Electricity Market Measures Submissions
Ministry of Business, Innovation and Employment
PO Box 1473
Wellington 6140
New Zealand
electricitymarkets@mbie.govt.nz

2 November 2023

Subject: Measures for Transition to an Expanded and Highly Renewable Electricity System

Helios Energy is a New Zealand-based solar development company with a focus on medium to large-scale grid connected solar projects, and is actively developing a portfolio of solar and storage in excess of 1GW across New Zealand.

Helios is very pleased to be able to submit on the Measures for Transition to an Expanded and Highly Renewable Electricity System.

Should you require further information, please do not hesitate to contact me.

Regards

Jeff Schlichting
Managing Director

Submission on *Measures for Transition to an Expanded and Highly Renewable Electricity System*

Name	[redacted], Managing Director
Organisation (if applicable)	Helios Energy
Contact details	j[redacted]

Release of information

Please let us know if you would like any part of your submission to be kept confidential.

☐ I would like to be contacted before the release or use of my submission in the summary of submissions that will be published by MBIE after the consultation.

☐ I would like my submission (or identified parts of my submission) to be kept confidential, and **have stated below** my reasons and grounds under the Official Information Act that I believe apply, for consideration by MBIE.

I would like my submission (or identified parts of my submission) to be kept confidential because [Insert text]

[To check the boxes above: Double click on box, then select 'checked']

Responses to questions

Part 1: Growing Renewable Generation

Are any extra measures needed to support new renewable generation during the transition?

1. Please keep in mind existing investment incentives through the energy-only market and the ETS, and also available risk management products. Any new measures should add to (and not undermine or distort) investment that could occur without the measures.

- Helios supports continuation of the core energy only market design which encourages least cost development of renewables through price signals (both short term and long term via contract prices)

- Helios is strongly of the view that financial measures in the form of subsidies are not required to support renewable generation and storage, but that market structures (and mechanisms to support independent renewable investment) can be evolved to facilitate generation and storage investment by existing and new market participants

- We acknowledge the current market design has worked to date, but the growing role of variable renewable generation and retirement of flexible thermal generation necessitate additional measures

- Helios believes the market has operated in a "just in time / just too late" mode – which was appropriate in a low growth market environment. However, for consumers to commit to decarbonisation and to utilise electricity as a preferred energy source, the supply, transmission and distribution elements of the market must operate in a way that ensures the following:

    - confidence in sufficiency of supply;
    - confidence in prices;
    - confidence to make long-term investments.

  Helios does not believe the current market structure provides the required levels of confidence.

- While there is considerable appetite to invest and developers are originating a wide range of generation and storage options, we note that advancing projects to Final Investment Decision requires navigation of additional (and either unnecessary or unnecessarily costly/complex) regulatory hurdles and financial hurdles

- Helios believes that the market design, unmitigated, will favour incumbents and potentially result in an elevated risk of independent developers being restricted from bringing projects to market due to i) high up-front costs and barriers; ii) inability to secure competitively priced PPA's or firming products; iii) technical hurdles of bringing new generation online in a timely manner; iv) lack of long-term price discovery; and v) lack of long-term hedging instruments
- Furthermore, NZ has a shallow bankable Commercial and Industrial market, an incipient PPA market (particularly for fixed price variable volume contracts typical of renewable generation) and a lack of alternative long-term hedges (particularly those with tenors that align with equity and debt provider timelines). These market characteristics typically mean that incumbents are a necessary element in the equation to secure revenue.

The cumulative effect of these issues has created an environment where it is difficult to attract offshore capital. Because NZ's incumbent generation owner asset base will not have sufficient capital capacity to fund the level of investment required, modifications to the market structure will be required to achieve Aotearoa New Zealand's decarbonisation goals across the wider energy sector.

If you think extra measures are needed to support renewable generation, which ones should the government prioritise developing and where and when should they be used? What are the issues and risks that should be considered in relation to such measures?

- Helios believes the consenting regime in New Zealand needs to be streamlined with a process that more efficiently facilitates establishing, operating and maintaining renewable energy generation in a reduced consenting timeframe (e.g. 1 year). This will provide developers/applicants with the necessary confidence to develop renewable generation projects and with making the investment required to advance projects to the consenting stage. This is particularly important for solar and storage which are the lowest impact, cleanest and least impactful generation technologies in the energy sector.
- Helios would also support more limited appeal rights regarding renewable generation activities in a consenting regime, to give certainty to developers/applicants in the durability of a decision, and to lessen the often drawn out appeal process. The current consenting landscape reduces investor appetite for projects, delays the start of construction,

and results in significant additional costs–costs that are ultimately borne by consumers.

- Helios has submitted recently on the central government consultation opportunities with regard to renewable energy generation and the direct impact on the ability to obtain resource consents
    - "Strengthening national direction on renewable electricity generation and electricity transmission" consultation (June 2023)
    - Amendments to the National Policy Statement on Highly Productive Land (October 2023)

- Helios will continue to advocate for more supportive resource management policy and a consenting regime that streamlines and facilitates the approval of solar generation projects in both central and local government consultation opportunities.

- Helios believes that The Overseas Investment Act is unnecessarily expensive, especially for smaller investments, requires significant time commitments on preparing applications and chills investor interest. Helios believes this process should be streamlined, that costs should be charged on a proportionate basis, and more appropriate criteria applied to ensure that certain activities (e.g. solar leases) are not required to pursue elaborate and expensive workaround exemptions. We also believe that repeat investors should be able to rely on pre-existing approvals, especially for investments of a similar nature.

- Helios foresees a shortage of skills across the sector, and in its own experience has relied on immigration to fill vacant positions. New Zealand will not achieve its objectives around renewable development without reaching into international labour markets. New Zealand is a highly attractive destination for offshore labour. Many offshore applicants have applicable experience and skills in renewable development honed in markets and countries where significantly more renewable generation and energy storage have been developed. These skills should be welcomed, and Helios recommends broadening the "green list" of eligible skills to include other technical, project management, commercial, planning, and market skills related to renewable energy and storage development.

- Helios notes comments in MBIE's consultation document relating to supply chain accessibility and the proposition that there could be a role for collective procurement of hard-to-access assets. Helios is less confident in the efficacy of these measures, and would prefer that the

focus of regulators and policy is to get projects to Final Investment Decision quicker. Gaining access to supply of equipment is often a function of supplier confidence in projects getting funded and deployed into the market, attempting to aggregate demand to achieve access is often complex, has multiple moving parts based on individual needs, and there are few "commodity" components that are relatively standard regardless of project (that can be redeployed if an individual project fails to proceed)

- Lack of stable government strategy on macro-market drivers has contributed to yet more uncertainty from the offshore investor market. Helios urges the Government to prioritise market clarity and to develop a viable national energy strategy. Certainty regarding gas exploration and a transition plan, the NZ battery project, ETS/carbon pricing and renewable energy targets is essential to a robust market and an attractive investment climate.
- Helios opposes regulatory policy that "picks winners" by favouring one technology over others. Government support of offshore wind through capital investment in transmission assets will distort and chill the market in the same way consideration of the Lake Onslow Project has cast a shadow over the market.. Technology-specific support for offshore wind could negatively impact the deployment of lower-cost, easier-to-build technologies like onshore wind, solar and BESS.
- Transmission Pricing Methodology (TPM) is complex yet opaque, the largest gentailers treat it as a black box, and it is seen as an area of considerable risk for investors, given the inability of asset owners to accurately forecast or control pricing. Helios believes TPM does not provide a clear investment signal and its design was suited to a time of incremental market growth with a goal of efficient cost allocation across a small group of market participants. Helios' forecast TPM charges across its portfolio of solar projects could comprise between 7% and 25% of annual operating costs. Helios recognises that any reform to TPM would take time but considers the current structure not fit for purpose.

Offtake arrangements

- As outlined earlier, current market design and practices are largely centred on a vertically integrated model of gentailers servicing customers in an increment (or flat) demand growth environment
- The combination of an energy only market design, the intermittent nature of renewables and highly variable hydro generation on a year-to year basis results in significant wholesale market risk, such that any merchant strategy is unappealing. This is a consistent area of feedback and uncertainty for international investors looking to invest in new renewable

energy assets in the NZ market. It is further evidenced by the fact that first mover new entrants to the market have also focussed on vertical integration.

- Wholesale market risks means investors favour contracted revenue, but the market for renewable PPA's here is nascent and very different to other markets with which offshore investors are comfortable. The limited nature of the NZ offtake market is further compounded by an absence of alternate long-term hedging instruments.

- Helios believes that markets thrive when there is significant competition amongst developers and amongst asset investors. For the reasons articulated above, NZ needs to urgently implement energy policy that supports a competitive environment and a wider range of investment in NZ's energy sector.

- Helios does not favour central procurement of CFD's or PPA's or FIT's in any form, as these lead to unintended consequences such as distorting market prices or underwriting less efficient (higher cost) projects.

- Helios supports prioritisation of initiatives that enhance
    - Competitively priced PPA's and CFD's
    - improved flexibility / seasonal contracts to support CFD's
    - increased traded volumes, depth, and term of ASX traded productions that complement renewable generation shaped products
    - information disclosure relating to contracts to improve investor confidence and pricing – which in turn leads to better selection of projects (survival of the fittest / most economic) which is good for consumers in terms of affordability

- In addition, Helios does see a role to improve credit – especially of counterparties that may not have credit ratings. Helios believes that government PPA wrapping or support could bring confidence to both producers (generators) and consumers (energy users) getting to FID on their respective projects, and the additional government support would help lower the cost of capital on both sides of the transaction. Undertaking this activity at scale allows investment risk to be managed across multiple projects, allowing diversity and reducing single project failure risk.

- The NSW LTESA scheme is a good example of a very low cost and non-distortionary intervention that provides investor confidence – it essentially acts as a low probability backstop (underwritten by consumers) that allows investors to bring projects to market by securing debt-financing without a full suite of contracted offtake being required. For example offtake can be subsequently negotiated once the project is constructed, which removes investor risk and enables better pricing for consumers. The counterfactual is developers relying on (and locking in) longer term PPA prices in a non-competitive PPA environment, competing with generator-retailer interests (which may not be aligned) and resulting in unattractive pricing. This has been the anecdotal evidence in NZ over a number of years.

- Helios has less confidence in the notion of an All of Government "centralised procurement" model, given the relatively small scale of direct government energy consumption, the need for retail intermediaries, and the challenges of aligning multiple departments into a scheme. It may be achievable, but it would be a lower priority in Helios' opinion

- Firm capacity in the market, over both intra-day and intra-season, is the most critical component of the transition to a high penetration of renewables in New Zealand.

3. If you don't think further measures are needed now to support new renewable generation, are there any situations which might change your mind? When and why might this be?

4. Do you think measures could be needed to support new firming/dispatchable capacity (resources reliably available when called on to generate)? If yes, which kind of measures? What needs do you think those measures could meet and why?

Yes. An efficient capacity market would enable energy asset owners to offer support capacity for managing the intermittency of renewable energy sources. This support should encompass both upward and downward regulation, providing firming capacity to address renewable energy variations in both directions. It's crucial not only for handling peak demand but also for managing situations such as:

1. **Up Regulation:** This scenario arises when there is a shortage of power in the market. Upward capacity bids can be activated to fill these gaps.

For instance, this might occur when there's a sudden drop in wind generation due to over-wind protection mechanisms.

2. **Down Regulation:** In contrast, when there's an excess supply of power in the market, downward capacity bids can be utilized to either reduce production, such as wind curtailment, or absorb surplus energy. This could include the use of virtual power plants or electric vehicle fleets.

An illustrative example of such a market is the aFRR/mFRR market in Europe. This market combines capacity payments to secure capacity and offers energy payments when the asset is called upon.

5. Are any measures needed to support storage (such as battery energy storage systems or BESS) during the transition? If yes, what types of measures do you think should be considered and why?

Yes - measures are needed to support BESS during this transition. BESS possesses several competitive advantages and unique characteristics that warrant special attention to foster the development of this crucial asset class within the transition. To ensure that these advantages are effectively integrated into the New Zealand market, it's essential to implement measures that reflect these special characteristics. These characteristics and the resulting measures are as follow:

1. **Fast Response:** BESS has the remarkable ability to respond rapidly, making it particularly valuable in the fast-response, frequency regulation, and synthetic inertia segments of the market. To fully harness this potential, we should consider expanding the frequency-keeping market and allowing increased participation from BESS.

2. **State-of-Charge (SoC) Management:** Effective management of the SoC is critical for BESS. Clear requirements for maintaining sufficient SoC bands are necessary. Moreover, the requirements for product delivery duration must be defined to optimize BESS operations in all existing and new markets. An excellent example of this is the SIR 15-minute requirement. This is to ensure that BESS operators have an operating structure and obligations for ensuring sustained delivery of the products offered, given the limited-energy nature of a battery.

3. **Limited Forecastability for SoC:** BESS SoC is non-forecastable, which implies that reserve and energy bids will require continuous optimization based on prior dispatch instructions. To accommodate this characteristic, BESS should be treated as a separate asset class, allowing for changes in bid volumes even after conventional trading gate closures.

4. **Bidirectional Capability:** BESS's bidirectional feature enables it to both charge and discharge energy, offering a unique combination of energy and reserve options in both directions. To maximize this potential, it's crucial to establish clear guidelines for BESS capacity bids, allowing for maximum reserves offered in conjunction with energy bids.

5. **Flexibility of the timing of BESS installation:** - depending on the project, there are instances where BESS's may not be installed at the same time as the construction of the related generation facility. Therefore flexibility is required within the scope of resource consent conditions mainly related to construction to enable BESS's to be installed at a later date. Further, to enable resource consent decision-makers to provide this flexibility, they will need to recognise the significant importance of BESS, which ideally would be identified in national level policy e.g. NPS-REG.

6. If you answered yes to question 4 or 5 above, should the support be limited to renewable generation and renewable storage technologies only or made available across a range of other technologies?

Keep in mind that fossil fuels are generally the cheapest option for firming, though this may change over time as renewable options (particularly batteries) become more efficient and affordable.

The transition will be difficult if security of supply is threatened as there will be a very real risk of losing consumer confidence, triggering the unintended consequence of other interventions, political, structural or otherwise.

The simplest option is often the best. While Helios firmly supports gaining access to more flexibility in the market from demand and storage resources, this only satisfies (and partly so) short term intra-day flexibility needs in the market. Longer term flexibility is an obvious and persistent requirement, at least until new forms of energy storage appear.

While it might seem to be a counterintuitive position for a renewable energy developer, Helios supports investment settings that enable gas firming and flexibility over a reasonable investment timeframe. The need for flexible/firming peakers is apparent under almost every independent market modelling scenario. This will, in Helios's opinion, lead to the least worst case – minimal intervention and emissions from a small number of thermal generation assets that in turn unlock the large-scale transition of bulk energy provision by new renewable resources.

Helios acknowledges that the current market settings make this challenging for investors, and despite Helios being a solar and storage investor and not having direct experience in thermal asset investment, Helios believes that the following would enable an attractive environment for gas investment.

- Investment signals that do not overtly distort average energy prices (as is the case now) which reduces affordability – there may be a case for

ring-fencing/amending market design with specific peaking generation mechanisms
- Finite period (i.e a licence that gives investors appropriate return – e.g 10-15 years)
- Any new generation to have an element of renewable fuel flexibility – e.g. transition to 'green peakers' over time, otherwise decommissioned (e.g. a licence that terminates after a fixed period)
- Helios is supportive of mandatory decommissioning notice periods. Clarity on thermal retirement timeframes is essential as it allows the market to adapt with alternate measures, or for new projects to stand in the place of retiring assets.
- We note in other markets that decommissioning timeframes/schedules are a key feature and inform sector wide planning decisions

However, any market settings to retail or incentivise development of necessary seasonal/peaking firming should be carefully designed to ensure that they do not cannibalise the market for lower cost, lower emission demand management and use of battery storage to firm on an intra-day basis.

Carbon price signals should be sufficient to minimise the use of non-renewable solutions, and Helios foresees a transition to storage and/or renewable based peaking and firming over time as the economics and feasibility of these technologies improve. Overall, the emissions of peaking and firming plant play a small role in sector emissions but provide significant leverage to decarbonising demand in other sectors, as well as displacing baseload thermal generation.

7. If you answered yes to question 6 above, what are the issues and risks with this approach? How could these risks and issues be addressed?

Helios believes this to be the lower risk approach – a "thermal backstop" gives confidence to the market to accelerate the decarbonisation of supply and demand through the development and commissioning of a significant volume of new renewables. The largest issue is likely to be the perception by some stakeholder groups who may be understandably concerned that new deployments and continued use of hydrocarbons as a fuel in energy generation creates a "back door" to more thermal generation, or a slow-down in the decarbonisation pathway, such that emissions targets are not met.

Helios does not believe this need be the case, so long as adequate ring-fencing provisions are implemented. If implemented correctly, a managed gas transition can be the most efficient way to decarbonise and reduce emissions in a sustainably affordable and reliable manner.

INVESTMENT IN FOSSIL GAS PEAKING PLANT DURING THE TRANSITION

8.	Are any measure(s) needed to support existing or new fossil gas fired peaking generation, so as to help keep consumer prices affordable and support new renewable investment?
9.	If you answered yes to question 8 above, what measures should be considered and why? What are the possible risks and issues with these measures?
10.	If you answered yes to question 8 above, what rules would be needed so that fossil gas generation remains in the electricity market only as long as needed for the transition, as part of phase down of fossil gas?
11.	Are there any issues or potential issues relating to gas supply availability during electricity system transition that you would like to comment on?
12.	**Managing slow-start fossil fuel capacity during the transition** Do you agree that specific measures could be needed to support the managed phasedown of existing fossil fuel plants, for security of supply during the transition?
13.	If you answered yes to question 12 above, what measures do you think could be appropriate and why? What conditions do think you should be placed on plant operation? For example, do you have any views on whether there should be a minimum notice period for reductions in plant capacity, and/or for placing older fossil fuel plant in a strategic reserve?
14.	If you answered yes to question 12 above, what are the issues and risks with these measures and how do you think these could be addressed?
15.	**The role of large-scale flexibility** What types of commercial arrangements for demand response are you aware of that are working well to support industrial demand response?
	Industrial and commercial companies should have access to revenue from demand-side flexibility beyond spot-market value. There should be some level of secured revenue that isn't solely tied to event-specific occurrences and can be accessed without being dependent on spot-linked energy pricing.

In New Zealand, the spot market and Transpower's demand response program primarily offer revenue opportunities during specific pricing or congestion events. However, commercial and industrial demand-side flexibility providers would require more certainty in potential revenue streams. They are unlikely to make investments for unknown revenue streams with value linked solely to event-specific outcomes.

A more favorable model is observed in Western-European markets like aFRR and mFRR. These markets offer capacity payments for reserved flex capacity, along with energy payments when demand-side flexibility is called upon. Such a structure aligns with the above requirements and is our recommended approach.

16. What new measures could be developed to encourage large industrial users, distributors and/or retailers to support large-scale flexibility?

As continued from question 15, one exemplar market mechanism is the aFRR/mFRR system in Europe, effectively combining the reliability of capacity markets with the added opportunity of energy payments for events as well as penalties for non-compliance. This structure offers payment certainty and a robust incentive system, employing a carrot-and-stick approach:

- **Capacity Payment:** Demand-side flexibility capacity payments are calculated based on the cleared volume in the market, ensuring participants of a steady revenue stream.
- **Energy Payment:** The aFRR energy market sets prices for moments when industrial loads are activated. In the context of New Zealand, this could resemble or simply be integrated with energy markets, making it an attractive proposition for market participants.
- **Penalties:** To guarantee that capacity bids translate into actual capacity delivered when needed, it's crucial to have adequate penalties in place to motivate reliability and responsiveness.

These mechanisms bear resemblance to New Zealand's Energy Reserves markets (FIR and SIR). However, they are distinguished by offering the feature of reserves in both directions (UP and DOWN). Moreover, the aFRR/mFRR measures are activated based on stricter frequency deviations, setting aFRR apart from FIR/SIR products by being called upon more often. This framework not only enhances demand-side flexibility but also extends the opportunity for demand response during over-supply events, moving beyond just interruptible load in under-frequency events.

17. Do you have any views on additional mechanisms that could be developed to provide more information and certainty to industry participants?

Forecasting the future market development and pricing within the New Zealand electricity market has typically been oriented toward supply and demand balances and the resulting energy prices. However, there remains a noticeable

lack of understanding and consensus regarding the development of reserves and ancillary services markets in the years ahead.

In order to provide greater information and certainty to industry participants, Helios advocates an increased focus and emphasis by the regulator on: a.) the outlook for ancillary service market structure; b.) the expected market value or pricing for energy reserves; c.) flexibility markets; and d.) other ancillary service opportunities. We believe the Electricity Authority should take the lead in providing insight into the development and expansion of these markets in order to enhance participants' confidence in–and investment in–solutions for accessing these markets.

This approach will empower demand-side flexibility providers with the assurance needed for their investment decisions, allowing them to assume a more significant role in serving the New Zealand electricity market.

Part 2: Competitive Markets

Workably competitive electricity markets

18. Do you agree that the key competition issue in the electricity market is the prospect of increased market concentration in flexible generation, as the role of fossil fuel generation reduces over time?

Helios agrees that the availability of flexible generation is a rapidly growing and obvious issue within the electricity market.

The majority of existing flexibility is concentrated in a small number of assets – North and South Island hydro storage, thermal generation and thermal fuel storage. With fewer participants possessing flexible generation as thermal retires, and (currently) limited motivation for investors to support new flexibility assets. Concentration of ownership in the existing storage and flexibility assets is an artifact of past privitisation decisions made by the government and not likely to be reversed.

Most owners of flexible assets are vertically integrated and have strong motivations to provide flexibility in support of their own portfolio needs. This fact, coupled with a lack of visible flexibility products, creates a lack of transparency and access to flexibility for other consumers in the market.

Helios notes that some flexibility owners are considering or providing access to flexibility – e.g. firming contracts. However, motivations may be driven by the perceived risk of regulatory intervention (i.e a "regulatory hedge") rather than strong market drivers to offer access to these services.

19. Aside from increased market concentration of flexible generation, what other competition issues should be considered and why?

Market share is concentrated with four large gentailers who largely self-hedge their retail books. This makes it extremely challenging for independent retailers and generators to join the market with adequate hedging, leading to stifled investment and a typically slightly under-supplied market with higher pricing.

Helios believes a more diversified market will result in greater competition/lower pricing for consumers; in turn this could lead to faster decarbonisation by sending more appropriate pricing signals to consumers to switch to electricity-based fuels.

20. What extra measures should or could be used to know whether the wholesale electricity market reflects workable competition, and if necessary, to identify solutions?

A number of the arguments against interventions in the current market design (in general, and specifically in relation to concentration of ownership of flexible generation) are reliant on conduct and enforcement measures. However, it is arguable that the EA has been slow to act in this regard. Enforcement is a significant backward looking process that takes considerable time to gather evidence and determine a view. The complexities of the market often result in an unclear determination (lots of smoke but no fire), and result in very little change.

There is also a significant asymmetry between the capabilities of the regulator and the resources of the major participants. Evidence would suggest that across a number of sectors (electricity, transport fuel, supermarkets, banking) undertaking material conduct and enforcement is very difficult. To rely on a slow and cumbersome enforcement process being the primary mechanism with which to curb underlying market power risks a relatively loosely regulated playing field.

More transparency should be provided to the EA on hedging processes (initial pricing) and final contracts, allowing the regulator to better understand commercial tactics and positions of market participants. Visibility and transparency should also be given to the EA on all market contracts (CfDs, OTCs, Swaptions).

Please refer to Helios's response to the EA consultation on Improving Hedge Disclosure Database for more detail.

21. Should structural changes be looked at now to address competition issues, in case they are needed with urgency if conduct measures prove inadequate?

One of the key themes of Helios submission is that the current market design has been workable. Many would argue otherwise, but on balance Helios believes it has been a workable market that has been focussed on efficiency,

affordability and delivered some degree of fairness. The challenges ahead, however, require change. The future demands a rapid transition measured by the rate of decarbonisation of energy use (within bounds of acceptable affordability, equity and not compromising reliability and security).

NZ Inc. needs and deserves a coherent national energy strategy designed to achieve the agreed decarbonisation targets. The central strategy (Plan A) should be predicated on an adaptation of the current regulatory structure to better accommodate new entrants and technologies. However, New Zealand also needs a Plan B should the light handed regulatory approach not be sufficient to deliver the investment required. This Plan B would quite likely involve major structural changes to enable the velocity of decarbonisation required. Plotting a coherent national energy strategy is an ambitious undertaking, and one far more easily said than done, but also one that is well past due.

22. Is there a case for either vertical separation measures (generation from retail) or horizontal market separation measures (amending the geographic footprint of any gentailer) and, if so, what is this?

Helios believes that a range of other measures, many mentioned in this submission, should be implemented before implementing large scale structure change.

23. Are measures needed to improve liquidity in contract markets and/or to limit generator market power being used in retail markets? If yes, what measures do you have in mind, and what would be the costs and benefits?

Helios strongly supports measures that encourage liquidity in contract markets. These measures should address liquidity, product (e.g. contract shape and structure) and term, enabling all generators and consumers to interact. Liquidity and product innovation has been, to date, limited by the relatively self-sufficient portfolio positions (due to vertical integration) which have reduced the appetite for deployment of capital by new investors on both the supply and demand side.

Helios recommends that the regulator consider mandatory purchase obligations on retailers over a certain scale (a percentage of their fixed price variable volume retail sales with a de minimis amount so the obligation is not incurred by small retailers). For example, market participants with over 10% market share would have a volume cap whereby no more than 60% of their generation assets can be internally-transferred to hedge their retail book

The benefit would be much greater liquidity in the market. Independent retailers would have more competition for purchasing generation volume and independent generators would have access to more buyers (gentailers) looking to hedge more of their retail book.

24.	Should an access pricing regime be looked at more closely to improve retail competition (beyond the flexibility access code proposed by the Market Development Advisory Group or MDAG)?
	No comment
25.	What extra measures around electricity market competition, if any, do you think the government should explore or develop?
	No comment
26.	Do you think a single buyer model for the wholesale electricity market should be looked at further? If so, why? If not, why not?
	Helios strongly opposes the single buyer model. In our view, the magnitude of the problem to be addressed is not sufficient to demand an intervention of this scale. The time required to assess a single buyer "solution" and implement this type of structural change would stall needed energy infrastructure investment. To reiterate comments earlier, Helios supports targeted modifications to the existing market structure to overcome deficiencies rather than fundamental structural change.
Part 3: Networks for the Future	
	A transmission system for growth
27.	Do you consider that the balance of risks between investing too late and too early in electricity transmission may have changed, compared to historically? If so, why?
	Helios believes the existing regulations related to grid investment have largely been developed around meeting observable/firm demand for capacity or resilience. In periods of low demand growth, this has been a logical approach, but it has not been perfect. Arguable projects (such as the CUWLP) were implemented sooner than optimal, which indicates the complexity that transmission and distribution planning faces. Helios believes that targeted investment in transmission and distribution ahead of need enables investors to have confidence in capacity being available when needed. As outlined in Helios' comments above regarding the need to achieve velocity and momentum to provide investor confidence, it is preferable to bring projects to market too early than being two late. Helios believes that well considered 'flexible' transmission solutions that can serve a number of needs will be utilised by the market, as grid capacity and connection will be constraining factors in a decarbonising market. Helio's recognises that there is some stranded asset risk that is borne by customers, should the market evolve slightly different, but in general this is

likely to be a timing issue. Even excess capacity "stranded assets" of the past are now being reconsidered to enable wind, solar, battery storage and hydrogen projects.

Helios supports the development of forward looking transmission and distribution investment plans that are not limited to the current 10 year asset management horizon. Many larger scale investments have a 7-10 year development period.

The risk of investing too late far exceeds the risk of investing too early. This risk can be partly mitigated by opening effective congestion management revenue options or incentives for demand-side flexibility and Battery Energy Storage System (BESS) developers, but significant upgrades in transmission and distribution networks will be required in every scenario.

Historically, development of the NZ electricity system has been more centralized and less driven by urgent decarbonization objectives. Additionally, demand growth has been slower than what was forecast. This combination of factors has significantly increased the current requirements for capacity to meet new demand and decarbonization goals, making the risk of investing too late a more significant concern than investing too early.

This shift in the reactive/proactive investment risk balance is not unique to New Zealand; it's a global challenge. The International Energy Agency (IEA) estimates that investment in electricity grids worldwide needs to double to $600 billion by 2030 to align with national climate targets (source).

A specific example of this challenge can be seen in the Netherlands, where the capacity of the distribution system struggles to keep up with connection requests to accommodate growing demand and new generation, as demonstrated by this interactive map. In recent years, the Dutch Distribution System Operators (DSOs) have been inundated with new connection applications, resulting in long delays that have adversely affected investor confidence. To address these challenges and investment required, distribution pricing is set to increase by 80% for certain customers in 2024 to fund the necessary upgrades in the Netherlands.

28. Are there any additional actions needed to ensure enough focus and investment on maintaining a resilient national grid?

To ensure a resilient national grid, several actions are needed. The ultimate goal is to ensure continuous customer connectivity and supply even in the face of unforeseen grid disruptions. This was exemplified during the severe flooding resulting from Cycle Gabrielle, which led to extended disconnections in regions like Hawks Bay.

To achieve grid resilience, it is imperative to not only focus on grid fortification but also explore alternative methods of ensuring connectivity during potential outages. This may involve strategies like distributed generation and storage

with islanding capabilities, designed to function at a local level. Such systems can enhance resilience by providing regional support for generation and Battery Energy Storage Systems (BESS). For instance, regions with renewables and BESS could supply power to support local communities during grid disruptions.

Distribution networks for growth

29. Do you agree we have identified the biggest issues with existing regulation of electricity distribution networks?

Helios believes the core issues have been identified in the consultation document.

Helios' experience is that connection practices, technical requirements, administrative processes and decision making timeframes vary significantly across the spectrum of EDBs. This is in contrast to the much more standardised, clearer and reliable (from an investor perspective) process to connect to the Transpower transmission network.

Helios supports common standards and processes across distribution and transmission. Clearly articulated technical requirements will also facilitate fair allocation of risk/cost borne by users across networks. Some of these issues may be shortcomings relating to code amendments to suit the new market environment, rather being inherent regulator issues per se.

30. Are there pressing issues related to the electricity distribution system where you think new measures should be looked at, aside from those highlighted in this document? How would you prioritise resolving these issues to best enable the energy transition?

Aside from inconsistencies and lack of Code specificity mentioned above, consenting generation, transmission and distribution infrastructure in a timely manner remains the single biggest challenge to decarbonising demand and bringing more renewable supply to market.

Helios has submitted on Government's "Strengthening national direction on renewable electricity generation and electricity transmission" consultation document in relation to a package of proposed national direction instruments under the Resource Management Act 1991 (RMA). This covered the existing NPS-REG, NPS-ET, NES-ETA, and a new National Environmental Standards for Renewable Electricity Generation.

In general, Helios:

- Supports the need for stronger policy direction to recognise the national significance of renewable energy generation, with a successful outcome being that REG activities move through the consent process efficiently and in a timely manner. Helios has seen the consideration of the NPS REG in a number of planning decisions 'trumped' by other national policy

documents or policies in District Plans because of the latter's specificity, strength, and local provisions.

- Supports improvement of the consenting of renewable electricity generation, transmission and distribution to enable the large-scale solarfarms Helios is looking to develop nationwide.
- Is concerned with the length and uncertainty of consenting timeframes for new renewable energy and transmission infrastructure
- Recommended a number of amendments to enhance the robustness of the NPS-REG and NPS-ET, including:
    - Policy direction needs to be clearly worded to avoid revisiting ambiguous terminology or wording when tested by the many REG activities that require consenting.
    - Whilst there are some specific clauses and standards targeting certain types of renewable energy activities, e.g. wind and solar, the overall strengthening of policy direction should be technology-agnostic, and enable a wide variety of REG activities to enable meeting New Zealand's decarbonisation goals.
    - A directive that clarifies the prioritisation and implementation of national policy versus local policy must be central to any initiative. Helios developers and planners are seeing local matters being given more weight than national policy instruments for the consenting of large-scale solar farm developments.
    - The NPS REG should address how decision makers assess the competing policies in the NPS REG and NPS HPL, the latter being intended to 'protect' HPL from land use which is not primary production. Helios believes this is a critical issue facing renewable energy development. Certain technologies such as wind and solar have low environmental and land impacts, and are technologies well suited to future decommissioning, avoiding permanent "lock up" or fragmentation of land.

In addition Helios supports BEC's submission point that "Resource consenting constraints also extend to distributors. Long waiting times and heightened costs associated with obtaining consent act as a barrier to realising the essential investment in distribution infrastructure. We recommend extending a provision for electricity distribution within the NPS-ET. Recognising the distribution network in conjunction with the transmission network as nationally significant, and enabling consistent regulations for the distribution network under the National Environmental Standards for Electricity Transmission Activities as well, would be a significant improvement for consenting of electricity distribution infrastructure. Across the country there are a spectrum of different rules and standards under District Plans that do not allow for consenting additions to the distribution network in a reasonable and timely fashion.

31. **NETWORK INVESTMENT MODEL TO SUPPORT THE ENERGY TRANSITION**

Are the issues raised by electricity distributors in terms of how they are regulated real barriers to efficient network investment?

Please give reasons for your answer. Is there enough scope to address these issues with the current ways distributors are regulated? If not, what steps would you suggest to address these issues?

Yes, the issues raised by electricity distributors are indeed real barriers. The current regulatory framework, which predominantly bases incentives on capital expenditure (CAPEX) rather than operational expenditure (OPEX), tends to skew decision-making towards increasing CAPEX to address congestion issues. This approach does not effectively encourage cost-effective non-network solutions for demand-side flexibility, pricing incentives to shift peak load consumption, or the digitisation of the network to enable the transition to a smarter and more adaptable grid.

Regulatory adjustments are necessary to address these issues and eliminate the resultant barriers. Shifting the focus from CAPEX to more balanced regulation that considers OPEX and non-network solutions for congestion management can promote more efficient network investments. This shift should also incorporate effective pricing structures and incentivise load consumption shifting. Moreover, embracing digital technologies to create a smarter grid can offer greater flexibility and reliability. By revising the current regulatory approach, the regulator can foster a more efficient and future-ready network investment landscape.

32. Are there other regulatory or practical barriers to efficient network investment by electricity distributors that should be thought about for the future?

Yes, there are indeed additional barriers to consider for efficient network investment.

First, there should be standardized pricing structures for distribution networks. While the actual price may vary based on the specific cost of delivery requirements for the 29 network entities, the *pricing structure* should be consistent as much as possible. Standardization enables more efficient customer demand-side flexibility, making it easier for customers to understand and respond to pricing signals.

Second, pricing signals should meet specific criteria to incentivise the efficient use of the network. These signals should be transparent and easily comprehensible for end consumers, such as simple peak pricing windows like 7-11 am or 5-9 pm. Accessible pricing signals should also be provided well in advance, allowing customers to plan their demand-side consumption effectively. Complex demand-pricing structures, such as based on the highest five 30-minute consumption peaks over a month, should be avoided as they hinder accessibility.

Third, distribution-level flexibility should prioritize standardized and *explicit* price signals, with *implicit* price signals considered as peripheral.

For more insights on this topic, please refer to the article titled "Flexibility the Key to the Energy Transition" from October 18, 2021.

REMOVING BARRIERS TO NEW CONNECTIONS

33. What are your views on the connection costs electricity distributors charge for accessing their networks? Are connection costs unnecessarily high and not reflective of underlying costs, or not? If they are, why do you think this is occurring?

No comment.

34. If you think there are issues with the cost of connecting to distribution networks, how can government deliver solutions to these issues?

No comment.

35. Would applying the pricing principles in Part 6 of the Code to new load connections help with any connection challenges faced by public EV chargers and process heat customers? Are there other approaches that could be better?

No comment.

36. Are there any challenges with connecting distributed generation (rather than load customers) to distribution networks?

There is ambiguity as to which standards are applicable for large DG > 30MW. Distribution network DG Guidelines suggest following AS/NZS 4777.2 for inverter based generation due to a lack of other applicable standards. This standard is only applicable for LV, but given a lack of applicable HV standards, Distribution networks are asking that the intent of AS/NZS 4777.2 should be interpreted accordingly for HV connections. This makeshift application of standards is not fit for purpose.

There is also ambiguity around applicable harmonics standards. DG > 30MW is required to comply with the Code which calls out NZECP 36, however AS/NZS 4777.2 and Distribution connection guidelines follow the IEC 61000 standards suite for harmonics.

Furthermore, there is an apparent lack of commissioning guides or standards set out for large DG connected to distribution networks, and lack of distribution networks' developed and published constraints management policies.

37. **Cost allocation to support efficient network investment ahead of connections**

Are there different cost allocation models addressing first mover disadvantage (when connecting to distribution networks) which the Electricity Authority should explore, potentially in conjunction with the Commerce Commission?

There are several emerging factors in the evolution of the electricity sector that open the door to different cost allocation models. These factors should be considered when exploring new approaches to the cost allocation of distribution networks:

1. **Non-Wired Solutions**: Non-wired digital and demand-side solutions are becoming increasingly viable for enhancing the efficiency of distribution networks and reducing costs. Introducing upfront peak-management revenue opportunities for providers of these non-wired solutions, based on the savings in capital expenditure (CAPEX) for distribution investments, can instill confidence among investors in these innovative services.
2. **Electric Vehicles (EVs)**: The widespread adoption of electric vehicles is expected to introduce a substantial new load on the distribution network. To manage this load effectively and prevent congestion, it is essential to establish clear pricing signals that incentivize EV owners to charge their vehicles during non-peak periods. Providing these signals upfront can influence charging behavior and contribute to the smooth operation of the network.
3. **Distributed Energy Owners (Solar + Batteries)**: Owners of distributed energy resources, such as solar panels and batteries, present both challenges and opportunities for distribution companies. To address this, clear pricing signals should be implemented. These signals, based on congestion management within the distribution network and the timing of energy consumption, can lead to more equitable and reflective cost allocation models. Costs would then be borne by those who provide the least support in managing their energy usage. Furthermore, this approach creates a viable business case for those interested in assisting with effective load management.

By incorporating these considerations into cost allocation models, the electricity sector can adapt to the changing landscape and ensure that first-movers are not unfairly disadvantaged.

38. Should the Electricity Authority look at more prescriptive regulation of electricity distributors' pricing? What key things would need to be looked at and included in more prescriptive pricing regulation?

No comment.

39. Do current arrangements support enough co-ordination between the Electricity Authority and the Commerce Commission when regulating electricity distributors? If not, what actions do you think should be taken to provide appropriate co-ordination?

No comment.

40. Will the existing statutory objectives of the Electricity Authority and Commerce Commission adequately support key objectives for the energy transition?

Climate change and decarbonisation are critical issues that should be included in the EA and Commerce Commission's statutory objectives.

41. Should the Electricity Authority and/or the Commerce Commission have explicit objectives relating to emissions reduction targets and plans set out in law? If so,

- should those objectives be required to have equal weight to their existing objectives set in law?

Why and how might those objectives affect the regulators' activities?

It is untenable to have an efficient energy market that fails to meet decarbonisation targets.

Including emissions reduction targets will compel market settings that encourage additional participation in the electricity sector. This will serve as a forcing function to ensure infrastructure is in place to enable renewable generators and storage providers on the supply side, and consumers on the demand side, to connect with confidence.

42. Should the Electricity Authority and/or the Commerce Commission have other new objectives set out in law and, if so, which and why?

43. Is there a case for central government to direct the Commerce Commission, when dealing with Electricity Distributors and Transpower, to take account of climate change objectives by amending the Commerce Act and/or through a Government Policy Statement (GPS)?

No comment

44. If you answered yes to question 43, please explain why and indicate:

- What measures should be used to provide direction to the Commerce Commission and what specific issues should be addressed?

How would investment in electricity networks be impacted by a direction requiring more explicit consideration of climate change objectives? Please provide evidence.

Part 4: Responsive Demand and Smarter Systems

45. Would government setting out the future structure of a common digital energy infrastructure (to allow trading of distributed flexibility) support co-ordinated action to increase use of distributed flexibility?

If the government decides to develop a common digital energy infrastructure, it should aim for a balanced approach. This means creating a framework that promotes the efficiency of a common infrastructure without becoming overly prescriptive about the specific technologies used. This should therefore only be targeted at the Market ⟷ Organisation interface.

The key areas of focus for a common digital infrastructure should include:

1. **Trading of Capacity and Energy Positions:** A standardized platform for trading capacity and energy positions can facilitate efficient interactions in the distributed flexibility market.
2. **Demand-Side Activation Signals (Flex Requests):** Establishing a system for issuing and receiving demand-side activation signals is crucial for coordinating flexibility across the network.
3. **Confirmation of Delivery of Service:** There should be mechanisms in place to confirm the successful delivery of flexibility services.

However, it's essential that the means by which organizations deliver flexibility, including the choice of technology stack, remain flexible and not be defined by the government. This approach allows room for innovation and prevents government intervention from stifling innovation.

For instance, in the case of Transpower's FlexPoint, which uses the OpenADR 2.0 Standard for external connections, Transpower's involvement does not extend beyond facilitating the connection between clients and FlexPoint over this open-source protocol. This setup is appropriate as it allows companies to choose the technology stack that aligns with their strategies for managing assets effectively as they may choose another communications protocol for communication with their flex assets.

46. Should central government see how demonstrations and innovation to help inform how trade of flexibility evolves in the New Zealand context, before providing direction to support trade of distributed flexibility? If yes, how else could government support the sector to collaborate and invest in digitalisation now?

The government's focus should primarily be on developing markets and revenue streams for demand-side flexibility rather than emphasizing demonstrations. Clear and concrete markets that are easily understood and accessible by customers, developers, and innovators will naturally encourage the emergence of distributed flexibility services.

Key developments to facilitate demand-side flexibility markets could include:

1. Creating a clear time-of-use electricity pricing structure for distribution company tariffs, aligned with embedded flexibility price signals to manage peak congestion. Regulating retailers to pass on these pricing variations can promote efficient use of flexibility.
2. Expanding Frequency Keeping Reserves (FIR and SIR) markets to include regulation in both directions, not limited to UP-frequency restoration.
3. Consolidating the energy reserves market with Transpower's demand response program to enhance the accessibility of flexibility opportunities.
4. Improving accessibility to capturing opportunities in pricing volatility in the wholesale energy market.
5. Expanding frequency-keeping markets and improving accessibility to a wider group of potential providers of this service..

By actively making these markets available and providing distributed flexibility with the same level of accessibility as grid-scale assets, innovation and demonstrations will naturally emerge when a viable business case exists. This approach allows the market to evolve based on real demand and need, promoting efficient trade of flexibility in New Zealand.

47. Aside from work already underway, are there other areas where government should support collaboration to help grow and develop flexibility markets and improve outcomes? If yes, what areas and actions are a priority?

ADDRESSING BARRIERS TO INVESTMENT IN DISTRIBUTED FLEXIBILITY/NON-NETWORK SOLUTIONS

48. Could co-funding for procurement of non-network services help address barriers to uptake of non-network solutions (NNS) by electricity distributors?

No comment.

49. Would measures to maximise existing distribution network use and provide system reliability (such as dynamic operating envelopes) help in New Zealand? If yes, what actions should be taken to support this?

No comment.

SUPPORTING UPTAKE OF CONSUMER ENERGY RESOURCES

50. What do you think of the approaches to smart device standards and cyber security outlined in this document? Are there other issues or options that should be looked at?

No comment.

51.	Do you think government should provide innovation funding for automated device registration? If not, what would best ensure smart devices are made visible?
	No comment.
52.	Are extra measures needed to grow use of retail tariffs that reward flexibility, so as to support investment in CER and improved consumer choice and affordability?
	No comment.
53.	Should the government consider ways to create more investment certainty for local battery storage? If so, what technology should be looked at for this?
	No comment
54.	Should further thought be given to making upfront money accessible to all household types, at all income levels, for household battery storage or other types of CER?
	No comment
55.	Should government think about ways to reduce 'soft costs' (like the cost of regulations, sourcing products, and upskilling supplier staff) for installing local battery storage with solar and other forms of CER/DER storage? If so, what technology should be looked at?
	No Comment
56.	Is a regulatory review of critical data availability needed? If so, what issues should be looked at in the review?
	No comment
Part 5: Whole-of-system considerations	
57.	What measures do you consider the government should prioritise to support the transition?
	As articulated in our responses above, Helios views the following core actions as critical to developing a more efficient, robust and transparent energy market: • Creating a stable long-term market that attracts capital (onshore and offshore) and enables the decarbonisation transition. This means providing or promoting clarity and certainty on macro market issues

without “picking winners”: NZ Battery Project, Gas Transition Plan, Renewable Energy Targets, Energy Strategy, Transmission Pricing, Offshore Wind
- Increasing liquidity in the market to promote competition from independent retailers and generators by capping the volumes large gentailers can internally contract.
- Revenue-risk backstop mechanisms (e.g. LTESA equivalents) that enable attractive levels of debt ahead of revenue contracting.
- Removing administrative burdens and policy inconsistencies, thereby reducing development cost, time and risk: Consenting timeframes and consenting appeal processes; OIO process;

Overseas Investment Office

Helios acknowledges that the OIO have already previously considered and approved consent applications for large-scale solar farms in New Zealand (both applications for exemptions from farmland advertising requirement as well as substantive OIO applications) - this is a positive precedent for the solar industry.

However, there are a number of ways we believe the OIO process could be streamlined to reduce time, cost (both developer and OIO) and uncertainty for developers around the various associated applications:

- It is highly likely that all solar farm developers will need to seek the same farmland advertising exemption given the relatively recent requirement to advertise land being leased to host a renewable energy project was clearly not introduced with solar lease arrangements in mind and requiring advertising in this situation will have unintended and detrimental consequences for any solar developer which may disincentivise spending the significant development capital required prior to project construction. We believe an automatic exemption or removal of the farmland advertising requirement should be applicable for solar projects where the interest being acquired in sensitive land is a temporary leasehold interest. This will create greater certainty and reduce costs associated with the exemption application (~$35k), application fees (~$15k) while freeing up OIO internal resources to consider substantive applications more quickly.

- Helios would also like the OIO to consider efficiencies where substantive applications are made for more than one solar project by the same developer - i.e. once the developer has satisfied the character and benefit tests once, the outcome of subsequent applications is likely to be similar unless there has been a material change in the circumstances of the developer. In such cases it could be time and cost effective to reduce the requirements for subsequent submissions, which could potentially also accelerate the approval process.

- An alternative to the above could be to allow a substantive application to cover multiple solar projects providing the developer is the same and the

leasehold interest and terms are materially consistent, in order to make more efficient use of developer and OIO resources and avoid a duplication of the ~$150k fee per application, in addition to the significant costs associated with the preparation of the application by the developer (~$50k+) .

58. Are there gaps in terms of information co-ordination or direction for decision-making as we transition towards an expanded and more highly renewable electricity system and meeting our emissions goals? Please provide examples of what you'd like to see in this area.

Helios supports the continuation of independent participate making own investment decisions as this is the fundamental market based structure that we have in New Zealand.

Helios only supports interventions where there are market failures, such as in the need to ensure policy settings support an appropriate amount of gas firming in the system or providing support for independent generation to participate in the market without the need to vertically integrated, to broaden NZ's investment capacity for the impeding uplift in sector capital expenditure.

We don't support a central architect that is determining a merit order for future projects and investments, as we believe (at least outside of the near term operational window) there is considerable uncertainty in the underlying generation or demand project information that opens this up for gaming, and will lead to inefficient outcomes.

We note how useful the Transpower queue system has been in increasing information transparency alongside rationalising the use of Transpower's finite capacity.

59. Are there significant advantages in adopting a REZ model, or a central planning model (like the NSW EnergyCo), to coordinate electricity transmission investment in New Zealand?

Would a REZ model for local electricity distribution be an effective means of addressing first mover disadvantage with connecting to electricity distribution networks?

Helios believes REZ's are good in concept but bring many execution challenges in practice, as evidenced by the experiences in Australia. Helios is of the view that in the near term there is sufficient grid capacity, as evidenced by the cumulative total of project capacity in the connection queue process, of which a large amount has a viable route to market.

NZ's geographic distribution of renewable resource and existing grid infrastructure is slightly different to Australia, and Australia has a different challenge of decarbonising very large amounts of brown and black coal generation with a transmission grid that was largely built to service thermal

generation assets. REZ's are a more logical fit there, but execution has been challenging.

Helios is more favourable to "mini-REZ's" where a smaller number of developers, consumers and Transpower collaborate to connect a manageable number of projects to the main grid. Outside of existing capacity in the grid, many New Zealand renewable development prospects require a short (by transmission standards) grid connection that is difficult for any one party to underwrite. Helios sees solutions like a mini-REZ likely being more effective beyond 2035, as there is significant capacity within the existing grid that can be released by relatively small scale tactical upgrades, reconducting and operational improvements.

LTESA arrangements are a mechanism that may have merit, as they would enable developers to bring projects to market without bargaining for PPA's from a weak position (pre-FID), which in turn give confidence for the investment required at a Transmission level. Helios has made comment on LTESA's earlier in the consultation response.

60. Should MBIE regularly publish opportunities for generation investment to enable informed market decision-making?

Helios is supportive of information transparency in the market and this underpins its comments on offtake arrangements, including PPA's.

Information related to generation opportunities is useful, as it enables developers to consider risks of deploying capital in development process where there may be competing projects and potentially finite transmission capacity, and/or risks of congestion should other projects commit in a region.

Transpower's connection queue has provided this visibility (on an anonymous basis, which Helios believes is important for early stage development assets). However, Helios believes at some point in the process developers should be comfortable with being identified. Helios also believes this opportunity list should extend to identify projects connecting at distribution level (above a MW threshold), as it is misleading to have clarity on grid connection interest but no understanding of embedded generation requests.

Helios recognises this transparency could and should extend to demand requests – indicating demand capacity, projected COD, load shape (even if one of a small number of profiles).This would have the benefit of producing a common dataset for all grid asset owners, generation and demand side consumers to identify opportunities and risks and to form the basis of long term system / market planning.

61. How should the government balance the aims of sustainability, reliability and affordability as we transition to a renewable electricity system?

Continue to support a market led approach to ensure competition drives efficiency in project / technology selection.

Shifting regulatory / market settings to become more anticipatory and proactive, ensuring supply and transmission is ready to meet emerging demand.

Ensuring sustainability outcomes are key measures of energy policy, and that they flow into regulatory settings.

62. To what extent should wholesale, transmission, distribution or retail electricity pricing be influenced by objectives beyond the (affordability-related) efficiencies achieved by cost-reflective pricing, such as sustainability, or equity?

Helios supports the view that markets achieve lower prices, in the long run, if efficient pricing signals are used and that redistributional mechanisms can work alongside markets, to achieve desired social outcomes

As per earlier comments, there is balance to be had between seeking purely efficient pricing that creates complexity, and certainty (which investors need). Helios believes that creating sufficient certainty in the market will foster investment, which will in turn enable the transition to be undertaken at the appropriate pace.

Recognising that energy hardship/inequity is a critical issue requiring action, Helios supports targeted redistribution but acknowledges that this often results in unintended consequences – low user pricing as a prime example. Helios believes it is vitally important to not attempt to solve social outcomes by manipulating market structures (i.e redistribution should be non distortionary).

63. Are the current objectives for the system's regulators set in law (generally focusing on economic efficiency) appropriate, or should these also include more focussed objectives of equity and/or affordability?

Helios believes regulatory outcomes should focus more on sustainability and the pace of change of the energy sector to low carbon / renewable sources of energy. This is the single greatest means of reaching carbon targets in the most efficient way. Diversity of investment, confidence in the reliability of the energy system, adequate capacity and the ability to secure revenue over appropriate investment timeframes will bring thriving competition to supply and generation of energy. It will also result in the best projects coming to market in the right order and give customers confidence to decarbonise.

General Comments: