

23 February 2022

NSW Department of Planning, Industry and Environment
Sent electronically to energy.consumerpolicy@dpie.nsw.gov.au

SUBMISSION: Promoting Innovation for NSW Energy Customers

Brighte Energy Pty Ltd (“Brighte”) welcomes the opportunity to make a submission to the NSW Department of Planning, Industry and Environment (DPiE) on the public consultation paper “Promoting Innovation for NSW Energy Customers”.

About Brighte

Brighte is on a mission to make every home sustainable. Recognised as one of Australia’s fastest-growing tech companies, Brighte’s sustainable homes platform is helping Australians bring home the benefits of solar energy to accelerate home electrification. Founded in 2015, Brighte has to date helped over 100,000 households get solar sooner, partnering with over 2,500 SMEs nationally and processing over \$1 billion in applications for household energy finance.

A purpose-led business supporting the power shift to the home, Brighte reduces household CO2 emissions each year by more than half a million tonnes with its residential energy solutions and has facilitated the installation of more than 500MW of new solar new generation so far. In 2021, Brighte was named as the exclusive finance and administration provider for the ACT Government’s \$150m Sustainable Household Scheme.

Focusing on solar, battery, electric vehicles, home electrification and retailing solar power, Brighte is bringing home the power of the sun and making the benefits of clean energy accessible and affordable to Australian families.

Introductory comments

With the Federal Government’s commitment to a net zero target by 2050¹, reducing emissions is now a national bi-partisan political priority. While much attention has been focused on large scale generation and storage opportunities, Australian households are responsible for 33.5% of domestic emissions² – from the energy they use and the cars they drive.

¹[“Australia’s plan to reach our net zero target by 2050”, Ministerial Press Release](#)

² [“Castles and Cars”, Rewiring Australia Discussion Paper](#)

An opportunity now exists to electrify Australian homes, reducing emissions, cutting energy bills and creating jobs. Accelerating the uptake of DER technologies will be fundamental in achieving this aim. However, this opportunity will only be realised by households if consumer needs are put at the centre of the clean energy transition.

It is in this context Brighte welcomes the proactive attitude of the NSW Government in adopting a consumer-centric approach to policy formulation through this consultation paper.

With over 7 years of DER experience involving over 100,000 households, it is Brighte's strong belief that the sustainable energy system of the future should be built around consumer needs as power shifts to the home.

Part 1: Digital Energy Technologies

Issue 1 – Meter Costs to Customers

- Brighte is supportive of measures the NSW Government could introduce to accelerate the roll out of smart meters across the state. Brighte is supportive of providing transparency of costs allowing consumers to make better-informed purchasing decisions. The smart meter cost should be called out separately - NSW could achieve this by making amendments to the National Energy Retail Law (NSW) derogational rule
- Customers should also have the right to transparent metering costs and if switching to other retailers could reduce that cost.
- Given the importance of smart meters to the proliferation of DER, the NSW Government should consider what policy levers it could deploy to increase uptake. This could concern rebates, incentives or other measures.

Issue 2 – Meter life & redundancy changes

- Brighte agrees that information related to the life expectancy of basic meters and smart meters is not easily accessible to customers. Education, transparency and customer communications in this space could be enhanced to promote uptake. Brighte also acknowledges that meter life may be viewed in fitness for purpose contexts rather than functional life alone, and that a case for (or otherwise involving) the former requires clear, transparent analysis and information communicated to consumers e.g., if smart metering allows tariff reform towards positive consumer outcomes, the arguments inherent need to be robust, specific and transparently communicated to consumers. There are many related arguments to this point e.g., concerning current challenges networks and markets face – in every instance, we consider it paramount that consumers should be 'brought along for the journey'.

- In addition to the transactional and administrative costs to install the new smart meter, there is also the regulatory burden to notify customers whose meters are replaced as part of the retailer led deployment. This notification burden is about 20 to 40 business days and includes the right of the customer to opt-out, leaving the retailer with a sunk cost in facilitating the replacement. Brighte encourages the NSW government to consider what measures can be undertaken to better educate the customer on the financial benefit of smart meters.

Issue 3 – Solar Connection Delays

- The 15 business day rule is enforceable – however, retailers and metering coordinators have the ability (with customer consent) to extend this date, rendering the 15-day time moot.
- Failure to comply with the 15 business day rule carries no self-reporting obligation. This makes enforcement challenging through lack of visibility and diminished incentive. The NSW Government should consider working with the AER to make the 15 business day time frame a reportable obligation. This will likely increase compliance and reduce delays.

Part 2: The Future of DER

Issue 8 – DER in NSW

- Per Energy Consumers Australia³ there are two energy transitions currently underway: decarbonation of the energy system and a second transition is at the consumer level, with users changing the way they engage and use energy – this is evidenced in the growth of DER.
- While DER (specifically rooftop solar) has grown significantly in the past decade, greater-than-expected uptake has seen a range of power system and market issues arise, particularly concerned with high volumes of unmanaged, behind-the-meter, small-scale generation. This has led, more recently, to initiatives to manage generation and grid export in ways that may limit individual customer value though that, with adequate network investment and network/market modernisation, may lead to greater consumer opportunity.
- Clear direction and coordination in the NSW DER sector is key going forward to provide certainty for all stakeholders, from customers to solution providers and the market.
- Brighte supports the NSW Government’s guiding principles of DER, noting that the first is *“impact on consumers is a primary consideration in all decisions”*. We would recommend going further and ensure that *consumer benefit is a primary consideration in all decisions*, and that all reasonable and practical steps are taken to reduce barriers and increase uptake. Presently barriers are significant, particularly with respect to a lack of clear standards guidance able to

³ [“Two Energy Transitions, Article”](#)

provide adequate investment confidence to relevant industry able to furnish DER product, and additionally given a lack of structured approach for consumer DER assets to access relevant revenue streams. Significant work is underway across Australia with respect to the latter particularly; we urge the NSW Government to support the adoption market and services operators able to integrate network and market concerns into value opportunities DERs may be able to contribute to from a single source of truth. This approach – being explored in several avenues nationally (e.g., Project EDGE is one such example) - also necessitates identification of DERs on the network and accordingly identifies value opportunity on a geographically-discrete basis, delivering value appropriate uplift to other network modernisation initiatives (e.g., Dynamic Operating Envelopes).

- From Brighte's experience in providing an innovative point of sale financing solution for household electrification products, a significant biggest barrier to adoption of clean energy technologies remains upfront cost. This is borne out not just in our internal research which demonstrates that without Brighte finance, over 70% of customers would have delayed or deferred their purchase – but also external research, such as that carried out by the UK Government⁴. We believe there are many opportunities to lower cost and increase consumer access to DERs, and urge the NSW Government to be proactive to these ends.

Brighte's consumer research has also highlighted the following key barriers:

- High cost and long payback periods - the economic case for batteries doesn't stack up for the majority of households without government rebates or generous VPP programs
- Lack of access to simple, trustworthy information and difficulty applying it to individual circumstances
- Concern about vendor quality, warranties and ongoing maintenance
- Increasing complexity in comparing energy solutions and understanding the relationship between PV, Batteries, EVs, VPPs etc.

Solutions may include lowering fixed DER adoption cost by e.g., mandating EV charging infrastructure in new buildings (or at least prewiring and circuit protection provisioning for this and/or other salient classes of DERs), studying deeply the socioeconomic benefits of DERs and providing appropriate incentives on this basis, contributing to reasonable and amenable standards, clarity as to how device interoperability could and should work – there is much that can be done for which the role of government is prescient.

- Much of the existing focus on DER has focused on rooftop solar. However, for the true benefits of solar to be experienced, energy storage (in particular, home batteries) is key, allowing households to not only generate power, but also store it for later self-consumption or distribution into the grid, earning additional revenue or reducing their bills. It would also

⁴ [UK Rooftop Solar Behavioural Research](#)

alleviate pressure on the grid. While some countries such as Germany currently have attachment rates of over 60%⁵, in Australia – despite over three million homes having solar PV installed – it is estimated less than 4% of these are also fitted with batteries.⁶

- With net zero targets in mind, government has a role to play in enacting appropriate policy settings and incentives to assist households in adopting behind-the-meter renewable generation and storage. For example, the ACT Government is providing no-interest loans for a range of DER products⁷ including solar PV, battery, efficient heating/cooling, electric cooktops, EV charging infrastructure and EVs through its Sustainable Household Scheme, administered by Brighte. In addition, the ACT Government is also providing rebates for battery installations⁸, reducing the upfront costs and making the payback period more economic. This rebate approach has been mirrored in other jurisdictions, such as SA⁹ and NT¹⁰. Experience has shown these rebate schemes are consistently 'oversubscribed' indicating strong demand when the barrier of cost / ROI is addressed¹¹. Given the importance of battery storage to maximise the value of rooftop solar, the NSW Government is encouraged to consider similar approaches to appropriately incentivise battery uptake.
- Another key barrier to the energy transition is access to appropriate information to assist households on the home electrification journey. Many consumers are unsure of where to start and can be overwhelmed with the choices on offer. Offering independent energy assessments and advice can be one way to address this issue. Brighte's community partner the [Australian Energy Foundation](#) is one such organisation that acts as an information and advice service for households.
- Low income or vulnerable households often face both these barriers (affordability, access to advice) simultaneously, as well as potential issues in accessing appropriate finance. There is a role here that government can play in ensuring the energy transition is inclusive, by programs targeted specifically at these cohorts, either in the realm of reducing upfront costs or providing low cost loans. The NSW Government's Solar for Low Income Households is one such initiative. Access to loans however, could be provided for other DER products related to home electrification. Organisations like (Brighte's community partner) the Australian Energy Foundation also have targeted programs for low income and vulnerable households.

Issue 9 – Enabling flexibility and dynamic operating envelopes

⁵⁵⁵ [European Market Outlook For Residential Battery Storage](#)

⁶ [Australians installed 31,000 batteries in 2020, led by households](#)

⁷⁷ [ACT Sustainable Household Scheme](#)

⁸ [Next Gen Energy Storage Program](#)

⁹ [SA Home Battery Scheme](#)

¹⁰ [NT Home and Business Battery Scheme](#)

¹¹ [Batteries included in 9% of new residential PV systems in 2020](#)

- While Brighte acknowledges the fact that *“households are installing solar PV systems that are significantly larger than their current consumption needs.”*, we would not agree with the reasoning that *“how can customers be encouraged to only install solar systems that suit their current consumption needs? What would be the most effective measure to achieve this aim?”*. This proposal is inconsistent with both the notion that solar PV needs to be sized greater than a given customer’s peak demand to meet their net energy requirements, and that the electrification of various sectors will increase customer electricity demand – and thus their solar PV sizing requirements – at any rate. Electrification is rapidly increasing – particularly in residential settings – and with solar PV typically being a long-term investment, it is neither practical nor in consumers’ best interests to consider solar PV within the context of current consumption needs.
- It is our view that this thinking views consumers as a problem to be managed, rather an asset to be leveraged – and rewarded. As the WA Energy Minister Bill Johnston has pointed out¹², the uptake of rooftop solar presents governments with an opportunity - *“We have 1.3GW of rooftop solar and so the trick for us is to integrate that and ... get the most value out of those mum-and-dad investments. Other people see it as a problem, we see it as an opportunity, and so we really want to unlock that value.”* Within this lens it may be more prescient for DPIE to view challenges around large amount of residential solar PV generation more as a challenge to best incentivise storage, intelligent demand flexibility and appropriate network management.
- Whilst cognisant of current energy market challenges with respect to minimum demand arising from (in part) solar PV, excess residential generation should be viewed as an opportunity given macroscopic shifts in the power system landscape – particularly given the withdrawal of thermal baseload assets. Residential solar PV is a key, low-cost part of the solution for our future grid if integrated correctly. Battery energy storage can assist significantly in realising the ultimate potential of behind-the-meter generation.
- As the consultation paper notes *“Although home batteries could help households to capture the excess electricity their solar system is generating, to be used by the household later in the day, currently their relatively high cost and long returns on investment are restricting widespread adoption.”* This is a broad reflection unfairly simplifying diverse customer demand profiles (some of which are more intrinsically financially amenable to batteries) and the current costs of battery energy storage, which are envisaged to fall rapidly. Targeted investments in residential battery energy storage – through government incentives – not only helps reduce bills and pressures on the grid, but serves to invest valuable experience and stimulus in a growth industry.
- Brighte recognises that achieving mass penetration of home batteries will take time, as will the

¹²[“Amazing” rooftop solar an opportunity, not a problem, says WA energy minister](#)

evolution of the grid. Given realistic challenges for network operators – particularly around maintaining investment efficiency as the power system transitions to a distributed state - dynamic operating envelopes will allow for greater volumes of residential solar PV to export to grid whilst minimising investments towards greater network investment efficiency.

- Brighte acknowledges that whilst DOEs provide the opportunity for consumer demand to be optimised relative to network and/or market conditions, effecting best behaviours may not reflect customer amenity. DOEs are best leveraged with intelligent Energy Management Systems (EMS) that automatically maximise the optimisation of DERs, market trading, self-consumption and the like. Brighte strongly encourages the NSW Government to establish subsidies for e.g., energy management.
- Within the above, Brighte urges DPIE to investigate metering reform towards low-cost, high-performance outcomes. Metering remains essential to revenue activities however it is now also essential to the correct operation of DERs (particularly with respect to export limiting), for ancillary service delivery and increasingly to cost recovery on a per-asset basis. Presently customers may have multiple meters serving different purposes in a residential energy system, however from a functional perspective it would appear much is duplicated – relevant system cost in this scenario exceed the cost of metering alone (installation and system integration costs particularly). There are many potential approaches relevant to increasing metering infrastructure access towards low-cost, high-performance outcomes. The customer benefits to these ends are clear.

Issue 10 – Quality, standards and compliance

- It is important that consumers have confidence that DER installations are safe, reliable and functional. Brighte supports further measures to ensure that consumer outcomes in the DER sector are improved.
- Brighte supports the new regulatory and enforcement guidelines issued by the CER for the rooftop solar sector, which come into effect in the second quarter of 2022. These new standards will place further obligations on solar retailers, designers and installers to provide written statements quantifying system performance, expected savings and safety requirements to qualify for STCs. These measures will increase consumer confidence in rooftop solar standards and in turn, help develop the industry by necessitating investments in point-of-sales capabilities that are better able to quantify customer expectations and empower purchase choices as DERs proliferate in number, type and configuration.

Issue 11 – Improving the visibility of residential DER and data management

- Brighte respects that DER visibility is essential to a range of network activities, including

investment planning, operation and to network state prediction.

- Today distribution networks have little data as to the likely uptake of DERs representing unprecedented residential power density; this complicates network investment activities and makes planning difficult. Given the risk to investment efficiency of poor planning – costs which are ultimately borne by consumers – we urge DPIE to explore all reasonable means to improve the visibility of DERs.
- Network state prediction is also essential to maximising the value potential of DERs to network and market operations, which in turn may increase relevant revenue operations for consumers. Presently this is undertaken in private means through discrete VPPs, an approach which does not maximise the network value of DERs. Brighte urges DPIE to investigate ways in which network state may be communicated and predicted in whole-of-network ways such that aggregated DER benefits may have positive, maximised effects on e.g., market state, effecting net downward pressure on consumer costs. (Whilst not a complete endorsement of a large and complex project) Brighte notes that certain elements of Project EDGE provide a functional template to these ends.

Issue 12 – Community batteries and emerging technologies

- Brighte believes that community batteries will have a role to play in our future energy network. In a broad sense community batteries are complementary offerings to behind-the-meter residential batteries. We see a future where the benefits of both approaches are sufficiently understood and rendered accessible such that the best approach is used in any given situation. We observe, however, that there are some ways to go before the promise of community batteries may be realised: there exist a range of regulatory issues with respect to the ownership and delivery of relevant assets and services from community batteries, and some significant research is required to develop optimisation strategies that make for transparently fair consumer outcomes. Put simply: community batteries require regulatory reform and further development; behind-the-meter batteries are available and viable today.
- A key underlying factor concerns consumers seeking more control over their energy usage. Household batteries offer this as a behind-the-meter asset, with consumers able to directly control how their energy storage works towards their intended ends.
- Ultimately, community batteries may be more appropriate in situations where independent installations are not feasible.
- Brighte does not view community batteries and behind-the-meter batteries as competitive solutions: they are ultimately complementary solutions towards the same ends. The NSW Government is encouraged to maintain a resolute focus on supporting the proliferation of behind-the-meter batteries towards achieving positive consumer outcomes whilst continuing

to invest the development of regulatory reform and product development necessary to make community batteries viable.

Issue 13 – EV Infrastructure in existing apartment buildings

- Brighte supports DPIE undertaking all steps to bring clarity, democratize knowledge and establish best practice in EV infrastructure in existing apartment buildings. This market segment is particularly important to the uptake of EVs and needs to be addressed in a cost-effective manner wherein advice around reticulation upgrades (where appropriate), circuit protection and dynamic limits, charge scheduling and customer amenity are all addressed.
- Energy management is essential to these ends; Brighte notes that several DERM businesses exist in Australia that are highly amenable to pivoting into this segment with appropriate industry stimulus. We urge DISER to consider this strongly. Whilst some players exist in EVSE supply that offer some management solutions, this space is held by considerably lesser vendors. Not only would the space benefit significantly from fair competition, but the positive effect on relevant industry would also likely conflate into a net positive effect for energy management solutions as an industry affecting DER uptake (positively) as a whole.
- Brighte also observes that relevant standards and frameworks to these ends are in flux with evolving approaches and value/application bundles. We urge DPIE to develop clear minimum performance standards able to positively frame vendor investment decisions.

Part 3: Energy Customers' digital Journey

Issue 17 – Access to information

- Knowledge is power: Brighte is supportive of measures the NSW Government could introduce to facilitate access to information regarding DER. Our community partner the Australian Energy Foundation provides such information and acts as an information and advisory service for households.

Issue 18 – Electricity Retailers Emissions Performance

- Consumers are becoming more climate conscious and aware of emissions related considerations when making purchases. This is especially the case for energy.
- In that vein, the government should consider making the emissions performance of retailers both transparent and highly visible, enabling consumers to make informed purchasing decisions
- This should include both the performance of the individual retailer emissions as well as the particular plans offered. This information should be publicly available on bills, comparison sites,

retailer websites and updated annually.

CONCLUSION

With a net zero future fast approaching, DER adoption in Australia's largest state will be critical to reducing emissions, reducing energy prices and creating jobs. Brighte welcomes and is encouraged by the proactive and consumer first approach DPIE is taking in formulating policy in this rapidly evolving space.

We're excited about the opportunity drive DER adoption even further into mainstream Australia and we would welcome the opportunity to provide more information or assistance to the Department about the matters raised in this submission, if required.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Nigel Freitas', with a stylized flourish at the end.

Nigel Freitas

Head of Corporate Affairs

Brighte