Utility Regulator
ELECTRICITY GAS WATER

# Northern Ireland Electricity Price Transparency:

# follow-up paper



# About the Utility Regulator

The Utility Regulator is the independent non-ministerial government department responsible for regulating Northern Ireland's electricity, gas, water and sewerage industries, to promote the short and long-term interests of consumers.

We are not a policy-making department of government, but we make sure that the energy and water utility industries in Northern Ireland are regulated and developed within ministerial policy as set out in our statutory duties.

We are governed by a Board of Directors and are accountable to the Northern Ireland Assembly through financial and annual reporting obligations.

We are based at Queens House in the centre of Belfast. The Chief Executive leads a management team of directors representing each of the key functional areas in the organisation: Corporate Affairs; Electricity; Gas; Retail & Customer Protection; and Water. The staff team includes economists, engineers, accountants, utility specialists, legal advisors and administration professionals.

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| Our Mission: | Value and sustainability in energy and water |
| Our Vision: | We will make a difference for consumers by listening, innovating and leading |

Our Values:

- Be a best practice regulator: transparent, consistent, proportional, accountable, and targeted
- Be a united team
- Be collaborative and cooperative
- Be professional
- Listen and explain
- Make a difference
- Act with integrity

# Abstract

This paper continues our work to increase transparency and assist policy makers by presenting data and comparisons on Northern Ireland (NI) electricity prices. It follows on from our March 2013 paper, which for the first time presented non-domestic and domestic electricity prices in NI and compared these with other countries. This paper discusses the main issues arising from the original March paper; key consultation points and findings; and comments on the way forward. We intend that the paper should contribute constructively to: a better understanding of electricity price issues; the context for energy policy development going forward including the review of the Strategic Energy Framework commencing in 2014, and to the review of electricity price issues being taken forward by the ETI Committee.

# Audience

Energy industry stakeholders; electricity consumers; electricity consumer representatives and policy makers.

# Consumer impact

This paper sets out the findings and way forward following on from UR's original work in March on NI electricity prices. Once these areas of further work are completed, regulatory and/or policy conclusions may be drawn that will have an impact on customers' bills. However this is not known at this stage. In the medium term, the work we have initiated to better understand prices and their drivers should assist in the development of policy and regulation to keep price drivers transparent and price levels as low as possible for consumers.

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# Executive Summary

## Background context

Electricity prices in NI remain a key concern for both domestic and non-domestic customers. Domestic electricity prices in NI tend to lie slightly above the EU average, and tend over time to lie above GB domestic price levels (by c10%), but below domestic prices in the RoI. Electricity prices for smaller non-domestic customers in NI are also slightly above the EU average - these customers represent the majority of non-domestic customers in NI. Electricity prices for the larger non-domestic customers in NI are amongst the highest in Europe.

Given the range of factors affecting electricity prices, it is not surprising that several of the issues raised in this paper go beyond the UR's statutory remit. We constructively hope that the issues identified and analysis to date can usefully feed debate and decisions in relation to energy policy development and for example feed into the mid-term review of the Strategic Energy Framework that DETI has planned for 2014.

## Our work

There are no straightforward answers to lower electricity prices for NI customers. As energy issues can be complex and interwoven, it is important to be clear about the key drivers of prices and the levers that can best be used to impact prices in both the short and longer terms. In our March paper and subsequent briefing to the ETI Committee earlier this year, we made clear that we did not believe there to be any simple and easy answers to lower electricity prices for NI customers. *Nothing we have heard in the interim across the whole debate has changed that view.*

Moreover, there are tensions between the energy policy goals of sustainability, security of supply and keeping costs as low as possible (the so-called energy policy "tri-lemma"). The UR wish to use our information sets and expertise to continue to independently inform the debate around transparency of electricity prices and their drivers. Quite often in the energy debate, there will upward cost implications for one set of customers, if another set of customers are to benefit from lower costs. Energy policy and regulatory decisions should clearly and specifically identify customer price impacts as part of the decision-making process.

## Wholesale costs and the SEM

Wholesale and generation-related costs are an important element of electricity prices as they account for a large proportion (c70%) of the final price. In terms of electricity price comparisons of NI versus other jurisdictions (apart from RoI as we share the common SEM arrangements) wholesale market costs are likely to be a key driver of price differentials. NI has benefited from the introduction of the SEM arrangements, which were put into place after much analysis and consultation. We are in a better position in terms of wholesale and generation issues than we would have been in the absence of the SEM. In addition, the SEM model has some characteristics which make it more transparent than the GB BETTA market. The UR and SEM Committee remain willing to engage on any area where SEM arrangements may be meaningfully improved upon and work is already underway to identify any such opportunities.

Wholesale prices in the SEM market are higher than those pertaining in the BETTA market in GB. This can be explained by a range of factors. These could include: higher raw input prices in SEM due to higher fuel transport and shrinkage costs; generation mix factors between the two jurisdictions; wholesale market design and related policy differences; economy of scale differences; and the view of some commentators that wholesale prices in GB are "too low" to incentivize the required investment in new generation. At this point, we have not attempted to investigate and apportion the differential between these factors, as this would require a much larger study across both the UK and Ireland.

As regards going forward on wholesale issues in terms of planned work, the Regulatory Authorities and SEM Committee recognize that there is further work needed to review SEM arrangements and where appropriate to consider options for improving the SEM market model. In this regard it is important to note that in the medium term the EU-driven regional integration project will alter the SEM market fundamentals and offers a key opportunity to further improve on the SEM model if and where necessary. In the shorter term, the SEM Committee has already committed to improve SEM price transparency and investigate options to improve the SEM policy framework.

# Network costs

Network cost issues are an important factor in electricity end prices as they make up around 20-30% of end electricity prices. However, the responses to our March paper did not indicate that higher absolute network costs were a significant factor in the final electricity end-prices differentials between NI and other jurisdictions at a market wide level. Rather there were many comments that the different jurisdictional allocations of network costs *between different customer groups* were materially impacting on the electricity price differences between different sized customers as seen in our March paper. In particular they argued that it partly explained the higher network related costs (and hence end-prices) for larger I&C customers in NI relative to RoI (and perhaps elsewhere in Europe).

As regards the situation in NI, the UR has recently confirmed with NIE that they maintain their network costs are allocated in a cost-reflective manner between customer groups, based on cost allocation models previously used by electricity companies in GB. Any move away from absolute cost reflectivity would be a decision for policy makers, not the UR or NIE, and would require legal assessment in relation to concerns such as state-aid and EU legislation compliance. Cost reductions for one set of customers would require offsetting cost increases for other customer groups.

The UR considers that further work is now needed to clearly identify, and model the impact of, the jurisdictional network cost charges and their impact across different customer groups. This can then aid policy debate in this area. Future work is also ideally required to better understand the network and related cost comparisons at an absolute level between NI, RoI and GB and the key cost drivers. Other relevant planned projects within electricity Directorate include: consultation on PSO charges and their allocations; and consultation on the costs associated with smart metering.

## Other costs

There are a number of other cost areas which impact end electricity prices and are normally collected through network-related charges (for example social and environmental obligations/taxes). We consider that these costs can impact on price relativities across jurisdictions and need to be brought into consideration in strategy or policy formulation so that a full picture of cost drivers can be seen. In this vein, we note that there is already significant policy development in this area across the UK, such as the Electricity Market Reform (EMR) agenda; and UR welcomes DETI's intention to undertake a review and analysis of the costs and benefits of renewables in the NI context.

## Retail costs

Respondents to our March paper argued that it is unlikely at this stage that retail cost elements are significantly impacting on the price patterns evidenced in our key findings in March. This view is supported by the current regulatory regime for dominant suppliers where we have control over margins earned. However we have much less visibility on the supplier margins earned in the non-price-controlled medium to the larger sized customer sectors in NI. In responding to our March paper, suppliers specifically argued that the supply margins are low for all size bands. The UR is commencing a number of projects that will influence the operation of supply companies and the regulatory framework around them. These include notably: delivery of the Supply price Controls and regulated electricity charges; a project to deliver enhanced retail market monitoring across all Suppliers in the NI market; and a review into the effectiveness of retail competition in the NI electricity retail market.

## Domestic Tariff Volatility

Some concerns have been raised at the volatility in end electricity prices seen by domestic customers; and we have been asked to consider options for reducing that volatility. The UR is undertaking some work and option assessment in that area, but it is clear that there are no easy answers to reducing volatility.

# 1. Introduction

In March 2013 the Utility Regulator (UR) published an information paper entitled "NI Electricity Prices: Data and Comparisons"[1]. The objective of the paper was to:

- report on, and begin a constructive debate about, electricity prices in Northern Ireland, especially in relation to non-domestic customers, where the data was newly developed by UR and publicly available for the first time;
- demonstrate how electricity prices in NI sit relative to other countries and seek stakeholder thoughts on the likely reasons for those observed relativities; and
- instigate and better inform a stakeholder debate about how energy policy and/or regulatory interventions might improve NI's electricity price positioning.

Using **2011** data, key findings highlighted in our March paper were:

1. Domestic prices in NI are around or slightly above the EU average. They tend over time to lie slightly above GB domestic prices but on a par or below domestic prices in the RoI.
2. Electricity prices for smaller non-domestic customers in NI were also around or slightly above the EU average.
3. Electricity prices for larger non-domestic customers in NI were found to be amongst the highest in Europe.

These patterns have recently been confirmed in the **2012** data now published by the UR in our latest Quarterly Transparency Report (and replicated in the Annex to this paper): (http://www.uregni.gov.uk/uploads/publications/Transparency_Report_2013_AUG.pdf).

The March paper has successfully started a debate on electricity price issues in NI. We invited views from stakeholders on the March paper, and received 9 responses in total. The consultation responses have been published on our website alongside this paper.

Also, the UR has had many interactions with stakeholders, including with media, politicians, the ETI Committee, Energy companies, DETI, CCNI, CBI, MNI, etc. We also note that the ETI Committee has launched a review into electricity pricing issues (as well as concerns around security of supply[2]). We have also had several interactions with the ETI Committee Review team, briefed the Committee ourselves, and been interested in the evidence given to the ETI Committee by other parties in recent months. This paper, and the UR actions on our way forward, should add constructively to the Review considerations.

Several of the issues raised in this paper relate to policy or legal issues; as such there are beyond the UR's statutory remit. We constructively hope that the issues identified by our March paper and in the analysis below, can usefully feed debate and decisions in relation to energy policy development and for example feed into the mid-term review of the Strategic Energy Framework that DETI has planned for 2014.

[1] http://www.uregni.gov.uk/publications/information_paper_on_northern_ireland_electricity_prices_data_and_comparisо

[2] http://www.niassembly.gov.uk/Assembly-Business/Committees/Enterprise-Trade-and-Investment/Inquiries/Review-of-Electricity-Policy/Terms-of-Reference/

# 2. Main issues arising from the UR's March paper

Based on: the UR work developing and publishing the original March price information paper; ongoing work within UR; the responses to our March paper; and stakeholder briefings since that release, the main issues we have identified are summarised below.

Many of the issues raised below go beyond the UR's statutory remit. Given the range of issues related to energy pricing it is likely that all the tools necessary to move forward will not be solely within the UR's remit – energy policy and/or legislative considerations may also have an influence. We would intend therefore that the issues raised by our March paper, and in the analysis below, should feed future policy debate and decisions in relation to energy policy and any future review of the Strategic Energy Framework (SEF).

To continue our approach of constructively contributing, the following are the key points that the UR consider have come out of the work, analysis and discussions to date.

## Background

**1. Electricity prices in NI remain a key concern for both domestic and non-domestic customers. Domestic electricity prices in NI tend to lie slightly above the EU average, and tend over time to lie above GB domestic price levels (by c10%), but below domestic prices in the RoI. Electricity prices for smaller non-domestic customers in NI are also slightly above the EU average - these customers represent the majority of non-domestic customers in NI. Electricity prices for the larger non-domestic customers in NI are amongst the highest in Europe.**

During our work, we have heard from stakeholders that the level of fuel poverty amongst NI households remains a concern in NI. We note also the current intense debate on energy prices and affordability issues in the GB energy market. In addition, electricity prices can be an important element of industrial competitiveness and investment decision-making. The UR has a statutory role in the protection of all electricity customers, and clearly electricity price levels and comparisons remain a material issue across Northern Ireland economy and society. Continuing to inform the debate via transparency on electricity price data and factors impacting on prices therefore remains an important consideration for UR.

As regards the overall picture on electricity prices, key trends (for more detail see Annex to this paper with relevant extracts from the August 2013 UR Quarterly Transparency Report) are:

Domestic customers' prices in NI tend to lie slightly above the EU average. They tend over time to lie above GB domestic price levels (by c10%), but below domestic prices in the RoI. The difference with GB is likely to be due to structural factors such as extra transport costs of fuel, economies and scale and power generation fuel mix.

Electricity prices for smaller non-domestic customers in NI (with annual consumption below 20 MWh), are also just above the EU average. These customers represent the majority of non-domestic customers in NI (approximately 65% of all non-domestic customers in NI at the end of

2012). By consumption, in 2012 they accounted for approximately 7% of non domestic volume. Similar to the domestic price patterns, available data indicate that smaller non-domestic prices tend to lie slightly above GB price levels (by c10%), but below smaller I&C prices in the RoI.

Electricity prices for larger non-domestic customers (with annual consumption larger than 20 MWh) in NI were found to be amongst the highest in Europe. Available data indicate that they tend to lie above GB and RoI equivalent larger non-domestic average prices. These customers represented around 35% of the non-domestic customers in NI at the end of 2012. By consumption, in 2012 they represented approximately 93% of the non-domestic volume.

**2. There are no straightforward answers to lower electricity prices for NI customers. As energy issues can be complex and interwoven, it is important to be clear about the key drivers of prices and the levers that can best be used to impact prices in both the short and longer terms. In our March paper and subsequent briefing to the ETI Committee earlier this year, we made clear that we did not believe there to be any simple and easy answers to lower electricity prices for NI customers. *Nothing we have heard in the interim across the whole debate has changed that view.***

**Moreover, there are tensions between the energy policy goals of sustainability, security of supply and keeping costs as low as possible (the so-called "tri-lemma"). The UR wish to use our information sets and expertise to continue to independently inform the debate around transparency of electricity prices and their drivers. Quite often in the energy debate, there will upward cost implications for one set of customers, if another set of customers are to benefit from lower costs. Energy policy and regulatory decisions should clearly and specifically identify customer price impacts as part of the decision-making process.**

In our March paper and subsequent briefing to the ETI Committee earlier this year, we made clear that we did not believe there to be any simple and easy answers to lower electricity prices for NI customers. *Nothing we have heard in the interim across the whole debate has changed that view.* There are clear tensions between the energy policy goals of sustainability, security of supply and keeping costs as low as possible - the so-called energy policy "tri-lemma".

However we also noted that we considered as the key price drivers, and the important role for informed and evidence-based policy making (both in terms of energy policy and regulatory decisions) going forward. These views were echoed by a number of respondents to our March paper and by several stakeholder briefings to the ETI Committee subsequently. We also note the fact that, quite often in the energy debate, there will upward cost implications for one set of customers, if another set of customers are to benefit from lower costs. We return to this issue as appropriate in the remainder of the paper.

In regard to energy costs, the SEF recognizes the importance of energy costs in NI, and highlights that: *"It is imperative that any policy decisions made now are assessed for their impact on energy costs",* and *"It is also important to ensure that policy changes which could impact on energy costs do not have an adverse effect on business competitiveness",* and *"As Northern Ireland has the highest levels of fuel poverty in the United Kingdom we must ensure that our desire to develop a more sustainable and secure energy supply is not detrimental to energy consumers"* Clearly therefore, the SEF always intended that the energy policy goals for Northern Ireland must be pursued with due consideration to the cost impact on present and future consumers. This is also a helpful and important strategic context to this paper.

The remainder of this paper focuses on what we understand to be the key issues in relation to electricity prices. To aid clarity of debate and policy focus, we separately discuss factors related to the ***wholesale***, ***networks*** and ***retail*** aspects of the cost chain of final electricity prices.

# Wholesale related issues

**3. Wholesale and generation-related costs are an important element of electricity prices as they account for a large proportion (c70%) of the final price. In terms of electricity price comparisons of NI versus other jurisdictions (apart from RoI as we share the common SEM arrangements) wholesale market costs are likely to be a key driver of price differentials. NI has benefited from the introduction of the SEM arrangements, which were put into place after much analysis and consultation. We are in a better position in terms of wholesale and generation issues than we would have been in the absence of the SEM. In addition, the SEM model has some characteristics which make it more transparent than the GB BETTA market. The UR and SEM Committee remain willing to engage on any area where SEM arrangements may be meaningfully improved upon and work is already underway to identify any such opportunities.**

The majority of respondents to our March paper, and in the subsequent discussions, noted the importance of generation-related costs to final end-prices. The costs which are driven out of the wholesale Single Electricity Market (SEM) arrangements account for the largest part of customers' electricity prices. Clearly there is an ongoing need to ensure that the SEM system on this island is operating effectively and striking the appropriate balance between cost, effectiveness, efficient investment signals, etc. There has been some debate on particular aspects of the SEM market design – for example the role of System Marginal Pricing (SMP) and capacity payments incentivising long run efficient generation. Clearly wholesale market design is a complex area and indeed the subject of much current debate across GB and Europe (for example the Regional Integration project). At the time SEM was being designed multiple consultations were held and briefing papers produced on the theory/rationale for SEM design principles, market design and development implementation and assorted policy issues. (More detailed information on the design and rationale for the SEM arrangements can be found on the all-island Project website). The SEM design was explicitly and transparently developed and chosen to strike the appropriate balance across a range of strategic objectives:

- Ensuring a secure supply of electricity
- Promoting competition in the electricity market
- Minimising transaction costs for participants and customers
- Fostering the use of renewable and sustainable energy sources;
- Enabling demand-side management.

The UR considers that electricity customers in NI have benefited from the introduction of the SEM arrangements. For example, the SEM arrangements facilitate the efficient scheduling of generators across the whole island, have helped encourage greater competition to develop (in both the supply and generation of electricity) and have helped to improve transparency of electricity trading arrangements. In addition, due to the implementation of the SEM, the UR was in a position to cancel unfavourable legacy generation contracts. Many factors influenced the value of these contracts; however, analysis carried out in 2010 indicated that the effect of

cancelling these contracts had the scope to deliver savings for NI consumers of circa £30m per annum. A further saving of £7m per year will be realised upon energisation of the second North/South interconnector – we consider this should be an urgent priority.

Moreover, other commentators have noted that SEM compares well with the wholesale/generation market (BETTA) in GB. For example, previous and current research work undertaken by the Economic and Social Research Institute[3] (ESRI) has analysed wholesale prices in the BETTA and SEM markets. They concluded that the wholesale electricity market in Ireland was working well – producing a wholesale price that approximates the long run marginal cost that would apply in a large liquid competitive market. In comparison, they argued that the BETTA market wholesale price appeared to be below the long run marginal cost of producing electricity. In that vein, we note also for example the recent comments from CBI to the ETI Committee[4] favourably comparing the SEM market to the wholesale/generation market in GB:

"In terms of generation cost, we would actually say that the all-island market is working pretty well. It is a good market". "The SEM is in a better place than the energy generation market in GB"
Further evidence to the ETI Committee from several parties have been clear that the SEM design is working well, and compares favourably with the GB BETTA system (the following are taken from formal briefings given to the ETI Committee as part of their work in relation to the Prices and security of Supply Review)[5].

For example the Single electricity Market Operator (SEMO), referring to the SEM market and the SMP model it employs:

"that is deemed to be a very effective way of running a market. That is not to say that there are not discussions around other market models, because they have their merits as well. The key issue is that SEM is transparent, so everyone knows exactly how the SMP is constructed each half hour, and people can have confidence that it is the right price - the most efficient price - for that half hour period."

SEMO, comparing the all-island SEM market to the BETTA wholesale arrangements in GB:

"the GB market is based on bilateral contracts. That is really not transparent. The market there is not as clear as ours".

CBI, referring to how SEM incentivises efficient generation capacity:

"The market is considered to be working a lot better on the island of Ireland than it is in England. There will shortly be a crisis in England because it does not have enough capacity".

Airtricity, referring to the degree to which change was required within SEM in the short term:

SEM is "a highly transparent and highly monitored market.....as it stands it is a well-regulated and well-monitored market".

[3] The ESRI (Economic and Social Research Institute) is an independent research institute. It is an important source of academic research on economic and social change, and informs public policymaking and civil society in Ireland. http://www.esri.ie/#/

[4] CBI representation to ETI Committee 19-09-13.

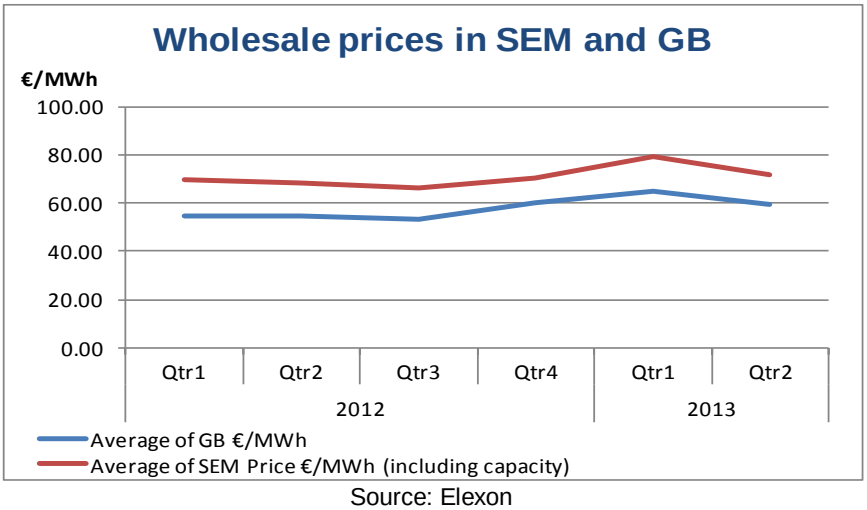
[5] http://www.niassembly.gov.uk/Assembly-Business/Committees/Enterprise-Trade-and-Investment/Minutes-of-Evidence-Hansard/

In the round, there appears to be a general consensus that SEM is operating fairly effectively. However, regardless of the positive soundings, clearly in any wholesale market system key aspects of that system should be kept under review to ensure they are continuing to function effectively. To be clear, **the UR and SEM Committee remain willing to engage on any area where SEM arrangements may be meaningfully further improved upon**; and indeed we note below some areas where the Regulatory Authorities already intend to carry out further analysis going forward. In addition, wholesale electricity market design issues are currently being debated across Europe and a new "Regional Integration" project is being delivered across Europe to better harmonise aspects of wholesale market design and enable an integration of markets in countries that are interconnected. Delivery of this project in the SEM offers another opportunity to make any necessary changes or improvements to the market design.

**4. Wholesale prices in the SEM market are higher than those pertaining in the BETTA market in GB. This can be explained by a range of factors. These could include: higher raw input prices in SEM due to higher fuel transport and shrinkage costs; generation mix factors between the two jurisdictions; wholesale market design and related policy differences; economy of scale differences; and the view of some commentators that wholesale prices in GB are "too low" to incentivize the required investment in new generation. At this point, we have not attempted to investigate and apportion the differential between these factors, as this would require a much larger study across both the UK and Ireland.**

Data sets to compare wholesale prices across jurisdictions do exist, though several have data confidentiality restrictions and may depend on a number of assumptions that cloud direct comparability. That said, the differential between the SEM and BETTA markets varies over time and different data sets produce various results, but a broad estimate indicates it broadly lies around the 20% range.

**Figure 1 Wholesale prices in the Single Electricity Market (NI and RoI) and GB**




Source: Elexon

For example, wholesale price estimated data[6] from Elexon (Figure 1 above) compares wholesale prices in SEM with GB showing that the average SEM prices trend higher than average prices for GB in the last few years. There are many reasons why prices could trend higher in SEM than in the GB market. These include:

I. **Higher input prices** in SEM due to higher fuel transport and "shrinkage" costs relative to BETTA.

II. **Economy of scale differences** - BETTA has the natural economies of scale of a larger market, with lower average costs to generate/supply than in SEM – helping to keep its wholesale prices lower.

III. **Generation mix factors** between the two jurisdictions – previous analysis has indicated that the generation mix used in the two markets in recent years has accounted for a significant portion of the SEM and BETTA spread differentials – this is linked to the relative reduction of the coal fuel input price and higher running levels of coal in GB (and possibly also the effect of having nuclear availability).

IV. BETTA and SEM **detailed market design, together with the underlying jurisdictional policy frameworks** for the wholesale and generation aspects of the electricity sector, differ in some aspects. It is likely that these differences impact final wholesale price levels and jurisdictional differences. Resulting issues such as the level of investment in back-up reserve generation and levels of generator profitability, will also ultimately affect end market prices.

**Are GB wholesale prices "too low"?**

For completeness, we note at this point the view expressed by some commentators in the energy media and industry in recent months that wholesale prices in the GB BETTA market are "too low" to incentivize the required investment in new generation, and that such a situation is unsustainable given security of supply issues in GB.

For example the work undertaken by ESRI noted above analysed electricity prices in the SEM against BETTA. Commenting on the higher wholesale price of electricity in SEM, ESRI attributed some of this to differences in generating technology, but the majority of the difference they argued was due to prices being "too low" in GB. They concluded that the wholesale electricity market in Ireland was working well – producing a wholesale price that approximates the long run marginal cost that would apply in a liquid competitive market. In comparison, the BETTA wholesale price appeared to be below the long run marginal cost of producing electricity.

ESRI has now produced a further working paper (at the time of writing this report has not been published) on "Irish and British electricity prices: what recent history implies for future prices". This paper finds as above that wholesale costs are lower in "BETTA" than SEM and attribute this the wholesale price in BETTA being set "too low" to cover long term generation investment and life-cycle costs. ESRI surmise that the substantial need for new investment in generation in GB will necessitate an increase in returns to generators in the coming period.

We are aware of the debate therefore on BETTA's pricing implications for GB security of supply issues, although the UR has no direct view (as we have not undertaken any analysis on the issue). However suggestions have been made that wholesale prices in GB may need to increase in the coming period - that remains to be seen.

[6] GB prices are market index data and reflect the price of wholesale electricity in the short term market. They have been taken from Elexon website. SEM prices are quarterly averages.

Given the number of issues raised above in relation to wholesale costs and differences between markets, at this point we have not attempted to investigate and apportion the differential between these factors – as that would require a much larger study across the UK and Ireland.

Finally in this section, we emphasise for clarity here that the wholesale cost differential discussed above will contribute to the overall level of final electricity prices being higher in NI (and RoI as we share the SEM system) than in GB. The wholesale price differential however is unlikely to contribute to the diverging pattern around the relative end-price differentials between customer groups across jurisdictions noted in the key findings of our March paper (we return to this issue below).

**5. As regards going forward on wholesale issues in terms of planned work, the Regulatory Authorities and SEM Committee recognize that it is useful to review SEM arrangements and where appropriate to consider options for improving the SEM market model. In this regard it is important to note that in the medium term the EU-driven regional integration project will alter the SEM market fundamentals and offers a key opportunity to further improve on the SEM model if and where necessary. In the shorter term, the SEM Committee has already committed to improve SEM price transparency and investigate options to improve the SEM policy framework.**

The SEM Committee recognize that it is useful to keep SEM arrangements under review, and to increase transparency on wholesale prices, their explanatory factors, and to consider any options for improving the SEM market model. The SEM Committee has introduced regular reporting of generators financial performance in the SEM. The first report was published on 23rd May 2013 and the second report is expected to be published Q1 2014. This is important as it will allow a structured trend picture to emerge of generator financial metrics under the SEM arrangements. In addition, the SEM Committee is exploring avenues for improving the effectiveness and the regulatory framework of SEM further, in advance of (and in tandem with) the new market design being implemented.

Importantly, the UR is currently working on a joint project with the Commission for Energy Regulation (CER) that will result in a change to the existing wholesale energy market on the Island of Ireland. This 'Regional Integration' project[7] is driven by European policy with the aim being to create a pan-European energy market. The rationale behind this pan-European market is to drive competition across the wholesale energy market in Europe and as a consequence produce more economic electricity prices.

The first step towards harmonisation of prices across interconnectors for the SEM will be to redesign the market structure to match the European Target Model allowing effective trades across interconnectors. By 2016 we will see the interconnectors that currently connect the SEM to mainland Great Britain utilised even more efficiently and measures will be put in place so that we can trade wholesale electricity throughout Europe. These changes will allow for not just trading across the existing interconnectors into GB but also put in place arrangements that would facilitate trading across any future interconnectors (either into GB or another country in Europe). It is therefore important that the Moyle interconnector is restored to full and reliable capacity as soon as possible; that the second North/South interconnector is delivered as soon as possible; and that full use is made of the new East/West interconnector in the RoI.

[7] http://www.allislandproject.org/en/TS_Decision_Documents.aspx?article=5dc5e905-db0a-4cde-b3bb-5cf9b1873559

Given the higher wholesale electricity prices prevailing on the Island of Ireland compared to other European countries, this would open up the relatively isolated SEM to further competition via imported electricity on the interconnectors. As a result, and to the extent that interconnection will allow/facilitate it, we would see further harmonisation of prices at a European level.

# Network (and related) cost issues

**6. Network cost issues are an important factor in electricity end prices as they make up around 20-30% of end electricity prices. However, the responses to our March paper did not indicate that higher absolute network costs were a significant factor in the final electricity end-prices differentials between NI and other jurisdictions at a market wide level. Rather there were many comments that the different jurisdictional allocations of network costs *between different customer groups* were materially impacting on the electricity price differences between different sized customers as seen in our March paper. In particular they argued that it partly explained the higher network related costs (and hence end-prices) for larger I&C customers in NI relative to RoI (and perhaps elsewhere in Europe). As regards the situation in NI, the UR has recently confirmed with NIE that they maintain their network costs are allocated in a cost-reflective manner between customer groups, based on cost allocation models previously used by electricity companies in GB. Any move away from absolute cost reflectivity would be a decision for policy makers, not the UR or NIE, and would require legal assessment in relation to concerns such as state-aid and EU legislation compliance. Cost reductions for one set of customers would require offsetting cost increases for other customer groups.**

There is a clear view from many of the responses to our March paper that network cost issues are an important factor in electricity end prices as they make up around 20-30% of end electricity prices (depending on the category of user, etc). The level of Network charges in NI going forward will be set as a result of the current CC reference in relation to the NIE Network price control.

Though the responses to our March paper did not indicate that final electricity end-prices differed in absolute terms between NI and other jurisdictions due to significantly higher or lower network costs, this is still an area of obvious interest and one where clear benchmarked information would be a useful aid to transparency – data to hand historically has been patchy on these relativities. As regards NI comparisons of network cost levels and key drivers with the RoI and GB Grid system – we do not presently have robust and systematic network cost comparison data. This is an area to look into further as we ideally need to better investigate and map out overall network cost differentials between NI, GB and RoI networks. Initial work undertaken within UR indicates that network costs "per unit of electricity" are somewhat higher (perhaps in the region of 10-15%) in ROI than in NI. However, this work needs to be properly analysed, discussed with the relevant stakeholders and clearly set out in the future.

Turning to the issue **of network cost charges and their appropriate allocations between customer groups** – we note to begin that this is currently the subject of some debate from commentators across the EU, including the network companies themselves[8].

[8] http://www.eurelectric.org/media/80239/20130409_network-tariffs-paper_final_to_publish-2013-030-0409-01-e.pdf

As regards previous UR work on the dispersion of final electricity prices between different customer groups across territories, our March report included the following (figure 2) end-price dispersion data (domestic prices were set as 100 and other prices indexed to the domestic charges in each territory).

**Figure 2 EU electricity price dispersions (Jul-Dec 2012)[9]**

| Inter-customer price relativities | | | | |
|---|---|---|---|---|
| Size of consumer | Ireland spread | UK spread | NI spread | EU Median spread |
| Domestic | 100 | 100 | 100 | 100 |
| Very small | 94 | 90 | 92 | 89 |
| Small | 71 | 73 | 86 | 67 |
| Small/Medium | 61 | 63 | 77 | 55 |
| Medium | 46 | 57 | 66 | 49 |
| Large+VeryLarge | 41 | 51 | 62 | 41 |

The table shows that the dispersion of end electricity prices across customer groups in NI is similar to that seen in the rest of the UK. However, in the RoI and for the EU median spread, the differential between domestic and the larger non-domestic customers is much more pronounced. Several respondents to our March paper argued that **the spread of network charging**, and how that pattern differed across jurisdictions within the EU, could partly explain this diverging pattern of end electricity prices.

Essentially the argument put forward is that the differential in final electricity prices between similar customer types in different jurisdictions can be explained at least in part by the allocation of network charges between customers groups; and that basically other member states have set or rebalanced their network cost allocations and hence network tariffs to favour industrial consumers in the interests of industrial competitiveness. The responses to our March paper quoted the RoI and Germany as two jurisdictions where this reallocation may have occurred. We are also aware of a debate taking place at the EU level about the issues (legal, economic and policy) around the appropriate allocation of network related charges in the context of a drive towards a "single market" in energy. We would suspect that this set of issues probably still has a long way to run at the EU level.

As regards briefings to the ETI Committee, we noted the Energia and CBI evidence in this regard. The latter's analysis for example, referencing the gap between large user prices in NI v's RoI, estimated that roughly half the observed cost differential between similar NI and RoI large I&C customers was due to the allocation of network and related costs between customer groups, with the RoI mechanism favouring their larger I&C customers at the expense of their domestics. (For completeness here, the other half of the differential they argued was due to the policy framework promoting renewable and other social policy goals – we return to that issue in the next section).

[9] For this analysis in order to reflect the end user prices - domestic prices include VAT whilst I&C prices exclude VAT (as VAT is a recoverable expense for I&C customers).

As regards the network cost allocation situation in NI, the UR has recently written to and confirmed with NIE that they maintain their network costs to be allocated in a cost-reflective manner between customer groups, based on network cost allocation models and principles previously used by electricity companies in GB.

Whatever the justifications, it seems clear from the recent findings that the allocation of network costs is affecting the final price relativities between customer groups in NI and RoI. (The issue may also be seen and illuminated further if similar GB network cost modelling for different customer groups was taken forward – we are not aware that such comparisons have been attempted in the past). Hence the UR considers that further work is now needed in this area.

However it should be noted that any move away from absolute cost reflectivity would be a policy decision, not the UR's, and would require further legal assessment. There would likely be concerns to do with state-aid and/or anti-competitive issues arising in this area. Also, the UR has statutory duties to protect customers and this is a requirement of protection across the entire customer base without preference to one particular type of customer (albeit the UR has to have special regard for vulnerable customers). The decision in the RoI to rebalance network costs in 2010 in favour of large I&C customers and to the detriment of domestic customers was we understand taken by the government[10] – we are not in a position to comment on the "cost-reflectivity" arguments around that decision or the RoI's justification for that rebalancing. So whilst the UR can carry out analysis to show what various customers in NI pay relative to their RoI and EU counterparts due in some part to network cost allocation, it will be for policy makers to decide if there is to be any subsequent policy response/challenge and the legal basis for that.

**7. There are a number of other cost areas which impact end electricity prices and are normally collected through network-related charges (for example social and environmental obligations/taxes). We consider that these costs can impact on price relativities across jurisdictions and need to be brought into consideration in strategy or policy formulation so that a full picture of cost drivers can be seen. In this vein, we note that there is already significant policy development in this area across the UK, such as the Electricity Market Reform (EMR) agenda; and UR welcomes DETI's recent announcement of a comprehensive analysis of the costs and benefits of renewables in the NI context.**

For completeness, there are other electricity costs paid by end-customers which we cover in this section (and they are mostly collected through network charges) and which will impact on the price differential seen across jurisdictions. These are not costs specifically associated with operating the grid, but include costs associated with meeting other objectives and policy (including taxation) priorities. They include for example: renewable-support (e.g. RoCs); environmental (e.g. Climate Change Levy) and energy efficiency (e.g. Energy Efficiency Levy) related costs; and Public Service Obligation (PSO). These are largely policy matters and lie beyond UR's direct influence – indeed several are decided upon at the UK level. However UR agrees that it is important that there is transparency on these cost elements and their impacts in NI, which in turn should lead to better-informed energy and regulatory policy and strategy development.

[10] See for example http://debates.oireachtas.ie/dail/2009/10/13/00055.asp

Some responses to our work highlighted these costs and noted the potential for these cost to contribute to the differential in electricity prices seen between NI and other jurisdictions (including the comparisons and differentials for large users with RoI). CBI for example highlighted renewable-related costs in particular: RoCs, CCL and grid reinforcements for higher renewable penetration (especially small scale diversified renewable plant). They argued that this factor combined to explain the other half of the cost differential seen between NI and RoI larger electricity users. We have not seen the CBI analysis, so cannot comment on it at this stage. We do note however that these are policy-related factors that need looked at in the round, and in terms of what we described to the ETI Committee as the "tri-lemma" of the potentially competing energy priorities: sustainability, security of supply and costs to consumers. We also note that the same issues are currently part of the wide debate on energy issues going on at the GB level.

In this regard, it is important to note that there is already a significantly changing policy environment lying behind several of these factors. For example, The UK-wide Electricity Market Reform (EMR) agenda is aimed at promoting security of supply, de-carbonisation of electricity generation, and minimising cost to consumers. There is much work in train, (beyond the scope of this paper) at delivering EMR across GB and within NI. We already know that the ROCs regime will close to new applicants in 2017, and be replaced with a new incentivisation regime in the form of feed-in tariffs. The policy intent is that this will provide more efficient long-term support for all forms of low-carbon generation whilst also lowering costs for consumers in the medium term. The intent is that as a result of EMR reforms, household electricity bills from 2016 to 2030 will be on average lower than they would be if we decarbonised under existing policy instruments.

At this point it's also important to note, and UR welcomes, DETI's recent evidence to the ETI Committee where they committed to "a comprehensive analysis of the costs and benefits of renewables in the NI context". This will provide updated information on the cost impacts of the 40% renewables target, which will then feed into the mid-term review of the SEF. It also intends to look separately at the cost impacts of large scale and small scale renewables and the cost impacts on the electricity grid.

**Weighing up the increasing levels of renewable generation.**

The issues around renewable generation: it's role in the wholesale generation mix on this island in the short and longer terms; it's role in SEM pricing; it's impact on system stability and balancing costs; its role in meeting de-carbonisation policy goals and targets; it's impact on network costs; etc are all elements of the debate which has been taking place since the release of our March paper. Because our paper naturally split the electricity prices issues into wholesale, network and retail aspects, an issue as wide as the role of renewables, which can impact on various parts of the electricity cost chain, did not slot neatly into either of those three categories.

Renewable generation has many facets:

- It can aid fuel mix diversity and make a long-run contribution to a diverse and secure energy mix. However the technology must be proven and cost effective to employ in both the short and medium terms.
- In the longer term renewables will arguably replace the need for costly and increasingly scarce fossil fuels, as well as positively impact on climate change issues. However in the short term they can have significant cost impacts on the grid for network connection and reinforcements, especially for small-scale distributed forms of renewables.
- They can put welcome downward pressure on wholesale market electricity prices in the SEM; and yet too they can lead to increased system balancing and control risks and costs due to their variability.

These are of course as much policy issues as regulatory ones and it's beyond the scope of this short paper to seek to fully account for and weigh up the various pros and cons.

It's much too simplistic to argue that higher levels of renewable generation are either a "good" or "bad" thing in the short and medium terms. Clearly, the role of renewables is exactly the type of major policy issue which can be beset by the sort of "tri-lemma" problems noted elsewhere in this paper, and thus must be subject to proper policy/strategy debate and cost benefit analysis. We therefore welcome DETI's decision to undertake work in this area and will seek to help that work as best we can.

**8. The UR considers that further work is now needed to clearly identify, and model the impact of, the jurisdictional network cost charges and their impact across different customer groups. This can then aid policy debate in this area.**

Given the network and related-costs issues touched on above, and in light of the responses made to our March paper, more work is needed to better understand the impact of these issues on final prices in NI, relative to RoI (and possibly GB). Specifically, further work is now needed to identify, and model the impact of, the different network cost charging systems used, and their impact on different customer groups. UR is preparing a project in this area to commence in the coming weeks. We intend to publish the results on completion of the work in 2014.

In addition, we intend to undertake further work in relation to the monies collected under the PSO regime in NI. Also, the UR will be consulting on the allocation of "market opening" costs (currently allocated in our PSO) later this year to ensure those costs are appropriately allocated and charged through to customers.

All of the above will further add transparency in relation to end prices and their relativities.

# Retail Market related issues

**9. Respondents to our March paper argued that it is unlikely at this stage that retail cost elements are significantly impacting on the price patterns evidenced in our key findings in March. This view is supported by the current regulatory regime for dominant suppliers where we have control over margins earned (domestic and smaller non-domestic customers). However we have much less visibility on the supplier margins earned in the non-price-controlled medium to the larger sized customer sectors in NI. In responding to our March paper, suppliers specifically argued that the supply margins are low for all size bands. The UR is commencing a number of projects that will influence the operation of supply companies and the regulatory framework around them. These include notably: delivery of the Supply price Controls and regulated electricity charges; a project to deliver enhanced retail market monitoring across all Suppliers in the NI market; and a review into the effectiveness of retail competition in the NI electricity retail market.**

The Retail element accounts for the smallest portion of final price (c 5-10%). The impact on absolute price levels is therefore small, and there was a view from some respondents to our March paper that this area of further work should not take priority as it is such a small element of price.

To a partial extent, this view is supported by the current regulatory regime for dominant suppliers - we know in relation to those customers covered by regulated electricity prices that, due to the nature of the market here and the regulatory framework in place, we have a lower supply margin than the margins quoted in the GB market. (We have no information readily to hand on the supplier margins in the RoI since the deregulation process unfolded there in the last few years). In NI, we maintain regulatory control over the revenues earned by the dominant electricity supplier in NI (Power NI) in the domestic and smaller non-domestic sectors.

Where prices are no longer regulated in NI (i.e. larger non-domestic customers), we have heard in the supplier responses to our March paper that competitive electricity supply is working effectively and adequately protecting customers in the NI Supply markets. In responding to our March paper, suppliers argued that the supply margins are low for all customer size bands. This remains to be verified - collection of robust and disaggregated data on supplier margins is being considered as part of the wider market monitoring framework we are working to deliver in NI. This data, alongside the current pricing information, would give a greater insight and improve transparency. We note in this regard that several respondents to the March paper commented on the need to increase the scope of our future retail market monitoring.

Given the above and the comments made in this area in relation to our March paper, the UR is not intending any additional urgent work in the Retail arena. However, there are a number of strategically important key projects that we will undertake to examine the operation of supply companies and the regulatory framework around them. These include notably: a project to deliver enhanced retail market monitoring across all Suppliers in the NI market; and a review into the effectiveness of retail competition in the NI electricity retail market. These projects will be included in our Forward Work Programme for 2014/15 as a priority (due to go out for consultation soon).

**10. Some concerns have been raised at the volatility in end electricity prices seen by domestic customers; and we have been asked to consider options for reducing that volatility. UR are undertaking some work and option assessment in that area, but it is clear that there are no easy answers to reducing volatility.**

During the period since our March report, and in the context of the rise in regulated electricity tariffs in July of this year, some concerns have been raised at the volatility in end electricity prices especially seen by domestic customers. Some stakeholders have asked the UR to consider options or mechanisms to reduce that volatility. In response, we are undertaking work and option assessment in that area, and will continue to look into (and report on) this going forward. However a note of caution would be that it is clear that there are no simple answers to reducing end-price volatility, given the fundamental underlying factor that electricity prices are driven by wholesale fuel input costs that in themselves are fundamentally variable (and at times volatile). Smoothing of prices, and dealing with the risks and costs of not reflecting underlying wholesale input costs in changing end-tariffs could itself bring other problems and costs to the industry that we are seeking to avoid.

# 3. UR Actions

The section above highlights the key points made in relation to our March paper and subsequent discussions with stakeholders. As we noted at the outset of this paper, the issues can at times seem complex; and the development and deployment of energy policy lies rightly with the relevant government departments and Committees. We undertook the original March work with the goal of transparently helping that debate and to better-inform future policy making. We hope that this follow-up paper continues in that constructive and transparent vein.

For our part, based on feedback and comment since then we can indicate where we suggest the priority for further work should lie for UR.

We consider the following to be the key actions and planned UR projects going forward:

| Area | Activities | Objective | Timing |
|---|---|---|---|
| **Wholesale** | - The UR and CER are progressing the Regional Integration Project as required by the EU to develop a European energy market as a priority in the coming period. The rationale behind this pan-European market is to drive competition across the wholesale energy market in Europe and as a consequence produce more economic electricity prices. | Amend the SEM arrangements to meet EU requirements and deliver lower electricity prices | Target date: 2016 |
| | - The SEMC is monitoring the financial performance of generators, with a further updated report planned for publication in Q1 of 2014. This will ensure ongoing transparency and feed into related regulatory work streams. | Increase transparency of SEM price issues | 2014 Q1 |
| | - The SEMC has initiated a work stream aimed at exploring options to improve competitiveness and the effectiveness of the regulatory framework of the SEM (in advance or in tandem with the Regional Integration project). Potential options are currently being explored by the relevant regulatory teams - these will be considered and advanced by the SEMC in the coming months. | To improve competitiveness and regulation in SEM framework | 2013/14 |

| Area | Activities | Objective | Timing |
|---|---|---|---|
| **Network and Related** | - Project to analyse and report on ***network (and related) cost allocation issues between customer groups*** between NI and RoI. (We may also consider including GB comparisons, depending on time and resources). This work will commence shortly and will include:<br>• Facts and commentary on network and related charges (what the different jurisdictions are actually charging), and the basis for calculating network charge and related schemes and allocations to system users.<br>• Modelling network and related charges for a defined group of "theoretical" customers (identified to get a broad spread - representative types with varying connections, load profiles and demand). This model will build up network and related costs based on actual network charge schemes for comparison of relativities (It is possible as part of the project that we may ask electricity suppliers to "verify" the results before finalising any report).<br>• Impact on consumer groups of re-shaping cost allocations<br>• Results-based commentary on impact of network and related charges (and their sub-components) on final prices, between jurisdictions and customer groups | Improve transparency and provide a sound basis for UR and policy makers to make future energy-related regulatory and policy decisions. Aid policy and strategy development. | Commence Autumn 2013 |
| | - Future work is ideally required to better understand the ***network and related cost comparisons at an absolute level*** between NI, RoI and GB and the key cost drivers. Structured benchmarking of network costs and their components and drivers would be ideal for transparency. There has been some limited work in this area from ESRI, but it needs a fuller analysis. This work will commence when resources and other priorities permit. | Improve transparency of network efficiency and cost issues, and their impact on end-prices | Timing to be reviewed during 2014 |
| | - Other relevant planned projects within electricity Directorate include: consultation on PSO charges and their allocations; and consultation on the costs associated with smart metering. | Improve transparency of other network cost related issues, and their impact on end-prices. Aid policy and strategy development. | 2014 |

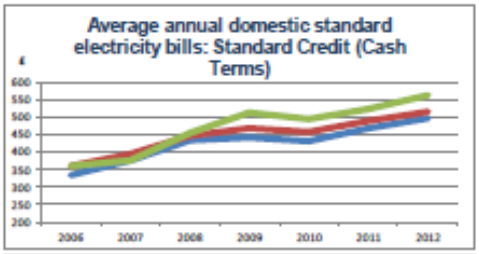
| Area | Activities | Objective | Timing |
|---|---|---|---|
| Retail | - Development of an enhanced retail market monitoring regime, including further transparency in relation to pricing and possibly margins. **Work now underway on this within UR – it will be consulted on in the coming months.** | Improve transparency of pricing and related factors | Q1 2014 |
| | - Update and release of domestic and non-domestic (per consumption band) average unit prices for NI. **Published quarterly in the Quarterly Transparency Reports.** | Improve transparency of pricing and related factors | Quarterly |
| | - Completion of rigorous electricity **Supply Price Controls** for dominant suppliers. | Maintain downward pressure on costs and prices | Q4 2013 |
| | - A review of the effectiveness of retail competition in electricity supply markets in NI. **This Review will commence in early 2014.** | Improve transparency and provide a sound basis for UR and policy makers to make future energy-related regulatory and policy decisions. | Q4 2013 |

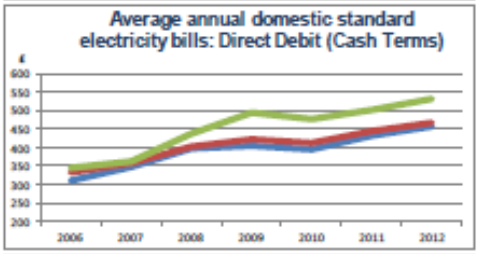
# Annex 1

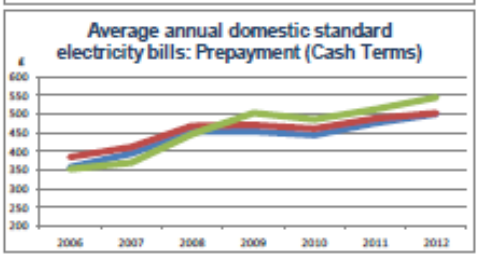
## Extract of August Quarterly Transparency Report

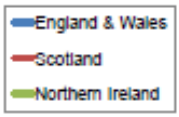
# 4 Domestic prices

## 4.1 Electricity domestic prices



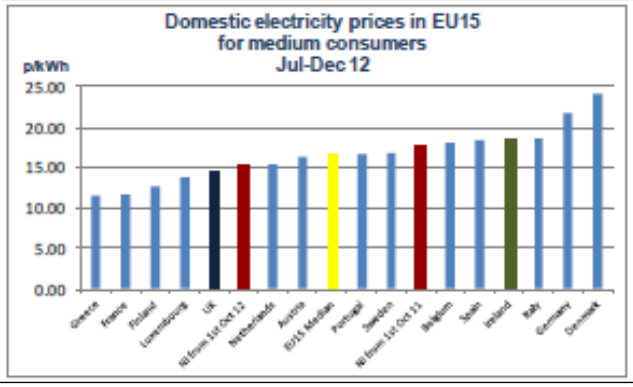




- Average domestic bills are calculated assuming an annual consumption of 3,300 kWh. Data is inclusive of VAT.
- These bills relate to the total amount charged during the year, rather than a bill based on the latest prices.
- Historically in NI, electricity prices have been higher than in GB. This is mainly because there are higher energy transport costs, small size of the market that reduces chances of economies of scale, difference in fuel mix, etc.
- The prepayment option in NI is cheaper than the Standard Credit tariff, and vice versa for the other two regions.
- Source: Table 2.2.2 on DECC last Quarterly Energy Prices (https://www.gov.uk/government/organisations/department-of-energy-climate-change/series/quarterly-energy-prices).

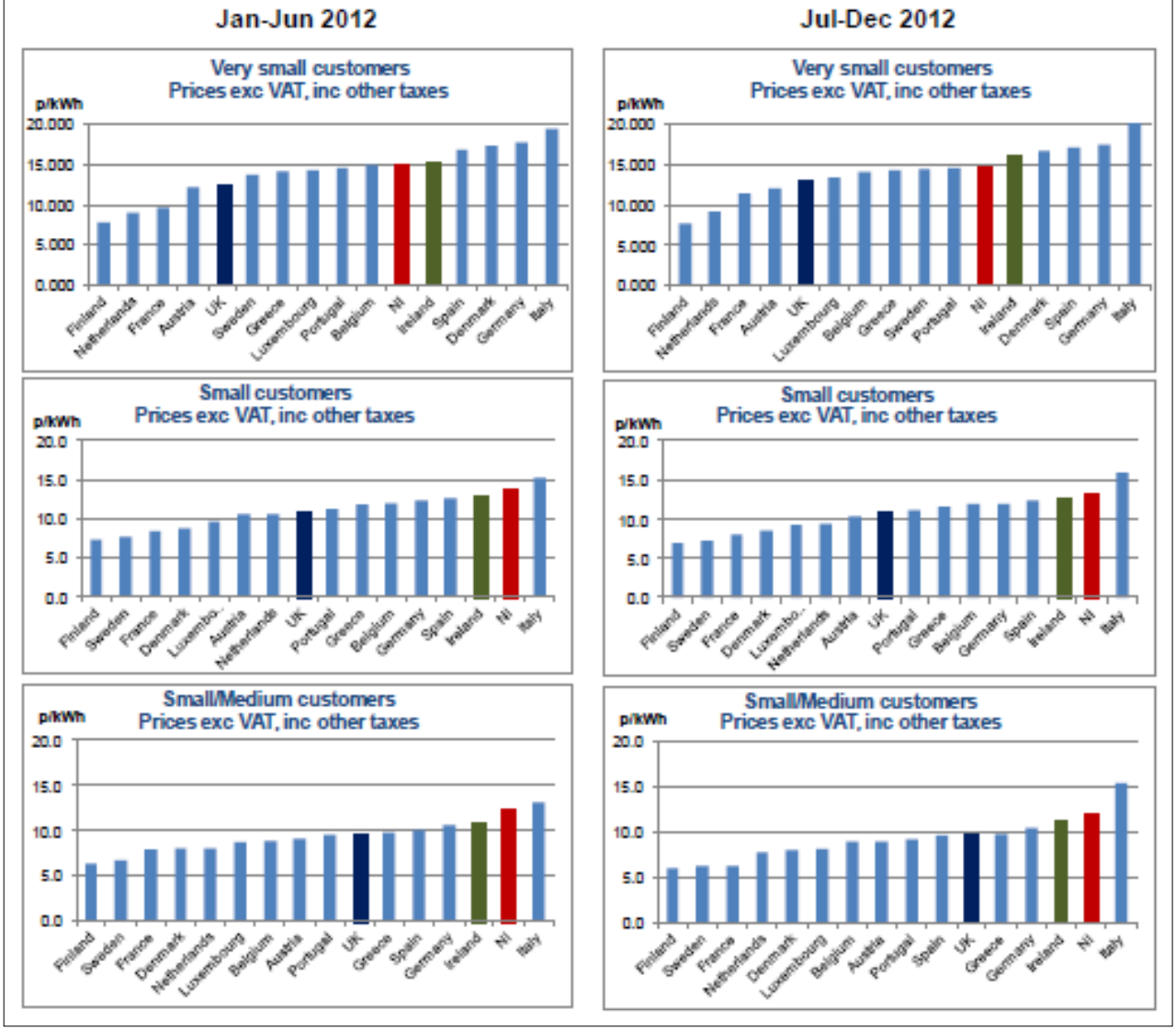
- The graph below compares NI domestic price with the most recent available prices for other countries in Europe (including taxes).
- For an average domestic customer consuming 3,300 kWh per annum, and including taxes, the NI regulated tariffs applying over the first half of the period Jul-Dec 2012 (for the months of July, Aug and Sept), was 17.82 p/kWh, while the regulated tariff applying for the remaining period (Oct, Nov and Dec), was 15.31 p/kWh.

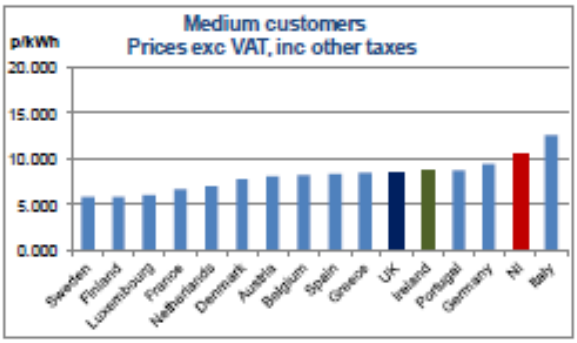


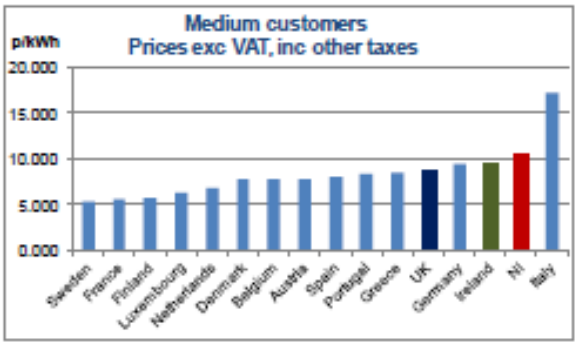

- NI regulated tariff from 1 July 2013 is 18.04 p/kWh.
- Source: DECC Quarterly Energy Prices. Table 5.6.2. Medium consumers (2,500-4,999 KWh) including taxes.

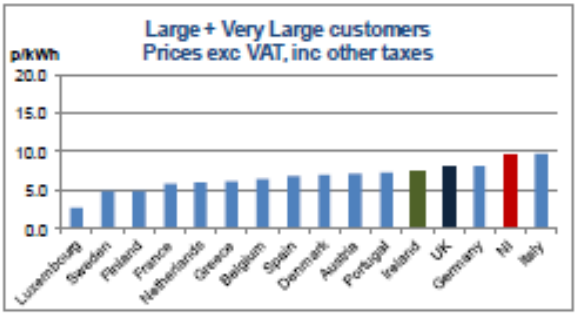
# 5 Electricity non-domestic prices

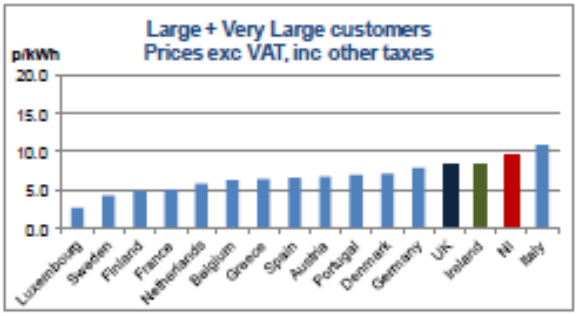
## 5.1. Price comparison with EU






Source: NI electricity suppliers, Eurostat and UR internal calculations

- Consumption size bands following EU categorization are in the table below. This also includes percentages of NI non-domestic customers at the end of Q4 2012 in each of those categories.
- Prices for the very small customers are around the middle of the EU range. However, prices for larger non-domestic customers sit towards the top end of the EU comparisons.
- As shown in the table below, NI non-domestic customers are very heavily grouped in the EU-standardised smallest size band (consuming less than 20 MWh per annum). These customers count for 70% of the total customers in the I&C sector, while they represent approximately 6.5% of the I&C consumption.

| Size of consumer | Annual consumption bands (MWh) | % of I&C customers | % of I&C consumption |
|---|---|---|---|
| Very small | 0 - 20 | 65% | 7% |
| Small | 20 - 499 | 33% | 35% |
| Small/Medium | 500 - 1,999 | 1% | 16% |
| Medium | 2,000 - 19,999 | 0% | 28% |
| Large + Very Large | 20,000 - 150,000 | 0% | 13% |