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Regulatory level playing field measures in Great Britain and possible applications to New Zealand

FTI Consulting | Report for Octopus Energy

1. Introduction

1.1 The Electricity Authority ("EA")'s options paper for level playing field measures in New Zealand ("NZ") briefly discusses the experience of similar issues, and the regulatory response, in Great Britain ("GB").

1.2 The paper concludes that the EA should be "wary of attempting to directly mirror the GB licence conditions in the New Zealand market", for a variety of reasons, including:

(1) difficulties in making before and after comparisons;

(2) the introduction of non-discrimination obligations in GB not being specifically related to flexible generation;

(3) wider differences between GB and NZ markets; and

(4) ongoing issues in the GB retail market.[1]

1.3 In this note, we provide a more detailed discussion of the GB electricity retail market experience, including an overview of how competition and regulation has evolved.

1.4 While we agree that regulators should base their decisions on the specific context in which they operate, based on our understanding of relevant features of the NZ market, we judge that, if anything, there is likely to be a stronger case for level playing field interventions in NZ today than there is or previously has been in GB.

[1] Often the terms "retail/retailers" are used interchangeably with the terms "supply/suppliers". In this note, we use the terms "retail/retailers" unless we refer to specific nomenclature in GB regulation that contains "supply/supplier".

2. The British experience

2.1 Over the course of its experience with liberalised energy markets, the approach to regulating the GB electricity retail market with respect to level playing field provisions has evolved, as has the structure of the market. This section briefly sets out this history in three parts:

(1) early regulatory arrangements (2000-2008);

(2) liquidity concerns (2008-2014); and

(3) the rapid decline of vertical integration (2014-present).

2.2 We end this section with an overview of the wider regulatory environment for retailers in GB.

Early regulatory arrangements (2000-2008)

2.3 GB gradually liberalised its wholesale and retail energy markets over the course of the 1990s, following privatisation through the 1989 Electricity Act.

2.4 The original privatisation of the GB market in England and Wales[2] involved splitting of the nationalised Central Energy Generation Board into three generation companies (National Power, PowerGen and Nuclear Electric) and a transmission company (National Grid). Further, the 12 Area Electricity Boards were privatised into 12 integrated retail-distribution Regional Electricity Companies ("RECs").

[2] In Scotland, given differing prior arrangements and an electricity system with relatively limited interconnection to the rest of GB, a different form was initially taken. Initially two fully-regulated utilities were created that were integrated across transmission, distribution, generation and retail. With growing interconnection and harmonisation of regulation, the approach was gradually aligned with England and Wales.

2.5 While generation was open to competition, there were initially strict limits on the generation capacity the 12 RECs could own. They were required to purchase electricity at the "best effective price reasonably obtainable" (in effect a prohibition on discrimination/cross-subsidisation). To encourage competition with the large generators, strict restrictions on REC ownership of generation were gradually relaxed.[3]

2.6 By 1999, the retail electricity market was fully opened to competition, including for household consumers. Soon after, new standard licence conditions were adopted following adoption of the Utilities Act (2000). These included several conditions with which the regulator could direct licensees to comply relating to preventing and monitoring discriminatory actions by vertically-integrated generator-retailers ("gentailers"), namely:

(1) maintain separate regulatory accounts for any generation and supply (retail) businesses (condition 16);

(2) avoid discrimination in the selling of electricity (condition 17); and

(3) avoid cross-subsidisation between generation and supply (condition 17A).

2.7 In addition, until 2004, special licence conditions specifically limiting 'self-supply' applied to some vertically-integrated firms. These were lifted when Ofgem, the GB energy regulator, determined that the strength of both wholesale and retail market competition meant that the special licence conditions were no longer needed, and that competition law powers would suffice.[4]

2.8 Throughout this history, the convention and practice in GB has been for the individual generation and supply licences to be held by separate legal entities for various licensed activities. Since 2001, there has been a strict prohibition on network (transmission or distribution) and competitive activities (retail or generation) being held in common legal entities.

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[3] Green, R., Market Power Mitigation In the UK Power Market, Institute for Energy Research and Policy, University of Birmingham, September 2004, [link].

[4] Ofgem, Notice under Section 49A of the Electricity Act 1989 [link]. For example, a merger application can be approved subject to the merging firm maintaining legal and operational separation of generation and retail activities. Centrica / British Gas, EDF, SSE, and Scottish Power, which were historically among the six large gentailers in GB, now operate their generation and retail activities through separate legal entities (with relevant licences) within their operating groups.

Liquidity concerns (2008-2014)

2.9 Following liberalisation and the relaxation of ex-ante restrictions on vertical integration, vertical integration in GB increased significantly over the course of the 2000s. The generation market share of six large vertically-integrated gentailers ("the Big Six") rose from around 35% in 2000 to more than 65% in 2008.[5]

2.10 The high generation and retail market shares of the Big Six raised increasing concerns about the impact on independent retailers. Following an in-depth review, Ofgem concluded that low liquidity in GB electricity market was harming independent retailer entry, and that this had the potential to be a "self-reinforcing cycle where low levels of liquidity may prevent entry and lead companies to find alternative ways of trading [(e.g. internal trading within gentailers)] which in turn may lead to further reductions in liquidity".[6]

2.11 Ofgem was also concerned about the transparency of the relationship between the generation and retail activities of the large gentailers. In particular, it was concerned about a lack of transparency on the relative profitability of generation and retail, and the basis on which vertically-integrated companies transferred between their generation and retail businesses. As a result, Ofgem introduced new licence conditions (including 16B of the generation licence and 19A of the supply licence). These required the submission of Consolidated Segmental Statements by the large gentailers, mandating detailed financial reporting, disaggregated between generation and retail businesses.

2.12 Further, in 2014 Ofgem introduced the 'Secure and Promote ("S&P")' licence conditions, which applied to the Big Six.[7] These included: 1) Supplier Market Access Rules – which governed the basis on which the large vertically-integrated generators interacted with small retailers; and 2) a Market Making Obligation ("MMO") for the gentailers in forward markets.

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5 Ofgem, Energy Supply Probe – Initial Findings Report, October 2010, [link]

6 Ofgem, Liquidity in the GB wholesale energy markets, June 2009, [link]

7 Ofgem, Wholesale power market liquidity – decision letter, [link]

2.13 The MMO required the Big Six to post a minimum volume of bids and offers for a range of forward products (covering both baseload and peak load, in monthly, quarterly and seasonal products up to two-years ahead), on recognised, open trading platforms (both over-the-counter ("OTC") and exchange-based), with maximum spread restrictions.[8]

The rapid decline of vertical integration (2014-present)

2.14 Following the introduction of the S&P licence conditions, the structure of the GB generation and retail markets changed significantly. This was driven by a wide range of factors, including the growth of renewables, the introduction of the contract-for-differences ("CfDs") and capacity market schemes, and evolving corporate strategies. As shown in Figure 1 below, vertical integration fell rapidly during this period, as a result both of restructuring among the Big Six and the parallel growth of independent retailers and generators.[9]

2.15 By 2019, these dynamics meant that of the original Big Six, only EDF would remain as a large residential retailer with a large generation portfolio, and therefore obligated under the MMO. Ofgem suspended the MMO in 2019 on the basis that the costs on the sole remaining party would be disproportionate. An options assessment conducted for Ofgem at the time also noted that the original market failure justification for the MMO (the dominance of large, vertically-integrated generators in the retail market) had fallen away.[10] For similar reasons, Ofgem decided in 2024 that the Consolidated Segmental Statement requirements would no longer apply to generation activities.[11]

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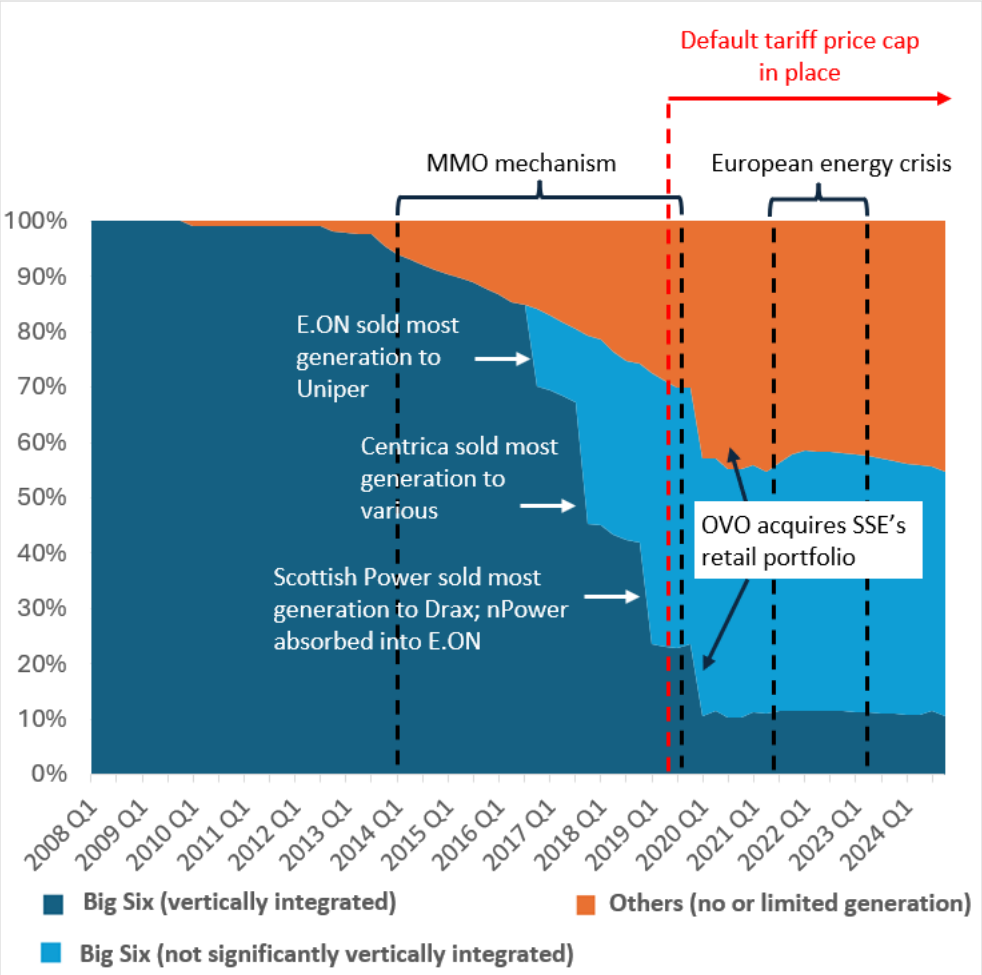
8 Prior to the introduction of the GB MMO, discussions took place whether to oblige gentailers to offer shaped products as well, but Ofgem decided not to include such products in the MMO list. It judged that shaped products are bespoke in nature and that therefore it would be difficult to apply the same general rules that were proposed in relation to standard products. Source: Ofgem, 2013, "Wholesale power market liquidity: final proposals for a 'Secure and Promote' licence condition" [link].

9 Due to data restrictions, we only show the market share for the residential segment of the retail electricity market. Similar dynamics were also present in the retail market for businesses.

10 NERA, GB Wholesale Power Market Liquidity: Options Assessment, December 2019, [link]

11 Ofgem, Reviewing the Consolidated Segmental Statements – Decision, February 2024, [link]

Figure 1: Evolution of share of residential meter points served by retailer type (share of meter points)



Source for underlying data: Ofgem [link]
Notes: (1) To identify the points at which the Big Six retailers ceased to be significantly vertically-integrated, we take the point at which Ofgem determined that it would no longer consider them obligated under the MMO; (2) Some 'other' retailers also owned some generation, but not to an extent that has raised regulatory attention, or notable concern from stakeholders (for example in Ofgem's 2024 call for input on liquidity).

2.16 These changes to the market structure have resulted in GB having one of the most competitive retail energy markets in the world, with significant benefits for consumers in terms of pricing and innovation. For example, in the "European barriers in retail energy markets" report published by the European Commission, GB ranks 3rd of the 28 considered countries with regards to the Performance indicator "Competitive advantage of vertically-integrated electricity suppliers" (i.e. there is little competitive advantage of gentailers detected in GB).[12] Aggregated over all indicators GB is ranked 9th out of the 28 countries in having low entry barriers into retail electricity markets.[13]

2.17 This is not to say that the GB retail market structure or regulatory regime is perfect. Within the retail market, significant perceived problems have included:

(1) Long-standing concerns regarding weak consumer response to high default tariff prices in the residential market (i.e. at the end of a fixed contract period, or move to a new property), resulting in limited competition for some groups of consumers. This led the government to mandate the introduction of a Default Tariff Cap on this subset of retail products (in the Domestic Gas and Electricity (Tariff Cap) Act 2018).

(2) Risky business models among some new, small retailers – including under-hedging of their wholesale market risk exposure – resulted in widespread retail failures during the European energy price crisis that followed the Russian invasion of Ukraine in 2022.

2.18 However, these do not relate to the existence of level playing field measures or the specialisation of retail and generation businesses within the GB market.

Wider regulatory environment for retailers in GB

2.19 In addition to the specific regulatory interventions related to gentailers, it is important to note that GB supply licences include a wide range of conditions that mark retail businesses out as having specific duties and requirements to their end-user customers, including requiring them to treat customers fairly. These are implemented through Ofgem's 'Standards of Conduct'.[14]

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12 European Commission, 2021. "European barriers in Retail Energy Markets" [link].

13 The performance indicator on which GB's retail market scored relatively poorly was "quality to data access" by distribution network owners to retailers, which has little to do with the issue at stake.

14 Ofgem, Standards of Conduct Guidance, February 2019, [link]

2.20 The Standards of Conduct are reflected in guidance as overarching objectives, with which retailers must act consistently. They form part of the general practice in GB energy markets that the retail businesses of energy companies are distinct from other segments (including generation) and should have appropriate governance and management arrangements to reflect this.

3. Application to New Zealand

3.1 The GB experience is highly relevant to NZ:

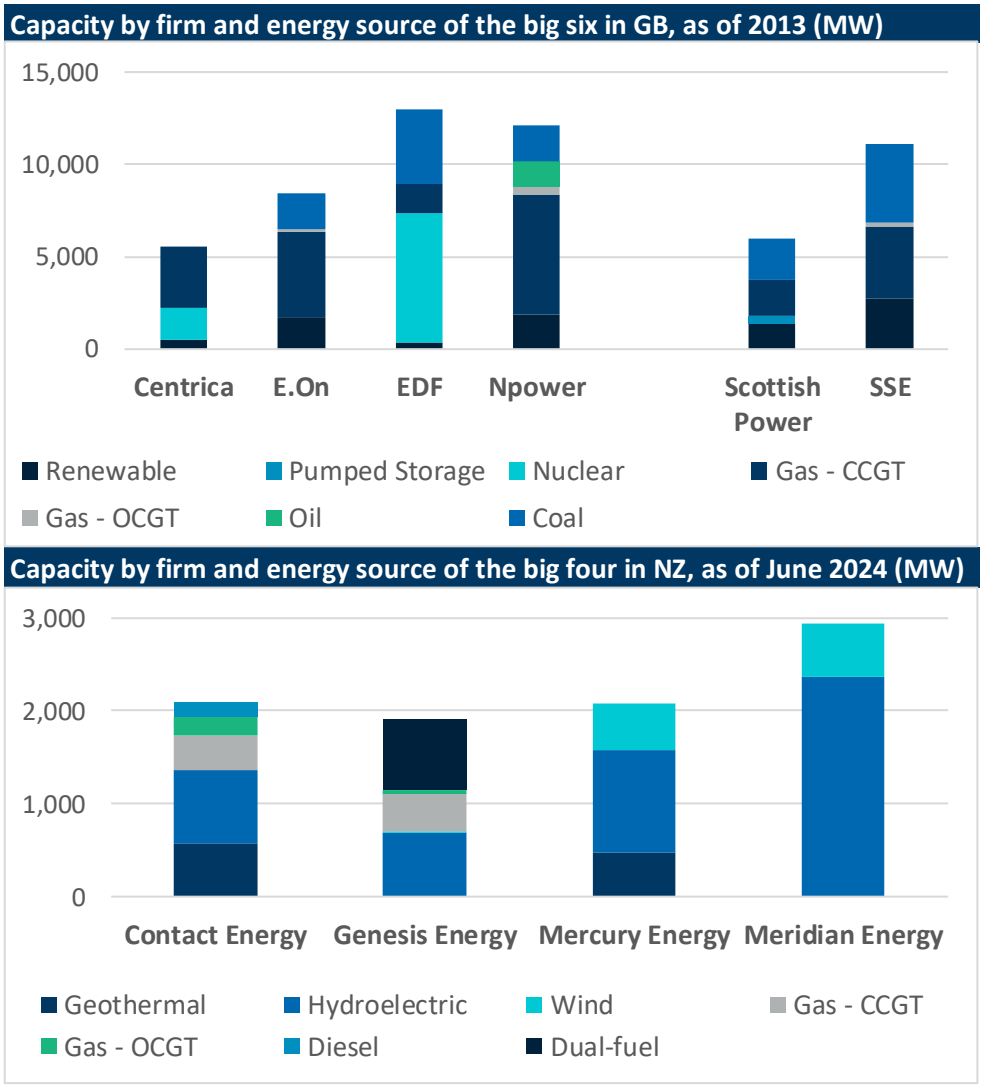
(1) First, the GB experience shows that regulatory measures to support non-discrimination and related behaviours can play an important role in facilitating the entry and expansion of smaller independent retailers, particularly in reducing the risks associated with low wholesale market liquidity.

(2) Second, transparency and reporting requirements are important to enable effective monitoring of the impacts of vertical integration and to identify any potential breaches.

3.2 There are, of course, differences between the GB and NZ energy markets. To try to understand the implications of these differences, we have assessed some key features of the GB energy market before the large-scale entry and expansion of independent retailers (that is, before 2014, when the S&P licence conditions were introduced). We then contrast these with key features of the NZ market today.

3.3 One important similarity between the four large gentailers in NZ today and the Big Six in GB pre-2014, however, is that the GB gentailers had a range of generation assets, including nuclear, wind and flexible thermal. This wide range of assets can create similar dynamics to those seen in NZ. In Figure 2 below we show the generation portfolios of the Big Six in GB in 2013 and of the four large gentailers in NZ in 2024.

Figure 2: Generation capacities of the Big Six in GB as of 2013 and of the four large gentailers in NZ as of June 2024.



Sources: GB data from Ofgem [link] / NZ data from the relevant Integrated reports and websites of the firms and third-party data Including from Power Technology and the landowner's websites on which the plants are built.

3.4 In what follows, we discuss three important differences between the GB context pre-2014 and the context in NZ today:

(1) the ability of the gentailers to self-supply;

(2) the liquidity in the electricity forward market and the ability to use liquid proxy-hedges; and

(3) the volume of entry by independent generators.

3.5 First, at the time Ofgem introduced the MMO in GB, the Big Six typically had a lower ability to self-supply than the current four gentailers in NZ. This implies that in GB the Big Six needed to resort more to OTC trade or exchange-based forward markets to buy/sell hedges to trade significant portions of their positions. This dynamic likely provided more hedging opportunities for independent retailers and generators in GB at the time than in NZ today.

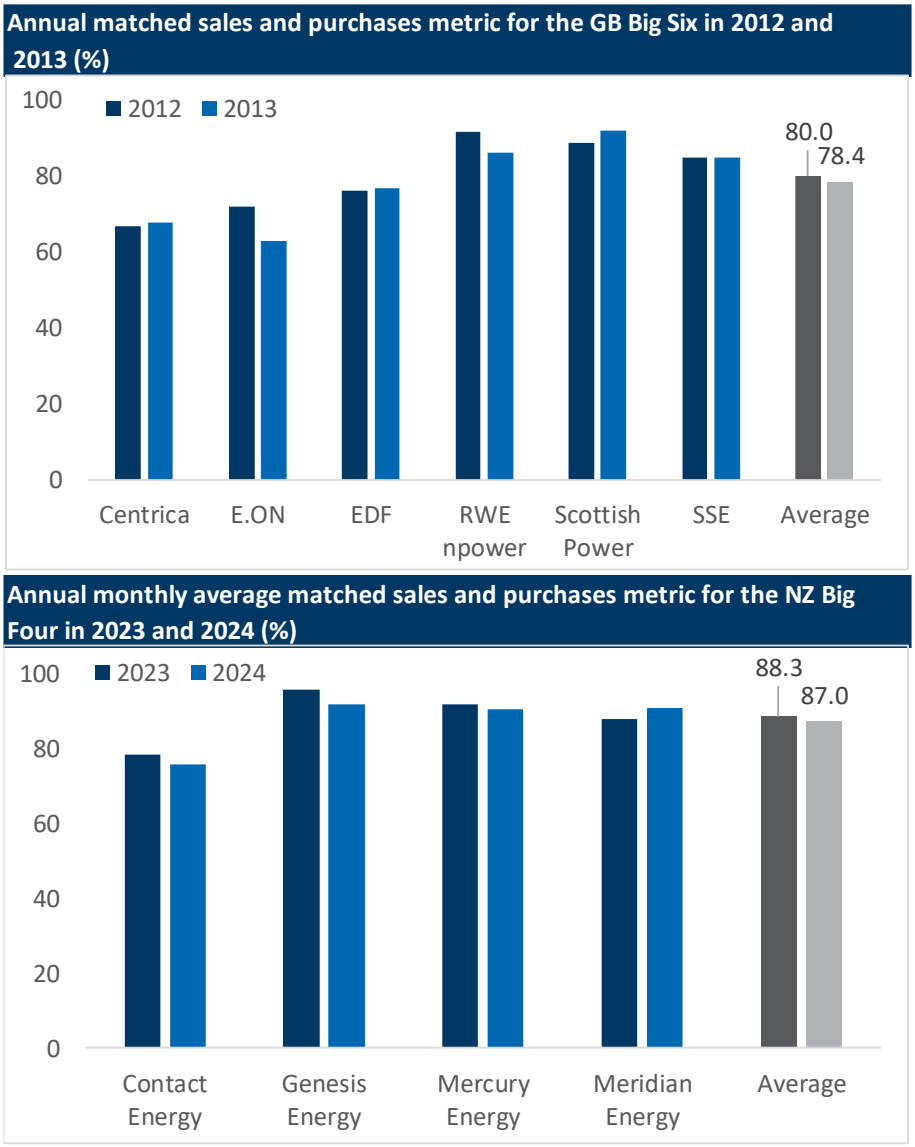
3.6 Figure 3 below shows the level of matching between sales and purchases (the NZ EA's dashboard metric for vertical integration) for the Big Six in GB in 2012 and 2013 and for the four large gentailers in NZ in 2023 and 2024. The higher the extent of matching, the higher the ability to self-supply without substantial trading.

3.7 Due to data limitations, we calculate the matching level for the GB Big Six using annual purchase and sales data for each gentailer. For the four large NZ gentailers, we use the monthly matching levels, published by the EA to calculate an average annual matching level. This is a conservative approach: if annual data were used for the large NZ gentailers, the matching level would be even higher.[15]

[15] The matching level is calculated as 2*100*min(sales, purchases)/sum(sales, purchases). Using monthly data to calculate the matching metric and then averaging the monthly matching levels to obtain an annual matching level will always lead to lower matching levels compared to directly using annual data for purchases and sales to calculate the annual matching level. For example, imagine a firm with 50 GWh sales and 50 GWh purchases in month 1 and 40 GWh sales and 50 GWh purchases in month 2. The matching level of month 1 is 100 and of month 2 is 88.9. The average over both months is 94.4. If we were to calculate the matching of purchases and sales over both months (100 GWh and 90 GWh, respectively), the matching level would be 94.7. In addition, we note that matching levels for the NZ Big Four are typically higher in months when the overall load is higher, which again means that our simple averaging approach tends towards a conservative view of the GB-NZ comparison. To calculate the average matching level across gentailers, we use as well simple averaging; there is no clear impact of the size of the gentailer on its matching levels.

3.8 Even under this conservative approach, the average annual matching level across the GB Big Six in 2012-2013 was significantly lower than the annual matching level across the four large gentailers in NZ in 2023-2024. This may suggest a greater need for non-discrimination, market making, and related obligations in NZ today than in GB in 2013.

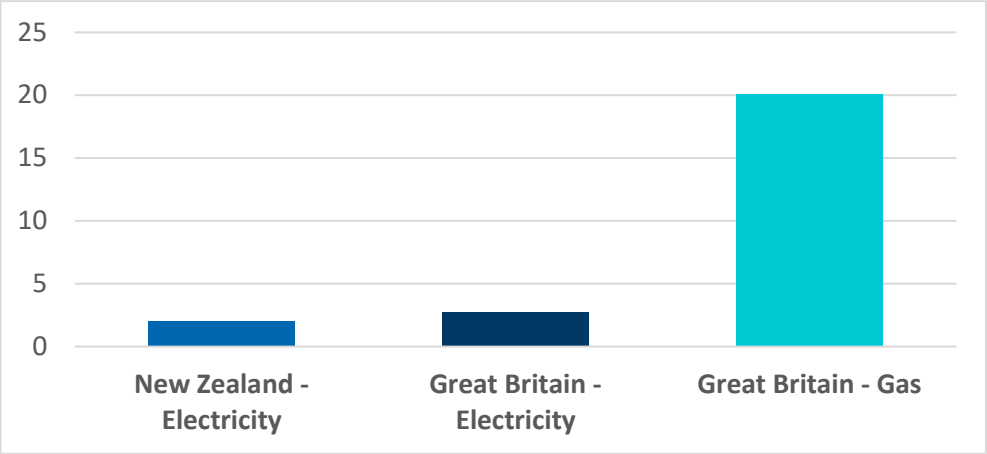
Figure 3: Level of matching of sales and purchases for the GB Big Six in 2012-2103 and the four large gentailers in NZ 2023-2024.



Sources: Consolidated Segmental Statements of the Big Six for GB [link] / The EA's EMI website for NZ [link].
Notes: See footnote 15 above for a detailed discussion of the methodology.

3.9 Second, and relatedly, the GB forward market in the early 2010s was more liquid than the NZ forward market today. In addition, independent retailers had a wider range of hedging opportunities, for instance via the highly liquid gas market which served as a proxy-hedge for the electricity market. In Figure 4, we show the average churn ratios[16] in electricity and natural gas forward markets in GB between 2010 and 2014 and in the NZ electricity forward market between 2020 and 2024.

Figure 4: Churn ratios for GB forward electricity and gas markets (2010-2014) and NZ forward electricity market (2020-2024).



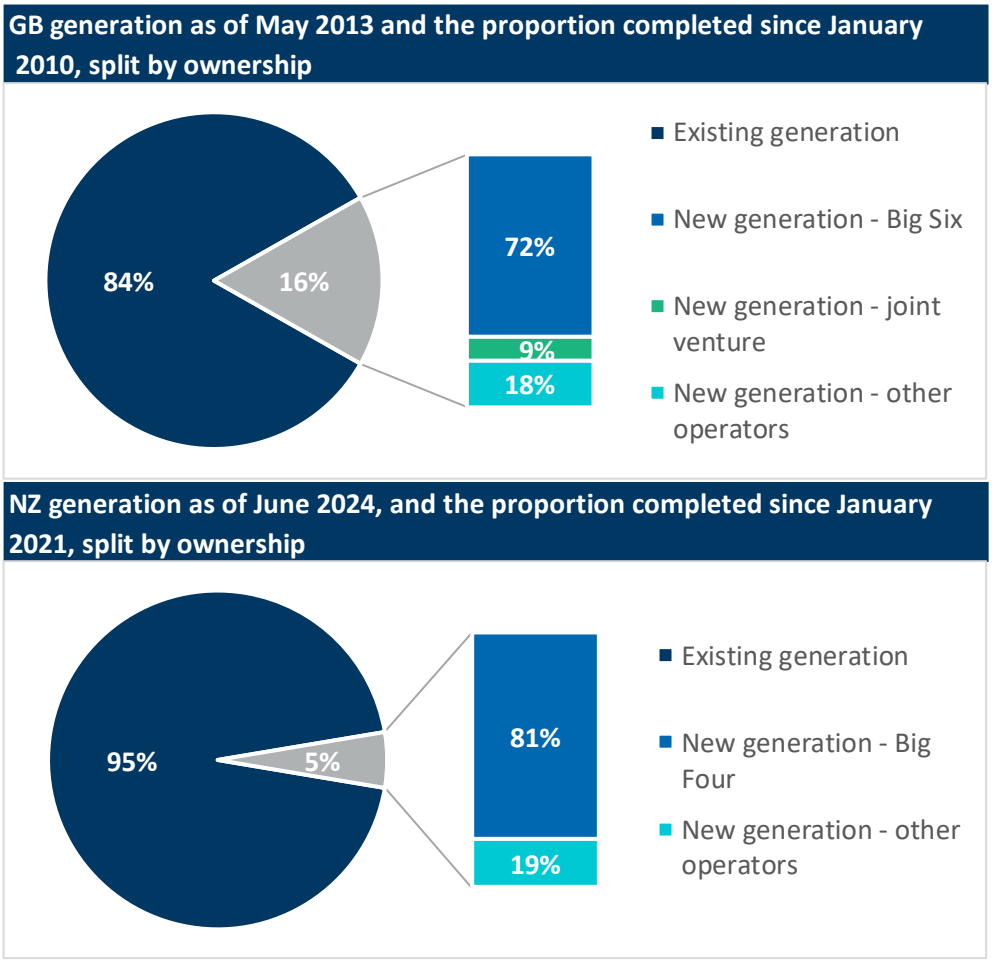
Source: Ofgem [link], NZ EA [link]
Notes: (i) Due to data availability, we do not include 2010 in our average of the GB gas churn rate; and (ii) we exclude spot market exchanges (N2EX and EPEX SPOT) for the GB electricity market when calculating churn ratio.

3.10 Third, independent generators have entered the GB market at scale since the early 2010s, in part driven by the growth of government renewable and capacity support schemes such as the Renewables Obligation, CfDs and Capacity Market. The entry of independent generators reduces barriers of entry for independent retailers by making it easier for them to buy energy in liquid forward markets. In contrast, there has been very limited entry of independent generators in NZ in recent years.

[16] Churn ratios are calculated as the ratio of the traded volume in forward markets to total annual consumption.

3.11 Figure 5 below shows that between January 2010 and May 2013 significantly more generation capacity owned by companies outside of the Big Six entered the GB market than additional generation owned by companies other than the four large gentailers entered the NZ market between January 2021 and June 2024. Again, this may suggest a greater need for non-discrimination and related obligations in NZ than in GB.

Figure 5: Total generation in GB in May 2013 and NZ in June 2024, compared to the proportion of new generation added in the preceding 42 months, split by ownership.



Source: Department for Energy Security and Net Zero and NZ EA.
Notes: (1) Joint ventures are jointly developed by the Big Six and other operators; (2) Figures may not add to 100% due to rounding.

3.12 Therefore, where there are differences between the GB and NZ electricity markets, those differences tend to suggest that NZ should consider going further than GB has at the various stages of its market development, rather than that the types of measures introduced in GB are irrelevant. Regulatory actions to tackle the implications of vertical integration, properly monitored and enforced, are likely to be as, or more, important in NZ than in GB.

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