ENM SOLUTIONS

Submission

Independent Pricing Authority and Regulatory Tribunal (IPART)

Embedded Networks Draft Report

January 2024

Submission to IPART Industry Consultation Paper

Seeking Comment

1. **Are embedded network sellers currently using time-of-use tariffs, demand tariffs, or any other innovative tariff designs?**

Yes. Many of ENM Solutions' clients, that are 'Embedded Network sellers', use innovative tariff designs, including time-of-use tariffs and demand tariffs.

The intent of tariff structures and designs, for all electricity consumers, is to incentivise the shift of how and when consumption occurs. This is reflected in the network tariff pricing approved by the Australian Energy Regulator (AER), and why the Australian Energy Market Operator (AEMO) has programs in place to reward customer side participation in the market - such as the Wholesale Demand Response (WDR) mechanism in the National Electricity Market (NEM).

For residential and small business customers specifically, innovative tariff designs will continue to play an important role in how an Embedded Network operates, both how energy is purchased and supplied to the Parent Meter and how it is then bundled and sold to the end consumer through the Child Meters.

Optional demand is not as popular for residential customers, and we have not seen it set up for small businesses for off-market customers. We do anticipate that residential and small business demand tariffs will have a larger take up over the next few years.

A common challenge that is faced by both consumers and 'Embedded Network sellers' is education around how these tariffs are structured, and how to utilise the tariff to elicit savings.

Our experience with 'Embedded Network sellers' is that flat tariffs are preferred due to their simplicity for customers.

For consideration is if centralised 'hot water embedded networks' are banned, then it is likely that new residential and small business embedded networks will require individual hot water boilers for each apartment – this may require innovative tariffs (dedicated circuits). Shifting the cost of hot water away from a separate invoice towards an electricity invoice will also see consumption increase. Comparison of this type of customer, with and individual electric hot water unit, would then be very difficult. Flexibility with tariff structures will be important.

2. **How are embedded network sellers charging for electric vehicle charging at the site? What are the prices?**

The invoicing and management of Electric Vehicle (EV) charging within apartment buildings and small business communities is an expanding area of innovation, learning and growth. From our experience there are two primary methods that are used to charge an occupier. The first is through the EV Charging provider, that charges the occupier through a credit card or similar payment option. The second is through the embedded network seller that charges by either generating a specific invoice for the consumption, or by including it on their electricity invoice.

The sale and supply of energy to a vehicle is not regulated by the AER and does not have the same regulatory burden associated with it. Similarly, there are currently no requirements around NMI Pattern Approved Meters being used to invoice for EV Charges, as it is sale of electricity to a vehicle and not a person.

We also note that the EV Charging provider and Operator are not necessarily the same entity, depending on the situation. The configuration of the embedded network will likely determine whether the site utilises a charging provider to manage payment for vehicle charging, much the same as a public charger, or whether the usage is separately measured and invoiced by the ENO. Neither would fall within the AER's exemption framework.

We cannot provide any comment on pricing; however, it should be noted that an energy management system should be incorporated to help manage the overall demand for the site. This is appropriate for if the site is an embedded network or not.

3. **Would a complaints-based compliance system deliver the right level of consumer protection?**

The proposed complaints-based compliance system involves IPART becoming the regulator to determine and enforce compliance with the maximum prices to customers within Embedded Networks in NSW. Currently, EWON already undertakes compliance reporting to the AER, including referral of potential breaches. The gap in complaint support through EWON to small business customers can be raised through engagement in the existing Exempt Framework review being undertaken by the AER. Their inclusion would enable these customers to have improved consumer protection under the existing framework.

ENM Solutions support the proposed extension of obligations for embedded network sellers of hot and chilled water to be members of EWON and regulated through IPART, including IPART's ability to investigate non-compliance. Those embedded networks who are already members of EWON may be required to update their membership and site details to capture where this is occurring.

4. Should new non-centralised hot water embedded networks be banned?

No. A centralised 'hot water embedded networks' is an efficient way to supply hot water to multiple residents; however, this is not the case for all instances. For example, a client of ours has an Embedded Network with both an apartment building and a group of townhouses. The apartment building utilises the centralised 'hot water embedded networks', whereas the townhouses have their own individual electric hot water unit. Banning 'non-centralised hot water embedded networks' would not support all new developments and would require further consideration and consultation for exclusions to a ban.

As an aside, the townhouse customers have consistently queried their electricity invoices. This is primarily because the electric hot water unit that was installed is of commercial grade, oversized, and consumes a lot of electricity – which leads to higher electricity bills. The rates are competitive in the market. This is not an 'Embedded Network sellers' issue, it is a development and setup issue.

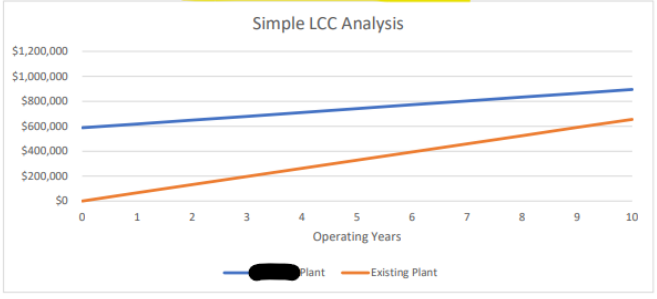
5. Should embedded networks using gas hot water systems be prohibited in new developments to assist in addressing cost of living pressures and assist in the NSW government meeting its net-zero policy?

Yes, new greenfield developments are much better suited to implementing electric heat pump hot water models where retrofit or adjustment of existing sites/builds can have extended pay-back periods that do not stack up to the investment and efficient supply of infrastructure for utilities. The language and examples around the short payback periods for electric heat pumps is somewhat concerning as a basis for all use cases. ENM Solutions has worked with a client who, despite all best intention to implement an electric heat pump, faced a payback period which was not feasible to consider – nearly 17 years. We have included details to validate this below which we would request to have removed/redacted from the public submission. The purpose of this is to outline that all best intentions and single scenarios do not justify wide-sweeping change.

Life cycle cost for equipment, energy, and maintenance.

Operating Year	[redacted] Plant	Existing Plant	Cumulated Difference
0	$587,533	$0	($587,533)
1	$618,216	$65,519	($552,697)
2	$648,899	$131,038	($517,860)
3	$679,582	$196,557	($483,024)
4	$710,265	$262,077	($448,188)
5	$740,947	$327,596	($413,352)
6	$771,630	$393,115	($378,515)
7	$802,313	$458,634	($343,679)
8	$832,996	$524,153	($308,843)
9	$863,679	$589,672	($274,007)
10	$894,362	$655,191	($239,170)

Expected payback period is 16.9 years.



Estimated Energy Demand

	Quantity	Notes
Estimated hot water usage per day	19000 L	At 55°C rise
Usage energy required per day	1215 kWh	Includes losses from return line

Equipment and Running Cost Comparison

	[redacted] Plant	Existing Plant	Notes
Capital cost	$587,533		
End use consumption	1214.5 kWh/day	1214.5 kWh/day	
Plant losses	22.4 kWh/day	127.9 kWh/day	Losses due to PTR, insulation, etc.
Solar contribution			
Required plant work	1236.9 kWh/day	1342.4 kWh/day	
Plant efficiency	309%	70%	7C ambient air
Energy input	400.3 kWh/day	1917.8 kWh/day	
Energy source	Electricity	Gas	
Tariff	$0.21/kWh	$0.09/kWh	
Energy cost	$84/day	$180/day	
	$30,683/year	$65,519/year	
Maintenance cost			

Tariff Information

State	Victoria
Electricity Tariff	$0.21/kWh
Gas Tariff (per MJ)	$0.02/MJ
Gas Tariff (per kWh)	$0.09/kWh

Response to Draft Decisions

1. **That the pricing methodologies be assessed according to the following objectives. That the pricing methodology:**
    a. **Ensures that embedded network customers are not paying more than non-embedded network customers**

This objective is too broad and needs to include the metric for what defines "more than non-embedded network customers".

    b. **Provides price stability for customers**

Agree. Although, revision of the maximum price twice a year as proposed may result in more fluctuation in price as compared to on-market customers who will generally only experience this once per year.

    c. **Is transparent, simple for customers to understand and easy to apply**

Agree that pricing methodologies should be simple for customers to understand and easy to apply; however, we believe that shadow pricing supports "transparency" to a sufficient level already, and any further requirements would add a significant level of complexity for both customers and embedded network suppliers.

    d. **Ensures that an embedded network seller is able to recover its efficient costs of supply**

This objective is too broad and needs to define what "cost of supply" includes. The cost stack behind operating an embedded network varies between embedded network suppliers.

    e. **Is responsive to changes in the efficient costs of supplying customers**

This objective is too broad and needs to define what would constitute a "change in the efficient costs of supplying customers".

    f. **Incentivises embedded network sellers to supply energy efficiently and enable the efficient use of energy**

This objective is too broad and needs to define if incentives are financial or sustainable/renewable.

    g. **Allows for cost-reflective pricing**
    h. **Encourages sustainable energy solutions and accommodates innovation and investment in the energy sector**
    i. **Involves regulatory costs that are proportionate to the problem**
    j. **Results in prices that are enforceable and capable of being monitored**

Agree.

2. **Setting maximum prices by benchmarking them to what on-market customers are paying best protects embedded network customers and meets our draft pricing objectives.**

Benchmarking a maximum price against on-market customers may provide a safety net for customers within embedded networks to ensure they are not paying a price set at the DMO. However, a maximum price should allow embedded network sellers to provide a comprehensive and high quality service, which may be in contrast to those that are providing the best in market.

Restricting EN customers to the lowest prices in the market may not allow these networks to facilitate innovative building, network and renewable solutions that can be reflected within a marginally higher price than market floor level. Not to mention investment in comprehensive, even Australian based, customer support and consumer experience.

A customer's choice of retailer is not exclusive to price, and includes factors such as service, consumer experience, trust, and simple invoice design and communication as outlined by the Behaviour Economic Team of the Australian Government (BETA) in their review for the Better Bills Guideline. While this review has placed significant focus on price, it should consider that consumer harm can arise from a variety of elements separate to price, including mismanagement of customer hardship, poor communication, life-support, and energy supply issues. Driving service provision purely focused on lowest price may not translate to improvements in these offerings by Exempt sellers and in fact could exacerbate consumer harm, service, and experience overall.

Market benchmarking that aligns to real market data on existing price plans that customers are signed up on, with trimmed outliers, would ensure that the maximum price is not more than what on-market customers are paying on average, but driven by average market price and lower. This may provide for more allowance in the services that innovative exempt sellers can provide to embedded network customers, and still support fastening the transition to improved technology, uptake of renewable and sustainable solutions.

Response to Draft Recommendations

1. **Maximum gas and electricity pricing methodology for embedded networks comprise:**
    a. **A consumption charge set equal to the median consumption charge of each active retailers lowest consumption charge (inclusive of discounts and GST) for their generally available offers.**
    b. **A fixed rate set equal to the median supply charge of each active retailers' lowest fixed charges (inclusive of discounts and GST) for their generally available offers.**
    c. **A separate price should be set for each distribution district, and for small business and residential customers separately.**
    d. **An active retailer is defined as one with at least 1000 customers in NSW that has an active offer available at the time the benchmark is calculated.**

Based on the Victorian Default Offer model, a maximum price cap can be implemented and managed sufficiently well to support outcomes within Embedded Networks, with allowance for distribution zone, supply and consumption charges. However, the use of lowest market offers is unlikely to reflect the open market and what on-market customers are paying. The objective of the pricing methodology above is to ensure customers are NOT paying more than on-market customers, which based on available price plans alone, will always be true, as unlike on-market customers are not restricted by maximum price. The objective is not to ensure embedded network customers are paying the lowest prices available in the open market. Our belief is that pricing to the lowest available offer is not in alignment with the pricing objective.

2. **For electricity embedded networks, an embedded network seller be permitted to apply different consumption tariffs for different time periods (i.e. time of use tariffs), as long as the average price does not exceed the determined consumption charge when it is weighted by the AER's Default Market Offer model annual usage profiles.**

Through our Embedded Network Manager services and consulting to a variety of operators, we are aware of time of use tariffs, step tariffs and other innovative demand-based tariffs being considered across both residential and small business customers to the benefit of both customers and owners (who are not necessarily mutually exclusive, a point that should be considered). We are supportive of Embedded Network Operators having capability to be able to provide innovative market tariffs to their customers.

3. **Where customers are billed in cents/Litre, the maximum price for hot water be determined by multiplying the maximum gas consumption charge (as applicable to the customers distribution district and whether the customer is a small business or residential customer) by the maximum common factor of 0.4MJ/L.**

Bulk hot water charges have been discussed periodically between various regulatory bodies, including the AEMC, AEMO, etc. However, to date, there has not been extensive regulation on the methodology across the National Electricity Market (NEM). Victoria's Essential Services Commission (ESC), has a dedicated section for bulk hot water in the Energy Retail Code of Practice.

4. **The pricing methodology for hot water permit embedded network sellers to charge for the consumption of hot water in either units of water (cents/Litre) or units of energy (cents/kWh or cents/MJ).**

Currently the AER has expressed that it will not be classifying the sale of hot water/cold water under the exemption guideline. Moving towards this format of billing requirement.

5. **Where customers are billed in cents/MJ or cents/kWh, that the energy price charged, multiplied by the common factor, cannot exceed the maximum price of hot water as determined by the pricing methodology specified in draft recommendation 3.**

ENM Solutions has no comment on this draft recommendation.

6. **Regulated maximum prices for chilled water be extended to all centralised air conditioning services sold by an embedded network seller.**

ENM Solutions has no comment on this draft recommendation.

7. **Embedded Network sellers of chilled water embedded networks be permitted to bill customers using either a consumption charge or a fixed daily rate. Sellers must use the same charging approach for all customers at a given site.**

ENM Solutions has no comment on this draft recommendation.

8. **Where an embedded network seller imposes a consumption charge for chilled water embedded networks:**
    a. **The maximum consumption charge in kWh is equal to the maximum electricity tariff for embedded networks.**
    b. **No additional fixed rate charge is permitted.**

ENM Solutions has no comment on this draft recommendation.

9. **Where an Embedded Network seller imposes a consumption charge for chilled water embedded networks, the seller must provide information on the efficiency of the centralised air conditions system on the seller's website. The information must include:**
    a. **The Energy Efficiency Ratio (EER)**
    b. **The coefficient of Performance (COP)**
    c. **The energy input for the last financial year**
    d. **The energy output for the last financial year**
    e. **The system's brand name or model number, where available**

ENM Solutions has no comment on this draft recommendation.

10. **Where an embedded network seller imposes a fixed daily rate for centralised air-conditioning, the maximum fixed daily rate be determined by:**
    a. **Taking the annual consumption benchmark for a comparable individual air-conditioning unit (i.e. for a given system size and star rating as per the products listed on the Commonwealth Government's Energy Rating website)**
    b. **Dividing it by 365**
    c. **Multiplying it by the benchmark electricity consumption charge.**

ENM Solutions has no comment on this draft recommendation.

11. **That the NSW Government enact legislation to authorise IPART to determine the maximum prices for the sale of electricity, gas, hot and chilled water to customers in embedded networks in NSW.**

ENM Solutions is supportive of the national framework under the AER. NSW falls within those states who utilise the Exemption Framework and should consider providing feedback on pricing mechanisms and regulatory challenges to the AER. Currently the AER is taking submissions for review of their exemption framework. This body is setup specifically to regulate the energy market and is afforded due process to do so. IPART's review, findings and recommendations for change can be submitted as part of this process and any change implemented in context to the NEM and existing exemption framework. Over the previous three years, the AER has shown that it can implement change under their exemption framework in response to feedback – when it is received as part of the due process.

12. **That the NSW Government authorises the Energy and Water Ombudsman NSW (EWON) to:**
    a. **Refer to the regulator any complaints that EWON reasonable suspects indicate an embedded network seller may have breached an embedded network pricing determination, and**
    b. **Provide to the regulator any supporting information or documentation regarding customer complaints it receives related to embedded network sellers not complying with the maximum price.**

Yes, where the regulator (IPART) is acting in its role to support Hot and chilled water embedded network customers. Electricity customers should remain within the existing framework under the AER.

13. **That the Statutory Framework,**
    a. **Authorise the regulator to investigate whether an embedded network seller has complied with embedded network pricing determination**
    b. **Authorise the regulator, by notice in writing, to require an embedded network seller to provide information, documents or evidence for the purposes of an investigation.**
    c. **Provide that is an offence, subject to monetary penalty for non-compliance, to refuse or fail to comply with a notice requiring the provision of information, documents or evidence.**

Yes, where the regulator (IPART) is acting in its role to support hot and chilled water embedded network customers. Electricity customers should remain within the existing framework under the AER.

14. **EN Sellers be required to publish their current prices on their websites**

Should a maximum price cap be implemented that places EN customers at a market advantage to on-market customers, placing pricing on their website would seem unproductive. Customers moving into Embedded Networks should receive information pertaining to their rates, prior to signing up and agreeing to these rates. It would also allow on-market retailers to more readily manipulate market rates that directly impact the price cap.

15. **Regulator empowered to take one or more enforcement actions for a EN seller who has not complied with pricing determination**
    a. **Direct EN seller to take action within timeframe to remedy**
    b. **Impost monetary penalty on the EN or person who is the director of or involved in management of an EN seller**

Yes, where the regulator (IPART) is acting in its role to support hot and chilled water embedded network customers. Electricity customers should remain within the existing framework under the AER.

16. **The statutory framework require the regulator, before issuing a direction or imposing a monetary penalty to:**
    a. **Consider the action the embedded network seller has taken or is likely to take in respect of the non-compliance, and be satisfied that it is nevertheless appropriate to issue the direction/impost the penalty**
    b. **Consider whether the non-compliance has been or is likely to be the subject of another penalty or action or cany claim for compensation, and be satisfied it is nevertheless appropriate to issue the direction/impost the penalty.**

Yes, where the regulator (IPART) is acting in its role to support hot and chilled water embedded network customers. Electricity customers should remain within the existing framework under the AER.

17. **The statutory framework provide that failure by an embedded network seller to comply with a compliance direction of the regulator is an offence and is subject to a monetary penalty**

Yes, where the regulator (IPART) is acting in its role to support hot and chilled water embedded network customers. Electricity customers should remain within the existing framework under the AER.

18. **That IPART be the regulator that determines and enforces compliance with the maximum prices for the sale of electricity, gas, hot and chilled water to customers in EN in NSW.**

ENM Solutions agrees in part; however, the AER should continue to regulate electricity prices in NSW, and IPART can step up to regulate the pricing for hot and chilled water to customers within Embedded networks in NSW.

19. **New hot and chilled water embedded networks are not prohibited in NSW.**

Yes, we agree with this recommendation.

20. **The NSW Government consider imposing additional disclosure requirements as part of its action to improve disclosure and consumer awareness for prospective purchasers and tenants under the Embedded Network Action plan.**

ENM Solutions agrees that an increased transparency for hot and chilled water embedded networks would be beneficial to customers and owners corporation committee members. Any disclosure requirements can be addressed within the proposed EWON/IPART regulatory framework.