THE INDEPENDENT VOICE OF STRATA OWNERS

23 February 2022

NSW Department of Planning, Industry and Environment
4 Parramatta Square
12 Darcy Street
Parramatta NSW 2150
By email: energy.consumerpolicy@dpie.nsw.gov.au

OCN – Enabling the Transformation of the Energy Sector

Dear Policy team,

Strata is the fastest growing form of residential property ownership in Australia. Over half the new dwellings to be built in our metropolitan areas over the next decades will be strata titled. The growth of this sector raises increasingly important questions over property ownership and governance.

The Owners Corporation Network of Australia Limited (OCN) is the independent peak consumer body representing residential strata and community title owners and residents. As such, OCN is uniquely positioned to understand the needs and constraints within this unique housing sector, as well as to advise on the potential impacts that legislation may have on planning, development, and day-to-day operational outcomes.

OCN strives to create a better future for residential and community living and ownership. We support the transition to resilient, empowered communities living in climate ready, defect-free buildings.

OCN welcomes the NSW Government's intention to deliver an energy system that puts the customer at the centre of policy and program design, while delivering an affordable and reliable energy future that helps achieve net zero emissions by 2050.

Please find below a detailed response to the consultation questions that we believe have most relevance to the strata sector. In summary, we draw your attention to the following key issues, and assure the Department that we stand ready to further assist your staff as they design efficient and effective policy:

- OCN urges the Department to consider the full range of costs and benefits when assessing policy options. For example, on issue 4 the need to consider the costs of materials displaced and reuse strategies needs to be included; and on issue 7 the need to provide consumer information on energy use AND water consumption should be provided;
- An explicit aim of Department policy should be to hasten the transformation of energy systems to Net Zero carbon emissions. Whilst the suggested principles in Issue 8 provides a reference to 'coordinating with the Net Zero Plan', OCN urges the Department to make an explicit principle that would require decisions related to DER to bring forward the realisation of a Zero Emissions electricity supply sector;

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- OCN urges the Department to publish and reference the *Making Apartment Buildings EV Ready* paper, that OCN has already provided to the Department – and continue to develop consumer guides and incentives that will assist the take-up of electric vehicle charging solutions in apartment buildings.

Yours sincerely,

Karen Stiles
Executive Director

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Detailed submission: Public consultation paper: Promoting innovation for NSW energy customers

The Owners Corporation Network of Australia Limited (OCN) has reviewed the Department's consultation paper in detail and makes comment on questions that it considers have most relevance to residential strata and community title owners and residents. OCN welcomes further discussion with the Department as appropriate on issues raised in the pursuit of OCN's vision of resilient, empowered communities living in climate ready, defect-free buildings.

Consultation Paper Issue 1: Meter costs to customers		
	Question: ***1c. Would it be useful for customers if the cost of a smart meter was included on the details of electricity plans on comparison sites?***	
		Yes. OCN supports the full disclosure of costs and benefits on comparison sites to enable customers and/or their advisers to make the fullest assessment possible.

Consultation Paper Issue 2: Meter life and redundancy charges		
	Question 2d. What are the factors to be considered before mandating end of life for basic meters?	
		An essential factor to be considered is how the material of the basic meter and the material used in the replacement is responsibly disposed of. Ideally solutions should be found to ensure all material is at best fully reused or at least fully recycled such that no landfill waste is generated.

Consultation Paper Issue 3: Solar connection delays		
	Question 3d. Are there any benefits for customers to allowing third parties to be able to manage the installation of a smart meter on their behalf?	
		This likely requires further exploration and discussion. OCN believes that there should be a benefit for a service provider to have full scope in managing a solar install for a customer, but we would like to understand any unintended consequences of this position before we commit.

Consultation Paper Issue 4: Meter board upgrades		
	Question 4a. Should there be a requirement to replace meter boards that are older than a specified age (e.g. 30 years) as a prerequisite to installing a smart meter?	
		OCN believes that age alone would be too blunt a threshold to require a costly upgrade to a meter board. Older boards may still be in good condition and have room to install new meters, and the costs of replacement include the amount of additional landfill waste that would likely be generated. It is also likely that owners will not have easily available detailed records of installations to enable the age of the meter board to be determined. Whilst OCN supports the intent to improve upfront cost estimates and to ensure long term reliability and upgrade pathways, we believe that the Department would be better focussed on providing guidelines to both Estimators and Installers on when a meter board should be replaced. These should include an assessment of issues such as Condition; Available space; Functionality and other Safety related issues related to the existing board.
	Question 4c. If a meter board survey service can be provided, how much should customers pay for the service? Can the service be offered for free?	
		Considering that the proposed survey would be included into an existing process, OCN does not believe that that the customer should be expected to pay an additional fee for this. In addition, when considering costs and benefits of this survey, OCN would ask that

		the Department consider the full range including reduced landfill waste and further technology benefits to the Retailer and Network providers, when considering cost allocation of this survey.
	Question 4d. Should electricity retailers and/or metering providers receive a report on the state of a customer's meter board? If not, why?	
		OCN does not see any reasonable concerns for why a customer should withhold this information to their retailer and or meter provider.
	Question 4g. What is the best way to provide customers, solar panel installers and electricity retailers with information about meter board upgrades?	
		OCN believes that customers should be given access to fact sheets developed and hosted by an independent and trusted provider. These should provide relevant information including the role of meter boards; typical issues and concerns; benefits of upgrades; who can provide upgrade services; and the likely cost ranges of upgrading boards. In the case of EV charging upgrades to buildings (See 13a), it is recommended that a building energy assessment be done by accredited professionals. The condition of the meter board should be included in these assessments.

Consultation Paper Issue 6: Consumer protections for remote vs manual re-energisation and de-energisation		
	Question 6a. Should the same obligations be applied to both manual and remote re-energisation and de-energisation services?	
		OCN believes that the consumer protections for remote re-energisation services should be at least as comprehensive as those afforded for manual re-energisation.

Consultation Paper Issue 7: Enhancing protections for hot water embedded network customers		
	Question 7a. Is it appropriate to require the sale of hot water to be treated as the sale of energy, to allow hot water embedded network customers to be given similar consumer protections as those in traditional common hot water systems?	
		OCN has recorded many instances where strata owners are negatively impacted by embedded networks. Issues such as lock-in contracts; locked out technology upgrade pathways; price gouging due to the lack of competitive pressures and contestability. We also have concerns if the supplier owns the infrastructure, the OC may not be able to make changes without paying for it, having it ripped out or needing to be replaced. As such OCN does not generally support the implementation of embedded networks. Departmental action to protect the customer would be a positive step. All consumers should be provided with the appropriate protections regardless of type of service provision. The protections provided under the 'traditional common hot water systems' should be considered the minimum set for all.
	Question 7b. Do you foresee any unintended consequences of requiring hot water embedded network operators to bill customers for hot water in the underlying energy source (in cents per megajoule or kilowatt hour), rather than as a separate 'hot water' product (in cents per litre)?	
		It is essential that the customer receives consumption data for their use of energy AND water. What is measured can be controlled. For those properties that use solar to pre-heat their hot water, it is possible that by charging for external energy only would mean that the customer would not be able to understand their actual water consumption.

Consultation Paper Issue 8: DER in New South Wales		
	Question 8a. Are the suggested guiding principles appropriate and adequate to guide government strategy for enabling high levels of active DER in New South Wales?	
		OCN does not believe that principle 5 is explicit enough. Rather than simply coordinating with the Net Zero Plan, a specific principle should be included that requires decisions related to DER seek to bring forward the realisation of a Zero Emissions electricity supply sector – this is a NSW target and should be an explicit goal for this strategy.
	Question 8c. How can the government support greater demand side participation and flexibility for customers and market participants?	
		We suggest that a workshop and/or design session be run with all relevant stakeholders to explore this issue further. OCN would be willing to participate and represent owners and residents.
	Question 8e. What could be done to ensure vulnerable, low-income and other 'locked out' households are not disadvantaged by the energy transition?	
		We suggest that a workshop and/or design session be run with all relevant stakeholders to explore this issue further. OCN would be willing to participate and represent owners and residents.

Consultation Paper Issue 9: Enabling flexibility and dynamic operating envelopes		
	Question 9a. 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?	
		OCN does not believe that customers should be encouraged to limit the solar system size installed for network and/or systems limitations. Considering the fixed cost of solar installation vs the capacity of solar actually installed it would likely make economic sense for the customer to maximise the scale of their initial installation. Also, customers should be encouraged to install as much solar as practical (having consideration for other uses of roof space at some apartment complexes such as green community space) to reduce the carbon emission intensity of the electricity they and their neighbours use. In addition, electrical demand in the near future for many apartment complexes will likely rise as actions to recharge electric vehicles and fully electrify buildings are taken. All calculations on the installation size of solar systems should consider current and future demands.
	Question 9f. Are there NSW-specific customer, grid infrastructure and/or technological issues that should be considered in enabling dynamic operating envelopes?	
		It's OCN's view that a full systems approach should be considered which would include behind the meter options and overall system management solutions.

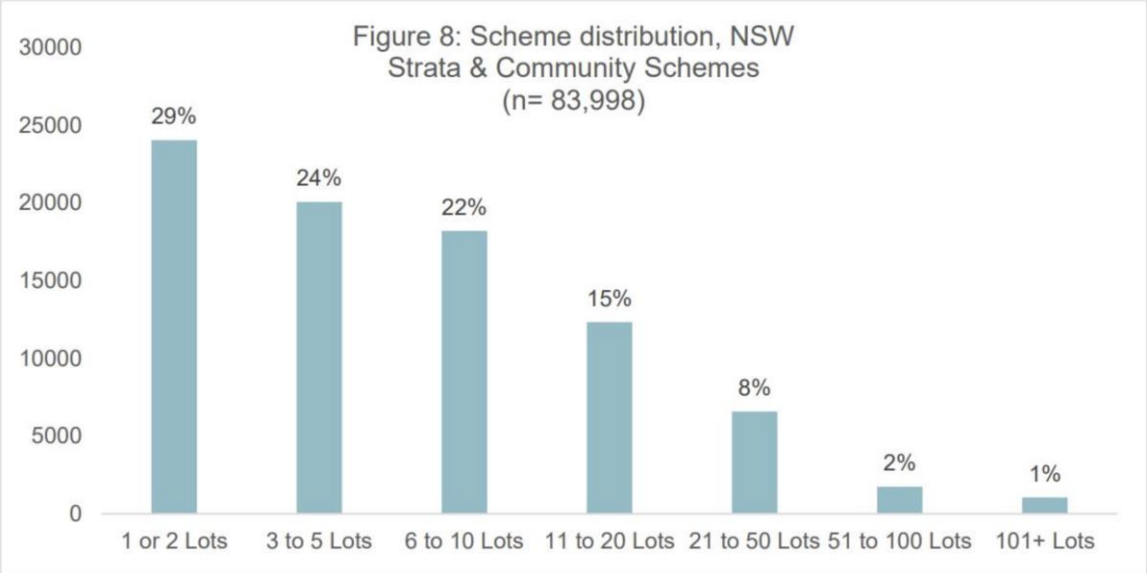
Consultation Paper Issue 12: Community batteries and emerging technologies		
	Question 12a. Are there any concerns about community batteries (or other similar DER innovations) from a system or customer perspective that should be considered as part of any future strategy or reform?	
		OCN has no concerns with community batteries per se. We submit that some strata plans/ apartment complexes may be suitable for community batteries. There are strata complexes that sit on large parcels of land, have many various sized buildings, and have more than sufficient roof space to support large arrays of solar panels. They also have sufficient space to install a community battery – either behind or in front of the meter. Consideration should be given to the installation of community batteries in such communities.
	Question 12b. What technical and regulatory changes that have not already been addressed, should be considered to enable the full value of community batteries and other DER solutions to be unlocked?	
		See 12a.
	Question 12d. Are community batteries an economically effective solution to managing the increasing amount of generation from rooftop solar PV on the distribution network? If not, what other solutions should be considered?	
		In the example of 12a the generation from rooftop solar PV could be contained to a community with existing management structures that enable the broader benefit of wider scale deployment of rooftop PV solar generation to be assessed and managed.
	Question 12e. What are the barriers for developing and implementing a community battery project, and then connecting and operating the battery?	
		We suggest that a workshop and/or design session be run with all relevant stakeholders to explore this issue further. OCN would be willing to participate and represent strata owners and residents.
	Question 12f. What other emerging solutions could enable locked out demographics to participate in the energy transition and benefit from clean energy solutions?	
		See 12a.
	Question 12g. Are there any other ways the NSW Government can support broader rollout of community batteries and other promising DER solutions that can enable locked out demographics to access the benefits of clean energy solutions?	
		We suggest that a workshop and/or design session be run with all relevant stakeholders to explore this issue further. OCN would be willing to participate and represent strata owners and residents.

Consultation Paper Issue 13: EV infrastructure in existing apartment buildings

Question 13a. How can the NSW Government support the residential deployment of electric vehicles and associated charging infrastructure?

Background

OCN is of the view that as more information becomes available about EV Charging (EVC) so does the need for understanding and simplification. The actual customer for EV decision making is the owners corporation (OC) and a good starting position is understanding what the actual customer needs are. Often, we think about apartment buildings as large multi-story buildings supporting 100 plus apartments. The fact is that large buildings only represent 1% of apartment buildings. The following graph demonstrates the distribution of apartment buildings according to size[1].



In understanding the OC's requirements for EVC, the diverse range of methods according to building size needs to be clearly understood. The three methods offered in the consultation paper significantly understates the issue.

In the *Making Apartment Buildings EV Ready* paper, provided to DPIE, OCN identified 5 specific methods OCs might consider in assessing EVC for their buildings.

These 5 methods are:

Method	Cost Range[2]	Charge level
1. Individual connection to the lot meter	Owner pays $2,000 to $5,000	Level 1 or 2
2. Repurpose existing circuits connected to the lot meter	Owner pays $2,000 to $5,000	Level 1 or 2
3. Common property (CP) connection – allocate CP car spaces and install EV charging stations for shared use	OC pays $20,000 to $50,000	Level 2 or 3
4. Modular method – purpose-built distribution boards that support up to 6 individual EVC circuits per module (including load control timers and	OC pays $5,000 to $7,000 Owner pays $2,000 to $3,000	Level 2 3.7 kW

[1] Source. UNSW City Futures and LRS data.

[2] Based on case studies and estimates

smart meters) which are installed in car parks and connected to the main distribution (EV Infrastructure) and connect to EV Supply equipment (EVSE) in owners' car space.		
5. Whole of building – infrastructure (including load control and metering) to support EVSE in any owner's car space	OC pays $70,000 to $200,000 Owner pays $2,000 to $3,000	Level 2

Assuming a reasonable penetration of 10% of EVs by 2030[3], with the distribution of sizes on buildings in the chart, we might assume that over the next 10 years:

- 75% of buildings which are small, those up to 10 apartments, might be served by methods 1 and 2, for the average of 1 EV per building.
- 24% of buildings which are medium, those between 11 and 100 apartments, might be served by methods 3 or 4, for the average of up to 10 EVs per building at the higher end.
- 1% of buildings which are large, those over 100 lots, might be served by either method 3 or 5.

This is a very rough assessment, but it shows why we need to focus on the actual, different building and OC needs across the wide range of buildings that exist.

In understanding customer need and to establish a proper understanding of the available methods for EVC, the OC should start with two key sources of data:

- Survey - Conduct a resident survey to gauge EV charging intentions and attitudes for their building.
- Obtain a building energy assessment to understand the impacts of EV charging, that assessment to include such information as:
    - Condition of the meter board
    - Existing circuit breaker sizes
    - Historical peak energy loads
    - Historical off-peak energy usage patterns
    - Consideration of energy efficiency programs to reduce load and create extra electrical capacity.

Based on this data, the OC can make informed choices in selecting the right method for their building.

<u>How can the Government support owners corporations?</u>

One of the top two major issues impacting EV take up is lack of EV charging infrastructure[4]. The most popular method of charging EVs is at home overnight[5]. Retrofitting EVC to apartment buildings is a significant challenge for EV owners to provide the necessary charging infrastructure to address these two key issues. To help support OCs and EV owners, there are a range of options available to the NSW Government. These include:

[3] EV Council Data
[4] https://www.climatecouncil.org.au/wp-content/uploads/2017/09/FactSheet-Transport.pdf
[5] Norway study

- Publishing of the *Making Apartment Buildings EV Ready* website and associated tools which OCN has drafted.
- Grants up to $2,000 to facilitate energy assessments for OCs on an as required basis.
- "Quick start' grants up to $7,000 for the provision of EVC infrastructure identified as method 4, modular method, for buildings where this method is deemed the most appropriate. This is likely to be many medium sized buildings and will provide an incentive for OCs to make a start once there is a legitimate request from a prospective EV owner.
- "Quick Start' grants of up to $10,000 to provide method 3, common property method, and method 5, whole of building, to fund trials and initial proof of concept applications.
- Zero interest loans to fund the installation of method 3, common property applications, and method 5, whole of building. While it may seem on the surface that funding method 5, whole of building for large buildings is expensive, the expense may be offset by the potential for high numbers of EVs in larger buildings, due to the demographics in larger buildings more likely to purchase an EV, once the question of making charging infrastructure available in the building is addressed.

13b. What are the roadblocks to the installation of EV charging infrastructure in apartment buildings?

The roadblocks to the installation of EVC in apartment buildings are many:

Buildings:

- The age or type of building may mean the electrical infrastructure is not always in good condition nor accessible, making the addition of new infrastructure difficult and expensive.
- There is not always sufficient electrical capacity into buildings to support EVC.
- Switch boards may not have sufficient capacity or be in good condition to support EVC.

Owners corporations (OC) and strata committees (SC):

- OC or SC are not always sympathetic to change nor sustainability, making it difficult to gain approvals for retrofitting EV charging infrastructure in buildings.
- SC are often not inclined to spend any funds.
- EVC is not seen as a priority.
- There is a lack of investment strategy or prioritisation processes to allow EVC to be included in the discussion.
- Little desire to take on special levies if there is a lack of funding.

Capital Works Fund (CWF)

- In some instances, a CWF either doesn't exist or has insufficient funds to support any capital expenditure, including EVC.
- What scarce funds do exist are prioritised to other capital expenditure deemed more important.

Load control:
The electrical capacity in buildings is limited by cable size, switch board size and the capacity of the local electricity network. Any upgrade to increase building electrical capacity can be an expensive, time consuming and disruptive process. There are a range of load control alternatives available to manage peak demand and not exceed these electrical limitations. These alternatives include:

- Use off-peak – only allow EVC in off-peak usage periods. Most owners will charge overnight, so this is not normally a problem.

- Electronic controls like demand management systems and current transformers to control demand in peak demand periods by selectively switching off devices like EVC until there is sufficient electrical capacity available.

13c. Of the three methods listed above, what is the preferred method for connecting EV charging infrastructure in apartment buildings?

As identified in the 13a Background above, the three preferred methods of EVC connection as included in the consultation paper, significantly understates the requirements of apartment buildings and OC.

The distribution of numbers of apartments across building sizes means that there is no simple solution nor one size fits all.

In considering the methods for the installation of EVC as raised in 13a background, the following might be taken as a very broad-brush approach:

- For the 75% of buildings which are small buildings, those up to 10 apartments, might be served by method 1, individual connection to apartment meters and method 2, repurpose existing circuits connected to the apartment meter. This assumption is based on easy access to the various apartment meter boards in these buildings.
- For 24% of buildings which are medium size, those between 11 and 100 apartments, might be served by method 3 common property located charging stations, if there are sufficient CP car spaces and the OC are able to manage a scheduling system to manage access to the charging stations or the method 4, modular method, to allow for EV charging to be provided to the owner's car space. Even for 100 apartment buildings, 1 or 2 modules would support 12 EVs, which exceeds the estimated 10% take up over 10 years.
- 1% of buildings that are large, those over 100 apartments, might be served by method 3 common property located charging stations, if there are sufficient CP car spaces and the OC are able to manage a scheduling system to manage access to the charging stations or method 5, whole of building to provide sufficient infrastructure to allow for an EV charging to be provided to the owners car space as required. This is a long-term investment aimed at future proofing the building for all future EVC requirements. While the percentage of large buildings is low, the number of apartments impacted is high and the demographics of residents such that they may be more inclined to be early adopters of EV, so these building may be the 'low hanging fruit' or an opportunity to encourage high numbers of early adopters.

13d. Do owners corporations or strata managers have any concerns about residents contracting licensed electricians to install private charging infrastructure in their parking space and connecting it to their apartment's electricity meter?

The OC has the sole responsibility for decisions about their building. In the case of EVC, there are several reasons why residents should not contract licenced electricians directly but gain the approval of the OC in the first instance:

- The installation of EVC in apartment buildings is relatively high-power consumption and does represent risk to the electrical capacity of the building if not properly managed. It is OCN's view that all applications for EVC should be approved by the owners corporation to allow the proper assessment of energy usage over time. See load control in 13b for alternatives to manage peak demand to minimise this risk.

- Distribution boards and meter boxes are, in most cases, in different locations requiring changes to common property for the installation of EVC infrastructure, which does require OC approval.
- With some small buildings or strata schemes, the apartment's meter box maybe located near or within the apartment, so the issue of having a licenced electrician simply connect their EVSE may be an option, assuming the overall building electrical capacity is assessed to be sufficient.

13e. Should there be different connection requirements based on the size or capacity of the EV charging infrastructure (i.e. 7 kilowatt or 50 kilowatt chargers)?

OCs should carefully consider any need for 50kW chargers, for several reasons:

- They are high power devices, in some instances exceeding the normal electrical capacity of residential buildings, meaning there may not be enough electrical capacity in the building to allow their operation.
- They are expensive, particularly when the cost of adequate electrical capacity to support the chargers is included.
- Most residential charging applications are for overnight charging using off peak electricity. In this instance 50kW chargers are an overkill.
- In some rare method 3, common property applications, consideration may be given to 25 or 50 kW chargers if there is high demand for charging due to multiple residents with EVs and there is an adequate scheduling system to manage use of the chargers, supported by operational staff that manage the actual charge times. In this case NSW Service and Installation Rules and AS/NZS3000:2018 apply.

13f. Who would be best placed to own and operate EV charging infrastructure in apartment buildings?

The answer to this question depends on the actual method selected by the OC. The following table shows who is accountable over the range of methods:

Method	Who owns/ Operates/ Pays	For what
1. Individual connection to the lot meter	Owner	Approvals, installation and EV Supply Equipment (EVSE)
2. Repurpose existing circuits connected to the lot meter	Owner	Approvals, installation, switching equipment and EVSE
3. Common property connection – allocate CP car spaces and install EV charging stations for shared use.	OC	Approvals, Electrical infrastructure from distribution board to car spaces, EVSE, scheduling system, load control, billing system and necessary approvals.
4. Modular method – purpose-built distribution boards that support up to 6 individual EVC circuits per module (including load control timers and smart meters) which are installed in car parks and	OC	Electrical infrastructure from main distribution board to modular panel, load control, billing, cable ducts to car spaces and approvals for the infrastructure installation.

connected to the main distribution (EV Infrastructure) and connect to EV Supply equipment (EVSE) in owner's car space.	Owner	Connection to the EVC infrastructure, cabling to EVSE, EVSE and associated approvals
5. Whole of building – infrastructure (including load control and metering) to support EVSE in any owner's car space	OC	Electrical infrastructure from main distribution board to car spaces, load control, billing, cable ducts to car spaces and approvals for the infrastructure installation.
	Owner	Connection to the EVC infrastructure, cabling to EVSE, EVSE and associated approvals

13g. How should the costs of the EV charging infrastructure in the apartment building be accounted for?

There are a range of approaches for accounting for costs, depending on how the OC wishes to deal with costs in their building. These approaches are outlined in the table below:

Approach	Application	Comments
No cost recovery. Owners corporation (OC) bears the full cost.	Common Property method. Modular or Whole of Building methods. Pros: Simple model. Cons: Some owners may feel disadvantaged. High cost to the OC.	OC determines EV Charging is a service they will offer to the building to increase the value of the building.
Full cost to owner	Individual methods, (meter and repurpose). Pros: No cost to OC. Cons: Does not consider growth in EV charging in the building. Limits EV uptake.	OC determines they will not incur any cost and the owner pays for everything, including: • General Meeting for sustainability infrastructure resolution and by-law. • Design costs • Installation costs • Billing and running costs
Cost recovery	Common Property method. Modular or Whole of Building methods. Pros: Provides a cost-effective way to future proof the building. User pays over time. Cons: OC needs the financial ability to fund in the short term.	OC pays for the design and initial installation of the EV Charging infrastructure and recovers cost over time as users connect. Cost recovery is calculated on: • Overall cost of the project • Expected number of connections. • Expected connection or usage rate • Expected time frame for cost recovery. Note: There are potential tax implications of the OC making a

		profit, so cost recovery must be limited to recovering costs only.

13h. Do electricity retailers or any other entities offer any specialised plans or discounts to incentivise EV charging infrastructure in apartment buildings?

None that OCN are aware of.

13i. Would it be fair to charge EV charging infrastructure users fees for installing, maintaining and operating the EV charging infrastructure in strata schemes (in addition to energy consumption charges)? Who should pay for these and why?

See 13g.

13j. Should energy consumption from EV charging infrastructure on common property be paid for by users or borne by the owners corporation?

This is another decision for the OC to take, dependent on the charging method selected and the needs of the building. The approach available to the OC are summarised in the table below:

Approach	Application	Comments
No Usage fee	Individual method where there is a single power point used, which is connected to common property power. Common Property method where the owners corporation decides to absorb the costs.	There may not be the capability to measure usage and/or it is not worth the cost of administering billing.
Flat Fee	Common Property method based on the number of requests to connect. Individual methods. Modular method. Pros: A simple flat fee may be easier than either providing a meter or reading the meter and calculating a kWh based fee.	Often the calculation of a usage charge is difficult and may not involve any significant amount of money, so a flat fee or $1 per day may suffice.
Metered Rate	Modular and Whole of Building methods. Pros: Making a calculation based on usage provides relatively accurate costing for cost recovery Cons: Someone needs to read the meter on a quarterly basis	Where usage meters are provided, it is a simple matter to calculate a usage charge based on a kWh rate.
Use existing Meter	Any method which uses existing meters.	Where the EV charging equipment is connected to the existing meter for the apartment, any increased usages charges are included into the existing billing.
Outsourced or 'turnkey'	Common Property method. Whole of building method. Pros: Simple for the owners corporation. The cost of billing can be incorporated in cost recovery of the EV Infrastructure costs.	Many EV operators provide a turnkey solution that includes aspects of billing, for a fee.

			Cons: Higher cost to Owners Corporation and Owners.	
	13k. Who should be responsible for managing and controlling the use of EV charging infrastructure on common property?			
		The OC is responsible.		

Consultation Paper Issue 17: Access to information		
	Question 17a. What kind of information, or which topics, do customers find most challenging or confusing to find information about in relation to smart meters, DER and/or other energy technologies?	
		As with most technical issues in a competitive market, consumers need information from unbiased and trusted sources on: Concepts (what is possible, why they should consider, high level concepts and typical designs); The range of solution types; Typical cost ranges for the various solution types; Where to find suitably qualified providers (what qualifications should they be seeking from them) of the solutions they are interested in.
	17b. Are customers likely to access the information on a website using a desktop browser or a mobile device?	
		This will depend on the type of information.
	17c. Would customers prefer to focus their research journey by learning about the various technologies available to them, or by learning about their specific dwelling type?	
		This will depend on the customer and their learning preference. Likely both methods and other methods will be required.

Consultation Paper Issue 18: Electricity retailers' emissions performance		
	Question 18a. Would customers prefer to review emissions performance based on the electricity retailer (i.e. the business) or based on the electricity plans offered?	
		OCN believes that Customers need full disclosure in order to make decisions. It is quite possible that retailers may differentiate their plans/ products by carbon emission intensity and therefore emission performance should be based on their plans offered not a generic view of their business.
	18b. Where would customers prefer to see information about retailer emissions (e.g. on a bill, on the retailer website, on a retail plan comparison site, or a combination)?	
		OCN believes that information should be provided at all places customers will interact with – this is not just an issue of providing information at time of sale, customers will also benefit from understanding the impact of their usage throughout the contract term. Therefore, the combination approach as described in the questions seems the best design.

Consultation Paper Issue 21: Improving access to data on customers of embedded networks	
	Question 21a. If embedded network operators were required to report on their 'child' connection points, should this reporting be done to the AER or their local electricity distribution network?

		OCN does not have strong views either way. The important issues for consumers are choice of provider, access to competitive pricing, and transparency and disclosure to ensure no gouging opportunities.
Consultation Paper Issue 22: Other improvements		
	Question 22c. Are there any new or emerging customer needs in the energy space that government should explore?	
		OCN would like to see ways OCs could combine solar use in their buildings to include both common property and resident use. OCN's response to 12a is one option to consider how to achieve this need.