MASTER ELECTRICIANS AUSTRALIA

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# Unlocking the benefits of CER through flexible trading.

Straightening the “Duck’s Back” & making every home a Power Station.

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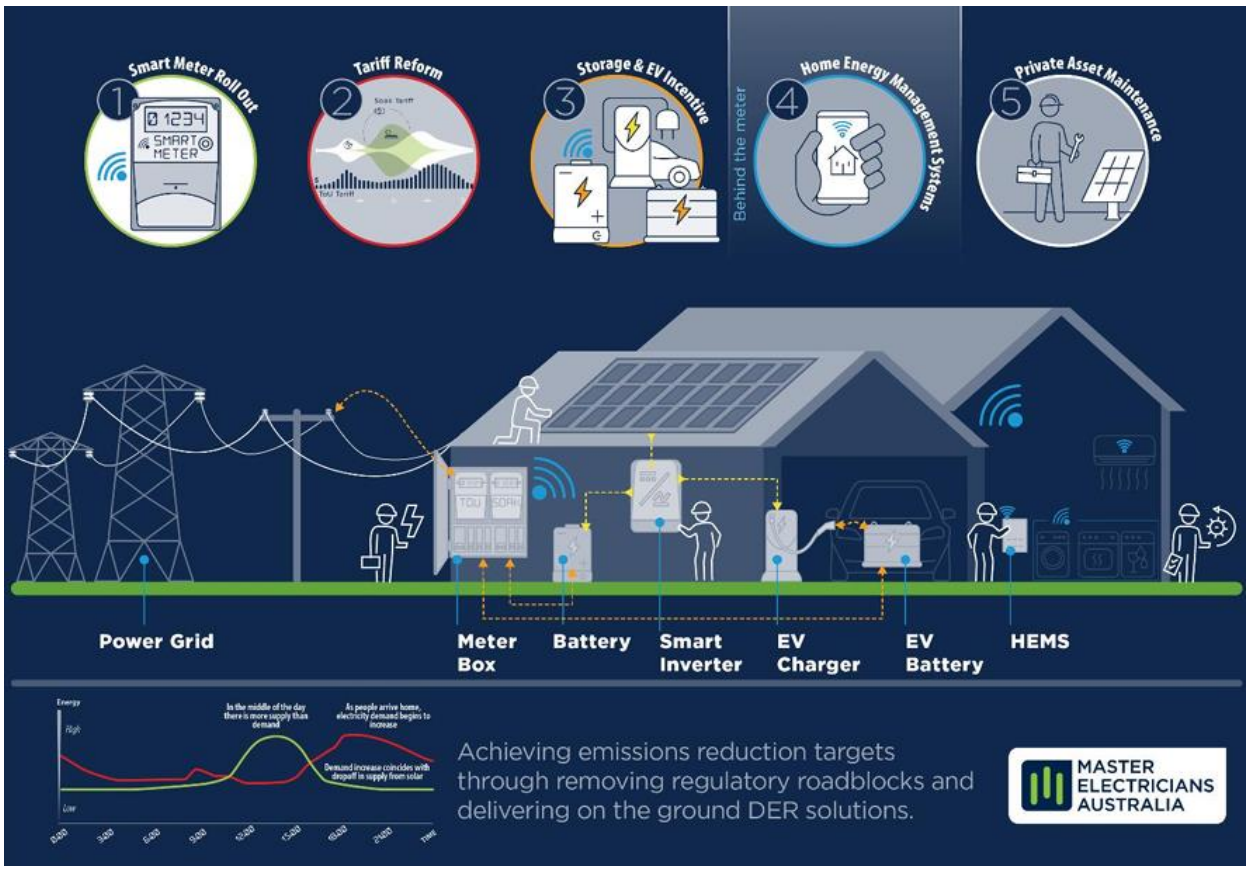
## Introduction

Master Electricians Australia (MEA) is the trade association representing electrical contractors recognised by industry, government and the community as the electrical industry's leading business partner, knowledge source and advocate. Our website is www.masterelectricians.com.au

MEA has responded to many consultations on the benefits of the implementation of Distributed Energy Resources (DER), which is now increasingly referred to as Consumer Energy Resources (CER) and have published a high-level policy document[1] that outlines our vision of turning every home and business in the country into a power station. By doing this, we will be relieving the need to invest in mega generation and transmission projects and utilising the existing infrastructure (existing poles and wires in our cities and towns) that the community has cumulatively paid for over the last century.

The dream of changing the energy demand curve (the ducks back), by taking the excess/cheap energy produced in the middle of the day, and using it during times of peak demand, thereby flattening the demand curve and stabilizing electricity prices can be realised in a reasonably short time period if we make some rational, sensible decisions. The technology is here now, the regulation just needs to catch up, and the workforce of electrical businesses across the country stand ready to make it happen.




[1] https://masterelectricians.com.au/wp-content/uploads/DER-Policy-Working-Paper.pdf

## OPTIMISING THE VALUE OF CER FLEXIBILITY – SEPARATELY IDENTIFYING AND MANAGING RESPONIVE CER

### 2. Key Considerations for Separately Identifying and Managing Flexible CER

*What benefits can be gained through separately identifying CER irrespective of whether there is a single FRMP or multiple FRMPs at the customer premises?*

Giving consumers' control over CER assets and especially the ability for domestic and C&I customers to enter into trading arrangements that could "shift" load, using power (soaking) when it is cheapest for flexible loads (hot water, ovens, EV charging, etc) and delivering power back (sourcing) from storage sources (batteries, bi-directional EV's) when energy prices are higher, would give households and businesses the ability to pro-actively reduce their overall power costs. Not allowing for a secondary settlement point with its own meter to separately measure CER generated energy from inflexible loads inhibits CER's full potential from being realised. Consumers will not reap the full benefits of CER assets thereby reducing incentive for consumer investment into private infrastructure.

As an example, EVs and home batteries could be all four (flexible load, fixed load, generation, and local storage) in a single day, requiring different pricing to incentivise the most efficient use of the assets. This could be difficult to achieve with one settlement point.

*Are there additional implementation issues that we should consider for the draft determination (and draft rule if needed)?*

MEA has considered the below to be potential implementation issues:

- Secondary settlement points create additional costs in both installation fees and metering charges, however without the possibility of having secondary settlement points for variable load and generation in some form, there will be little incentive for retailers to offer innovative products.
- The metering installation rules for each jurisdiction will need to be updated to reflect these types of permissible loads on secondary settlement points. It is worth considering that the Competitive Metering Industry Group (CMIG) has already formulated a voluntary national Metering Installation Rules (MIRs) that could assist in standardizing practices nationally.
- Expertise of installation. Serious consideration should be given to empowering Electrical Contractors and their workers to be accredited under existing and expanded Authorised Service Provider (ASP) schemes, making it easier for licensed and trained electrical contractors to be able to upgrade older meters in existing dwellings more cheaply and more efficiently, improving smart meter penetration into the market.

## 3. Enabling a Second Settlement Point at a Single Connection Point (33-36)

*Do stakeholders agree the technical and market considerations outlined above are the key considerations we should address in relation to establishing a second settlement point, irrespective of the metering configuration options available and proposed for separating and measuring CER?*

MEA agrees with the technical and market considerations outlined as key considerations in the report, in particular –

- Secondary settlement points are to have their own NMIs within the MSATS
- Reduced specifications to be allowed for CER measuring devices compared to residential primary connection smart meters. i.e., embedded power monitoring as an integral part of a CER appliance (battery, EV, charger, street lighting, etc.)
- Distributors purchasing CER services for support network services need to be held to a higher standard than CER integration into the AEMO market systems.

**Any other issues that need to be addressed?**

MEA has no comments.

*Should a second settlement point at a single connection point be restricted to defined situations and conditions (e.g., EV charging)? What criteria and governance processes need to be applied when allowing second settlement points at customer premises?*

MEA advocates that secondary settlement points be limited to flexible loads or generation. Necessities such as lighting, general power circuits, emergency and critical supplies, water pumps etc. to remain on the inflexible circuit/tariff.

*What would be the appropriate framework for approving and verifying alternative measuring devices permitted to be used at the second settlement point?*

NATA certification and type testing of the accuracy of the alternative/embedded metering devices to ensure margin of error small enough to be relied upon for commercial billing purposes.

*What would the implementation costs be for creating second settlement points with associated metering configuration options?*

Metering infrastructure, local wiring, and installation of appropriate circuit protection. Also, upgrades to non-compliant electrical metering infrastructure.

## 4. Using Other Devices for CER Measurement and Reward (37-38)

*What change to the rules, if any, should be assessed in relation to these non-market-related devices for CER products and services to consumers?*

Provided the devices and procedures of use are aligned with Australia's safety and legal regulations and are accurate then rules associated with non-market measurement method should remain as is. Many households and businesses intend to use CER purely for self-consumption and therefore not concerned with accessing the wholesale market.

## 5. Establishing Two Connection Points at a Single Premises (38-40)

*Are there any changes we could make to the NER and NERR to assist in overcoming the current barriers to second a connection point?*

*Processes for Establishing Second Connection Points*

Nationally harmonised guidelines regarding the installation of second settlement points should be introduced. The current lack of commentary within the Installation Rules could leave distributors averse to such installation. A mandated National approach preferable, otherwise a slow and uneven adoption will occur throughout Australia, hindering full optimization of CER leaving any coordinated regulatory overhaul ineffective.

The end user should absorb the cost of updating secondary settlement points' NMI's through their electricity bills. Thes costs should be offset when CER is better integrated into the energy network, and wholesale electricity prices are reduced because of more stable spot pricing.

*Multiple Distribution Network Tariffs at the Same Premises*

Paying a double fixed fee at the settlement point risks not only deterring consumers from installing CER devices, and reducing CER's cost saving benefits. It could be argued that there should be a split of the collection of the network charge between the primary connection/settlement point and the secondary settlement point if there are different retailers to ensure that there is not a perception of a price advantage. MEA agrees with the Commission's view that lowered fixed network charges will not mitigate network price signals.

MEA advocates for flexible demand driven time of use and generation tariffs (TOU) to be at the forefront of secondary settlement pricing scheme for flexible loads and generation export. Such tariffs will be the primary driver in altering consumer behaviour towards saving, utilising, and supplying energy.

*What issues need to be considered in evaluating whether there should be changes to the fixed network*

*tariff for second connection points at the same premises? How (if at all) should this issue be addressed in the NER?*

Refer to above response.

### Sub-Conclusion

MEA advocates separate identification and measurement of flexible energy is vital for the CER benefits to be unlocked, which requires consumer's access to second settlement point on premises. Both domestic and C&I consumers will gain control over the utilization, storage and sale surplus flexible energy allowing cost saving benefits. MEA stresses that second settlement points are to be used strictly for CER energy while necessities such as lights, fridges and life-support are to remain with the primary settlement point controlling the passive load.

MEA recognises installing secondary settlement points has inherent installation cost issues. However, we believe the solution is to provide TOU tariffs which integrate network maintenance costs. The cost of installing the secondary settlement point and assigning an NMI can be recovered through consumers' electricity bill which will be offset by the financial benefits reaped from CER.

To ensure a nationally even adoption of secondary settlements, the AEMO should adapt current rules to provide specific instructions for their installation. There needs to be a national adoption of the rules otherwise CER benefits will not be fully realised across Australia.

To elevate the pressures on the workforce that installing secondary settlement points will create, MEA suggests allowing licensed electrical workers to become ASPs.

## FLEXIBLE TRADING WITH MULTIPLE SERVICEPROVIDERS AT A CONSUMER'S PREMISES

### 6. AEMO's Specific FTM2 for Small Customers

*Do you agree with the Commission's view and its initial position to not progress further with AEMO's specific FTM2 for small customers?*

MEA disagrees with the commissions view and is concerned with the current dis-incentive for both retailers and generators to sell less power to residential and small business consumers. In effect to make it cheaper for consumers, giving them more control over their consumption, generation, and storage options (solar PV, home batteries, EVs), even though this is the stated public policy of both state and federal governments. There is an obvious incentive to sell more power and to charge more for it, that is directly at odds with stated public policy. It is believed that multiple FRMPs at a single premises is a way to resolve this. However, if the Commission is rejecting the AEMO's proposal for multiple FRMPs, then MEA urges the Commission to amend AEMO rules to a version that promotes increased consumer choice for their flexible energy. This is essential for unlocking the full benefits of

CER, efficiently using the wasted rooftop PV in the system, and reducing the need for investment in expensive publicly funded transmission infrastructure.

Amber Energy is a limited example of the retail services that need to be available to consumers. With their battery plan, consumers can charge their CER storage battery during off-peak when prices are low leaving them the option to utilize, store or sell back to the grid any surplus energy during on-peak time when prices are high. There are multiple players in the market with proven technology and financial platforms, with a capacity to facilitate VPPs (virtual power plants) and arbitrage the energy usage and generation across an ecosystem of participants.

## 7. AEMO's Specific FTM2 for Large Customers

*Do you agree that introducing AEMO's FTM2 (or variations to it) for large customers would create an additional or better option for large customers to engage with multiple service providers?*

Yes.

## 8. Multiple FRMPS: Embedded Networks Model

*Other than metering and network connection costs, are there other reasons SGAs use the embedded network framework?*

If used fairly, embedded networks are perfect for allowing for greater uptake of CER infrastructure and price reductions, for those who would otherwise not have the bargaining and buying power to invest in CER.

There have been cases of landlords or facility managers taking advantage of buying power for electricity and not passing on savings, or indeed, inflating costs to users behind the paywall of embedded networks. MEA believes though that these issues have been addressed by legislation and codes of practice in most jurisdictions. As stated before, some of the greatest efficiencies in CER could be realised by using the infrastructure provided by embedded networks.

*Do stakeholders consider that the existing embedded network framework should continue to be used to facilitate flexible trading and market participation or should the Commission consider alternative models/framework?*

Embedded networks in strata living arrangements such as apartment complexes, town house developments, retirement villages should be able to efficient come to integrated arrangements to best utilize their buying power and the benefits of coordinated CER. Thought should be given to ensuring that other regulations and legislation that affects consumer choice in these arrangements can do so and are not subjected to price gouging from unscrupulous operators controlling the primary meter.

Not all of these dwellings operate behind an embedded network and have individual billing arrangements and choice of retailers, in these circumstances they should be treated as any other

consumer.  as these are a large and growing sector of consumers that would otherwise be excluded from the expanded use of CER facilitated by these rule changes.

*Are there any additional issues with the use of the embedded networks framework to facilitate flexible trading not already discussed above?*

MEA would like to note there would be no issue relating to the problem raised in the report regarding move-in/move-out. The primary connection would always remain live for inflexible loads (such as fridges) while it would be the new tenant/owner's responsibility to activate the secondary settlement point.

## 9. Multiple FRMPs: AEMO's FTMS2 Proposal

*If the Commission introduced FTM2, how would (or should) it affect the existing arrangements that allow for flexible trading, such as SGA, embedded networks, and wholesale demand response?*

As mentioned previously, FTM2 would incentivize retailers to provide consumers access to innovative services and products allowing for greater consumer choice in the way consumers manage and finance their electricity. Natural market competition would then ensue, leaving behind those retailers who are unwilling to provide more flexible arrangements to reflect consumer choice.

Allowing multiple FRMPs to operate within embedded networks will give apartment complexes greater control over their electricity prices. Currently, many high-rise residents do not have this luxury, limited to the service provider selected by the body corporate and subtractive metering.

With technological advancements, such as EV charging, the power grid's integrity and stability will be compromised as demand increases. By allowing consumers the option to both store energy for later use when prices are expensive and/or sell power to the grid when demand is high, the wholesale market will be better positioned to respond to demand pressures and stabilize pricing.

*Would introducing AEMO's FTM2 model for multiple energy service providers significantly impact the business model or costs of the primary energy service provider?*

MEA recognises there are technological and regulatory issues that need consideration such as equitable splitting of network costs and adequately attributing appropriate levels of responsibilities and liability amongst differing FRMPs. The AEMO would need to implement a framework that protects the primary providers from being disproportionately burdened such as network tariffs and a clear list that clearly states the responsibilities of different providers.

*Would FTM2 encourage distributors to test and implement new tariffs (e.g., dynamic) for sizable and responsive loads more readily than they have to date?  Would FTM2 affect the way in which energy service providers (such as aggregators) provide network services?*

Yes. As aforementioned, FTM2 would pressure retailers to offer consumers innovative products and services, such as that offered by Amber Energy, allowing consumer choice over utilization, storage and selling power back to the grid, those retailers who do not provide such services will risk losing customers. As it costs customers time and effort to change suppliers, if the existing retailers started to offer more flexible and innovative power products, it would reduce the likelihood of losing existing customers.

This would also incentivize retailers to pressure distributors to integrate new tariffs within their systems to assist in stabilizing the power grid during peak times and assist in keeping up with demand.

*Are there any costs or benefits that we have not considered in relation to AEMO's FTM2 proposal?*

As aforementioned, FTM2 would drive retailer market competition for innovative goods and services, leading to greater consumer choice.

## Sub-Conclusion

MEA advocates that CER benefits can only be fully realised when retail service providers offer innovative goods and services, such as Amber Energy's offering[2] , and Red Earths VPP package[3], which provides consumers with control over consumption, storage, and sale of surplus energy back to the grid. The current environment in which retailers are operating does not in any way incentivize them or exert any pressure to implement such innovations, despite regulatory expectations and policy announcements.

MEA is supportive of allowing multiple FRMPs at large consumer premises as we believe this will encourage such innovation. As such, it follows that MEA supports embedded networks to be a continued option allowing for multiple FRMPs, otherwise residents in high-rise living complexes will not be able to utilize CER technology.

MEA accepts that issues arise regarding cost and regulatory burden allocation. This can be resolved with AEMO providing a clear framework for calculating network tariffs for the secondary provider and a clear set of responsibilities each provider is liable for.

However, continuing to limit small consumers to one FRMP leaves a gaping hole in solutions to advance retailers to providing services reflective of CER infrastructure. Multiple FRMPs create natural market competition to provide better services and favorable tariffs for consumers. The AEMO now needs to introduce rules which direct retailers to providing such services. Without the incentive to do so, CER benefits will not be fully optimized, and consumer costs will not be reduced to the extent they could be.

[2] https://www.amber.com.au/
[3] https://redearth.energy/private-power-plant/

## MEASURING ENERGY FLOWS FROM STREET LIGHTING AND OTHER STREET FURNITURE

### 10. Opportunities and Benefits of Improving Existing Arrangements

*Do stakeholders consider there are other matters that the Commission should consider in terms of the opportunities, benefits, and costs for improving existing arrangements of the measurement of street lighting and public furniture?*

MEA supports AMEO's proposal to upgrade the current measurement framework of street furniture. Accurate measurement of street light usage will reduce pressure on the power grid as demand of inflexible loads will decrease, creating greater grid stability and drive greater CER benefits.

### 11. Market Functions and Obligations – Metering Roles

*Should there be another level of accreditation for Meter Providers in the NER?*

MEA does not believe additional meter provider categories are required as this creates greater market complexity and bureaucracy. However, MEA does support the requirement for existing metering providers to train technicians to be competent with installing or commissioning minor energy flow meters if they are performing this work.

*What are stakeholders' views on distributors performing the functions of the MC, MP and MDP for the street lighting and other street furniture they manage, if (Minor Energy Flow Meters) MEFM is introduced?*

MEA agrees that DNSPs be allowed to function as metering MCs, MPs and MDP for street furniture.

*For street furniture not managed by distributors, should the existing competitive framework for metering parties apply if MEFM is introduced?*

Yes

### 12. Technical Requirements

*Do stakeholders have views on the removal or amendment of minimum service specifications for minor energy flow meters?*

MEA believes that MEFM should have similar accuracy requirements as primary energy flow meters. However due to the nature of them most likely being embedded in products, these products being mostly inaccessible, numerous, and reporting via wireless communication protocols (i.e., streetlights), then some amendments may need to be made. The benefits to the grid, and the financial savings in reduced consumption, for being able to measure and dynamically vary the load of appliances such as street lighting, would make up for any perceived risk of metering variability.

*Do stakeholders have views on inspection and testing requirements for minor energy flow meters?*

If MEFM is integrated within equipment, and installed with adequate quality assurance during manufacturing, then inspection and testing requirements for all units would be unnecessary. Perhaps a sampling audit framework should be introduced to check for assurance/compliance.

### 13. Implementation and Transition

*Are there any other implementation or transitional issues we should consider for this aspect of the rule change?*

MEA echoes the local councils concerns, that installation costs should be limited allowing for continued momentum of transition to MEFM.

### Sub-Conclusion

MEA supports the AEMO's proposal to upgrade street furniture energy measurement infrastructure. This will reduce incorrect energy attributed to passive load thereby reducing load and decreasing demand on the grid. Provided that MEFM is integrated into the measuring products under quality assurance measurements, testing requirements would be unnecessary and merely require an audit assurance framework. It is vital installation costs are controlled to avoid deterrence from investment into smart street lighting.

MEA does not believe it is necessary to create a new meter provider category so long as those performing the installation are competently trained. Furthermore, MEA supports the proposition that DSNPs should be able to function as MCs, MPs and MDPs.

## SUBMISSION CONCLUSION

MEA supports the proposition of allowing consumers to install secondary settlement points on their premises, identifying and measuring flexible loads and generation. This would provide consumers with real choice over the use of their underutilised CER assets and arm them with the right incentives and platforms to load shift the daytime oversupply to the evening peak, this would steadily reduce the evening peak demand curve. The overall effect would be that over time, all consumers can expect to experience reduced energy prices.

Without nationally harmonised rule changes to proactively encourage FRMPs to install secondary settlement points, the retailer sector will continue to resist change, and stifle the implementation of CER reforms. MEA suggest that fixed network charges are not charged at the same price on a secondary settlement point as the primary NMI settlement. FRMPs should split the fixed network costs equitably in their consumer billing arrangements, and of course charge the consumer a component for the administrative costs of providing their service.

MEA recommends allowing licenced and trained electrical workers under the supervision of licensed electrical contractors, to install the secondary settlement points as Authorised Service Providers on behalf of retailers. This will mitigate any skills shortage issues with the uptake in installation of smart meters and CER infrastructure, while increasing the momentum of smart meter installations, especially on older dwellings.

If the commission does not allow for the possibility of Multiple FRMPs on a single site for small consumers, it will reduce the ability to address the disincentives for FRMPs/ retailers to introduce innovative products and services which would optimise CER benefits and stabilise the grid. AEMO's proposal was an opportunity to foster greater market competition amongst retailers to provide customers with packages allowing for greater consumer choice and the optimisation of their privately installed CER infrastructure. Without retailers providing such services, CER benefits will remain locked-down.

MEA supports a decision to consider allowing multiple FRMPs at large consumer sites. As noted in the discussion paper, this practice is already taking place through embedded networks. With transparent and equitable arrangements, embedded networks consumers, (such as tenants in high-rise complexes or commercial body corps) can benefit from the co-ordinated implementation of CER equipment. MEA strongly advocates that the FTM2 for large consumers is applied within the rules. This should lead to a reduction in prices in the wholesale energy market as larger customers would be incentivised to invest in and utilise their own generation and storage assets in a competitive retail market.

MEA supports the AEMO's proposal for upgrading street furniture measurement frameworks to MEFM. The current measurement framework provides inequitable distribution amongst consumers and an unnecessary burden on the passive load of the grid. DNSPs should be able to perform functions of MC, MP and MPA to service.

In summary, it is MEAs position that using existing DNSP infrastructure, the underutilized potential of rooftop solar PV, and the exciting possibility of bidirectional EVs and BESS, is not being hampered by a lack of available technology or platforms. The widespread introduction of CER to shift daytime oversupply curves to cover evening demand and bring stability to energy pricing, is being stymied purely by a combination of regulatory inaction, retailer self-interest, and DNSP inertia. Unless there is an incentive for retailers to integrate the types of innovative energy products that we have outlined here, in the form of the threat of competition from innovative FRMP's, then they will continue to sell as much electricity as they can, for as much as they can, to consumers. Whilst there is the possibility that retailers may lose customers, MEA believe that most consumers will stay with their existing retailer for convenience, ***if*** they start to offer the types of innovative services that give consumers control over their consumption, generation and storage, maximizing their existing investment in PV, and incentivizing investment in batteries.

The path to net-zero and the cost of the energy transition cannot be reliably and affordably achieved by sole reliance on mega projects, funded in large part by the public purse, leaving a legacy of more debt for future generations. The need and associated cost of thousands of kilometers of HV transmission lines, servicing thousands of acres of solar and wind farms, could be eliminated by simply using the existing transmission infrastructure in our cities and towns, where the electricity generated on rooftops of the nation could be used closest to the source.

The time for delay has passed, if there is not going to be the possibility for multiple FRMPs for small customers, then MEA urge the AEMC to swiftly mandate rule changes to normalize flexible trading of generation from BESS and bi-directional enabled EVs, i.e., *Cost Reflective Time of Use and Generation Tariffs*.

# Roadblocks and Solutions

There are many moving parts to achieving emissions reduction targets set by governments. Master Electricians Australia (MEA) has identified several areas that the electrical contracting industry can and should be at the forefront of, including:

1. Digital Meter rollout – clearing the roadblock caused by Power of Choice (POC).
2. Tariff Reform – onto Flexible Demand Driven Tariffs/Time of Use (TOU) tariffs.
3. Solar PV – utilising existing and future capacity to shift daytime oversupply to storage for peak load dispatchable power.
4. Home Battery Storage – installation of home batteries to charge during the periods of oversupply on the grid, and discharge during undersupply.
5. Home Energy Management Systems (HEMS) – behind the meter (privately installed) systems that controls energy usage of manageable loads by using smart-home technologies to run them when prices are lowest.
6. Electric Vehicles (EVs) – prioritise bi-directional charging for government procurement and consumer incentives.
7. Private Asset Maintenance – as private energy assets become a more integral part of the public grid, ensuring the integrity of the network and the safety of the public by having minimum maintenance requirements on private energy assets that export to the grid.

Licensed electrical contractors are the solution to remove these roadblocks and deliver these on the ground DER solutions.

## Digital Metering Rollout

The narrowest and most pressing bottleneck is the rollout of digital smart meters into homes and businesses.

**Power of Choice (POC)** metering reforms were designed to promote choice and efficiency in the delivery of energy to the end point consumer. While they have partly delivered on the promise of choice, more work needs to be done with tariff reform in a DER environment and recognizing the potential of smart meters. The promise of efficiency has not been achieved, and the delivery of metering services has been made considerably more complex with an overall increase in delay for new connections and metering changes.

An increase in layers of administration and stakeholders with the advent of POC has meant that connection times and changes to metering are taking longer. This bottleneck in the installation and

replacement of meters is slowing down the transformation of the grid and provision of more consumer choice.

There is a skilled and underutilised workforce that could fill this gap rapidly. Licensed electrical contractors with minimal training could become **Authorised Service Providers (ASPs)** to replace meters. This would reduce connections times, improve consumer experience, reduce smart-meter roll out costs and help facilitate a swifter transition to a responsive electricity grid that can take advantage of DER opportunities.

One of the key objectives of the POC reforms was to increase **Demand Side Participation (DSP)**. Following advances in technology since the POC review in 2012 plus opportunities offered by battery technology and EVs to drive DER efficiencies in the energy market, MEA believes this needs to be updated to reflect changes in technology and the nation's commitment to net zero and carbon reduction targets.

## Tariff Reform

Some states have a simplified off-peak tariff (typically between 9pm and 3 pm) that reflects peak usage times. Other states have introduced very targeted solar-sponge tariffs that concentrate incentives for usage to the middle of the day when solar over-generation is being underutilised, causing network stability problems. To combat this stability problem, most jurisdictions have enacted legislation designed to constrain (turn off) private solar assets during the day. This is not efficient and would squander available energy.

MEA believes that the best way to change consumer behaviour with DSP and drive development of technological solutions that increase energy efficiency, is to move as many consumers as possible to a single meter using **Flexible Demand Driven Tariffs**, where decisions about usage of power are made behind the meter by use of **Home Energy Management Systems (HEMS)**.

With the market sending price signals, the consumer can use existing technologies to control manageable loads. This includes EV and home batteries to soak up the excess supply on the network during the day to provide energy needed for night-time requirements, without the need for other on-call sources of generation.

MEA recognises some classes of accommodation (rental, lower socio economic, or fixed income cohorts) may need a for a community tariff for equitable access to affordable power where it is not viable for PV, batteries, or HEMS solutions. For all other consumers of electricity, there should be a move to a universal **Flexible Demand Driven Tariff**.

# Master Electricians Australia Distributed Energy Resources (DER) Policy

## Solar PV

As Solar PV is now a mainstream part of the market, policies should aim to integrate existing and new solar installations with home batteries and EV charging requirements, targeting subsidies and incentives to drive consumer behaviour to enhance DER implementation.

A concerted effort should be made to make the most efficient use of the large stocks of rooftop solar already in market to shift the oversupply of generation during the day, to peak usage times in the early evening.

To have Solar PV installed in homes or business, consumers should engage a licensed electrical contractor with a Cert 4 in PV and a CEC Accreditation.

## Home Batteries

To enable a diverse DER strategy that does not overly rely on large-scale solar farms, the market needs to make the best use of rooftop solar in domestic homes and businesses. Governments at a state and federal level should offer incentives to offset the costs of battery installations to assist with the replacement of dispatchable capacity as coal fired power stations are continuously taken offline.

Significant efficiencies by using available renewables can be achieved and stability improvements in the grid realised via a number of methods. This includes using soak tariffs to charge home batteries during periods of oversupply of PV. Or **Flexible Demand Drive Tariffs** that work in concerts with HEMS to manage capacity of home batteries and control other manageable loads (including pools, dishwashers, hot water systems, air conditioners).

Licensed, trained, and insured electrical contractors are the essential workforce needed to install batteries for consumers.

## Home Energy Management Systems (HEMS)

The installation of HEMS, to control appliances is a private consumer choice. If incentivised by government and adopted by a considerable proportion of homeowners and small businesses, it could have a rapid and significant impact.

It is a powerful companion to tariff reform and home battery strategies to improve energy efficiency and decrease emissions across the economy.

The attractiveness of HEMS is that it is a ‘behind the meter’ consumer driven solution that can make a significant difference to energy usage in a home or an installation without relying on the expensive infrastructure of multiple smart meters with different tariffs controlling fixed loads on dedicated circuits.

There are relatively inexpensive plug and play systems that a homeowner can install, or more comprehensive solutions that can be wired to control fixed loads such as hot-water and air conditioning and integrate their use with your solar production. These must be installed and set-up by a licensed electrical contractor.

## Electric Vehicles (EV)

The expected shift to EVs is going to present challenges and opportunities for the electricity grid. An increase in EVs will see significantly more renewable energy production required to service energy needs. Conversely it will also mean that existing oversupply of PV capacity during daylight hours will have the ability to be soaked and possibility of being dispatched during times of need.

MEA is advocating for government procurement policies and consumer incentives to preference bi-directional EVs for passenger vehicles. With bi-directional charge enabled vehicles as the standard for passenger vehicles in Australia, we would have the benefit of both a soak load for periods of daytime oversupply and a massive reservoir of dispatchable power during periods of undersupply.

Installation of EV infrastructure in homes and businesses in concert with HEMS (for residential) and **BMS (Building Management Systems)** for commercial businesses would increase the stability of the network.

Again, licensed and trained electrical contractors would be at the forefront of delivering this capacity.

## Private Asset Maintenance

MEA believes that if the network is going to move to more reliance on private energy assets from domestic solar and batteries, then it would be prudent to build in an obligation that anyone who is receiving a **Feed in Tarif (FIT)** ensures that their system is maintained to a minimum standard of safety and reliability.

An increase in the prevalence of DC isolator failures, high penetration of solar PV systems and the expected increase in the installation of home batteries and vehicle chargers makes it necessary to ensure that these assets are safe for consumers and reliable for the stability and capacity of the grid.

MEA recommends consideration of mandating inspections on grid connected solar and battery systems receiving a FIT, by an appropriately licensed electrical contractor every 5 years. We suggest this could be funded by the levying of a monthly fee on the consumer's electricity bill and organised by the retailer.

# Master Electricians Australia Distributed Energy Resources (DER) Policy

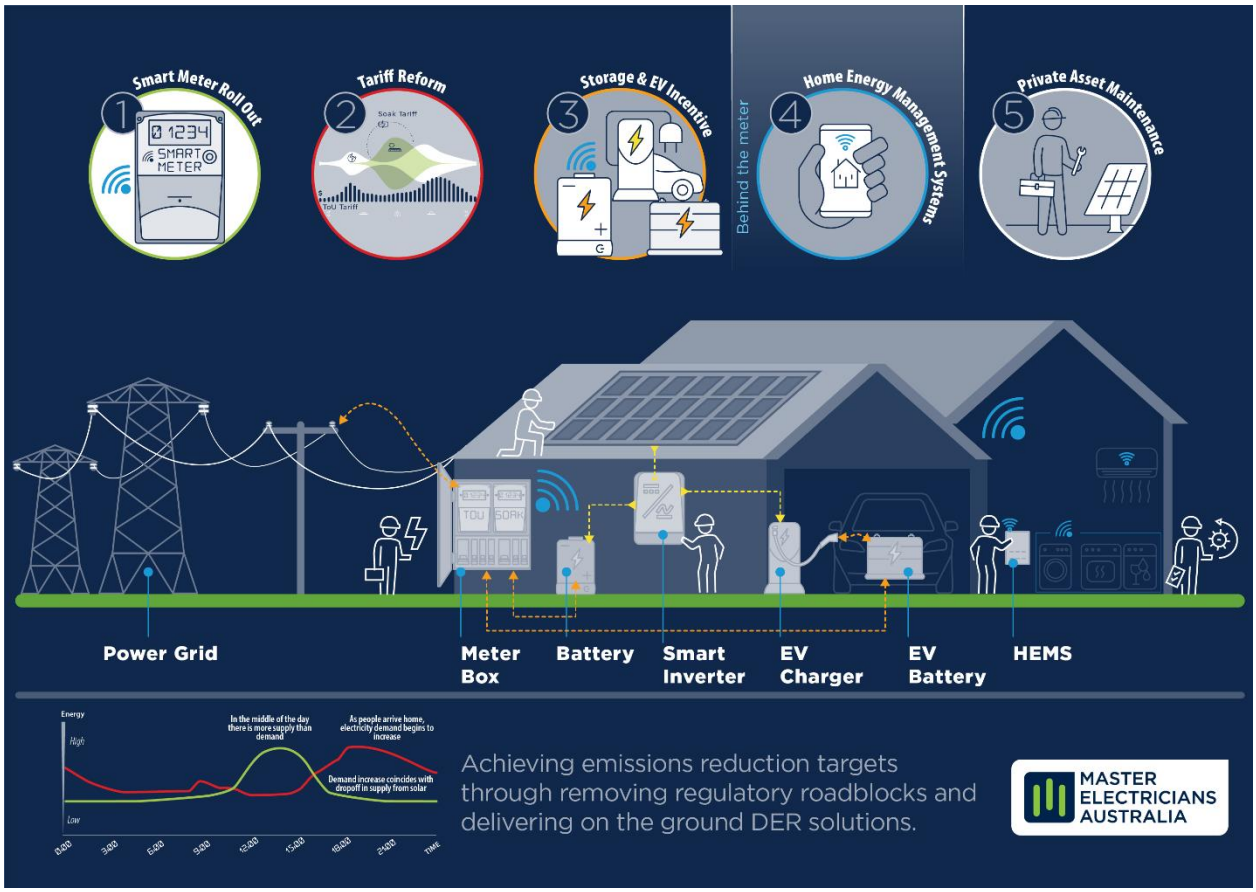
## Conclusion

MEA are supportive of Australian Government initiatives and believe that the electrical contracting industry and licensed electrical workers are at the forefront of helping deliver constructive solutions to deliver their emissions reduction targets. In summary these would be:

- Licensed electrical contractors could become **Authorised Service Providers (ASPs)** to install new meters and replace old metering. This would reduce connections times, improve consumer experience, reduce smart-meter roll out costs and help facilitate a swifter transition to a responsive electricity grid that can take advantage of DER opportunities.
- MEA believes that the default Tariff for electricity consumers should be a flexible demand driven tariff.
- MEA also believe that as more EVs become available on the Australian market with bi-directional charging ability, they should be preferred in the payment of incentives for EVs and in government fleet procurement policies.
- Governments should consider moving subsidies towards batteries and EV infrastructure, in concert with home solar to drive consumer behaviour to the DER phase to make the most efficient use of the stocks of rooftop solar in the market.
- Governments should consider some incentives and funding for pilots to assess the effectiveness of HEMS to identify the best application of these in homes and businesses to reduce energy usage.
- MEA recommend mandating inspections on grid connected solar and battery systems receiving a FIT, by an appropriately licensed electrical contractor every 5 years.

# Master Electricians Australia Distributed Energy Resources (DER) Policy

## DER Home Solution Opportunities



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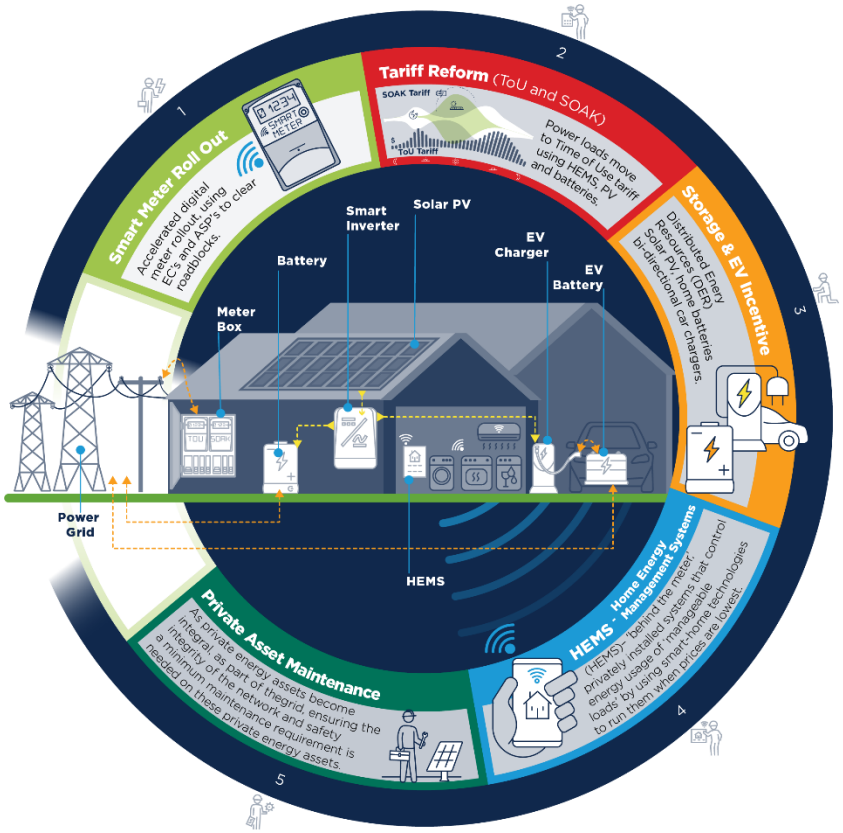
## Distributed Energy Resource Cycle

Achieving emissions reduction targets through removing regulatory roadblocks and delivering on the ground DER solutions.

MASTER ELECTRICIANS AUSTRALIA



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