in these zones than under national pricing.
- Interconnector risk:** Zones with greater levels of interconnection to other countries are exposed to additional risks through changes in connected markets. For example, the issues seen in the French nuclear fleet in 2022 would have a greater impact on the south coast zone (zone L) than other zones under zonal pricing.
- Market Power risk:** One of the drivers of higher prices during the recent energy crisis was scarcity pricing within the market. Under zonal pricing, this risk is likely to increase if a single company owns substantial generating capacity within a zone. In these cases, there is a risk significant that market power is exercised leading to higher prices during times of scarcity. The map on the right shows the maximum ownership share of generation within each zone today*. This shows that in some zones, particularly zones C in Central Scotland and F and J in England and Wales, a single company owns more than 40% of the capacity in that zone. This compares to a maximum ownership percentage of 9% in the current national market. While the capacity mix and ownership in zones will change substantially before zonal pricing is implemented, this shows that individual zones are more likely to be exposed to market power risks which could drive up wholesale costs.

Max ownership % by zone



*The data was procured from the LCP Enact platform for short-term power market intelligence which holds data on all GB power plants with a BMU, the zones within our modelling were a different granularity so this data is representative of a likely zonal pricing market. Note that Zone H is not included in this analysis as it is too small and does not correspond to an Enact zone

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