energy networks association

# EMRWG CONSULTATION PAPER: NEW ENERGY PRODUCTS & SERVICES

ENA Submission, 20 March 2015

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# EXECUTIVE SUMMARY

ENA welcomes the opportunity to make a submission to the Energy Market Reform Working Group (EMRWG) consultation on the regulatory implications of new products and services in the electricity market.

The ENA and network businesses support the development of a vibrant, innovative market enabling new services and products such as distributed energy resources including onsite generation and storage.

ENA endorses the view expressed in the consultation paper that regulatory frameworks need to strike a balance between supporting development of innovative products and services and achieving the market and customer protection outcomes in the NEO and NERO.

In this dynamic market environment, it is in the long-term interest of electricity consumers that unnecessary barriers to entry in competitive energy markets should be avoided.

However, the ENA recognises the scale of change to customer energy services does require consideration of changes to the policy and regulatory environment, particularly for energy supply operations and consumer protection. For instance, participation in solar, storage or demand management markets may significantly alter both the physical and financial features of a customer's energy service. Further issues arise where customers are supplied via micro –grids, with or without backup supply from the central network. Finally, the extent of choice available to consumers itself may permit re-evaluation of consumer protection frameworks not only for new services but for traditional energy services.

In this dynamic environment, policy makers should carefully evaluate the policy and regulatory framework to ensure it remains fit for purpose, light-handed and supports innovative service delivery to customers by both new and traditional service providers. The ENA has indicated in response to the AER's review of the regulation of innovative energy business models, the ENA considers it is timely to revisit the regulatory framework for energy seller authorization and customer protection more generally. As noted below, ENA considers the scope of the current EMRWG fundamentally overlaps that of the AER and the two processes should be consolidated. Nevertheless, in this submission ENA has responded to the specific questions raised by the EMRWG in its paper.

In relation to **Energy Supply Markets**, ENA has recently submitted to the Australian Energy Regulator's review of innovative business models that it supports a light-handed, principles-based approach to customer protection regulation. The ENA's submission to the AER included:

- ENA considers the review should be approached in a manner which is appropriately comprehensive and coordinated with other related review processes and include natural gas.
- ENA notes that both the current criteria ("primary energy seller") , and its interpretation in relation to SPPAs, is no longer appropriate and requires review
- The ENA does not support a full authorization framework for innovative business models.
- The ENA supports a light-handed regulatory framework which is fit-for-purpose and based on transparent decision-making criteria.
- An 'exemptions' framework for energy sellers could be viable but it would require development of clear principles-based criteria for application of customer protection requirements.

ENA supports the broad identification in the consultation paper of markets relating to Electricity Supply, Demand Management, and Energy information.

In relation to **Demand Management Services**, ENA considers that an operational governance framework is required to maintain power system stability in the interests of all consumers, while still promoting new demand side markets. ENA has proposed key principles and welcomes the opportunity to engage in further consultation on developing an effective and efficient regulatory framework. This would be expected to be implemented via changes to the National Electricity Rules, or through industry protocols if equivalent certainty could be secured.

At this stage, ENA does not consider there is yet a clear case for additional regulatory intervention to provide specific customer protection for customers participating in demand management markets.

In relation to **Energy Information Markets**, ENA shares the concern expressed within the consultation paper on the challenges inherent in developing an industry specific privacy regime, especially in the context of dynamic development of new energy products and services. Where such a regime prescribed all primary and secondary purposes for the collection and use of metering data, it could potentially block innovative service offerings that could be of benefit to customers. Operation of the current privacy framework should be maintained at the current time.

AEMC has recently undertaken a review of customer access to their energy consumption information and released their final determination in November 2014. AEMO is currently considering its approach to developing guidelines required under that determination to ensure market participants provide appropriate access to energy consumption information, taking into account both access provision and privacy obligations.

ENA considers that matters relating to customer privacy and access to and provision of consumption data by market participants should be managed within the AEMC/AEMO processes underway.

# RECOMMENDATIONS

1. ENA recommends that current reviews by the EMRWG (related to new products and services) and AER (related to innovative business models) should be consolidated and capture both the electricity and gas sectors to ensure a coordinated and comprehensive energy market policy and regulatory framework. The COAG Energy Council could oversight a single review led by the EMRWG and supported by the AER.

2. ENA recommends that the EMRWG does not adopt proposed principle relating to energy specific customer protections in its current form, but rather undertakes a more comprehensive policy review of energy –specific customer protection requirements to ensure a light-handed regulatory framework which is fit-for-purpose and based on transparent decision-making criteria.

3. ENA recommends that an operational governance framework for the demand-management market should be established in the National Electricity Rules to maintain power system stability in the interests of all consumers. This would be expected to be implemented via changes to the National Electricity Rules, or through industry protocols if equivalent certainty could be secured.

4. ENA recommends that the energy information market issue should be managed within the AEMC/AEMO processes underway, so that duplication is minimised and stakeholder resources are most economically utilised.

# INTRODUCTION

The ENA is the national industry association representing the businesses operating Australia's electricity transmission and distribution and gas distribution networks. Member businesses provide energy to virtually every household and business in Australia. ENA members own assets valued at over $100 billion in energy network infrastructure.

ENA welcomes the opportunity to make a submission to the Energy Market Reform Working Group (EMRWG) consultation on the regulatory implications of new products and services in the electricity market.

The EMRWG has stated that its purpose is to begin a consultation on whether the regulatory frameworks that govern the NEM are appropriate in the context of new products and services being offered to small electricity customers[1].

The ENA and network businesses support the development of a vibrant, innovative market enabling new services and products such as distributed energy resources including onsite generation and storage. There are significant potential benefits to electricity customers in the economic utilisation of such technologies and the emergence of customer-focussed energy services and products which provide benefits to customer control over energy use, convenience and long-term affordability.

After a general introduction noting related processes, the ENA submission generally reflects the structure of the consultation paper. Answers to specific questions are attached as Appendix 1.

# COORDINATION

ENA notes that the current EMRWG consultation on new products and services is being undertaken in the context of a wide range of inter-related reviews and activities. This includes the Australian Energy Regulator (AER) issues paper on regulating innovative energy selling business models under the National Energy Retail Law; the AEMC reviews and rule changes relating to their Power of Choice review, including competition in metering and related services, network pricing reform, customer access to their energy consumption information and consideration of multiple trading relationships, plus proposed review of the AER guidelines on ring fencing.

All of these reviews have potential implications for the operation of new products and services in the electricity and it will be important to ensure consistency between the reviews and their outcomes.

In particular, ENA considers that the current EMRWG review fundamentally overlaps the AER review of regulating innovative energy selling business models under the National Energy Retail Law.

As noted also in the ENA response to the AER issues paper, ENA considers that regulation of innovative energy selling business models should approached in a manner which is:

- ***Comprehensive***, systematically addressing issues related to the regulation of energy services relying on solar technology, storage technology and the emergence of microgrids with a view to establishing an integrated, coherent regulatory regime; and
- ***Coordinated,*** recognising the interrelationship between the AER review and the EMRWG consultation.

ENA notes from the consultation paper that EMRWG expects to take a discussion paper to COAG Energy Council in mid 2015 to identify any priorities for regulatory reform and will canvas best options for progressing any work[2]. This would seem likely to commence in second half 2015 at earliest.

The current reviews by the EMRWG (related to new products and services) and AER (related to innovative business models) should be consolidated to ensure a coordinated and comprehensive policy and regulatory framework. The COAG Energy Council could oversight a single review led by the EMRWG and supported by the AER.

The AER itself has recognised the potential need for a more thorough assessment of the appropriate regulatory framework for the regulation of new business models, noting the 'strain' which the existing framework is being placed in its Consultation Paper:

> *While the AER has used the exemptions framework to regulate businesses selling energy through SPPAs, we are concerned that the Retail Law is not equipped to deal with many emerging energy retail models. As such, there are significant challenges in applying the authorisation/exemption distinction in those cases and it may be timely to revisit the framework more generally.*[3]

[1] Energy Market Reform Working Group, *New products and services in the electricity market: consultation on regulatory implications,* December 2014, p.4

[2] Ibid, p.5

[3] Australian Energy Regulator, *'Regulating innovative energy selling business models under the National Energy Retail Law',* 18 November 2014, p 6.

The ENA agrees that it is timely to revisit the framework more generally and urges the EMRWG and AER to do so, in the comprehensive, coordinated manner suggested above.

ENA supports a regulatory framework that is fit for purpose and resilient to the dynamically changing market environment. This may require review of the current framework to adequately cover significant issues such as:

- Opportunities to achieve more efficient or light-handed regulatory obligations for all sellers, including retailers, alternative sellers and innovative business models;
- Deficiencies in the current criteria for determining if a seller is eligible for exemption from authorisation, including "whether the seller is the primary source of energy";
- The need to consider the implications of competitive neutrality principles in the regulatory obligations which apply to all market participants;
- The need to publish appropriate criteria for the application of customer protection regulatory obligations on sellers (whether those obligations are conditions of an exemption or under.

A consolidated review process would appear more likely to produce a coherent, consistent policy and regulatory framework which is resilient to ongoing changes in the sector. It would also be more efficient for agencies and participants.

**Recommendation**

ENA recommends that current reviews by the EMRWG (related to new products and services) and AER (related to innovative business models) should be consolidated and capture both the electricity and gas sectors to ensure a coordinated and comprehensive energy market policy and regulatory framework. The COAG Energy Council could oversight a single review led by the EMRWG and supported by the AER.

# ELECTRICITY MARKETS

The EMRWG identifies three broad markets which they consider to cover most products and services relating to electricity supply and use. These markets are:

- The electricity supply market: supply and sale of electricity to customers;
- The demand management market: this market allows customers to take an action to change their electricity consumption or cost, and
- The energy information market: where customers receive advice and information to help them manage energy consumption and cost.

In the context of electricity markets for small customers, ENA agrees with this broad categorisation of markets and considers that these markets would cover all new products and services that could be offered to small electricity customers.

# PRINCIPLES

The EMRWG identify three principles for identifying whether a product or service should be drawn into the National Electricity Laws and Rules. These principles are:

1. *it affects the operation of or confidence in the wholesale electricity market;*
2. *it is a monopoly activity; or*
3. *it affects power system quality, safety, reliability and security (referred to as 'power system operations' in the rest of this paper).*

ENA considers that these are useful principles to commence a discussion of new products and services in the electricity market. Given their operational and legal responsibilities, ENA members are particularly conscious of the potential implications upon network and power system security which arise in relation to the diversification of energy products and services.

However, in evaluating the application of regulatory measures, the ENA supports best practice principles, such as those identified by the Council of Australian Governments in 2007:

- A case for action should be established before addressing a problem;
- The option with the greatest net benefit for the community should be adopted;
- Regulation should remain relevant and effective over time; and
- Action should be effective and proportional to the issues being addressed.[4]

The EMRWG consultation paper then considers the need for additional protection under the National Energy Customer Framework (NECF) and National Energy Retail Law and Rules, noting the range of customer protections already

[4] Council of Australian Governments, *Best Practice Regulation - A Guide for Ministerial Councils and National Standard Setting Bodies*, October 2007.

available for residential and small business customers under the NECF and general consumer law.

The consultation paper considers that energy specific customer protections are required due to the essential service nature of supply of energy and seeks comment on whether an additional principle should be added to customer protections under energy regulation, this being:

4. *Energy-specific consumer protections are required when a product or service impacts on a customer's access to a reliable, safe and high-quality supply of energy on fair and reasonable terms*[5]

The ENA does not support the adoption of the proposed additional principle in its current form as a decision making criteria, because:

(i) *The precise effect of the current principle is not sufficiently clear.* The terms are open to very broad interpretation, depending on how one interprets "impact" and "access". On one interpretation, it could be argued that energy specific consumer protection protections would be frequently applied to new products and services because most energy-related services would have some impact on the customer's energy service. On another interpretation, it could be argued it would have a narrow application whilesoever the customer had access to a default, conventional electricity supply from the central network.

*ii) A broader policy review is required to establish a basis for light-handed customer protection measures which are fit for purpose.* As noted above, ENA supports a comprehensive assessment of energy-specific customer protection regulation, which is focused on the policy purpose of the regime.

Such a review should firstly consider the 'market failure' or 'need' for energy-specific customer protection. General consumer law provides degrees of customer protection in relation to market power. The ENA supports a robust policy review which evaluates not only the extent to which elements of customer protection regulation should be extended to new services, but also whether there are opportunities to achieve more efficient, light-handed regulation of traditional and non-traditional service provision.

ENA is keen to ensure that the development of innovation in energy product and service delivery for customers is not inadvertently restricted by regulatory constraints. Equally, the EMRWG should ensure a clear, transparent framework for alternative sellers and innovative business models, which takes into account competitive neutrality principles and avoids free-riding, cross subsidies or cost transfers.

Regulatory frameworks have the potential to create unfair competition, to the extent they provides for inconsistent consumer protection requirements related to comparable services. This may occur, for instance, where an alternative or innovative energy seller is not subject to National Energy Customer Framework requirements in relation to billing, management of payment plans or rules pertaining to management of supply to customers on life support.

ENA's concern arises not because of the financial impacts on 'traditional' sellers but because of the long-term interest of consumers. Consumers collectively pay more under regulatory regimes which do not promote genuinely efficient competition on level playing fields. Some consumers who do not adopt new technology are unfairly disadvantaged if regulatory regimes permit unintentional cross-subsidies to new adopters of technology at their expense.

However, the ENA is not advocating the full customer protection requirements of energy retailers should be applied to new products and services. The ENA does not support a full "authorization" framework for innovative business models. A fit-for-purpose regime would seek to apply light-handed obligations which provide for consistent consumer protection requirements related to comparable services.

A more fundamental review of customer protection frameworks would also acknowledge the willingness of some customers to accept a different risk and cost profile in a new service offering. Customers are exercising choice and participating in an extended ranges of service options. Network customer engagement already seeks feedback from customers collectively on their preferred 'tradeoffs' between network reliability and network charges. It is likely that individual customers or groups of customers may choose to make informed and deliberate decisions relating to their preferred energy supply options, including its relative reliability, quality and supply source. The regulatory framework should neither artificially discourage such customers from making those choices, nor incentivise them to do so through effective cross-subsidies borne by others.

**Recommendation**

ENA recommends that the EMRWG does not adopt the principle in its current form, but rather undertakes a more comprehensive policy review of energy –specific customer

[5] Op.cit, pp.7,8

protection requirements to ensure a light-handed regulatory framework which is fit-for-purpose and based on transparent decision-making criteria.

# ELECTRICITY SUPPLY MARKET

## REGULATORY FRAMEWORK

ENA endorses the view expressed in the consultation paper that regulatory frameworks need to strike a balance between supporting development of innovative products and services and achieving the market and customer protection outcomes in the NEO and NERO[6].

The paper further notes that new products and services in the supply market could involve supplying customers with electricity from on-site generation, as well as microgrids, community owned renewable generation or district energy schemes. ENA endorses the view that future supply may come from a wide range of potential sources and suppliers.

ENA endorses the view in the EMRWG paper that there is "… *the need to make sure that the economic regulation framework for network businesses is flexible enough to accommodate market changes in future*." [7]

In an economically efficient regulatory environment, potential benefits can be realised for both individual customers taking up new technologies and those customers who do not yet still benefit from system-wide efficiencies (such as improved energy balancing) realised through network integration. Recent economic analysis commissioned by the ENA from Energeia identified the potential for approximately 35 GW of efficient Solar PV and Storage investment by 2034, in an environment of cost-reflective electricity tariffs, including approximately 7 GW of storage capacity and 27 GW of solar PV capacity.[8]

Australian electricity networks are playing an important role in facilitating the economic uptake of distributed energy resources, including through the connection of over 1.3 million rooftop solar photovoltaic (PV) systems to date; trials in storage and other innovative technologies; and the development of new standards in collaboration with other stakeholders. The ENA and its members continue to support related regulatory reforms including the review of the Demand Management and Embedded Generation Incentive Scheme, to promote the economic utilisation of distributed energy resources.

In this dynamic market environment, it is in the long-term interest of electricity consumers that unnecessary barriers to entry in competitive energy markets should be avoided.

However, it is equally important that the emerging market environment takes into account the principles of competitive neutrality and that networks, regulators and policy makers do not seek to 'pick winners' or advantage one form of energy service provider over others.

## OFF GRID CUSTOMERS

In considering off-grid customers, the consultation paper notes several key issues:

- In principle, off grid customers should have the same rights as others to access a reliable, safe and high quality supply of electricity;
- Some customers may choose to accept higher levels of risk in return for lower costs;
- Some customers may be off-grid through economic choices made by their suppliers (eg remote communities; community systems).

Where customers elect to be supplied by 'inset' microgrids adjacent to centralized electricity networks, customer protection issues do arise as the alternative energy service represents their primary source of supply and potentially represents a significant financial exposure to customers.

As noted above, ENA supports a comprehensive review of the regulatory framework for energy sellers which firstly addresses the policy purpose (or 'market failure' ) the regime is intended to address and secondly establishes, explicit principles and policy criteria for the application of fit-for-purpose regulation (if any).

However, customer protection policy development should avoid stifling innovation. Specifically, regulation should not preclude the potential for service providers to offer tailored solutions to informed consumers, which reflect the value that the customer places on the reliability and quality of power supply. Such tradeoffs and customer engagement are increasingly reflected in services to network customers, including in the regulation of network reliability performance and network planning models.

The ENA notes that legislative and regulatory change would be likely to be required to establish, at least, information requirements for service providers offering off-grid solutions. The NECF currently does not apply to alternative energy supply to customers on micro-grids or stand alone power systems. Consequently, there is the potential for

[6] Ibid, p.8
[7] Ibid,p. 8
[8] Energeia, *Network Pricing and Enabling Metering Analysis*, November 2014

customers to be supplied by a micro-grid service provider which is not subject to NECF requirements in relation to billing, management of payment plans or rules pertaining to management of supply to customers on life support

As noted previously, ENA considers that in this dynamic environment, an holistic review of the policy and regulatory framework may be warranted to ensure it remains fit for purpose, light-handed and supports innovative service delivery to customers by both new and traditional service providers.

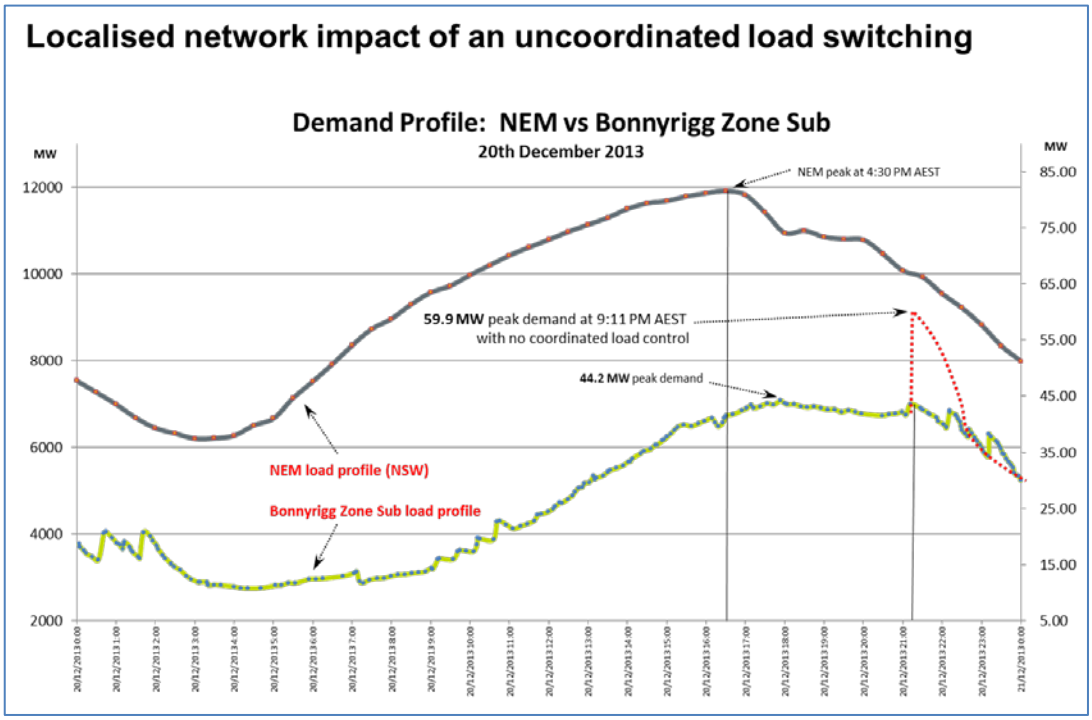
# DEMAND MANAGEMENT MARKET

In considering the demand management market, it is essential to ensure that the potential application and availability of a wide range of new products and services to support the operation of current market participants, including network service providers, is not inhibited by unnecessary regulatory barriers. For example, utilisation of embedded generation or storage options at network scale could be highly beneficial in maintaining secure and reliable network operations at the most cost effective price for customers. For example, storage services are being utilised or trialled by most network service providers in Australia.

Data from AMI meters within Victoria are enabling a wide range of network management and improvement options, including enabling identification of safety issues (eg candling) prior to outages, speedy resolution of outages by re-routing energy supply, improved monitoring of power quality and voltage fluctuations (enabling active network management, rather than response to an outage).

It will be critical to ensure that within processes such as the competition in metering and related services rule change and related processes, that the cost effective and efficient access by network service providers to network services enabled by advanced meters and other devices is facilitated to ensure greatest benefit to the customer bases.

ENA has raised the issue of potential impacts of synchronised load switching on network security and operations over a number of years. Recently, ENA made a presentation to the EMRWG workshop on 5 March illustrating the issues of most concern. Copy attached as Appendix 2.



Key issues raised are as follows:

- Electricity network are designed to cope with periodic swings in energy supply and demand. Current practice manages large loads, generation, air conditioning and hot water energy storage, but does not consider aggregated and synchronised swings of: Small loads, Generators, or Energy storage.
- Network design and operations have three fundamental drivers: Energy system security; Power quality, and Capacity utilization.
- To protect energy systems and customers from synchronised switching, the industry requires:
  - A clear operational governance framework, and
  - Transparency, coordination and communication.

The key risks if load switching is not appropriately managed relate to increased outages (eg where power switches exceed network security systems and trip safety switches), potential loss of data (eg from PC restarts and data lost or corrupted), loss of production (eg batch failure from loss of supply to a bakery), customer equipment failure (eg from power spikes), co generation export failure (where solar inverters are designed to shut down if the voltage becomes to high. If there is too much solar generation in an area, local voltage level will rise, which in turn causes the solar systems to trip off, reducing benefit to customers); nuisance events eg resetting clocks due to momentary outages).

ENA has proposed some initial key principles to manage impacts of increasing demand management products, processes and parties upon energy system operations and delivery of reliable service to customers. These key principles are indicated below.

## ENA KEY PRINCIPLES OF LOAD MANAGEMENT:

1. Customers own the right to control their load, and customer contracts, deemed or explicit, are the underlying driver and must be respected
2. The development and implementation of load management should support the long term interests of customers
3. Power quality and reliability standards must be protected for the customer
4. Coordination and communication between the parties is fundamental
5. Operational load thresholds and controls must be set for networks or network segments
6. A party that has the capacity to dispatch loads that, in aggregate, exceed the operational threshold for a network or network segment, must ensure that the load group is registered and 'discoverable' by other authorised market participants and must ensure controls are in place to prevent system instability
7. A party switching a load group that exceeds this threshold must notify the network (for their approval) before switching the load
8. Access to aggregated load control should be facilitated to allow a greater range of products and services that enable better customer outcomes (enabling lower peak demand, greater control of energy exchanges, and customer cost choices).

ENA considers that a framework should be developed to manage communications, advice between parties and identification of thresholds for load management operations. This would be expected to be implemented via changes to the National Electricity Rules, or through industry protocols if equivalent certainty could be secured. ENA would be happy to participate in an industry working group to progress this framework.

In relation to customer protection of load control customers, ENA considers that customers contracting with load control service providers should be appropriately informed of the terms of service, including the risks inherent in the offer that they accept. However, any proposed regulatory intervention should firstly consider the 'market failure' or 'need' for energy-specific customer protection given general consumer law.

**Recommendation**

ENA recommends that EMRWG coordinate consideration of a governance framework for the demand management market, based upon the ENA outlined approach. This would be expected to be implemented via changes to the National Electricity Rules, or through industry protocols if equivalent certainty could be secured.

# ENERGY INFORMATION MARKET

ENA supports the development of a vibrant and effective energy information market to enable customers to engage actively to the limit of their interest and requirements within the electricity market, especially given the growth in range of products and services that will be developed.

As noted in the consultation paper the AEMC has recently considered the issue of privacy protections for metering data in its determination relating to customer access to their energy consumption data. This considered the access and obligations on market participants relating to this metering data. In the context of this recent review, ENA agrees with the consultation paper that current arrangements are appropriate to manage how market participants handle metering data. ENA considers that the energy information market issue should be managed within the AEMC/AEMO processes underway, so that duplication is minimised and stakeholder resources are most economically utilised.

ENA shares the concern expressed within the consultation paper on the challenges inherent in developing an industry specific privacy regime, especially in the context of dynamic development of new energy products and services. Where such a regime prescribed all primary and secondary purposes for the collection and use of metering data, it could potentially block innovative service offerings that could be of benefit to customers. Operation of the current privacy framework should be maintained at the current time.

The energy and privacy frameworks need to ensure market participants are able to carry out their functions, whilst protecting and maintaining customer privacy rights and responsibilities.

AEMC has recently undertaken a review of customer access to their energy consumption information and released their final determination in November 2014. AEMO is currently considering its approach to developing guidelines required under that determination to ensure market participants provide appropriate access to energy consumption information, taking into account both access provision and privacy obligations.

ENA recommends that matters relating to customer privacy and access to and provision of consumption data by market participants be managed within the AEMC/AEMO processes underway. ENA and other stakeholders will be involved in consultation by AEMO on development of the Metering Data Provision Guideline.

**Recommendation**

ENA recommends that the energy information market issue should be managed within the AEMC/AEMO processes underway, so that duplication is minimised and stakeholder resources are most economically utilised.

| Question No | Question | Comments |
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| **Section 2 - Which products and Services?** | | |
| 1 | Do these three markets cover all new products and services that could be offered to small electricity customers? | ENA considers the three broad markets identified within the consultation paper, viz electricity supply market, demand management market, and the energy information market cover services that could be offered to small electricity customers |
| **Section 4 - What are the current regulatory frameworks?** | | |
| 2 | Are these principles useful for identifying whether a product or service should be drawn into the National Electricity Law and Rules? | ENA considers that these are useful principles to commence a discussion of new products and services in the electricity market. In particular, ENA has raised significant concerns regarding potential implications upon network and system security relating to expansion of energy products and services, highlighting the critical need for visibility and accountability in processes and impacts. Consequently ENA strongly supports principle 3. |
| 3 | Is this principle useful for identifying whether a product or service should be drawn into the NECF? | ENA considers that the precise phrasing of an additional principle relating to customer specific protections for small electricity customers needs further consideration.<br><br>ENA notes that protection of customers in terms of fair and reasonable prices already exists under the general consumer law and should not be duplicated within energy regulation.<br><br>ENA is keen to ensure that the development of innovation in energy product and service delivery for customers is not inadvertently restricted by regulatory constraints. However, it is equally important to ensure that responsibility to provide and observe customer protections extends fairly across all parties providing relevant services. |
| **Section 5 - Electricity supply market** | | |
| 4 | Are there other products and services emerging in the electricity supply market (beyond distributed generation and storage) that we should consider in our advice to Ministers? | ENA considers that the review of new products and services should be framed to enable access by customers to the broadest range of new products and services within an equitable, fit for purpose regulatory framework |

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| 5 | Do you agree that the National Electricity Law and Rules can accommodate new products and services in this market, through the framework for authorising and exempting generators and network operators? | The ENA considers there is a need to revisit the authorization and exemptions framework more generally. The regulatory framework should be fit for purpose and resilient to the dynamically changing market environment. This may require review of the current framework to adequately cover significant issues such as:<br>» Opportunities to achieve more efficient or light-handed regulatory obligations for all sellers, including retailers, alternative sellers and innovative business models;<br>» Deficiencies in the current criteria for determining if a seller is eligible for exemption from authorisation, including "whether the seller is the primary source of energy";<br>» The need to consider the implications of competitive neutrality principles in the regulatory obligations which apply to all market participants;<br>» The need to publish appropriate criteria for the application of customer protection regulatory obligations on sellers (whether those obligations are conditions of an exemption or under.<br>In this context, the ENA considers that the current EMRWG review fundamentally overlaps the AER review of regulating innovative energy selling business models under the National Energy Retail Law. ENA considers that regulation of innovative energy selling business models should approached in a manner which is:<br>» ***Comprehensive***, systematically addressing issues related to the regulation of energy services relying on solar technology, storage technology and the emergence of microgrids with a view to establishing an integrated, coherent regulatory regime; and<br>» ***Coordinated,*** recognising the interrelationship between the AER review and the EMRWG consultation.<br>The current reviews by the EMRWG (related to new products and services) and AER (related to innovative business models) should be consolidated to ensure a coordinated and comprehensive policy and regulatory framework. The COAG Energy Council could oversight a single review led by the EMRWG and supported by the AER. |

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| 6 | Is the NECF flexible enough to allow the AER to ensure customers of alternative energy sellers have appropriate consumer protections? | No. NECF currently does not apply to alternative energy supply to customers on microgrids or stand alone power systems. While it is legitimate to examine what is needed in customer protections for those customers, if the intent is that NECF should apply, this will require regulatory change.<br><br>As noted previously, ENA considers that in this dynamic environment, an holistic review of the policy and regulatory framework may be warranted to ensure it remains fit for purpose, light-handed and supports innovative service delivery to customers by both new and traditional service providers. |
| 7 | Will off-grid energy supply arrangements create specific consumer protection issues if this becomes a mass-market option? | Regarding business models based upon 'inset' microgrids adjacent to centralized electricity networks, customer protection issues do arise as the alternative energy service represents their primary source of supply and potentially represents a significant financial exposure to customers. As noted above, ENA supports a comprehensive review of the regulatory framework for energy sellers which firstly addresses the policy purpose (or 'market failure' ) the regime is intended to address and secondly establishes, explicit principles and policy criteria for the application of fit-for-purpose regulation (if any).<br><br>However, customer protection policy development should avoid stifling innovation. Specifically, regulation should not preclude the potential for service providers to offer tailored solutions to informed consumers, which reflect the value that the customer places on the reliability and quality of power supply. Such tradeoffs and customer engagement are increasingly reflected in services to network customers, including in the regulation of network reliability performance and network planning models. |
| 8 | Are specific consumer protections required to help consumers make informed decisions about going off-grid? | Yes. Customer protection regulation is required to ensure informed consent by individual customers or groups of customers who agree to go off-grid and cease supply from the centrally delivered network. This should apply when individual customers take up stand alone power system services or groups of customers take up a micro-grid or alternative supply model. Both cases require the customer is sufficiently informed of any changes in their terms of supply or the new risk profile inherent in the offer they are accepting.<br><br>This can be distinguished from an existing regulated network service provider altering the service delivery model, such as to employ a non-network solution in lieu of a network solution. While best practice customer engagement will still be important in such scenarios, the customer's own risk profile or relationship to the network service provider would generally remain unchanged. |

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| 9 | Are there other consumer protection issues we should consider in this market?<br><br>If so, how could these be addressed? | See answers above to Qu. 7 & 8 |

| Section 6 - Demand management market | | |
|---|---|---|
| 10 | Are there other products and services emerging in the demand management market that we should consider in our advice to Ministers? | In considering this issue, it is essential to ensure that the potential application and availability of a wide range of new products and services to support the operation of current market participants, including network service providers, is not inhibited by unnecessary regulatory barriers. For example, utilization of embedded generation or storage options at network scale could be highly beneficial in maintaining secure and reliable network operations at the most cost effective price for customers. For example, storage services are being utilised or trialled by most network service providers in Australia.<br><br>Data from AMI meters within Victoria are enabling a wide range of network management and improvement options, including enabling identification of safety issues (eg candling) prior to outages, speedy resolution of outages by re-routing energy supply, improved monitoring of power quality and voltage fluctuations (enabling active network management, rather than response to an outage). It will be critical to ensure that within processes such as the competition in Metering and related services rule change and related processes, that the cost effective and efficient access by network service providers to network services enabled by advanced meters and other devices is facilitated to ensure greatest benefit to the customer bases. |

| | | |
|---|---|---|
| 11 | Could direct load control products create material risks for power system operations? If so, how could these risks be managed within the regulatory framework? | ENA has raised the issue of potential impacts of synchronised load switching on network security and operations over a number of years. Recently, ENA made a presentation to the EMRWG workshop on 5 March illustrating the issues of most concern. Copy attached as Appendix 2. Key issues raised are as follows:<br>• Electricity network are designed to cope with periodic swings in energy supply and demand. Current practice manages large loads, generation, air conditioning and hot water energy storage, but does not consider aggregated and synchronised swings of: Small loads, Generators, or Energy storage.<br>• Network design and operations have three fundamental drivers: Energy system security; Power quality, and Capacity utilization.<br>• To protect energy systems and customers from synchronised switching, the industry requires:<br>– A clear operational governance framework, and<br>– Transparency, coordination and communication.<br>The key risks if load switching is not appropriately managed relate to increased outages (eg where power switches exceed network security systems and trip safety switches), potential loss of data (eg from PC restarts and data lost or corrupted), loss of production (eg batch failure from loss of supply to a bakery), customer equipment failure (eg from power spikes), co generation export failure (where solar inverters are designed to shut down if the voltage becomes to high. If there is too much solar generation in an area, local voltage level will rise, which in turn causes the solar systems to trip off, reducing benefit to customers); nuisance events eg resetting clocks due to momentary outages).<br>ENA has proposed some initial key principles to manage impacts of increasing demand management products, processes and parties upon energy system operations and delivery of reliable service to customers (see submission above page 6). This framework should be developed to manage communications, advice between parties and identification of thresholds for load management operations. This would be expected to be implemented via changes to the National Electricity Rules, or through industry protocols if equivalent certainty could be secured. |

| | | |
|---|---|---|
| 12 | Are there similar implications for power system operations where distributed generation and storage are being controlled remotely? | The continued significant growth in Embedded Generation provides operational impacts, as well as benefits, for electricity networks. ENA studies have highlighted that integrated embedded generation requires careful management of a range of power reliability, quality and safety risks:<br>• Voltage Fluctuations and Balance<br>• Network losses:<br>• Power quality:<br>• Network Protection and Safety; and<br>• Fault management.<br>In many cases, these and other issues may be manageable with simple or low cost responses, however in all cases the risks will require a situation-specific analysis. The risk and response usually depend on the size and location of the embedded generation; the characteristics of the network environment and loading; and the existing penetration of embedded generation. These issues require networks to undertake robust connection assessments to ensure connections do not risk safety, quality and reliability of supply |
| 13 | Should parties offering direct load control products to customers have similar obligations to retailers and distributors regarding informed consent?<br><br>If so, how could these obligations be created for parties not covered by the National Electricity Retail Law? | Customers contracting with load control service providers should be appropriately informed of the terms of service, including the risks inherent in the offer that they accept. Any proposed regulatory intervention should firstly consider the 'market failure' or 'need' for energy-specific customer protection given general consumer law.<br><br>In relation to operational implications of load control, as noted above, ENA welcomes the opportunity to engage in further consultation on developing an agreed framework to support growth of the demand management market in the interest of customers while maintaining essential system operational stability. This would be expected to be implemented via changes to the National Electricity Rules, or through industry protocols if equivalent certainty could be secured. |

| Section 7 - Energy information market | | |
|---|---|---|
| 14 | Do the National Electricity Rules protect metering data sufficiently where it is held by market participants? | Yes. As noted in the consultation paper the AEMC has recently considered the issue of privacy protections for metering data in its determination relating to customer access to their energy consumption data. This considered the access and obligations on market participants relating to this metering data. In the context of this recent review, ENA agrees with the consultation paper that current arrangements are appropriate to manage how market participants handle metering data. |
| 15 | Is the Privacy Act sufficient to protect metering data where it is used by parties outside the electricity market? | ENA shares the concern expressed within the consultation paper on the challenges inherent in developing an industry specific privacy regime, especially in the context of dynamic development of new energy products and services. Where such a regime prescribed all primary and secondary purposes for the collection and use of metering data, it could potentially block innovative service offerings that could be of benefit to customers. Operation of the current privacy framework should be maintained at the current time. |
| 16 | How can the privacy expectations of customers and the need for market participants to access data best be managed concurrently? | The energy and privacy frameworks need to ensure market participants are able to carry out their functions, whilst protecting and maintaining customer privacy rights and responsibilities.<br><br>AEMC has recently undertaken a review of customer access to their energy consumption information and released their final determination in November 2014. AEMO is currently considering its approach to developing guidelines required under that determination to ensure market participants provide appropriate access to energy consumption information, taking into account both access provision and privacy obligations.<br><br>ENA recommends that matters relating to customer privacy and access to and provision of consumption data by market participants be managed within the AEMC/AEMO processes underway. ENA and other stakeholders will be involved in consultation by AEMO on development of the Metering Data Provision Guideline. |

Appendix 2: ENA presentation to EMRWG workshop 5 March 2015

energy networks association

ENA

# EMRWG workshop
# Network Load Management Principles

**MICHAEL MACFARLANE**

**5 MARCH 2015**

# Network Load Management Fundamentals

Electricity networks are designed to cope with periodic swings in energy supply and demand. Current practice manages large loads, generation, air conditioning and hot water energy storage but does not consider aggregated and synchronised swings of:

- small loads,
- generators or
- energy storage

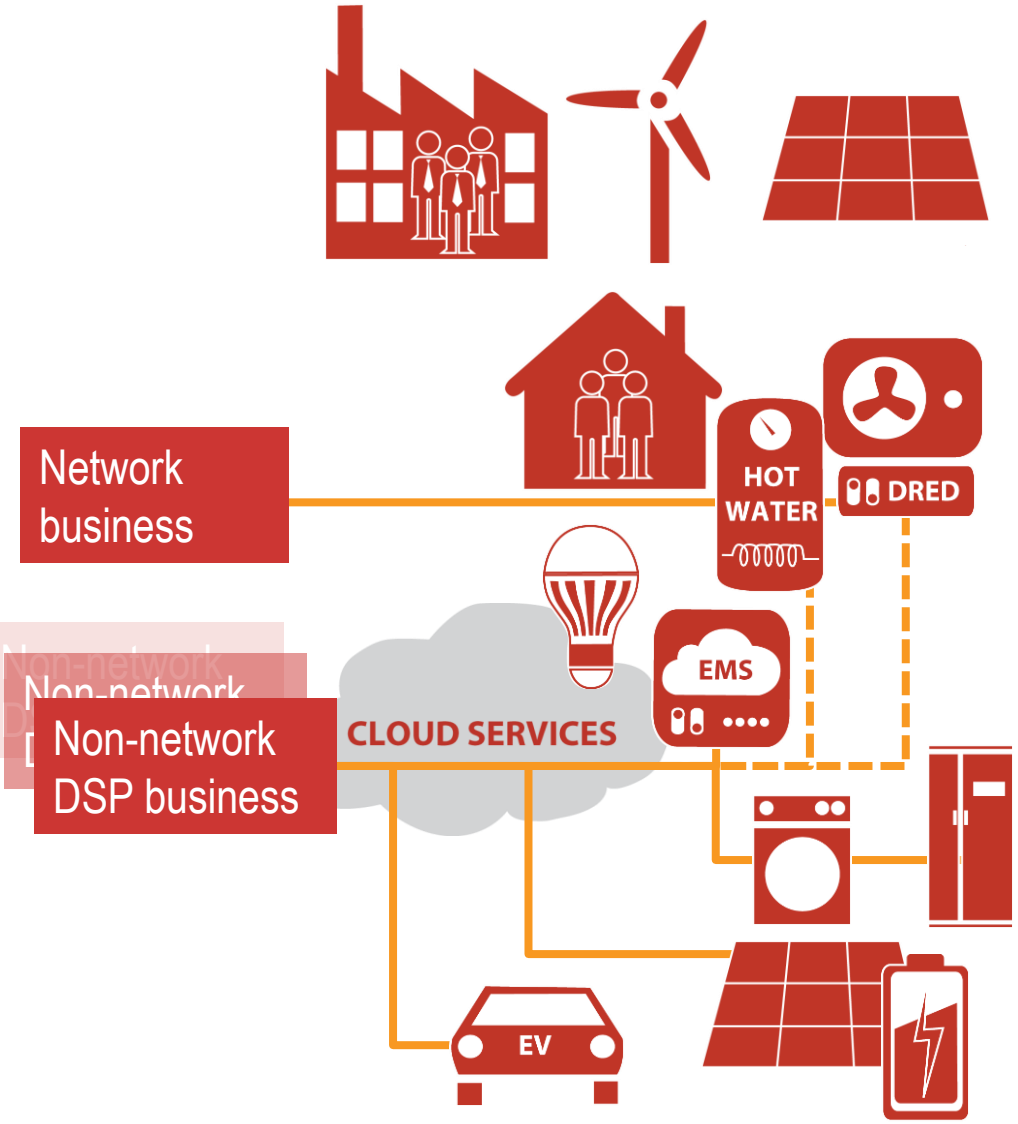
Network design and operations have three fundamental drivers:

1. energy system security
2. power quality
3. capacity utilisation


To protect energy systems and customers from synchronised switching swings the industry requires

- Governance and Industry Framework
- Transparency, Coordination and Communicating

# Load Management is growing in complexity




**Large loads and generators**

> **Rules** ensure network impacts are managed

**Significant domestic loads**

> **Networks** control directly, through off-peak controlled load tariffs and DLC schemes

**Other loads**

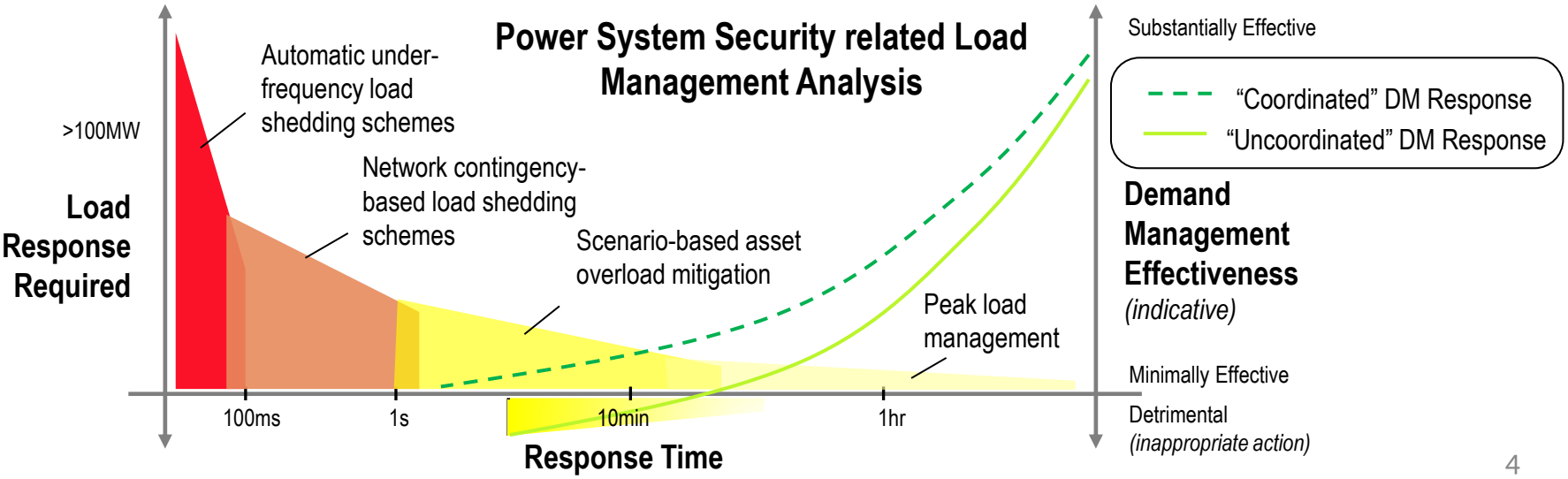
> Network designs rely on **natural diversity** to spread load

> Future load aggregators and energy management products may **reduce diversity**

> **New technologies** may drive up network costs if unmanaged

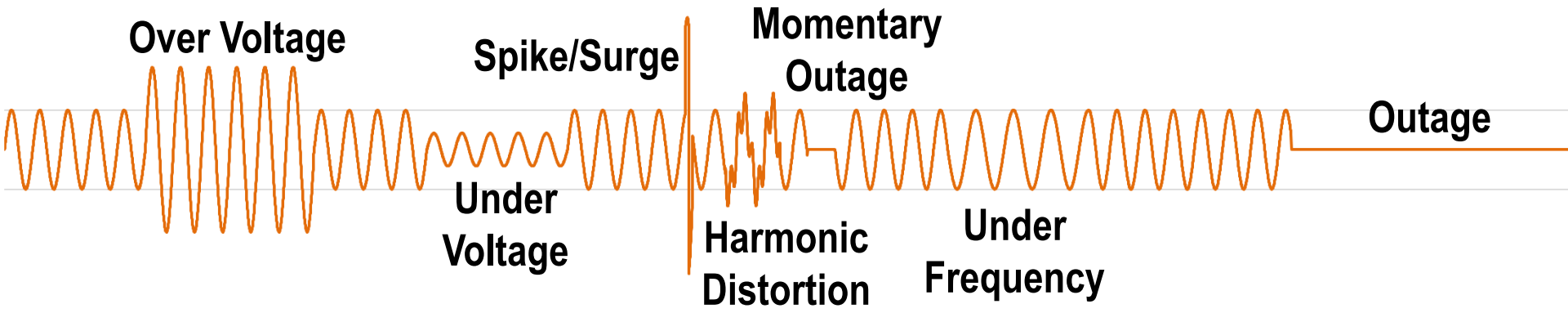
# Energy System Security

- Inappropriate switching of load, storage or generation on a large scale could trigger a cascading failure
- A coordinated demand response action can be effective in averting an event
- An un-coordinated and inappropriate demand response action can trigger a detrimental event
- The scale of an event determines the responsiveness required to avert it



# Power Quality (PQ)

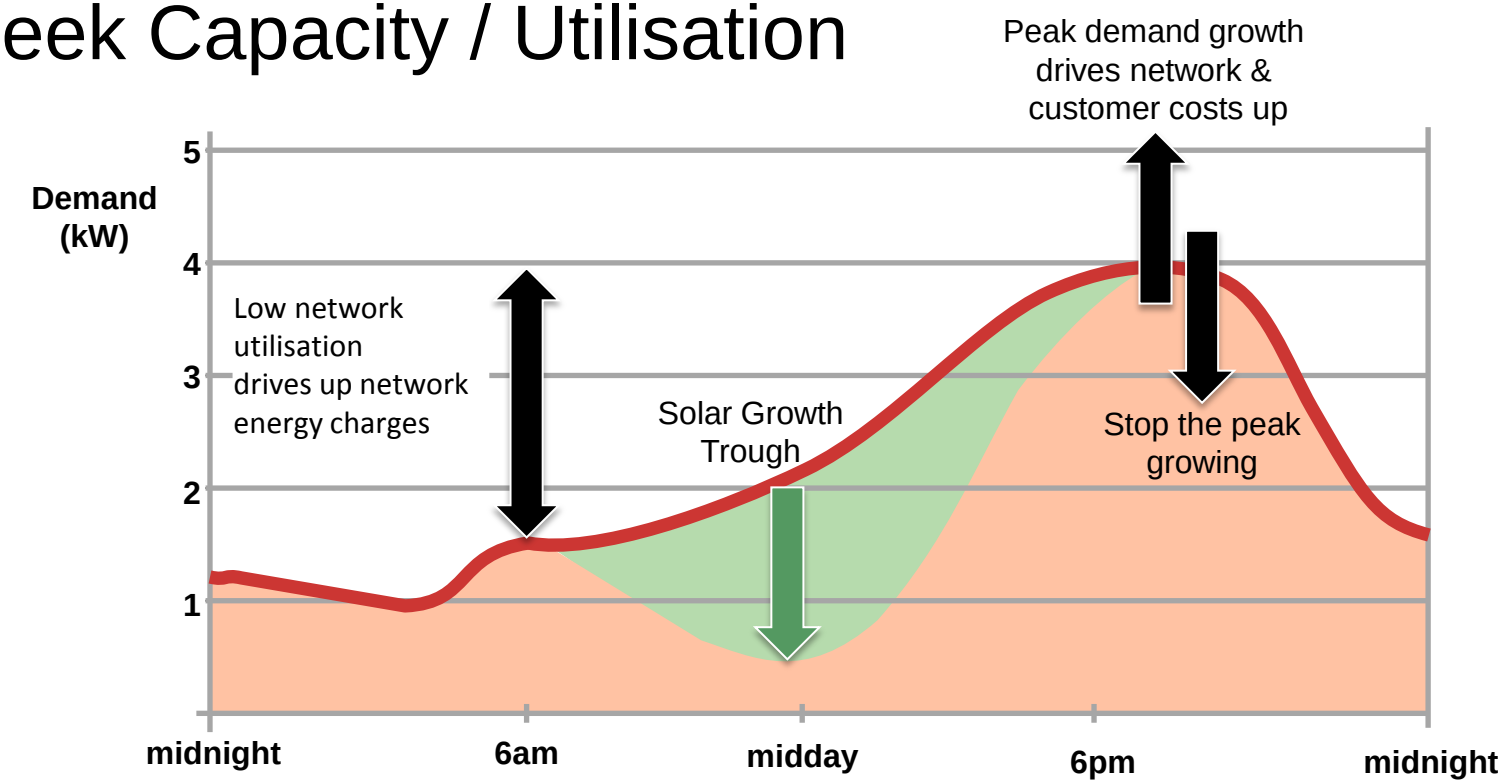
Power quality is a fundamental requirement & obligation of the network




In the digital age the customer impact of PQ is broader than before:

- Outage (unplanned and/or rolling)
- Loss of data
- Loss of production (eg batch failure)
- Customer equipment failure
- Co-Generation export failure
- Greater visibility and nuisance events

# Peek Capacity / Utilisation




- Network capacity is matched to the peak load,
- therefore management of the peak allows for deferral of investment,
  (Note the solar generation peak without storage is not coincident with the peak load)
- and in turn downwards pressure on energy charges
- competing interests between parties may exacerbate the peek

# Load Management Challenges / Risks

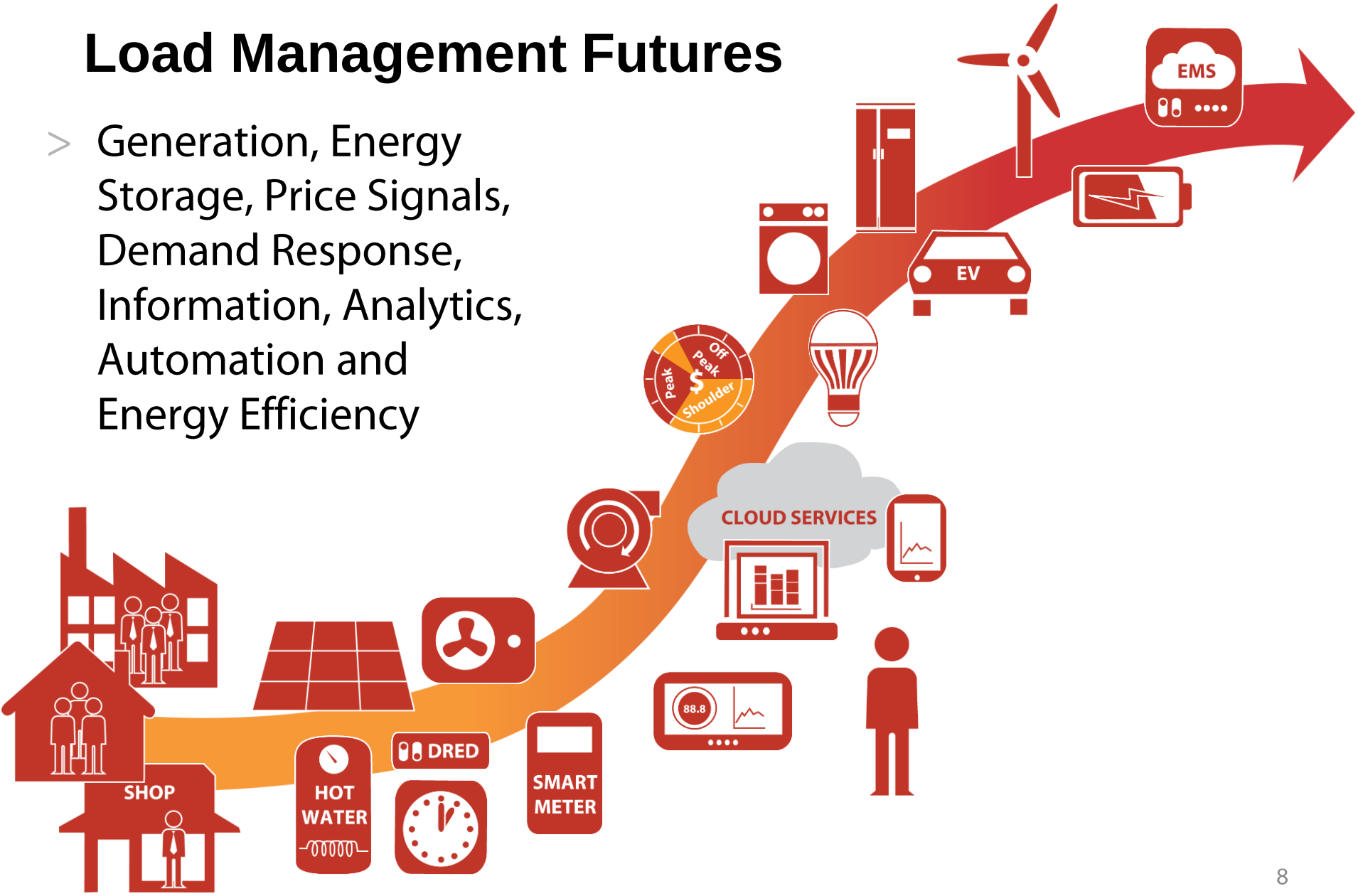
- Synchronised aggregation > network operational threshold
- Increasing complexity of load management (responsiveness)
- Rate of change (technology adoption rate, investment cycles)
- Conflicting objectives between parties
- Loss of demand management capability (control and monitoring)
- Cyber Security attack (hardening of DM devices and services)
- Inappropriate incentives and cross subsidies
- Poor realisation of value from load management investments

Risk of undermining:

- safety, network security,
- power quality,
- economic efficiency of the system

# Load Management Futures

- Generation, Energy Storage, Price Signals, Demand Response, Information, Analytics, Automation and Energy Efficiency

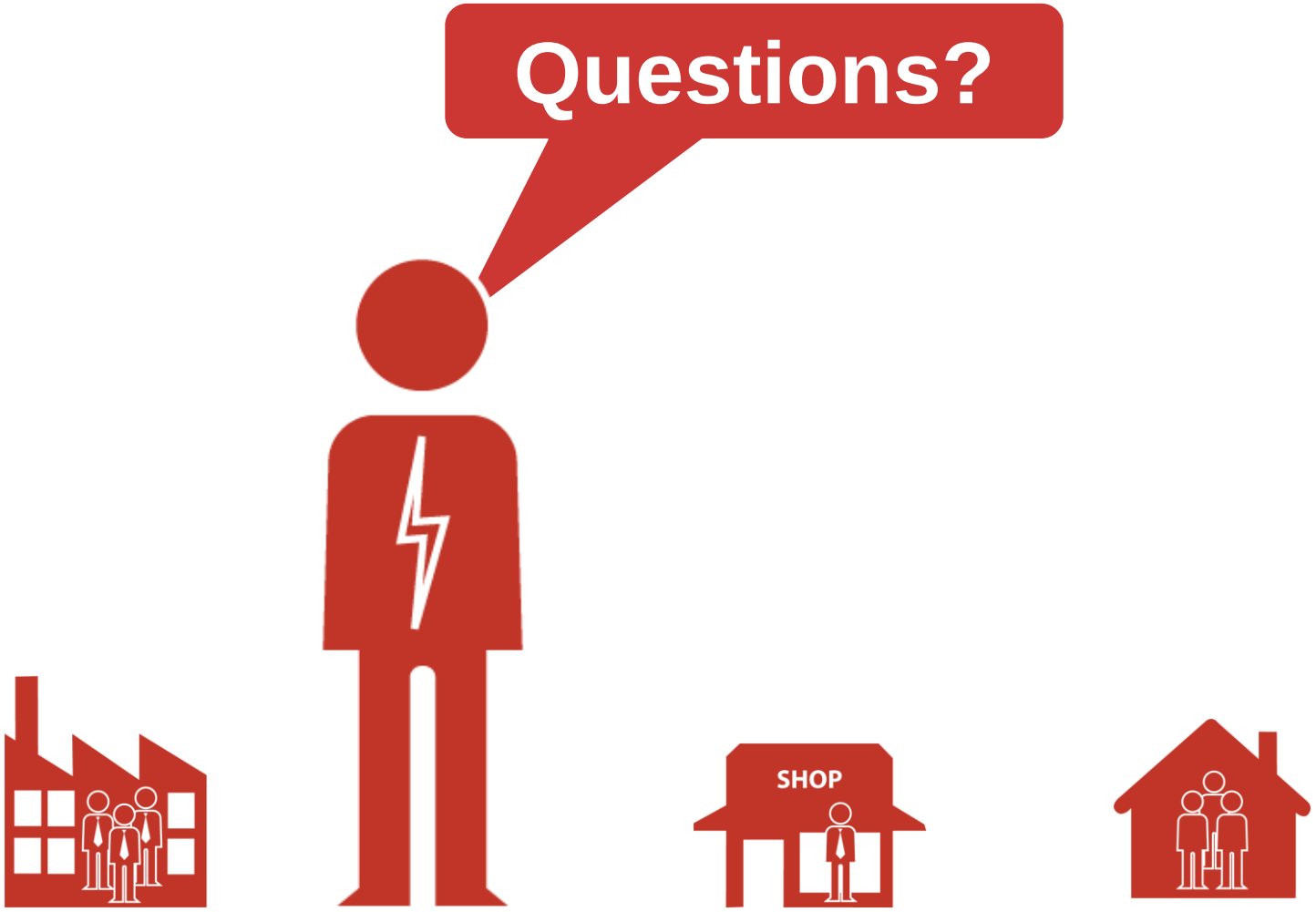



Opportunity
Challenge

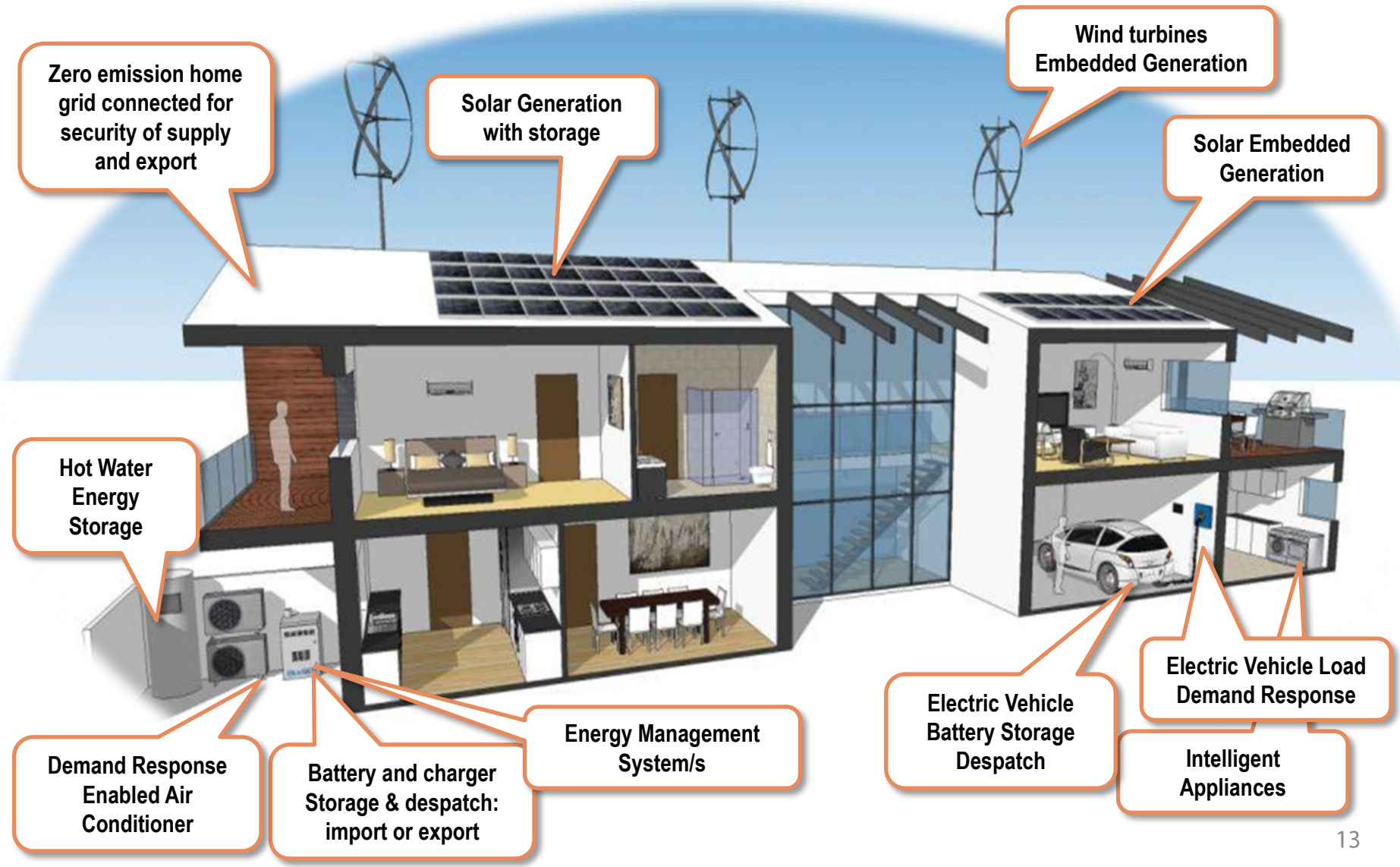
# Required - Industry Framework and Governance

- An industry framework to manage new reality:
  - to coordinate activities and relationships and
  - align roles and responsibilities
    (recognising emerging technologies and new operating models)
- Operational Thresholds are required:
  - System level thresholds
    (energy market)
  - Local level thresholds
    (network, region, or network segment)
- Framework needs to deliver
  - Transparency
  - Pricing signals
  - customer protections, e.g. informed consent

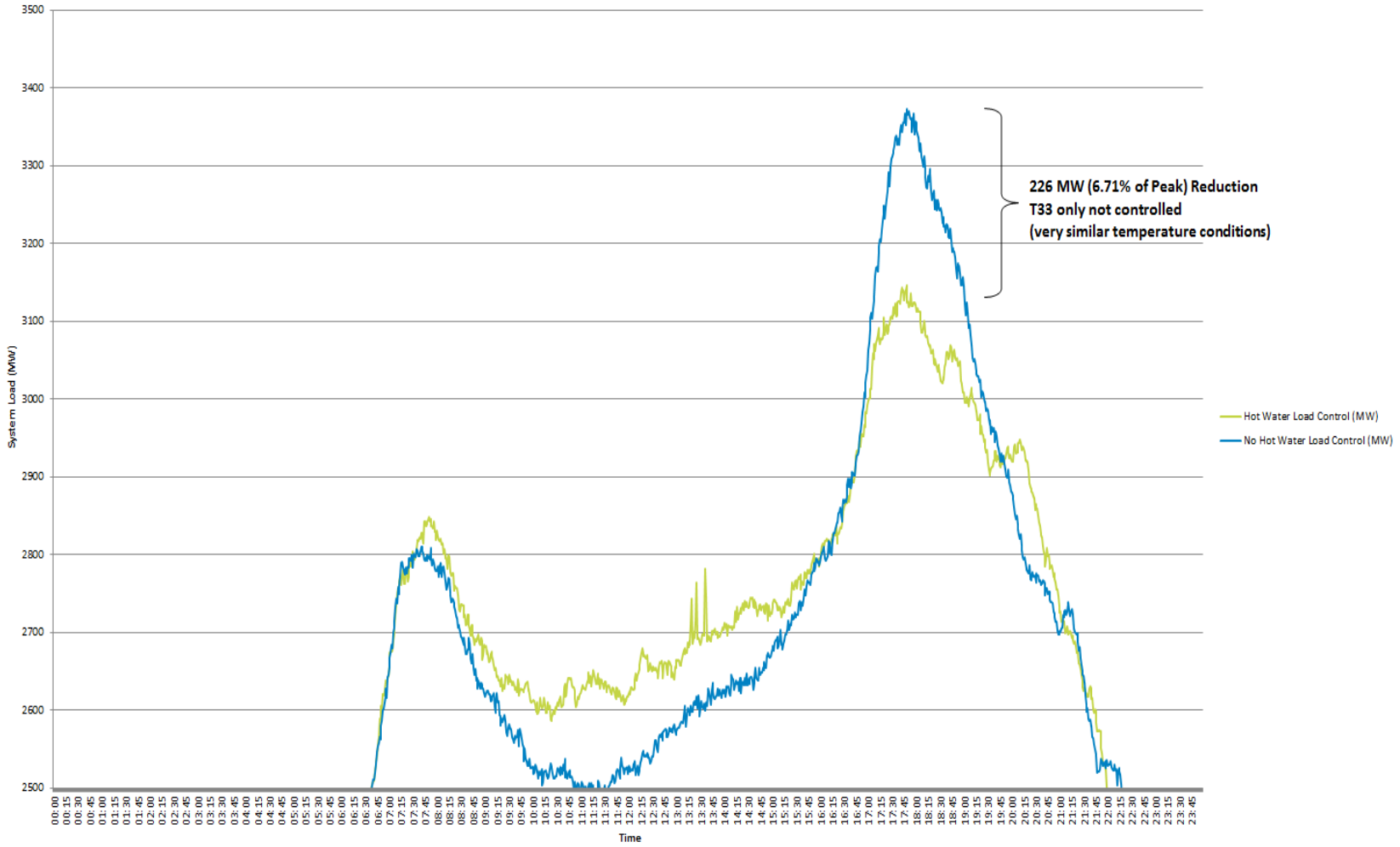
| Area | ENA Initial (key) Principles of Load Management |
|---|---|
| **Customers** | 1. Customers own the right to control their load, and customer contracts, deemed or explicit, are the underlying driver and must be respected<br>2. The development and implementation of load management should support the long term interests of customers |
| **Power Quality** | 3. Power quality and reliability standards must be protected for the customer |
| **Coordination** | 4. Coordination and communication between the parties is fundamental |
| **Operations** | 5. Operational load thresholds and controls must be set for networks or network segments |
| **Transparency** | 6. A party that has the capability to dispatch loads that, in aggregate, exceed the operational threshold for a network or network segment, must ensure that the load group is registered and discoverable by other authorised market participants, and must ensure controls are in place to prevent system instability |
| **Coordination** | 7. A party switching a load group which exceeds this threshold must notify the network (for their approval) before switching the loads |
| **Access** | 8. Access to aggregated load control should be facilitated to allow a greater range of products and services that enable better customer outcomes (enabling lower peak demand and greater control of energy exchanges) |


Questions?
SHOP

# Load management futures



# Energex system load mild day with and without DM



# Localised network impact of an uncoordinated load switching