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Ofgem – Future Network Regulation

30 October 2022

Dear Sirs,

Open Letter on the next network price control review process

I am pleased on behalf of Millhouse Power Limited to offer our response to the above timely open letter. We are encouraged that Ofgem has recognised the need to review the role of energy networks regulation in the context of developing a future efficient, coordinated and economic energy system which is able to fully support the UK's ambitions of achieving Net-Zero by 2050 and decarbonising Britain's power system by 2035 whilst also meeting our needs for security of energy supply.

Millhouse Power Limited is an independent consultancy to the energy industry specialising in innovation, network asset management, and power system design and development. We also have an established background in electricity network regulation, linking network Business Plans and strategies to the regulatory framework in order to deliver maximum value both to network companies' customers and their shareholders. Our experience enables us to understand both the benefits and limitations of the current regulatory framework and price control process, and places us in a strong position to identify the opportunities for improvement.

The open letter correctly identifies the establishment of an independent Future System Operator as being an opportunity for shaping the future operation of the gas and electricity networks and further driving competition in the design and delivery of new network capacity. We would suggest that, subject to the provisions of the Energy Security Bill, the FSO's strategic planning role should extend to other energy (and energy-related) vectors such as heat, hydrogen and carbon capture and storage, as should (importantly) the future scope of Ofgem's remit in terms of regulation of associated energy network infrastructure.

Ofgem's recent call for input on the future of local energy institutions and governance recognises a further key component to delivering a future secure, efficient, coordinated, economic and integrated energy system – which is the establishment of Regional System Planners and Independent DSOs. RSPs and IDSOs will play a key role in planning and delivering local area energy infrastructure, optimised to address local (sometimes unique) challenges and opportunities whilst simultaneously supporting national energy and decarbonisation objectives overseen by the FSO.

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Millhouse Power Limited has provided consultancy services as a consortium member in an advisory capacity in projects exploring opportunities relating to the FSO's role from a whole energy system perspective, and also the feasibility of different framework models for establishing local area energy planning, markets and operational capability.

We believe that the FSO, along with RSPs and IDSOs, will become key players in the planning and delivery of future integrated energy systems falling under Ofgem's remit as an economic regulator well before the beginning of RIIO-3. In this regard and given Ofgem's extended remit as proposed within the provisions of the Energy Security Bill, we are surprised that the role of independent DSOs has not been explicitly considered, and that hydrogen, heat networks, generation and storage (and carbon capture and storage) assets are explicitly excluded from the scope of this particular open letter. We trust these opportunities will be addressed in future open letters and/or consultations which we look forward to with interest.

Whilst we appreciate that in the context of regulating a whole energy system Ofgem's current remit is limited, and that from a regulatory framework perspective primary legislation might be required to fully enable cross-vector optimisation, we would nevertheless encourage Ofgem to fully exploit its wider remit proposed under the Energy Security Bill in applying a more integrated whole energy system perspective to energy networks regulation. In the meantime, we are pleased to offer our response to the questions raised by the open letter from a purely electricity and gas (methane) public energy networks regulation perspective. In so doing we have proposed the basis of an approach which we believe would significantly reduce the regulatory burden associated with five-year fixed-term periodic price control reviews, and at the same time ensure better alignment between network companies' Business Plans and the strategic challenges facing Britain's energy system.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'D Openshaw', written in a cursive style.

David Openshaw C Eng FIET FRSA
Director - Millhouse Power Limited

1. Strategic issues in the energy system

We agree with Ofgem's articulation of the strategic issues which our energy system will need to address. As we outline in our covering letter above, whilst we agree that an independent Future System Operator will play an increasingly significant role in shaping the operation of the gas and electricity networks, and further driving competition in the design and delivery of new network capacity more quickly, so too will Regional System Planners and Independent DSOs.

Benefits of Local Energy Institutions - Whilst an FSO will (subject to the provisions of the Energy Security Bill or future amendments thereto) provide a strategic planning and delivery assurance role in terms of a Net-Zero compatible energy system and decarbonised power system, the regionally diverse and complex nature of local area energy requirements and opportunities across different vectors requires the creation of complementary decentralised institutions which, with local stakeholder involvement, are able to identify challenges and opportunities which would otherwise be opaque to a central body. This will include place-specific opportunities for hydrogen production (either through electrolysis or steam-methane reformation with carbon capture) and hydrogen deployment (for example as a source of fuel for energy-intensive industrial processes and commercial or public transport). There will also be site-specific opportunities for the economic development of industrial and commercial cogeneration and trigeneration, and for residential heat networks and local energy communities. The planning of other energy-dependent local critical national infrastructure such as telecommunications and water would also be better facilitated by a cross-vector / cross-sector local area planning strategy.

Improved coordination of power system planning - From an electricity vector perspective, the opportunities for renewable generation in the form of wind, solar, wave, tidal, hydro and BECCS will be dependent on regional-specific weather characteristics and/or natural capital, as will opportunities for SMRs and energy storage technologies. Local energy institutions can be effective in coordinating both planning submissions and subsequent network connection applications, enabling DNOs to plan network investment more strategically. Similarly, the rollout and network connection of public EV charging infrastructure would be more effectively facilitated if connection locations, volumes, timings, and capacity requirements were locally coordinated, enabling DNOs to plan network capacity upgrades holistically rather than on what is currently a largely piecemeal basis.

Effective stakeholder engagement - A further benefit of local energy institutions lies in their ability to facilitate local stakeholder engagement more effectively than DNOs or GDNs whose licensed networks each cover a wide area typically spanning several counties. A common criticism with the current regulatory price control review process is that of 'lost voices' meaning that stakeholders' views relating to specific local issues can easily be overlooked as DNOs and GDNs assemble the vast amount of input and feedback they receive.

Independent Business Plan endorsement - The establishment of local area energy institutions will not only help ensure optimisation of energy vectors to meet our energy needs, but also provide an invaluable source of knowledge to Ofgem in the price control review process, providing validated costs and evaluated benefits for energy infrastructure investment decisions. Indeed, we would see RSPs as being an integral part of the Business Plan peer review and submission process as an informed

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independent authority endorsing the Business Plans of DNOs and GDNs, and to some extent also gas and electricity TOs.

National and subnational coordination – Ofgem’s open letter correctly notes that, given the increasing pace of transformational change, the need for whole-system optimisation and the importance of managing uncertainties are key aspects of the energy transition ahead of us. The FSO, RSPs and IDSOs, working in collaboration from both a national and sub-national perspective, will be pivotal in unpicking much of the current uncertainty around energy transformation by identifying the unique challenges and opportunities for the local area electricity and gas distribution and transmission systems managed by each of the individual licensed DNOs, GDNs and TOs whilst at the same time ensuring Britain is on track to meeting its strategic objectives for the energy system.

2. The case for change

We agree that the scale and pace of transformational change, coupled with increasing uncertainty in evolutionary energy pathways, presents a case for change in terms of the process, structure, scope, and underpinning philosophy governing the current price control review process. We also agree that the RIIO framework has been successful in delivering service improvements, has delivered investment at a scale needed by consumers, and has encouraged companies to innovate and deliver efficiency improvements. Nevertheless, notwithstanding the undoubted success of the RIIO framework which we believe is superior to many other regulatory models (and indeed a major improvement over the RPI-X framework) we also agree that it must adapt in order to remain fit for purpose in a rapidly changing energy landscape.

Benefits of RIIO which we believe should be retained in RIIO-3

An evident success factor with RIIO has been the focus on outputs and deliverables - such as (for DNOs) maintaining the health of the network assets at a level which is acceptable in terms of risk (probability and consequence of functional failure) and maintaining a level of network utilisation which is proportionate in terms of efficient use of network capacity (i.e. providing reasonable - but not excessive - headroom for load growth) whilst limiting technical losses. For DNOs, RIIO-ED1’s focus on incentives such as: Broad Measure of Customer Satisfaction, Interruption Incentive Scheme, and Time to Quote / Time to Connect have also delivered measurable network performance and customer service improvements, whilst the Totex Incentive Mechanism (TIM) has been effective in driving both capital and operational cost-efficiencies. For transmission companies, incentives surrounding Reliability of Service, Stakeholder and Customer Satisfaction, Environmental Impact, Safety, Availability, and Timely Connections have driven overall performance improvements, but have also penalised companies where appropriate (for example where SF6 leakage-rate targets have not been met).

Similarly, for GDNs, delivery against a number of specified outputs such as: Iron Mains (safety) Risk Reduction, Loss of Supply, Emergency Response, Customer Satisfaction, Social Obligations and Environmental Outputs has either generally exceeded RIIO-GD1 targets or shown improving performance trends.

Our view is that RIIO has been pivotal in delivering improvements in (genuine) capital and operational cost efficiency, improved customer service, assurance of underlying network asset health, and in promoting innovation that will deliver future benefits in terms of enabling cost-efficient low-carbon energy transition. These are important successes which should be retained in RIIO-3.

In summary:

- RIIO rewards innovation and outputs through incentives - which is an important step forward from simple RPI-X which rewarded cost-efficiency but also, perversely, inefficient cost-cutting.
- Despite some perceptions to the contrary and concerns over how benefits are shared, the Totex Incentive Mechanism (TIM) is effective in reducing the incentive on network companies to simply 'grow the RAB' - i.e. companies are generally content to trade long-term capital growth for a higher *rate* of return on investment which benefits customers and shareholders equally (i.e. with TIM incentive rates for RIIO-ED2 set at 50%¹ for all companies).
- Whilst concerns have been expressed over the scale of shareholder returns (RoRE), these concerns should be balanced against the benefits that customers have realised in terms of lower DUoS charges arising from companies generally underspending against their baseline revenue allowances. The fact that these returns are in any case used in part to fund future investment and reduce borrowing requirements (and not simply to pay dividends) is sometimes overlooked.
- Whilst cost-of-capital can be a source of uncertainty in reaching Final Determinations, and which can significantly impact RoRE, this is mitigated by the 10-year trailing indexation of cost of debt. Whilst the cost of debt financing has been relatively low and stable over RIIO-1 and RIIO-2 to date, recent events have shown the value of indexation in protecting both companies and customers from cost of capital uncertainty. Any temptation to move towards 'rate of return' regulation to address perceptions of excessive shareholder returns would be a backward step for both customers and investors.

By way of context, we understand that DNOs are projected to outturn RIIO-ED1 generally outperforming against incentive targets, but with significant underspends against their baseline revenues. Some of these underspends will certainly be due to genuine efficiencies, including through innovation, but some will also be due to lower than expected economic activity (in part due to Covid-19) and hence lower load growth, leading in turn to a lower than previously anticipated need for network reinforcement.

¹ note: rounded to two significant figures

Limitations apparent within the RIIO-2 framework and process which we believe should be addressed in RIIO-3

We agree there are issues with the current framework relating to: process; structure and form; balance of risk; scope; and uncertainty. In particular, we believe the following are priorities for resolution for the RIIO-3 framework:

- The process (beginning at least two-years before final settlement) is extremely long, time-consuming, and resource-intensive for both Ofgem and network companies. The companies dedicate a considerable resource - including through activities associated with stakeholder engagement, challenge groups, working parties and bilateral meetings - towards producing a well-justified five-year (draft and subsequently final) Business Plan with numerous appendices and supporting data (as specified by the RIGs). Ofgem in turn, alongside its consultants, dedicate a considerable resource to evaluating and comparing Business Plans (including through benchmarking and regression analyses) and to consultation at each stage of the process, for example in developing Sector-Specific Methodologies, Business Plan Guidance, and Draft Determinations, before eventually publishing their Final Determinations². These are skilled resources which might be better deployed in delivering improved network performance, cost efficiencies, and better customer outcomes.
- Notwithstanding the above, final settlement is ultimately based on information for which there is limited confidence in terms of the accuracy of forecast investment and cost drivers.
- Moreover, despite efforts to refine forecasts and drivers for investment throughout the review process, by the time that Final Determinations are published, the landscape will already have moved on, and will continue to diverge from the assumptions underpinning the Business Plans and Final Determinations as the five-year period unwinds.
- Uncertainty mechanisms, whilst helpful, are limited in terms of providing the required agility to respond to the nature, scale and pace of a fast-changing energy landscape.
- The five-year fixed-term planning horizon can obscure opportunities for efficient investment to meet future needs beyond the five-year period.
- The five-year plan, in itself, provides no indication as to whether it is consistent with a pathway that will achieve longer-term strategic goals, such as a decarbonised power system by 2035 or a Net-Zero compliant energy system by 2050.
- Ofgem as well as the network companies are limited by their remit/licence conditions in terms of adopting whole-energy strategies.

² which are then reviewed and challenged by the companies before acceptance – a process which may in exceptional cases involve CMA referrals

The following examples serve to illustrate some of the consequences of these limitations:

Uncertainty - Uncertainty mechanisms and re-opener triggers (and cost-efficiency sharing mechanisms) are helpful in terms of mitigating financial risk to both customer and shareholders. However, given the limited confidence in the accuracy of forecast investment and cost drivers, coupled with an increasing pace of change and uncertainty of direction regarding energy transition pathways, these mechanisms are becoming increasingly unsatisfactory. A further issue relating to uncertainty is that, as an economic regulator, Ofgem might be overly cautious in funding investment unless the case is fully proven (and shown to be necessary within the five-year period) as opposed to being justified on a basis of balance of probability.

Short-term bias - A related issue is that, whilst the Totex Incentive Mechanism (TIM) has undoubtedly driven genuine capital and operating cost efficiencies, there is a risk that it can also encourage companies to seek short-term solutions that will survive the five-year review period, rather than pursuing an investment strategy which addresses the longer-term need. Network options assessments should ideally be based on incremental cost-benefit and discounted cash-flow analyses (for example using Ofgem's standard CBA template). However, the TIM can also encourage adoption of least-cost solutions within the five-year review period (rather than highest value / lowest NPV cost solutions over the life of the investment). By way of a hypothetical example, this might lead to investing in a load transfer scheme solution which deferred the need for major network reinforcement just beyond the five-year window, but which would not necessarily be justified in NPV terms.

Investment risk-aversity - A further risk related to uncertainty is the lack of appetite for least-regrets or anticipatory investment where the timing, or sometimes ultimate scale, of investment need is uncertain. Whilst the risk of asset stranding is understandable, this has to be balanced against the risk that insufficient anticipatory investment might lead to unmanageable (and potentially more costly if demand for resources exceeds supply) levels of investment in the future. A consequence of this could be delayed connections of low carbon technologies such as wind and solar PV farms, or public EV charging infrastructure. It might also act as a barrier to electrification of heat. Ultimately it could threaten both the 2035 decarbonised grid and 2050 Net-Zero targets. It follows that asset stranding risk has to be balanced against risk of future inadequate network capacity. The former will drive decision making from a simple 'network economics' perspective, whereas the latter would drive decision making if risks of missing either the grid decarbonisation by 2035, or Net-Zero by 2050 targets were the dominant decision drivers.

Limited whole-system focus - A consequence of uncertainty and/or of the TIM is that DNOs are encouraged to continue to pursue a 'flexibility first' strategy when considering network options assessments to address demand (and generation) growth, and emerging network constraints. Flexibility applied holistically can undoubtedly deliver cost-efficient solutions to emerging network constraints by deferring the need for reinforcement as peak demand approaches firm capacity. It can also be beneficial in deferring network reinforcement until greater certainty arises over the additional capacity headroom required (noting that asset stranding can also occur if insufficient additional capacity is installed).

However, as a means of network constraint management, it also risks creating a bow-wave of urgent reinforcement when load growth outstrips the capacity of flexibility to maintain EREC P2/7 security or (at LV) avoid thermal overloads or statutory voltage non-compliance issues. Moreover, from a whole-system perspective flexibility might be better targeted towards improved real-time alignment of demand with weather-dependent zero-carbon / zero-marginal cost generation such as wind and solar PV. Whilst we acknowledge the work being undertaken by the ENA Open Networks programme in identifying primacy rules for coordination of ESO and DNO ancillary services (which should lead to procurement efficiencies through identifying synergies and conflicts) we believe that the value of demand flexibility as a network constraint management option should be considered against its value in the wider context of operating a future electricity system with minimal levels of flexible / dispatchable generation and potentially real-time periods where zero marginal cost generation output would otherwise either fall short of or exceed system demand.

Lack of longer-term strategic focus – The decarbonisation of the power system by 2035 and achievement of Net-Zero by 2050 will require a major transformation of Britain’s whole energy system. A limited five-year planning horizon cannot provide assurance that companies’ Business Plans and investment proposals are on track to achieving these longer-term strategic objectives.

3. Possible high-level options for the development of an updated framework

In terms of practical steps that Ofgem could take within their current and emerging remit, we would offer the following:

Opportunities for improved visibility - Notwithstanding the current time and resource-consuming process we have outlined above, in practice, the companies’ Business Plans are actively managed by the companies throughout their life through strong (internal) governance, risk analysis, and change-control, with continuous review of inputs and outputs such as (for DNOs): network performance trends, load growth, new demand and generation connections, asset condition / risk trends, innovation opportunities, etc. All of these are reflected in revisions to the actual delivery plan and to companies’ internal budgets. However, other than through uncertainty mechanisms and reopeners, these (legitimate) changes to the plan are not reflected in companies’ allowed revenues or performance targets. Indeed, these changes, and more importantly the rationale for these changes, are largely invisible to Ofgem other than through data provided under the RIGs.

Reference - Cost of Energy Review - An interesting source of reference is Dieter Helm’s Cost of Energy Review undertaken in 2017³ - in particular, Section 8 paras 34-43, but also noting that some of his comments under ‘The role of the NSO and RSOs’ (and subsequent subsections) are relevant to the creation of an FSO and RSPs. The report highlights the flaws inherent in five-yearly price controls in that by the time Ofgem has issued its Final Determinations, the landscape has changed, and continues to change further throughout the five-year period, to the extent that what DNOs (perhaps less so TOs

³ <https://www.gov.uk/government/publications/cost-of-energy-independent-review>

and GDNs) deliver over the period can be quite different to what their submitted Business Plans proposed. Whilst we would not advocate Dieter Helm's recommendations (in particular, the proposal that periodic reviews should be discontinued altogether) the report does nevertheless support the case for a different approach that is more capable of aligning companies' allowances with the programme that is actually required and delivered.

A more interactive and agile approach - Given the above, and the fact that there is considerable uncertainty regarding the scale, pace and form of low carbon energy transition (for example the future role of hydrogen as an alternative to electrification for some forms of transport and heating) it follows that an ex-ante approach based on a five-year forward view (even with ex-post uncertainty mechanisms) is unlikely to be fully effective in aligning companies' costs and revenues with efficient investment over the five-year period.

One option therefore might be to move towards a more interactive and agile process whereby the outcome of a company's internal Business Plan change-control and budgeting process is seamlessly reflected in their allowances⁴. Such an approach would be even more beneficial in the context of an environment where scale and pace of low carbon transition at a regional level is increasing, but not easily quantified five years in advance.

The decarbonisation of the power system by 2035 and achievement of Net-Zero by 2050 will require a major transformation of Britain's whole energy system. It follows that by the beginning of RIIO-3 (2026 for Transmission and Gas Distribution and 2028 for Electricity Distribution) it will be important to be able to demonstrate that companies' Business Plans are aligned with these longer-term strategic goals, demonstrating clear pathways to achieving the 2035 and 2050 targets.

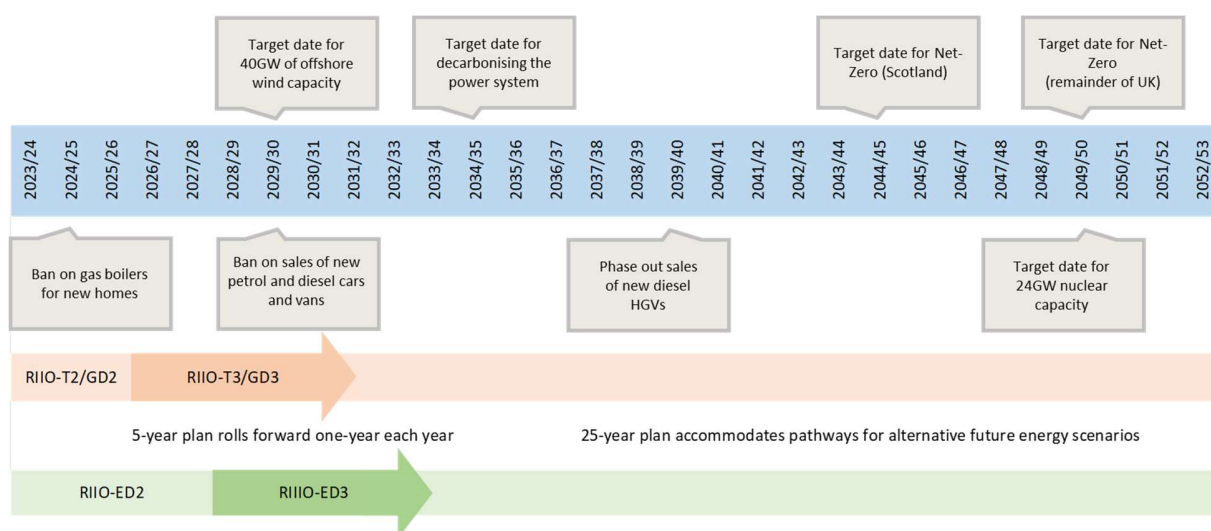
A 25-year planning horizon - For the above reasons, we believe there could be merit in considering Ofwat's proposed approach as set out in their ambitions for the 2024 price review PR24 'creating tomorrow together'⁵. Under these proposals, companies would set out their five-year Business Plans in the context of a long-term (25-year) delivery strategy, not only anticipating change, but adapting to it. Applied to electricity and gas networks, this would helpfully place company Business Plans in the context of delivering a zero-carbon power system by 2035 and a Net-Zero compliant whole energy system by 2050. The basis for the 25-year planning horizon would be their Distribution Future Energy Scenarios which would be aligned with the FSO (currently National Grid ESO) Future Energy Scenarios and endorsed by the FSO. Pathways under the 25-year planning horizon would not be fixed but would be derived from adaptive planning techniques to embrace a range of credible pathways – for example pathways to achieving each of National Grid ESO's 2050 Future Energy Scenarios (reviewed and updated annually) noting that as we progress towards 2035 and 2050 the pathways would inevitably

⁴ conceptually this could also apply to actual cost-of-capital

⁵ <https://www.ofwat.gov.uk/publication/pr24-and-beyond-long-term-delivery-strategies-and-common-reference-scenarios/>

converge, and hence the Business Plan longer-term investment strategies would increasingly transition from provisional to firm. In that context, the five-year Business Plans would be staging posts in the overall trajectory towards the long-term strategic objectives and outcomes.

A rolling five-year plan - We would suggest that a logical extension of this concept is that, rather than price control reviews based on five-year fixed-term periods, an option could be to move to a more continuous (but lighter touch) regulatory regime based on a *rolling* five-year plan (i.e. annually updated and incremented by one year, but maintaining a 25-year planning horizon).



Improved alignment - Such a process would be better aligned to the strategic milestones facing the energy system, and inherently more agile and adaptable to a rapidly changing energy landscape. Applied across all vectors (both transmission and distribution) this would allow better whole energy system coordination and optimisation, and greater assurance that Business Plans were on track to achieving our longer-term strategic objectives. A further significant advantage of this approach is that it would be based on companies' internal Business Plan change-control governance and budgeting processes which are already firmly established; in essence it would be simply a case of sharing this information with Ofgem. An important additional benefit is that the cyclic resourcing pressures (for both Ofgem and companies) inherent in the current process could be much reduced. Moreover, the current two-year 'phase difference' between electricity Transmission and Distribution price controls would effectively be eliminated.

Regulatory assurance and reporting - In terms of maintaining incentives associated with: network performance, customer service, public safety and environmental and social obligations, we would advocate the continuation of annual targets which would be reviewed and refreshed at five-yearly intervals but based increasingly on stakeholder input facilitated by the establishment of local area energy institutions. Similarly, matters affecting financing such as cost of capital, inflation and company-specific real price effects would be reviewed at five-yearly intervals and ongoing revenues adjusted accordingly.

In terms of regulatory assurance, companies would be required to report annually to Ofgem on key metrics such as customer service, network performance, and asset utilisation and health trends - the latter for example through the established Common Network Asset Indices Methodology adopted by DNOs. Companies would also be required to report annually on progress against their network asset management plan (i.e. the basis of their baseline revenues) explaining and justifying significant delays (or accelerations) in delivery of high value projects and work programmes. In so doing they would be required to clearly differentiate between cost savings which had resulted from genuine efficiency and/or innovative solutions (and which would therefore be eligible for the TIM) and those which had resulted from reprogramming, descoping or indefinite deferral. The annual report would set out the proposed work programme for the following five years showing the revised and extended expenditure profile, clearly identifying changes in timings and costs of high value projects and programmes of work. We would expect these reports to be independently audited and drafted in a style which is accessible to customers and stakeholders.

Resourcing efficiencies - From a regulatory burden perspective, although this approach would involve a continuous (rather than periodic) price control review process, the resourcing implications would be much less onerous since the required information would be generated through companies' existing internal governance processes, and the current five-yearly heavy resourcing peak would be replaced by a continuous but lighter resourcing requirement.

We acknowledge that what we have outlined above is largely conceptual and would need substantial development with supporting impact analysis to demonstrate proof of concept and potential benefit, but we do believe that, as a framework model, it has the potential to address the challenges and opportunities that lie ahead more effectively than the four specific options outlined in Ofgem's open letter which we comment on as follows:

(1) Continued use of periodic reviews, with RIIO being adapted where appropriate to address the strategic issues above, such as by including incentives around whole system optimisation.

Whilst the concept of incentives on whole system optimisation is intuitively appealing, we would question whether that in itself would sufficiently address the strategic issues outlined above. TOs and DNOs already have a 'whole system' licence obligation (albeit limited to the efficient, coordinated and economic development of transmission and distribution networks) but this does not address the need for integrated energy system planning crossing energy vectors; neither does it address the current resourcing issues; nor does it address the need for greater agility and adaptation. A five-year rolling plan based on a 25-year planning horizon, reviewed annually (at a relatively high-level using information already assembled by the companies as part of their annual internal review, change-control governance and budgeting processes) would help ensure outcomes were better aligned with strategic objectives under a fast-changing landscape. It would also considerably ease the regulatory burden for both Ofgem and the companies, releasing skilled resources to turn their attention to delivering strategic objectives around low carbon energy transition and better outcomes for customers.

(2) An alternative ex-ante incentive regime, where the control is set in advance, but is based on a simpler target to improve operating efficiency, for example based on a longer-term productivity incentive that is reviewed only as and when necessary, which would reduce the complexity of the process of setting price controls.

Whilst attractive from the perspective of reducing the regulatory burden on both Ofgem and network companies, an approach based simply on targets to improve operating efficiency, and incentives to deliver longer-term productivity, would provide little assurance that companies were delivering against longer-term strategic objectives. Indeed, it would seem only to offer a simplified alternative to RPI-X regulation. Adopting a five-year rolling plan based on a 25-year planning horizon with annual adjustments to align revenues and targets with emerging cost and investment drivers would retain an ex-ante methodology but also address the inherent risk of progressive divergence from the assumptions that informed the five-year settlement.

(3) A model involving greater user/stakeholder participation to determine investment need or other elements of the price control (e.g. negotiated settlements with customer representatives or with a central planning body such as the FSO). This approach would reduce the scope of Ofgem's direct involvement in setting price controls.

We agree that enabling greater user/stakeholder participation is an important provision within any new regulatory framework, but one which depends crucially on the establishment of effective local energy institutions and governance. One of the benefits of local energy institutions lies in their ability to facilitate local stakeholder engagement more effectively than DNOs or GDNs whose licensed networks each cover a wide area typically spanning several counties. If RSPs (whose remit would include coordination with the FSO to align local and national energy strategies) were to become an integral part of the Business Plan peer review and submission process as an informed independent authority that would endorse the companies' Business Plans, this would both reduce the scope of Ofgem's direct involvement in setting price controls whilst also providing assurance that the plan was better informed by local stakeholders and aligned with local area (as well as national) energy needs.

(4) An ex-post regime, where allowances are set based on a pre-determined rate of return, subject to effective operational delivery. This would represent a material shift in the structure and form of the price control, with incentives primarily focussed on the achievement of delivering whole-system objectives.

Whilst an approach geared towards achieving whole-system objectives would be welcome, we would not advocate 'rate-of-return' regulation as we believe this could stifle both innovation and incentives to more efficiently deliver outputs to the benefit of customers. Moreover, such a regime suffers similar limitations to option 2 above in that it would provide little assurance that companies were delivering against longer-term strategic objectives. Concerns over perceptions of excessive shareholder returns could be addressed more effectively by the (annually reviewed) five-year rolling plan approach we advocate, since companies' revenues would be adjusted to reflect their performance against the cost and investment drivers they actually encounter (rather than those assumed at final settlement) and the outcomes they actually deliver. As we note above, applied across all vectors (both transmission

and distribution and ultimately including other energy vectors) this would allow much better whole energy system (not only electricity transmission and distribution) alignment and optimisation.

Flexibility and third-party assets - We note that the options being explored by the open letter apply only to the regulation of activities/costs of incumbent network monopolies, and that as the system evolves there is an expectation by Ofgem that this will result in greater use of flexibility and third-party assets alongside those of the regulated networks, and also that there will be increased focus on the way in which networks are designed and managed to achieve whole-system objectives. Whilst we have commented on the role of flexibility in our response to question 2 above, we would reiterate our view that whilst flexibility can undoubtedly deliver cost-efficient solutions to emerging network constraints by deferring the need for reinforcement as peak demand approaches firm capacity, or until greater certainty arises over the additional capacity required, it will be important from a whole-system perspective to ensure the use of flexibility is targeted to deliver the maximum whole system benefit, particularly as our reliance on weather-dependent renewable generation increases.

In terms of third-party assets, the increasing role of 'behind-the-meter' assets in delivering whole system benefits has already become apparent with increasing use of flexibility not only for system balancing but also to improve distribution network load factors and hence mitigate peak demands which would otherwise trigger electricity network reinforcement, either to maintain ENA EREC P2/7 design levels of security of supply or to maintain power flows within asset thermal ratings, and voltages at points of supply to customers' premises within statutory limits. Key to deriving the greatest benefits from flexibility is to exploit the synergies inherent in the various electricity system services requirements (viz. system balancing, operating reserve, frequency response, capacity, and network constraint management) but also to manage potential conflicts in the way in which the services are procured and dispatched. For example, whilst DNOs are universally applying a 'flexibility first' approach in their network options assessments, a valuable further use of flexibility in future will be in alignment of demand with renewable generation output, for example through dynamic ToU tariffs which we predict will become commonplace once the smart metering programme is rolled out and half-hourly settlement based on actual demand patterns replaces profiled settlement.

The role of the FSO and DSOs in network design and management - Given the need for increased focus on the way in which networks are designed and managed to achieve whole-system objectives, we believe the establishment of the FSO and DSOs, ideally Independent DSOs (ring-fenced or legally separated from their DNO businesses) will further enhance innovation when undertaking network options assessments and deriving whole-system solutions. We believe strongly that these developments will deliver greater whole-energy system cost efficiencies than simply opening-up network management, planning, operation and investment to greater competition. The FSO and DSOs will have regard to the wider system benefits of different network options which might be overlooked by simple consideration of the lowest cost solution (determined through competition) to a particular investment trigger. An important principle to retain is that of efficient, *coordinated* and economic network planning and operation, but with increasing emphasis on whole system perspectives. It should also be recognised that procurement of network assets and services is already subject to regular market-testing through ITT's and RFPs.

4. Summary of our key messages for RIIO-3

RIIO-3 provides an opportunity to adopt a more strategic, forward-looking regulatory framework with a specific focus on longer-term objectives such as delivering a decarbonised electricity system by 2035 and a Net-Zero compatible energy system by 2050. We believe it also provides an opportunity for a better aligned regulatory framework which can reduce the regulatory burden on both Ofgem and network companies whilst improving visibility of progress against strategic objectives and providing greater assurance that network companies' regulated revenues are consistent with their actual funding requirements for efficient delivery of outputs and outcomes.

Retaining focus on outputs and outcomes – RIIO has transformed the approach to network regulation, moving away from incentivising simple cost-cutting to incentivising genuine capital and operational cost-efficiencies in delivering important outputs such as assurance of underlying network asset health and sufficiency of network capacity. These are important successes which we believe should be retained in RIIO-3.

A forward-looking strategic regulatory framework - We support the objective of allowing more flexibility for Ofgem and network companies to re-orientate the focus of regulation towards forward-looking considerations, including enhancement projects and whole-system optimisation. The RIIO principle of focussing on defined deliverables and outputs, rewarding genuine efficiency and innovation through appropriate incentivisation, should be retained but with an increased focus on delivering affordable low carbon energy transition.

A longer-term planning horizon – We advocate a five-year rolling Business Plan approach (based on a 25-year planning horizon) with light-touch annual reviews based on information that is already generated by companies for their own governance purposes. We believe this is a concept which could be developed and tested over the RIIO-2 period. Not only would this approach reduce the heavy resourcing requirements for both Ofgem and the network companies associated with the current in-depth five-yearly reviews, it would also avoid the cyclic pattern whereby at least two out of every five years of each review period involves preparation for the following five-year review period, with the resource effort building to a peak approaching and following draft and then final Business Plan submissions. Most importantly, based on a 25-year planning horizon as we suggest, a five-year *rolling* plan would provide assurance that companies' Business Plans were being adapted and aligned with achieving the longer-term strategic goals for Britain's energy system. The current five-year fixed-term planning horizon is unable to provide such assurance.

A better-aligned regulatory framework - Adopting a five-year *rolling* plan would align the price control process with the annual (and to some extent continuous) Business Planning process that network companies undertake as part of their overall governance and budgeting. Like most significant businesses, network companies do not construct their Business Plans on the basis of a five-year fixed-term planning horizon reformed at five-yearly intervals; rather they look towards longer-term horizons and update their plans continuously as new intervention drivers and solutions present themselves. In the case of network companies, this would mean updating their network asset management plans as network options assessments are refined, as project costs are finalised, and as work programmes are prioritised. Using companies' network asset management plans as a basis for the regulatory price-

control review framework would greatly improve transparency, ensure currency of delivery assumptions, reduce (if not eliminate) the need for uncertainty mechanisms, and permit revenues to be adjusted to reflect actual funding requirements.

Revenues aligned with efficiently incurred expenditure - Should it become apparent that previously anticipated investment had become unnecessary and/or could be safely deferred due to (say) demand growing at a slower rate than anticipated, or due to (say) underlying asset health (and functional failure risk) deteriorating at a slower rate than anticipated, then revenues would be adjusted to reflect lower (or later) than anticipated costs of intervention. The reciprocal is also valid whereby should investment become necessary earlier than expected then revenues would similarly be adjusted accordingly. In many cases this might simply be a case of 'retiming' of investment, and hence revenues, by one or more years which would be reflected in the forward plan. This would enable differentiation between cost-efficiencies delivered through innovative applications of technology and market mechanisms (which should be rewarded through the TIM) and simple deferral of expenditure due to a lower (or later) than expected need. Under the current approach the revised timing of investment deferred beyond the five-year review period is largely opaque to Ofgem, whereas under the 25-year planning horizon we advocate, the re-timing of the deferred investment would be transparent.

Addressing concerns over rates of return - As well as ensuring the value of companies' Regulated Asset Bases (RABs) were reflective of actually incurred and/or efficiently avoided investment, and not artificially inflated by forecast expenditure subsequently proving unnecessary (i.e. due to the combined effects of the TIM and Totex capitalisation rates) this approach would also go some way to avoiding the perception of companies making 'unearned' rates of return. In our view this is highly preferable to any explicit form of 'rate-of-return' regulation which we feel could undermine incentives for capital or operating cost efficiencies, and instead provide a perverse incentive on companies to maximise the value of their Regulated Asset Bases to maximise longer-term returns.

Retaining incentives – notwithstanding the benefits of better alignment of revenues with efficiently incurred expenditure, it will nevertheless be important to retain an efficiency incentive mechanism whereby if innovation allowed *efficient* capital or operating cost savings, or *efficient* deferral of investment, this should continue to be rewarded through something equivalent to the current TIM. Network performance and customer service incentives should also be retained, as should requirements to address social, safety and environmental obligations.

A whole-energy system perspective - Whilst we have offered our views on the next price control review process in the context of electricity and gas (methane) networks regulation, we would nevertheless reiterate our strong view, given Ofgem's extended remit as proposed under the provisions of the Energy Security Bill, that from a whole-energy system perspective the future regulatory framework applying to hydrogen, heat networks, and carbon capture and storage assets should also be taken into consideration as interdependent energy (or energy-related) vectors, as should the role of independent DSOs and Regional System Planners and their relationship to the FSO. We might reasonably expect that these will all be factors in play by the commencement of RIIO-3.