Market Study of the Northern Irish Retail Electricity Market*[1]

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Executive Summary

This report provides analysis and evaluation of competition, and its barriers, in the Northern Ireland retail electricity market. By measuring market shares of the different competitors currently involved in the market it attempts to explain areas of concern around competition, focusing on:

- Lack of transparent pricing.
- Presence of switching costs between suppliers.

This study also looks at potential solutions to these barriers to competition through providing better information to consumers allowing them to make a more informed decision based on their needs. Furthermore it looks at the potential benefits to competition of deregulation in the electricity supply industry.

I. Introduction

Whilst the main focus of my study is on the retail electricity market in Northern Ireland, the final part of the electricity supply chain, it is necessary to give some background information with regards to generation, transmission and distribution of electricity in Ireland. These after all have considerable impact on final prices to customers and I will be referring to them throughout.

Historically, Ireland's electricity has been provided by two vertically integrated, state owned monopolies: Electricity Supply Board (ESB) and Northern Ireland Electricity (NIE). The privatisation of NIE in 1992 split up the stages of the electricity supply chain. Northern Ireland's power plants were subject to power purchasing agreements (PPAs) throughout the 1990's

In 2007 the Single Electricity Market (SEM) was introduced, creating a single wholesale electricity market for generators north and south of the border. This represented a noted shift away from bilateral contracts and exposed wholesale electricity to more competition.

In 1998 Viridian was created, a holding company for NIE, and in 2007 NIE was split up further in accordance with the EC Electricity Directive. The directive stated that "it is appropriate that the distribution and transmission systems are operated through legally separate entities where vertically integrated undertakings exist", meaning that NIE Power Procurement Business (PPB) and NIE Supply were split from its transmission and distribution arms. This led to the creation of Power NI in 2010 when NIE's transmission and distribution arms, including its name, were sold to ESB.

2010 also marked the entry of the first firm to provide competition in the domestic retail market: Airtricity. Since then there have been a couple of firms entering the market. We shall aim to see if this introduction of competition has benefitted consumers and to see what else can be done to improve the situation.

II. Market Definition

My study is limited to the Retail Electricity Market in Northern Ireland, which is defined as the final part of the electricity supply chain (i.e. not including generation, transmission or distribution of electricity) and focuses on the interaction between suppliers (retailers) and consumers (households and businesses) of electricity**.** I chose this market because it is where competition is most prevalent in the Irish electricity market, and also because it is the market that potentially has the greatest influence on consumer welfare. Transmission and distribution are arguably natural monopolies; economic theory tells us that duplication of networks in undesirable and wasteful, and therefore competition is less desirable.

The relevant product market is the supply and sale of electricity to households and businesses. Within this we can split the market into submarkets of domestic keypad, domestic credit, Small and Medium Enterprises (SME) and Large Energy Users (LEU). It is important to note at this point that these markets are somewhat rigid, that is consumers cannot switch between them easily i.e. a company cannot easily reduce its amount of electricity and even domestic consumers such as students who mat be credit-constrained may not be able to switch between keypad and credit methods of payment. Thus justifying the product market separation outlined. There are no close substitutes for electricity; it is homogenous as a good, that is to say that one unit of electricity cannot be more efficient than another

The Geographic market is the state of Northern Ireland (NI) since different regulatory requirements make it difficult for the same company to supply electricity north and south of the border in Ireland. Most of the same companies operate in both markets, but as separate entities. For the SEM agreement that created a single wholesale electricity market, legislation was required in both Dublin and London, with joint regulation. This partly explains why electricity suppliers only operate on a national basis.

Using the SSNIP test, we ask could a hypothetical monopolist sustain a 5-10% price increase in an area. Due to electricity being a homogenous good, and no real substitutes existing, a hypothetical monopolist could implement a profitable price increase in the region of NI.

III. Alternative Competition Measures

Hirfindahl-Hirschman Index (HHI) measures market concentration based on the sum of all market shares squared in the market. I have calculated it for domestic and commercial energy suppliers in Northern Ireland based on customer numbers and output supplied (GWh)

HHI for the whole market can be calculated in terms of market share by consumption (GWh) as follows:[2]

[1] Data obtained from Utility Regulator ERR Report 2012

$$HHI_{domestic} = \sum_{i=1..n}^{N=4} s_i^2 = (91.99)^2 + (7.54)^2 + (0.22)^2 + (0.24)^2 = 8519.12$$

$$HHI_{SME<70Kva} = \sum_{i=1..n}^{N=7} s_i^2 = (34.10)^2 + (37.34)^2 + (16.66)^2 + (11.77)^2 + (0.11)^2 + (0.01)^2 + (0.02)^2 = 2973.19$$

$$HHI_{SME>70Kva} = \sum_{i=1..n}^{N=6} s_i^2 = (14.11)^2 + (22.54)^2 + (30.63)^2 + (31.78)^2 + (0.86)^2 + (0.08)^2 = 2656.06$$

$$HHI_{LEU>1MW} = \sum_{i=1..n}^{N=7} s_i^2 = (4.08)^2 + (22.17)^2 + (27.73)^2 + (38.14)^2 + (1.30)^2 + (6.58)^2 = 2776.75$$

HHI>2500 indicates a highly concentrated market. We can see that whilst all the markets are highly concentrated, the market share is differently distributed amongst the competitors in each market. For example, Power NI (which is the first statistic in each calculation) dominates the domestic market, however its share of the commercial market (SMEs and LEUs) is more modest. How then to redress the balance of competition? One suggestion could be to incentivise firms such as Energia and Electric Ireland, who are large commercial suppliers, to compete more effectively in the domestic sector.

Another point to make is that HHI may not be the most adequate measure of competition, as McCarthy (2005) notes. Whilst the HHI and market share indices are internationally recognisable standards, as static measures they do not represent the real-time aspect of electricity markets very well. This is an important point as it is this aspect of electricity markets that causes prices in all aspects of the supply chain to fluctuate greatly.

HHI may not tell us the whole story regarding competition in the NI retail electricity market. Due to the relative infancy of competition in the market, it is natural for market shares of new entrants to be relatively small. A more dynamic view of competition would be to see if the market shares of these entrants were increasing over time, or whether the incumbent (Power NI) is retaining market power.

IV. Theory of Harm

In this section I will set out my theories of harm pertaining to Northern Ireland's electricity retail market, and try to give an estimate of the potential consumer detriment.

The two theories I will look at will both encompass switching costs. Firstly, of the presence of significant switching costs preventing the market working efficiently. Secondly, that electricity suppliers do not compete effectively amongst each other, particularly in the case of Airtricity and Power NI in the domestic market.

Firstly, on switching costs, which are suggested due to the fact that market shares amongst competitors are polarised. In the domestic sector, which is split up into credit (i.e. bills delivered every month, paid by direct debit or credit) and keypad (i.e. top up electricity meters), four firms operate in each sector. In both sectors Power NI dominates with 76.6% market share in domestic credit sector and 75.2% in domestic keypad in terms of consumption (GWh) as of February 2013. The only real competitor Power NI faces is Airtricity who controls a 22.2 % and 17.4% market share in the credit and keypad sectors respectively.

This is something I think is a particular cause of concern since Budget Energy, which supplies nation-wide and offer lower prices on their standard credit and keypad tariffs, control only a 0.6% and 7.3% market share in domestic credit and keypad respectively. This is despite the fact that Budget offers a 1.34 pence per unit saving on Airtricity and Power NI's standard credit tariffs, equivalent to an 8.75% saving. On their keypad tariffs Budget offer a 13% saving on Airtricity's standard rates and a 10.85% saving on Power NI's standard tariff. These represent significant savings across the course of the year. Using OFGEM's statistic for typical consumption per GB household of 3300kWh[3], where 1 kWh = 1 unit of electricity as billed, I calculated that using standard tariffs, Budget domestic credit customers would save £44.23 a year compared to Power NI and Airtricity customers on standard tariffs.

Why haven't more consumers switched to Budget? The fact that Budget's market share remains so low, despite its lower prices, suggests the presence of switching costs. Whilst it may not be physically difficult to switch supplier, switching costs take many forms and it can be argued that there is an information cost. That is, consumers perceive themselves to have limited choice of suppliers and insufficient information as to what tariff is in their best interest. In a properly functioning market, it is likely there would be many more customers switching to Budget.

Another point on switching costs is that, as mentioned earlier, some consumers may be physically unable to switch i.e. credit-constrained consumers who are resigned to using keypad tariffs or LEU's who cannot curtail their consumption of electricity enough to be banded in a different group. This could lead to such

[2] http://www.ofgem.gov.uk/Media/FactSheets/Documents1/domestic%20energy%20consump%20fig%20FS.pdf

manipulation of these product markets that consumers are charged more because they cannot easily switch away.

An alternative explanation is that suppliers are not, or even not able, to compete effectively with each other. Budget only offers one standard tariff in each of the domestic credit and domestic keypad sectors, whereas Power NI and Airtricity offer a multitude of different tariffs making it, arguably, deliberately confusing for the consumer to be able to compare tariffs. For example, Power NI reward tariffs that offer discounts when customers top up a certain amount of money via a mobile app. Airtricity offer similar reward schemes and green tariffs at the same cost as regular tariffs. While such innovations are beneficial in terms of choice and benefit the pre-paid meter customers, they also come with locking-in effects. The fact that Power NI is the previously state-owned incumbent suggests that it would be prudent to monitor its use of this technology in respect to potential exclusionary practice. Smaller companies such as Budget most likely cannot viably offer such services, but are trying to increase competition by having smaller overheads and offer a lower price, which should be encouraged.

V. Solutions

This section discusses potential solutions to the problems identified in the previous section. It is important to note, due to the relative infancy of competition in the Northern Irish retail electricity market, that more time will be required to see whether this market is functioning well and it may already be headed in the right direction. Nonetheless, there are two potential actions that policymakers could take to improve the status quo.

Firstly, pertaining to consumer information and switching costs, as it stands comparison between tariffs is complicated, perhaps even deliberately so. Therefore it would not be unreasonable to propose that companies should be made to provide some standardised industry information on their tariffs, which should be more readily accessible to consumers (e.g. through a price comparison website); this would increase the information available to consumers and allow them to make better-informed decisions. Physical switching costs do not appear to be prevalent in the electricity supply industry, that is there are no significant barriers stopping consumers from switching. However the perceived effort of switching from consumers could be higher than the actual effort.

The absence of switching could be attributed to the attitudes of consumer in Northern Ireland, to whom competition in utilities such as electricity and gas is relatively new. To help make consumers aware of this competition, local government could run an advertising campaign illustrating the savings between the highest and lowest tariffs on offer. Some may argue that this is down to the supply companies themselves; however, it has been shown that people distrust advertising supplied by market operators or believe that lower prices now will entail a price rise in the future.[4]

[3] Consumer Council Survey, Power to Switch Report

Continuing on switching costs regarding consumers who are unable to switch i.e. the credit-constrained domestic customer who may be limited to a keypad tariff. It is imperative that adequate monitoring of the price differentials between such tariffs, to prevent 3rd degree price discrimination which may amount to abuse. Having adequate competition in each of the product markets would mitigate any tacit collusion to penalise keypad consumers, for example, who are unable to switch.

Secondly, looking at ineffective competition, encouraging the growth of existing smaller competitors and encouraging new entrants is key to creating a more balanced and competitive market. The Utility Regulator currently imposes maximum price controls on Power NI. I think it should be looking to remove these in the short term, as competitors in the markets already offer discounts on Power NI's prices. If Power NI then wishes to raise its price further, perhaps this would stimulate switching of consumers to other suppliers, particularly at a time when increasing energy prices is so topical.

Finally, another cause for competition concern is the overall market structure; the dominance of Power NI and Airtricity combined controlling over 70% of the market in terms of consumption and over 90% in terms of customer numbers. There is great potential for collusion between the two firms as the two major players in the retail market. This could take the form of tacit collusion, which can be just as harmful to consumers. Opening up electricity regulation so that suppliers can compete north and south of the border is probably the most effective way to bring competition to the market. This would, however, require new legislation passed in Whitehall and Merrion Street, which is undoubtedly a lengthy and difficult process.

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