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Dear Kevin,

Northern Ireland Electricity Transmission and Distribution Price Controls 2012-2017 Draft Determination

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Thank you for the opportunity to respond to this draft determination for the fifth price control for Northern Ireland Electricity Ltd. SSE's plans for further investment in sustainable generation in Northern Ireland depend on the availability of reliable and robust grid infrastructure. Our supply business, Airtricity is the second largest supplier of electricity in Northern Ireland and relies on the network to transmit and distribute electricity to our customers.

As a major generator and supplier of electricity, we understand that high energy prices are a major concern in Northern Ireland. However, we also believe that Northern Ireland's current grid infrastructure is not sufficient for the efficient transmission and distribution of power nor the development of a sustainable, low carbon energy sector, which would mitigate against volatile fossil fuel prices and ensure a secure and stable supply of energy. While cost is a major consideration in protecting the interests of electricity customers, it is not the only concern. Electricity customers deserve value for their investment in network infrastructure. An overriding focus on controlling cost will not deliver long-term value for money for existing and future customers of the network.

The importance of infrastructure spending

Northern Ireland's energy infrastructure is a key enabler of economic growth. The existing electricity infrastructure is not equipped to deal with many of the policy and demand drivers that are shaping energy production and usage in the 21st century. Major utilities, commercial and industrial investors are ready to invest capital in Northern Ireland. However, without the grid infrastructure in place to facilitate this, there is a risk that Northern Ireland will miss out on significant sums of private-sector investment.

The UK Government¹ has rightly prioritised private sector investment in infrastructure as key to achieving sustainable long term growth, and providing a major economic stimulus during a period of public fiscal consolidation. The debate in GB has moved onto how to de-risk projects and investment in order to attract new capital into UK infrastructure projects through institutional investors such as pension and sovereign wealth funds².

The Northern Ireland Executive's Programme for Government identifies '*enhanced economic infrastructure*' and '*developing the green economy*' as key outputs under its first priority: growing a sustainable economy and investing in the future. Capital spending can provide an economic stimulus in

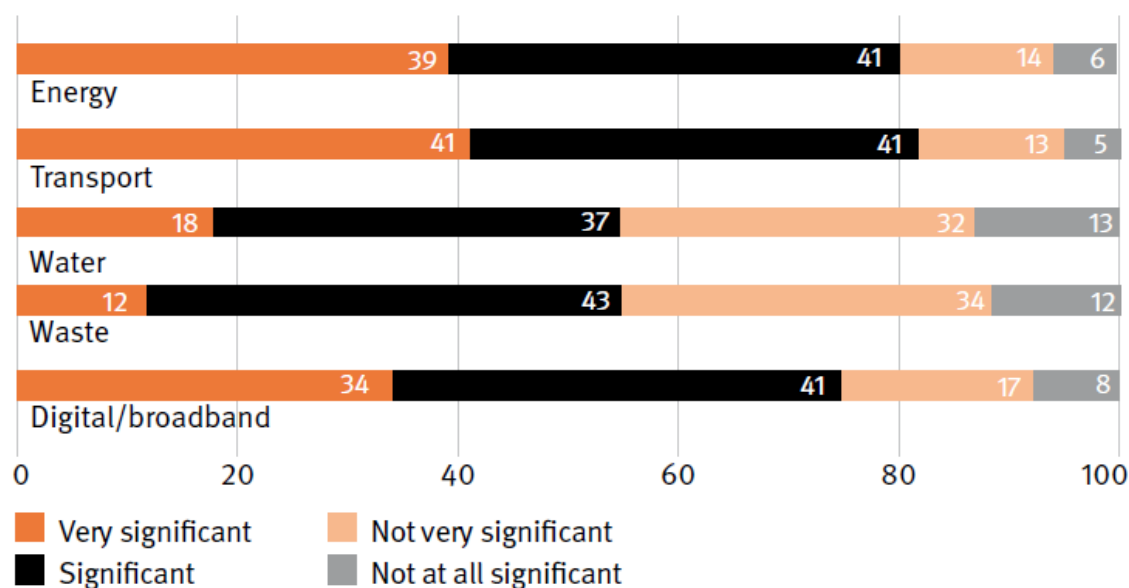
¹ One of the UK Government's key economic policy objectives, outlined in the growth review is to stimulate private infrastructure spending. A Cabinet Committee on infrastructure, chaired by the Chief Secretary to the Treasury is ensuring that the £200 billion of investment required in areas from telecoms to water delivers value for consumers.

² CBI (2012), An offer they shouldn't refuse – attracting investment to UK infrastructure

times of austerity with private investors receiving a long-term return recovered through use of system charges.

The requirement for grid infrastructure is clear; a 2011 CBI and KPMG survey of users, constructors, investors and financiers of infrastructure revealed that 80% of potential investors felt that energy infrastructure was a significant consideration in their investment decisions. Likewise, generators and suppliers of energy like SSE cannot invest in Northern Ireland without the infrastructure in place to transmit and distribute energy.

Figure 1: CBI/KPMG survey – significance of reliability and quality of infrastructure in investment decisions



However, as this price control demonstrates, the debate regarding the specifics of investment in Northern Ireland’s infrastructure has focused on minimising any capital expenditure or asset replacement to prevent price increases³. SSE believes that this is not the right approach. Rather than trying to avoid or delay required investment in electricity networks, the focus must be on maximising the value for customers from necessary upgrades.

In particular, we believe that a greater focus must be placed on expected outputs, rather than trying to control the inputs that NIE feel are required. NIE must demonstrate that any capital expenditure delivers value for money, but they cannot demonstrate that investment is worthwhile if potential users delay or reject investment decisions due to a lack of grid infrastructure.

Two models, RPI-X and RIIO

The price control process is complex and extensive, with much of the detailed information exchanged bilaterally between NIE and the Utility Regulator. As such, we do not feel that we can comment on many of the specifics of the RP5 price control. However, we can draw some comparisons between Ofgem’s RIIO model and the model (closely resembling RPI-X) used for this price control.

³ Network costs are a relatively small part of a total electricity bill. By preventing technologies like onshore wind with zero/low short run marginal cost from connecting to the network, there is a risk that the cost of generation, which makes up approximately 60% of cost of electricity paid by consumers will increase.

The Regulatory Framework in Northern Ireland is primarily focused on short term cost-efficiency and closely resembles the RPI-X framework previously used by Ofgem in GB to regulate both the gas and electricity industries. This framework has been used to drive efficiencies in newly privatised network companies over 20 years. However, Ofgem concluded in their RPI-X@20 process that:

“RPI-X was designed for a very different environment to the one we will face in the future. The regulatory framework needs to change to encourage network companies to deliver a sustainable energy sector and provide value for money.”

“The existing regulatory framework has delivered well for consumers but it was designed for a different era. We do not think it would sufficiently encourage or reward network companies to take a leading role in meeting the challenges. It is important that the framework used to regulate network companies changes to encourage network companies to take on a full role.”⁴

Ofgem have moved to a different framework through the RPI-X@20 process in order to facilitate the development of a sustainable energy sector, given the significant requirement for network investment and innovation. In order to facilitate this at lowest possible cost to the customer, Ofgem have introduced a ‘Sustainable Network Regulation’ model⁵, entitled RIIO – setting **Revenue** using **Incentives** to deliver **Innovation** and **Outputs**. The framework mimics the competitive markets by rewarding companies that deliver on the outputs valued by customers, and penalising those that don’t.

Figure 2: Comparison of Regulatory Frameworks

	RP5 (RPI-X)	RIIO
Outputs	Primarily cost and number of customer minutes lost.	Outputs decided through consultation with stakeholders, including customers, generators and Government.
Innovation	No major incentives for DNO to invest or attempt alternative approaches	Innovation central with incentives for new, cost-effective delivery or alternatives to capital spend on network improvements
Sustainability	Investment allowed if present value captured in cost benefit analysis. Opportunity cost and risk passed on to generators & existing/future customers.	Allows DNOs to play a full role in the delivery of a sustainable energy sector. Sustainability can be core outputs. Needs of existing and future customers captured.
Length of price control	Price control set for 5 years.	Price control set for 8 years with a provision for a mid-term review of outputs
Incentives and penalties	Simple incentives based around cost efficiency and Guaranteed Service	Sophisticated incentives and penalties related to delivery of outputs.
Engagement	Stakeholders can contribute through Utility Regulator	Stakeholders can contribute to DNO business plan and through Utility Regulator

The RIIO model requires network operators to consult with all stakeholders – customers, industry and Government and take account of their views. Having established what stakeholders want and are willing to pay for, the network operator develops a business plan to meet the needs of current and future⁶ customers in an economic and efficient way. The business plan has to be specific in what outputs companies will deliver on, and what customers will get for their money. Performance is then benchmarked against delivery on those outputs, which allows for networks to think differently about how to meet customer needs – e.g. deferring traditional investment or meeting requirements in different ways.

⁴ Ofgem (2010), RIIO: A new way to regulate energy networks

⁵ Ofgem (2010), Regulating energy networks for the future: RPI-X@20 Recommendations Impact Assessment

⁶ This ensures DNOs take a long term view of investment, rather than the typical 5 or 8 year price control timeframe.

While we expected the existing RPI-X approach to be taken and tweaked for the RP5 price control, we stressed in our RP5 strategy submission that we felt it was important to develop more detailed and sophisticated output measures to meet the needs of existing and future customers. Considering the challenge all energy companies face in delivering a sustainable energy sector and the publication of the Department for Enterprise, Trade and Investment's Strategic Energy Framework (SEF) in 2010 we expected an extension of existing output measures linked to capital and operating expenditure in order to deliver better value for customers.

We would like to examine some of the areas of comparison in the latter part of our response in more detail: outputs, innovation and sustainability before considering the timeliness and efficiency of the existing regulatory approval process.

Outputs, not inputs

We would agree with the main conclusion of the Utility Regulator's capital expenditure review which states:

“One of the main issues with the RP4 investment plan outturn is that NIE T&D appears to be treating the agreed investment plan as an allowance. As such, it is investing to a limit rather than having a defined view of the efficient expenditure required to deliver the required outputs.”⁷

By clearly defining and attempting to control capital investment in RP5 through cost benefit analysis, we fear that framework continues to encourage the treatment of agreed investment as an allowance, rather than a means to achieve specified outputs.

While the draft determination identifies planned **outputs** in terms of plant, transformers, overhead lines etc, we would consider these **inputs** that should be assessed against actual delivery of improvements in network performance. This means holding NIE's investments to account against clearly defined and measurable metrics – RIIO uses claw back and penalty mechanisms that require licensees to ensure capital expenditure is both efficient and necessary.

A certain level of information asymmetry between the Utility Regulator and NIE T&D is to be expected, as the requirement for every new asset cannot be known at the outset of a 5 year price control, and the impact of meteorology, changes in network demand or load growth are first known by NIE's engineers. This information asymmetry is manageable through robust assessment of out-turn and utilisation.

Despite extensive consultation with stakeholders the major network outputs that we see explicitly identified in the RP5 draft determination primarily relate to cost and number of customer minutes lost⁸. We think that this is somewhat of a missed opportunity; the consultation on expected network outputs is led by DNOs in GB and has identified a wider number of stakeholder requirements. Minor incentives for opex efficiency, customer minutes lost, network losses and a Guaranteed Standard are outlined, but the focus appears to be on controlling the inputs in terms of asset investment decisions.

As a customer of NIE, SSE would like to see capital expenditure more closely linked to outputs. As we stressed in our original RP5 strategy paper submission, we believe that incentive structures must be retained and extended rather than limited as in the draft determination.

- **Delivery of firm access** – achieving the SEF's 40% renewable electricity target will require the delivery of firm access for renewable generators to be significantly stepped up
- **Quality of service** – with penalties as well as rewards

⁷ Section 5.71, Utility Regulator (2012), Transmission and Distribution Price Controls 2012-2017 Draft Determination

⁸ We note the GSS research report into customer attitudes that suggests electricity services are satisfactory for most customers but the network questions primarily relate to interruptions to supply.

- **Reduction of network losses** – with results proven by actual metered values⁹
- **Reduction of carbon in network operation** – with associated reporting
- **Delivery of capacity improvements through use of technology** – some capacity can be delivered in ways other than the building of additional wires
- **Information Quality Incentive (IQI)** – to encourage better forecasting of capex required.

We are concerned that by making inputs central to the draft determination (i.e. should NIE invest in a new substation or staff to deal with emergency calls), rather than outputs (i.e. delivery of firm access, response times in storms, or reduction in network losses) the Utility Regulator could potentially be taking unnecessary market and policy risk on behalf of present and future customers.

Innovation isn't planned

SSE would draw a distinction between 'known' innovation and 'unknown' innovation. Some radical changes to networks are now widely understood to have value, like smart networks or dynamic line rating. We agree with NIE and the Utility Regulator in that the fast follower principle is generally appropriate for introducing these, with relevant ideas being taken and rapidly replicated. During the next NIE price control period we would expect there to be many opportunities to replicate ideas because of RIIO's emphasis on innovation.

However, 'unknown' innovations require a regulatory framework that encourages natural monopoly businesses to justify taking risks or introducing new ideas. As the RP5 draft determination closely follows the RPI-X framework, we would suggest that an expansion of the existing Sustainable Networks Programme could offer substantial 'unknown' benefits for customers at a relatively minor cost. Recommendations for further work have apparently been considered as part of the review of NIE T&D's capex proposals, but we cannot see a detailed break-down of what has been approved. We have heard that the majority of innovation spend has been rejected.

SSE would stress that innovation can only be facilitated 5 years in advance, not planned. We were disappointed to see that the Utility Regulator's position on innovation stated in the draft determination was:

“NIE T&D's licence condition 19 (system security and planning standards and operation of the distribution system) states that:

‘The Licensee shall plan, develop and maintain the total system, and shall operate (including, without limitation and where necessary, coordinating the flow of electricity over) the Licensee's distribution system’.

Opportunities for innovative solutions should therefore be sought out as part of the wider development of the distribution system. For NIE T&D to do so we consider that NIE T&D should take into account any advancement in technology without having to be specifically rewarded for it.¹⁰”

SSE believes that there is a significant difference between an obligation to plan, develop and maintain the system and an incentive to improve the planning, development and maintenance of the system. There are natural incentives to innovate in a competitive market, whereas a regulated natural monopoly business requires justification for taking risks or introducing new ideas in the form of well-designed incentives.

⁹ As noted in the draft determination, we understand that reliable baseline data will be required from NIE T&D before a cap and collar mechanism takes effect. However, the £1m pot suggested is not enough to make this a 'central' output or target, despite the estimated £70m of electricity lost before it reaches consumers

¹⁰ Section 14.30 – 14.31, Utility Regulator (2012), Transmission and Distribution Price Controls 2012-2017 Draft Determination

Some examples of the ideas SSE's engineers in Scotland have been able to introduce under the RIIO framework are listed below. Innovative ideas are more difficult to introduce when a DNOs projects are micro-managed, or when incentives to achieve measurable improvements in network outputs are not central to the regulatory framework.

Maximise the use of existing assets to deliver capacity and speed connection

Dynamic Line Rating

At present the SHETL system is designed to ensure safety clearances (primarily the distance between the conductor and the ground) are within prescribed limits at all times. Dynamic line rating involves using real time data to make informed decisions about how much power can flow through a conductor without breaching these limits. This allows the maximum rating of the asset to be utilised, and unlocks the potential for more generation to be connected to the system.

To facilitate this, SHETL has trialled the Nexans CAT-1 transmission line monitoring system which allows accurate real-time rating of transmission lines by monitoring the tension on power lines. These field trials are taking place on our Inveraray-Port Ann-Carradale circuits where there is extensive renewable generation connected. The installation took place in 2008, and we believe this to be the first live installation on the UK transmission network.

Minimise the cost of providing network capacity

ACCC Conductor

A third circuit was installed between Peterhead and St. Fergus at 132kV using Aluminium Conductor Composite Core (ACCC) conductor. This uses innovative composite core technology to give the conductor a very high current rating with very little sag. This means the structures on which the conductor is strung do not have to be as high, or as heavily engineered, as those required to carry its traditional alternative. Costs were significantly reduced in this project through the use of 'Trident' wood pole construction, rather than galvanised steel towers. SHETL has led the world's first installation of this type of conductor onto pole structures.

Maintain and improve safety and environmental performance

Alternative Tower Construction Methods

A particularly challenging aspect of building transmission towers is creating access for the heavy machinery required for their construction. Traditionally, this has required roads to be built, accompanied with their associated environmental impacts.

SHETL are addressing this issue by trialling alternative methods of tower construction, focusing particularly on the use of a modified emergency return to service (ERS) system as a lightweight crane to erect and dismantle transmission towers. This would avoid the need to construct access roads suitable for heavy and cumbersome traditional mobile crane.

We have analysed the benefits of this system, and subsequently purchased the equipment necessary for this project to be put into the trial stage. We plan to fully trial this system, invest in staff training and in purchasing more equipment before moving the process to Business As Usual.

A sustainable energy system

The Strategic Energy Framework set out a clear vision of the scale of investment required in order to overhaul Northern Ireland's electricity infrastructure.

“Extensive investment in electricity grid improvements must happen if Northern Ireland is to maximise its use of onshore and offshore renewable electricity resources. In addition, a robust and stable electricity transmission system is an essential prerequisite for a competitive electricity market and is critical to a modern economy.

Northern Ireland needs to ensure that investment delivers an electricity grid with greater capacity and the resilience to manage larger fluctuations in supply and demand. The damage to Northern Ireland's electricity system from the ice storm of March 2010, and its impact on homes and businesses, vividly illustrates the need for a resilient electricity infrastructure.”

The emphasis on delivering the capacity, flexibility and resilience required to meet Northern Ireland's policy objectives is missing from the draft determination. For renewables, these were to be delivered through NIE T&D's short-term, medium term and Renewables Integration Development Plan (RIDP).

The final elements of NIE T&D's medium term plan have expected completion dates of 2015/16; in total these are expected to deliver approximately 730MW of firm access. To deliver the necessary firm access required for continued deployment of renewable generation SSE would have expected a number of medium-term projects to receive regulatory approval for capital expenditure in RP5, especially considering that a number of elements of the medium term plan are already behind schedule, most notably the work on cluster substations.

NIE’s original consultation paper on cluster substation charging arrangements was issued on the 16th March 2010. A decision paper with proposed charging methodology was then issued by the Utility Regulator in April 2011¹¹. However, a further consultation is required to justify the need for an individual cluster as that has not specifically been consulted on, despite the principle being widely understood and accepted by renewable generators, the Utility Regulator, Planning Service and other stakeholders. The consultation process has taken 2 years, and will now likely take until the end of 2012.

We are unclear as to what value further layers of detailed cost benefit analysis of medium term projects will add; more firm access capacity for renewable generation is clearly required in order to facilitate additional investment in renewables. If NIE’s projects are cost-effective and technically sound at this point, they should proceed.

SSE would also note that there is still relatively little visibility for investors of the long term integration plan for renewables, RIDP. Planning preparations were to begin in 2012, as illustrated on the plan. With the body of work that has been deferred in the RP5 draft determination relating to spending on renewables and interconnection (including parts of the medium-term plan) we fear that any long-term network planning will not take place until the next price control period. Grid infrastructure designed only for the present does not properly serve the interests of customers.

Poor planning can add significant delay and cost to vital infrastructure projects. The North-South Interconnector is an example of a project with strategic importance, the absence of which costs customers an estimated £25m per annum. Typically, large infrastructure projects take over 5 years to consent, our Scottish Hydro Electric Transmission Ltd (SHETL) required 8 years to gain consent for the Beaulay-Denny 400kV transmission line. Major projects require work in advance, so although removing minor elements of spend relating to NIE T&D’s long-term planning in this price control defers a minor cost now, the lack of preparation will add significant cost later.

Figure 3: Renewables Integration Development Plan

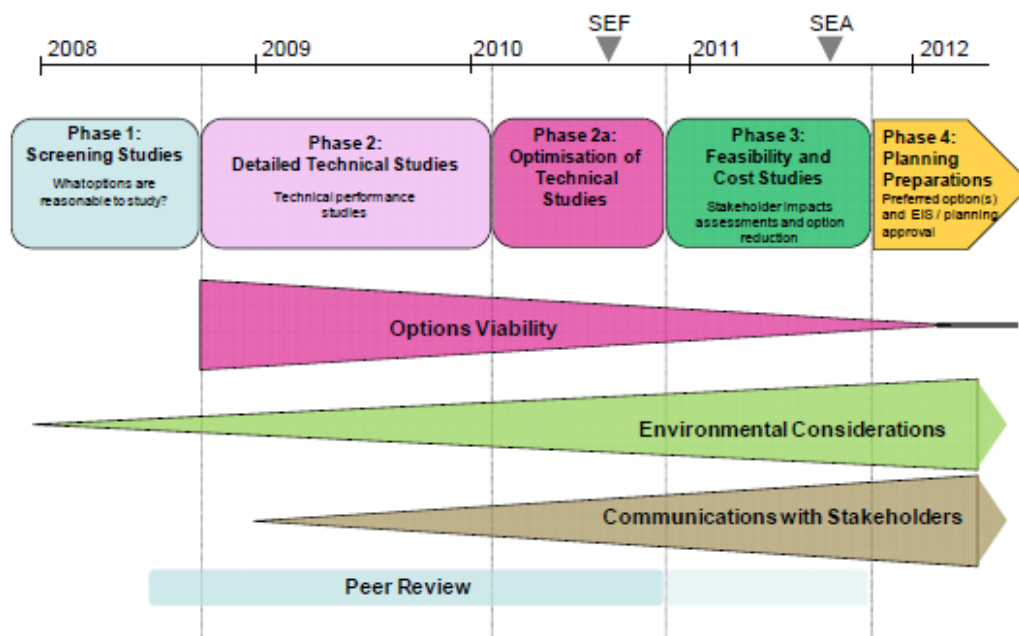


Figure 3.4: RIDP Process

¹¹ Utility Regulator (2011), Decision Paper on the Charges for Connecting Groups of Generators (Clustering) to the Northern Ireland Distribution System

Regulatory approval

SSE understands that the Utility Regulator will consult on a regulatory approval process for individual renewables projects later this year. They also expect approvals to be faster with the new reporter function as submissions will follow a standard format.

While we had initially supported the introduction of a reporter in our RP5 Strategy Paper submission, we have not been convinced that the introduction of an independent reporter to audit, certify and comment on submissions would add significant value, and would like to see more detail as to the terms of reference for the role. If the expectation is that the role would ensure the consistency and accuracy of regulatory returns, we suggest that this could be achieved at lower cost¹² through changes to reporting templates or requiring 'director sign-off' for certain regulatory submissions. We would note that the principle of an independent reporter was considered by Ofgem in the RIIO consultation:

“This review considers, as one option, the benefits of introducing requirements for companies to appoint independent reporters. At this stage, we do not anticipate making a recommendation on the introduction of the type of scheme employed in the water and sewerage sectors, whereby each company appoints an individual with a joint duty of care to the company and regulator to examine the systems used in preparing the principal annual reporting submissions and to review the company’s performance. However, we could see merit in similar but more focussed arrangements with the reporter looking solely at the robustness of regulatory reporting.”¹³

There is a risk of adding significant development costs if those terms of reference extend to the scrutiny of specific details of individual projects. The priority should be on altering the existing regulatory approval process to be more efficient and timely. An explicit performance target for the Utility Regulator with regards to turn-around times for regulatory approvals would ensure that investors aren't simply relying on positive expectations of performance.

We would also stress that competitive prices will be most effectively achieved through the introduction of competition into new areas where possible. Contestability of connections will provide a natural check on connection costs and we are convinced that the introduction of a formal process should be prioritised by the Utility Regulator¹⁴.

¹² We understand that the reporter function will cost £1.5m over a 5 year period.

¹³ Ofgem (2011), Strategy for the next transmission price control – RIIO-T1

¹⁴ We have experience of an informal process of contestability on the connection at our Slieve Kirk wind farm. This delivered significant project savings.

Figure 4: Utility Regulator at RP5 stakeholder briefing

Turnaround times for regulatory approval

Process to be followed will be based on:

NIE	UREG
NIE Request approval for pre-construction costs	
	UREG undertake technical assessment and cost benefit analysis (CBA)
NIE prepare outline design and obtain planning permission etc.	
NIE prepare tender documents and undertake procurement and finalise wayleaves etc.	UREG technical assessment of final scheme
NIE submit final cost details to UREG	
	UREG review CBA
	Final Approval by UREG board

With no certainty of technical and cost approval from the Utility Regulator until planning permissions are obtained for large grid projects, there is a danger that funds will primarily be spent on planning consultants rather than vital network assets. The process with the North South Interconnector presents an example of how obtaining planning permission for grid infrastructure is not necessarily simple or straight-forward.

We expect that the investment risk associated with delays to grid delivery will either be priced into expected project returns or that investors will simply delay investment decisions until firm access is available for projects. The latter would prevent the achievement of DETI's 40% renewable electricity target, and will undermine security of supply. Unfortunately, the environmental, opportunity and security costs of missed investment in sustainable generation are not easily calculated. Some of SSE's renewable generation projects have already seen grid delays of over 3 years¹⁵. If it would be helpful, we can submit a case study from a recent project which illustrates medium-term grid delay from a generator's perspective.

¹⁵ Our Slieve Divena 2 project has seen its planned connection date revised from 2012 to 2015. A grid connection offer was first issued in January 2009.

Concluding remarks

SSE's existing and future business in Northern Ireland depends on the availability of reliable and robust grid infrastructure. We understand that energy prices are a major concern for customers, and that strategic thinking is required to strike the right balance between the short, medium and long-term. We would have concerns that this draft determination leans toward short-term solutions, which will not deliver long-term value for customers. In particular, we feel that there is an overarching focus on controlling the detail of investment decisions made by NIE, rather than assessing the outputs in terms of improved network performance.

SSE's businesses in Ireland are mainly unregulated – we know that consumers primarily care about the end result, the value they receive which is a balance of quality and cost. When we fail to deliver that value, we are penalised through losses in market share or losses on generation projects. We feel that similar principles should be emulated in monopoly network regulation where possible; NIE should be allowed to make investments on the inputs – transmission wires, IT systems or workforce renewal schemes, if they can prove that those investments deliver improvements in the outputs valued by consumers at lowest possible cost.

I hope that you find SSE's comments on the draft determination helpful, if you wish to discuss any aspect of our response in more detail, please do not hesitate to contact me.