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Electricity Price Review
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SUBMISSION TO THE ELECTRICITY PRICE REVIEW 2018

23 October 2018

To the members of the Electricity Price Review Panel,

Climate change is the greatest challenge of our time and requires an urgent shift in how we power our lives. As the recent IPCC Special Report notes, we have just over a decade to halve the world's greenhouse gas emissions.[i] What is required is a level of ambition, transformation and courage on a scale unparalleled in history, other than perhaps during war-time.

Alongside shifting our food system, transforming the energy sector (including electrification of transport and industrial heat) is the key to driving down New Zealand's greenhouse gas emissions in the short time we have left.

With this energy transformation comes a world of opportunity, to democratise energy, bring down power prices, generate new job opportunities and improve health and comfort in New Zealand homes.

Current policy settings and market arrangements will not deliver change on the scale required. The centralised, privatised, deregulated energy system we have today is failing to deliver efficiency, affordability, or innovation. Clean energy growth has been stymied while power prices have skyrocketed for the most vulnerable. There is a direct link between high power prices and the use of dirty energy like coal, gas and diesel.

Today, New Zealand's energy is expensive, outdated, and still too dependent on dirty fuels. The rules that govern our energy system prioritise energy company profits over a safe climate, local ownership, and affordable household bills. Significant change is needed.

The purpose of Government and the regulator is to act in the interests of New Zealand citizens, not to create favourable conditions for large energy users and power companies to profit.

We must redesign our energy system so that it explicitly serves the goals of a) reducing emissions to zero and b) delivering affordable energy to New Zealanders. By doing so, we can:

- Have 100% renewable electricity by 2030.
- Electrify 85% of our transport using clean power sources by 2050.
- Insulate New Zealand's 600,000 cold homes.

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- Replace coal and gas used in industrial processes with clean electricity or biomass by 2050.
- Create thousands of jobs, both in urban areas and the regions.
- Reduce climate pollution across the whole energy system and play our role as a responsible international citizen within the Paris Climate Agreement.
- Cut our dependence on expensive imported oil, which currently costs $5.7 billion a year.[ii]

We welcome this review into electricity prices and would appreciate the opportunity to speak to our submission in person.

KEY RECOMMENDATIONS

Greenpeace recommends five focus areas for New Zealand's energy policy:

1. Redesign the rules
    a. Make the Electricity Authority responsible for reducing carbon emissions, ensuring affordable energy for households and enabling people to generate their own power.
    b. Stop big energy companies from squashing competition, and instead make space for new entrants in the market.
    c. Make lines companies think outside their lines and poles and embrace more efficient ways of providing affordable energy to households.
2. Support citizens to generate their own power
    a. Rewire our laws and energy pricing so they reward people for contributing clean energy to the grid, instead of punishing them.
    b. Provide a one-stop community power advice shop to support community energy schemes.
    c. Introduce a People's Power Fund that provides grants for community energy.
3. Double down on energy efficiency
    a. Ensure Kiwibuild homes are highly energy-efficient so they require little or no heating.
    b. Tighten efficiency standards for buildings, appliances, and vehicles.
    c. Insulate all 600,000 under-insulated homes in the next 10 years.
4. Replace polluting technology
    a. Reintroduce the ban on new coal and gas generation.
    b. Plan for the managed closure of coal and gas plants with a just transition for workers.
    c. Boost investment in clean energy and battery storage, and demand flexibility to manage peaks.
    d. Invest in research and development into dry-year back-up
5. Back bold projects
    a. Add solar and batteries to 500,000 homes in the next ten years through a zero-interest loan from Government.
    b. Create a training centre for clean energy workers, supporting new jobs and skills for thousands.
    c. Invest in innovation in offshore wind and ocean energy.

For more details, please refer to our recent *Seize the Sun* discussion paper.

RESPONSES TO KEY QUESTIONS

What are your views on the assessment of consumers' priorities?

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The consultation document does not capture New Zealanders' desire for energy independence. Research shows only 30 per cent of New Zealanders are happy getting electricity from their power company. Fifty eight per cent would prefer to generate their own energy.[iii]

What are your views on whether consumers have an effective voice in the electricity sector?

We agree with the IEA's conclusion that residential energy users need a greater voice in decisions about how our energy system is designed and regulated. Energy users are under-represented in such decision-making in New Zealand compared to other jurisdictions, such as the United States, Europe and Australia.

The impact of this underrepresentation can clearly be seen in the discrepancy of price rises across residential, commercial and industrial users. With greater financial and lobbying power, commercial and industrial energy users have been able to push down prices or keep them stable. Residential users have little lobbying power and the effect can be seen in the 79% increase in prices that they have faced. International comparisons are a sign that New Zealand's energy system has disproportionately penalised residential users, while commercial and industrial users have benefited.

The consultation document notes that "The electricity sector is complex" and suggests that this creates high barriers to entry for residential users. We agree. The solution is to seek to reduce complexity in the regulatory environment and to create institutions that make it possible for residential users to participate effectively. We support the creation of stronger advocacy bodies for residential energy users with financial backing from Government.

Ultimately, it is the job of Government and the regulator to operate in the interests of New Zealand citizens, who's voice is no match for the lobbying power of large energy users and power companies.

What are your views on the assessment of the make-up of recent price changes?

While the consultation document lays out the facts on where price rises are coming from, it provides little analysis of the systemic reasons why price rises have so disproportionately affected residential users. For example, the report notes that distribution charges have largely shifted from businesses to residential users, pointing out that "distribution charges for householders rose 548 per cent, while those for commercial and some industrial businesses fell 58 per cent." This cost transfer highlights a serious injustice in our energy system.

It is our view that the corporatisation, deregulation, and privatisation of the energy system is largely to blame. This can also be gleaned from the data: the report states that "retailing charges were the biggest component of residential price rises between 2004 and 2018 (3.5 c/kWh, or 30 per cent)". Rather than reduce bills, competition between retailers appears to be driving up prices for New Zealanders as retailers increase marketing budgets in order to win new customers. The promise of privatisation was that there would be more competition and a better deal. However, New Zealanders are actually worse off as a result. Bold political intervention is needed to correct the injustices in our energy system and address energy poverty, dirty fuel use and a dearth of innovation.

What are your views on the outlook for electricity prices?

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Transpower confirms that "A renewable future is the most affordable"[iv] and it is good to see this captured in the consultation document. The falling costs of solar, wind and battery storage and their ability to displace expensive fossil fuelled peaking plants suggests there is good potential for electricity costs to fall.

In order to reap the benefits of new technology for reducing prices, regulatory measures need to be taken to mitigate the perverse incentive that current market arrangements create for generators to restrict supply and to maintain fossil fuels at the margin. Transpower refers to this phenomenon as "investment gridlock".

> *With current market arrangements, the prices realised by generators are determined by the highest prices bid by generators who wish to sell and whose volume is required to satisfy demand. All market participants receive that highest price. Often, the market prices are set by the prices offered by thermal generators, who must bid high prices because their costs are high due to the costs of the fossil fuels they burn.*
>
> *If a large volume of capital investment is made in wind, solar and geothermal generation capacity, then thermal plants would be needed less frequently, leading to market prices being determined by the marginal costs of the renewable producers. These prices will be lower than the marginal costs of thermal producers, particularly if increasing carbon prices are factored into the mix. Under those circumstances, market prices would be much lower, and the expectation of materially lower prices has the potential to deter investment in the renewable generation capacity, creating a form of 'investment gridlock'.*[v]

Analysts have argued that the same market dynamics have created a perverse incentive for large generators to provide heavily discounted energy to New Zealand Aluminium Smelters Limited at Tiwai Point.[vi] This maintains coal and gas in the energy system while keeping prices artificially high for residential users.

Current market arrangements create a market failure that stands in the way of reducing greenhouse gas emissions and delivering affordable energy to New Zealand households. This failure is not acknowledged in the consultation document and requires further investigation by the panel.

Greenpeace advocates that the following policy instruments be used to correct for this failure:

- Introduce new rules separating the generation and retail arms of the generator-retailers.
- OR mandate that these large retailers are only legally permitted to purchase 50 per cent of their electricity from their generation arm, requiring them to buy the rest from other players, including specific targets for community and household-generated energy.
- Reintroduce the ban on new thermal generation plants (including the removal of consents for peaking plants slated for construction in Otorohanga and Taranaki).
- Plan for a managed phase out of existing coal and gas plants with a just transition for workers.
- Roll out more battery storage to manage peak demand, such as through zero-interest loans and other financial incentives for household batteries and electric vehicles.
- Invest significantly more in research and development for dry-year back-up, including ocean energy, biomass, geothermal, and storage.

<u>What are your views of the assessment of the outlook for the affordability problem?</u>

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We fully support the call to improve home energy efficiency, including through rigorous upgrades to the building code, legal requirements on landlords to meet strong energy efficiency standards in their rental properties and a significant extension of Government support schemes to help insulate the 600,000 under-insulated homes in New Zealand in the next 10 years.

Building new homes to be net zero, following passive house standards would dramatically cut bills by reducing energy used for heating and cooling, while relieving pressure on the energy grid during the winter evening peak.

What are your views of the assessment of barriers to competition in the generation sector?

The key to creating real competition in the generation sector is to facilitate the roll out of household and community energy generation. As it stands now, households and communities face many barriers to generating their own power, from legal and financial barriers to low/unpredictable buy-back rates[vii] and discriminatory lines charges.[viii] In other parts of the world, Government is actively supporting decentralised generation to improve energy democracy as well as increase grid resilience.

As a rule, households and communities that produce, save, or store energy must be fairly compensated for the services they're providing to our energy system. This should be enshrined in law, as in the EU.[ix] The Government must also support the roll-out of peer-to-peer trading systems to facilitate households and small organisations to independently sell energy to each other.

In general, households and communities should receive fair and transparent buy-back rates for solar energy. Those rates should be set based on the value they are adding to society, such as through the "value of solar" metric that's being developed in many US states. Importantly, they should be set by an independent authority instead of being left to the whims of power as is currently the case. Household and community energy schemes directly compete with established power companies who, therefore, have an incentive to discourage their uptake. Government must step in to advocate on behalf of citizens.

Households that provide storage or reduce energy demand during peak times should also be rewarded.

Locally produced energy, storage, and managing demand produce significant benefits for everyone because they replace costly investments in new poles and wires that we all pay for in our energy bills. At a time when energy demand is very likely to increase, avoiding expensive new infrastructure will benefit the whole system. But currently the market does not recognise this benefit.

In order to extend the benefits of locally produced energy beyond homeowners, the Government must reduce barriers to community energy generation. In other parts of the world, cooperative energy schemes are providing a way for renters and people on lower incomes to have a stake in clean, local, and affordable energy generation.

Here in New Zealand, legal and financial barriers to community energy generation must be reduced, for example by requiring local governments to provide information and support like a "one stop shop" for community organisations wishing to develop a scheme. This is the case in countries like Germany, which have high levels of community energy generation.

The Government should also consider setting up a People's Power Fund to provide grants for community energy schemes, similar to the grants being provided by New York

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State.[x] Another approach is to require energy developers to offer shared ownership to local communities, which happens in Denmark for example.

What are your views on whether current arrangements will ensure sufficient new generation to meet demand?

New Zealand will need to embark on an ambitious programme to build the new clean energy needed to replace dirty fuels. National grid operator, Transpower, forecasts a doubling in demand for electricity in New Zealand over the next thirty years, driven by the electrification of transport and industry.[xi]

In order to avoid the "investment gridlock" challenge mentioned above, as well as ensure that the benefits of new energy development flow to people, rather than large power companies, the Government should back a number of bold projects. We recommend that the Government:

- Solarise half a million New Zealand homes in ten years. Through an interest-free loan on solar panels and a battery, with no upfront costs for the homeowner, we can inject a significant amount of new clean power and grid-stabilising battery storage onto New Zealand's electricity grid. Importantly, this power must be owned by citizens and communities, not large power companies.
- Build Kiwibuild homes to very high energy efficiency standards, and incorporate solar panels and batteries on every suitable Kiwibuild home. This would significantly cut bills, at the same time as adding new clean energy to the grid.
- Explore the potential for offshore wind in Taranaki. Engineering skills employed in the oil industry transfer well to the offshore wind sector, making Taranaki an ideal location for exploring offshore wind development in New Zealand.
- Establish an ocean energy innovation hub. As an island nation surrounded by high energy oceans, our natural resources provide us with an enormous advantage when it comes to developing marine energy. New Zealand could become the Southern Hemisphere centre of ocean energy research, project demonstration, certification and commercialisation.
- Establish a training centre for the clean energy workers needed to install solar panels and batteries, to build wind turbines and transmission lines, to plan new electric vehicle charging infrastructure, and to retrofit homes to make them warmer and more efficient. The effects for local and regional employment would be transformative

We also note the critical role of local and community ownership in ensuring a fast rollout of new, clean energy. Transpower highlights the possibility that local resistance, particularly to wind, could put a brake on clean energy development.[lbid] Research suggests that community ownership is the key to overcoming public opposition as local people have a stake in and benefit from clean energy development in their area.[xii]

1. What are your views on the assessment of retail sector performance?

The evidence presented in the consultation document suggests that there is currently no onus on retailers to provide transparent pricing information to customers and that they are able to charge inappropriately high prices to people who, for whatever reason, are unable to spend time searching for the best deal. This is unjust. The onus of getting a fair price for energy should not be on energy users. The data shows that, in particular the most vulnerable people in our society do not have the time or ability to shop around and are suffering as a result.

This same data also reflects badly on the assumptions behind our privatised energy system. As noted in the document, "There are signs competition may be producing uneven benefits. One indicator is the price difference between the cheapest retailer in

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each area and the retailer there when retail competition was introduced in the late 1990s (the 'incumbent' retailer). Figure 16 shows this price difference has increased by about 50 per cent since 2002, after adjusting for inflation."

The last 30 years of energy sector reforms are not delivering for New Zealanders. It's time to call into question the assumptions that sit behind our current energy market and redesign it so that it instead meets the urgent challenges of climate change and affordable household bills.

What are your views on the assessment of generators' and retailers' profits?

We note the recent Auckland University study in which Dr. Stephen Poletti found that New Zealand energy generators have taken home $5.4 billion in excess profits in the last seven years, due to lack of competition among big players in the power sector.[xiii]

The consultation document suggests there is insufficient data to be able to make a judgment on whether generators/retailers have made excessive profits. In light of the Auckland University study, the panel should take urgent steps to clarity their opinion and act to insure fair and equitable pricing.

What are your views on the assessment of barriers to greater efficiency for distributors?

Importantly, New Zealand's consumer-owned trusts are some of the most democratic institutions that remain in our energy system. Within a reformed energy system with improved policy settings, these institutions can play a very important role in delivering clean, affordable and democratic energy services to New Zealanders.

The strict rules that govern lines company activity need revisiting. New technology means there are now more efficient ways to deliver affordable energy to households. Lines companies could receive performance-based incentives to help customers save energy and cut carbon emissions, for example through solar panels, batteries, insulation, efficient heating, smart appliances, and other measures. Community-owned lines companies should also be given more space to support community-scale solar and wind projects.

The Acadia Centre offers useful reflections on grid modernisation and utility business model reform.[xiv]

What are your views on the assessment of the allocation of distribution costs?

As the document notes, "Compared with usage, businesses on affected networks are paying on average less than a proportionate share of distribution costs, and residential consumers are paying more. We estimate householders' average yearly bill could fall by $90 (including GST), or about 4.5 per cent, if business and residential allocations were brought into line with usage on all networks. Businesses' average yearly bills would increase by about 5.5 per cent."

This discrepancy must be rectified immediately and further investigation carried out into the systemic drivers of this unjust outcome.

What are your views on the assessment of the impact of technology on consumers and the electricity industry?

The consultation document draws a lot of attention to the impact of increased solar and electric vehicle penetration on low-income households. These impacts can be mitigated by adjusting policy settings. What is required is an approach to energy policy

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design that prioritises directing benefits towards residential users, particularly low-income users.

The consultation document fails to acknowledge that locally produced energy paired with storage has benefits for everyone, from reducing costly peaks and avoiding expensive new investments in poles and lines, to limiting line losses and increasing resiliency. Increased household solar can particularly help reduce the cost of transmission and avoid lines losses for New Zealanders in Northland, who face some of the highest power prices in the country.[xv] Solar and batteries also enable the development of micro-grids, which can power important community facilities such as emergency shelters during natural disasters like storms and earthquakes.

Overseas, there are examples of governments using solar PV as a means to address fuel poverty and other issues faced by low income households. For example, the State of California is using some of the money it collects from its emissions trading scheme to provide solar PV panels to low income households, the State of Massachusetts has instituted a solar loan programme for low-income residents[xvi], and New York is piloting a community solar project to benefit low-income residents who gain energy savings from shared solar panels.[xvii]

Solar PV, especially when combined with energy efficiency, can help address fuel poverty by lowering electricity bills. For example, UK research indicates that solar PV can make a valuable contribution to reducing fuel poverty in social housing, if tenants understand how to adapt their electricity use to realise the biggest electricity bill savings.[xviii]

Overseas experience shows that community energy schemes also have a significant role to play in extending the benefits of the energy transition to low-income people. A project, in Ashland, Oregon, allows residents to "adopt" part or whole solar panels that are located on the roof of the City Service Centre, and which are maintained by the City. Output of their adopted panel is then credited to their electric bill.[xix] In Colorado, the community in San Miguel County built a solar array on top of a former landfill site, which will significantly lower the electric bills of qualified low-income participants in the project.[xx] And in Gardner, Massachusetts, a community solar array on the site of an abandoned manufacturing plant is creating energy cost savings for a non-profit organization supporting those with disabilities and substance abuse disorders.[xxi] These examples illustrate how diverse New Zealand communities could benefit if we were to support community solar in New Zealand.

A compassionate New Zealand Government should follow these examples, to address the injustices of the current energy system and empower low income households to reap some of the rewards of the renewable energy transition. What is required is a new way of thinking about our energy policy; one that prioritises reducing emissions and lowering prices for the most vulnerable, rather than simply relying on market efficiency to deliver these outcomes. Data shows that it has not.

<u>What are your views on how emerging technology will affect security of supply, resilience and prices?</u>

As we are seeing now with the Pohokura outage, our dependence on fossil fuels can result in system volatility and significant price rises. Increased investment in a greater diversity of clean energy sources including wind, solar and marine energy is required alongside the development of storage. South Australia's famous Tesla battery has resulted in significant cost-savings to energy users by outcompeting expensive gas generation used for peaking.[xxii]

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A significant rollout of decentralised energy generation is also key to improving security of supply and resilience. Centralised power grids, such as New Zealand's, are vulnerable to frequent and prolonged outages. For example, Auckland experienced a six hour power cut in 2006 which cost about $70 million and affected 700,000 people.[xxiii] Solar PV and battery storage systems can increase grid reliability when designed to do so. This particularly beneficial in a country prone to earthquakes, and will be increasingly beneficial as we face increases in extreme weather due to climate change. Overseas, solar PV has been providing resilience to grid outages for more than two decades. For example, in the aftermath of Southern California's 1994 Northridge earthquake, PV kept some communication links operating and supplied power to residents who had installed PV systems.[xxiv]

Solar PV and battery storage are enabling the development of micro-grids, which are small-scale power grids that operate independently or in conjunction with the main electrical grid. Micro-grids provide additional resiliency, and can incorporate important community facilities such as emergency shelters. For example, in the USA, the town of Rutland Vermont constructed the country's first 100% solar micro-grid, which had solar PV and storage capacity to supply 356 houses with power during normal weather conditions, or to power their public emergency shelter during natural disasters.[xxv]

2. <u>What are your views on the assessment of the place of environmental sustainability and fairness in the regulatory system?</u>

As mentioned numerous times throughout this submission, New Zealand's electricity industry is not delivering on social or environmental outcomes. We believe the current ideology that guides the energy policy framework to be fundamentally flawed. As stated in the consultation document, "The electricity regulatory framework is the result of reforms by successive governments over the past 30 years. Underpinning them has been promoting competition, on the assumption competition stimulates innovation, gives consumers more choice, improves service and keeps costs and prices in check." This assumption does not match the evidence that is laid out in the consultation document itself, which demonstrates that residential users are getting a worse deal than before privatisation.

We also note the recent IPCC special report, which points out that we must halve our greenhouse gas emissions in just over ten years. The energy system must be redesigned to deliver on this existential threat, rather than continuing to serve a profit-focussed ideology which has proven to be ineffective at delivering good outcomes for citizens and the environment.

The purpose of Government and the regulator is to act in the interests of New Zealand citizens, not to create favourable conditions for large energy users and power companies to profit.

The primary objectives of the energy system should be to a) reduce greenhouse gas emissions to zero and b) deliver fair, affordable energy to New Zealanders. The statutory objectives of the Electricity Authority must be updated to reflect this.

<u>What are your views on the assessment of whether the regulatory framework and regulators' workplans enable new technologies and business models to emerge?</u>

The consultation does not sufficiently explore the role of community energy development. Although the nature and extent of benefits vary, in general the benefits of community energy projects include greater public participation in the energy transition leading to increased public support, increased financing for clean energy, stronger communities and benefits to the local economy.[xxvi] As we have seen with individual households, community ownership matters too: economic returns for

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communities are substantially higher for locally-owned solar projects as opposed to absentee-owned projects.[xxvii] US research shows that the economic impact is 3.4 times greater, if local ownership is high.[lbid]

Yours sincerely,

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