



**Submission to:**

**Australian Energy Market Commission (AEMC)**

**From:**

**Uniting Communities**

**(with UnitingCare Australia)**

**Subject:**

**Distribution Market Model**

**January 2017**

Contact

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## **Main Response.**

In this submission, we make a number of comments and suggestions, with much of our response based on building consumer engagement and the capacity of consumers to respond to changing market design.

Our major proposal is in response to question 6 from the approach paper and proposes two additional “principles of good market design.”

***Recommendation: That additional principles of “Direct Consumer Engagement” and “Equity” be added to the proposed list of “Principles of good market design”***

## **Background**

UnitingCare Australia is the national policy body for the UnitingCare Network, one of the largest providers of community services in Australia. With over 1,600 sites, the network employs 39,000 staff and is supported by the work of over 28,000 volunteers. UnitingCare Australia works with and on behalf of the UnitingCare Network to advocate for policies and programs that will improve people’s quality of life. UnitingCare Australia is committed to speaking with and on behalf of those who are the most vulnerable and disadvantaged, for the common good.

Uniting Communities is a member of the UnitingCare network, working with South Australian citizens across metropolitan, regional and remote South Australia through more than 90 community service programs.

Uniting Communities has provided financial counselling services for many years along with a range of low income household support services. It is through working with clients in these services that we have understood that periods of rapidly rising utility prices for extended periods over the past decade are amongst the main reasons for people being pushed in financial stress. The unpredictability of utility bills and rapid increases have broken many lower income household budgets, despite the skill of low income people to manage their finances.

Uniting Communities is undertaking energy advocacy responsibilities on behalf of UnitingCare Australia and is also informed by its own service delivery.

We appreciate the opportunity to comment on aspects of the Distribution Market Model approach paper which was released 1<sup>st</sup> December 2016. This submission responds to the questions posed in the approach paper.

### **Question 1. Do stakeholders agree with these definitions, or have any views on the project scope as a result of these definitions?**

We can accept the proposed definitions, though as a somewhat pedantic point, would prefer not to use the term “smart,” as in “smart energy equipment”. The reasons for our ambivalence to the use of the word “smart” are firstly that, by dictionary definitions, the word has many meanings including, “sharp, stinging pain,” “well-dressed” or even an attitude bordering on sarcasm.

For many consumers, “smart meters” are regarded in negative light, in part because of the compulsory rollout in Victoria, generating some ill-will amongst Victorian consumers, while outside of Victoria, there is unease due to fears that “smart meters” will be imposed and result in higher

costs for consumers. While these perceptions may not be accurate, they are real and suggest caution in using language that is evocative of “smart meters,” another reason to be wary of using the word “smart” with regard to energy markets.

Further, the acronym “SMART” is quite widely used in business planning and evaluation situations to mean “Specific, Measurable, Achievable, Realistic and Time specific. Confusion with this use of “SMART” may lead to some confusion.

We suggest “rapidly responsive” as an alternative term to “smart”. This means that the sort of equipment associated with distributed energy resources could be referred to as “rapidly responsive energy equipment”, which we suggest is a fairly accurate description and perhaps less prone to the vagaries of meaning associated with the term “smart.”

**Question 2. Do stakeholders support this project scope? Is there anything that has not been flagged for consideration that should be? Is there anything that should be excluded from the project scope?**

The approach paper states *“This project does not explicitly consider aspects of the National Energy Consumer Framework - that is, the National Energy Retail Law (NERL) and National Energy Retail Rules (NERR) - that may be relevant to the consideration of the impact of distributed energy resources on distribution market design.”*

While the rationale is understood, we do not believe that consumer protection can be ignored in distribution market design, particularly during a period of substantial transition and transformation. The sad reality is that whenever change is afoot, there will be attempts by some ‘rogues’ to exploit consumers for their short-term gain. Every effort must be made to both recognise the potential for ‘rogue’ elements to appear, particularly during transition, and to ensure that there is protection universally available to protect end consumers and to engender trust in the market at large. For this reason we believe that the National Energy Customer Framework needs to remain a consideration of this process, while not been the primary focus.

**Question 3. Are there any other elements of a DNSP's role or current responsibilities that should be considered?**

The role and responsibility of DNSP’s to engage with consumers (and we add) consumer representative groups (in particular) is not presented in section 2.3, even though “consumer attitudes” are recognised as a “driver of change” in section 2.2. We believe it is important that proactive consumer engagement needs to be understood as a core role of DNSP’s. (Note we expand upon the theme of consumer engagement in our response to question 6). Active and ongoing consumer engagement remains the most effective approach for regulated natural monopolies to obtain competitive market type feedback from customers.

**Question 4. Are there any aspects of the regulatory framework that are not set out in sections 2.3 or 2.4 but which should be considered through this project?**

There may be regulatory change as a result of future policy decisions by Government. The current situation of heightened concern and focus on both (post Paris agreement) climate change policy and Australian standing energy market policy needs to lead to greater alignment of these important policy areas and greater clarity about government policy direction in the medium and longer term. These important policy considerations remain as an ‘unknown variable’ for regulatory framework development and network business responsibilities.

**Question 5. Should the coordination of distribution systems with distributed energy resources be centralised under the direct control of one body? Or should it be devolved and performed in a tiered manner?**

We believe that there always needs to be an accountable body in the provision of any essential service, electricity is no different. The Australian Energy Market Operator (AEMO) has been established to manage the National Electricity Market and remains the most appropriate body to do so now and into the future, notwithstanding that aspects of the future are unknown.

**Question 6. Do stakeholders agree with the Commission's framework and these principles of good market design? Is there anything that the Commission has missed, or is unnecessary?**

The “principles of good market design “as summarised in box 3.2 of the approach paper are:

**Principles of good market design (abridged)**

1. Facilitate effective consumer choice.
2. Promote competition where feasible
3. Regulate to safeguard the safe, secure and reliable supply of energy, or where it would address a market failure.
4. Promote price signals that encourage efficient investment and operational decisions.
5. Ensure technological neutrality.
6. Prefer simplicity and transparency.

We are generally supportive of these principles, however we wish to ‘nuance’ some of the principles and suggest that there are 2 missing principles. We consider the proposed principles in turn:

**1. Effective Consumer Choice**

The first principle relates to consumer choice, with part of the explanation of facilitating effective consumer choice being *“only a consumer itself knows its own preferences, and it expresses these preferences through its choices.”*

Our opinion is that this is too simplistic view of consumer choice and fails to recognise the range of consumer experience and subsequently the very varied capabilities of different classes of consumer to make choices.

We suggest that the implicit analysis within the discussion paper is for a heterogeneous supply side and homogenous demand side. It is crucial that the demand side is also understood to be heterogeneous.

*Heterogeneity of Consumers*

One of the important factors to consider when thinking about the reality of the market giving price signals to end customers is the capacity of these customers to act in response to price signals. The capacity to act varies significantly between different consumer groups.

The CSIRO / ENA Network Transformation Roadmap<sup>1</sup> identified five different groups of household customers which they named: empowered, autonomous, active, passive and vulnerable.

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<sup>1</sup> [http://www.energynetworks.com.au/sites/default/files/roadmap\\_interim\\_report\\_final.pdf](http://www.energynetworks.com.au/sites/default/files/roadmap_interim_report_final.pdf)

The report set out the capacity of each of these five groups to have a focus on energy costs and options and their capacity to act, the following table summarises their analysis, with empowered and autonomous consumer being grouped:

	Empowered/ Autonomous	Active	Passive	Vulnerable
Focus on energy	High	Medium/High	Low	High/Medium
Ability to act	High	Medlum	Medium	Low
Descriptor	I want to act and I can		I don't need to act	I need to act but can't

We think the summaries about “focus on energy” and “ability to act” are critically important for good market design, and need some further analysis, both to understand the different consumer groupings as well as their ability to act and then develop appropriate policy and market design responses.

The question then is about the relative size of these four groups of customers? We suggest that much of the market design approach to energy markets only considers empowered autonomous and active consumers, using the CSIRO / ENA descriptors. We focus on the “vulnerable” group as the group of people for which we have primary concern, the group that has been most adversely impacted by rapidly rising energy prices.

The 2014 General Social Survey from the ABS included the financial stress survey which found that 12.1% of all Australians struggled to pay utility bills on time at some stage in the last 12 months. For people in one parent families, 29% were unable to pay these bills on time and it was 23% for single people under the age of 35 years.

ACOSS reported in October 2016 that 20.1% of Australians lived below the poverty line measure of income less than 60% of median income, while using a 50% of median income poverty line there were 13.3% of people below that poverty line measure.

Nationally in 2013-14, 24.4% of households relied on transfer payments as their primary source of income, while for the 2011 census, 33% of households were renters.

We suggest that the people represented in all of these measures would be regarded as vulnerable households from an electricity costs perspective, a vast majority would be renters with limited capacity to respond to housing based energy savings measures.

Our opinion is that about 40% of households would be in the “vulnerable” category for electricity bills, with at least 13% of all households desperately struggling to pay their electricity bills, being below the austere 50% of median income poverty line. There are degree to which people are vulnerable. Some people are even more vulnerable than others. Our 40% estimate is based on about a third of households being renters, and consequently with little opportunity to act and about another 10% of households who are notionally homeowners and employed, but with precarious employment and so living a “hand to mouth” existence. We note that this group of people are overwhelmingly the main group of people seeking financial counsellor assistance, and ‘doing it very tough.’

We then suggest that at least another 25% of households would be in the passive (and anxious) category, again based on our experience of providing services to a broad range of the community. It is our opinion that many households in the “passive” category are “battlers” who have limited capacity to act and are anxious about the future, including energy costs, so they are not “passive

indolent” households as some energy market entities want to think, rather these households are much more likely “passive anxious,” the term we will use for the ‘passive’ category of the Network Transformation Roadmap.

The suggestion of something like 60% of households being in the “passive” and “vulnerable” categories is generally in line with recent Galaxy research and published in the Sunday Mail in Adelaide on 22<sup>nd</sup> January 2017<sup>2</sup>

*“Galaxy research conducted with 1000 Australian households found that in SA:*

**54 PER CENT** will determine the amount of time they use their air conditioning based on the cost of electricity.

**41 PER CENT** will cut back on spending with entertainment and dining the first luxuries to go.

**22 PER CENT** intend to reduce spending on groceries and other household essentials to pay their summer electricity bill.”

Then suggest that a proxy measure for the empowered / autonomous category would be the ‘prosumers’ who own rooftop photovoltaic systems, with the Clean Energy Council reporting that over 15% Australian households now have solar PV with average system size nearing 5 kW per system, though we note that this percentage is higher in South Australia and Queensland

This suggests that least 15% of households fit in the empowered / autonomous category.

This would leave about 20% of households in the “active” category

In summary, our initial attempt at quantifying the proportion of household consumers fitting the various CSIRO / ENA categories yields the following:

vulnerable:	40%
passive:	25%
active	20%
empowered / autonomous	15%

We recognise that these estimates are indicative, but we believe they are robust enough to suggest that nearly 2/3 of households have limited capacity, through tenure, income and uncertainty, to be regarded as consumers with genuine ability to act in energy markets. This has significant implications for distribution market models, which could lead to market models designed for a minority of consumers, albeit well informed, active and able to respond. Market design needs to also consider impacts on the majority of households, less able to respond.

This in turn begs both policy and market design questions about “how far down the electricity use distribution can markets efficiently expose customers to price signals?”

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<sup>2</sup> [http://www.adelaidenow.com.au/news/south-australia/new-survey-finds-1-in-5-sa-households-will-cut-buying-groceries-other-essentials-to-pay-electricity-bill/news-story/b9652a5563fa3f297f536a983d2e951a?utm\\_source=The%20Advertiser&utm\\_medium=email&utm\\_campaign=editorial](http://www.adelaidenow.com.au/news/south-australia/new-survey-finds-1-in-5-sa-households-will-cut-buying-groceries-other-essentials-to-pay-electricity-bill/news-story/b9652a5563fa3f297f536a983d2e951a?utm_source=The%20Advertiser&utm_medium=email&utm_campaign=editorial)

We strongly suggest that consumer choice can only be effective communitywide, when the capacity of vulnerable and passive/anxious consumers are effectively incorporated into market design considerations.

Application of the “Consumer Choice” market design principle must ensure that the needs and capabilities of the over 60% of household consumers who are vulnerable or passive/anxious are actively considered and responded to.

## **2. Promote competition where feasible**

The principle of promoting competition, where feasible, is not controversial. The dilemmas arise in the greyness of not quite perfectly competitive markets and questions about how many competitive ‘markets’ are effective within the delivery of one particular product.

The following revisits the key characteristics of perfectly competitive markets, from the standard economics theory, noting that these characteristics are additive, in that all characteristics need to be met for a market to be (effectively or) perfectly competitive.

*Perfectly competitive markets<sup>3</sup> exhibit the following characteristics:*

- 1. There is perfect knowledge, with no information failure or time lags in the flow of information. Knowledge is freely available to all participants, which means that risk-taking is minimal and the role of the entrepreneur is limited.*
- 2. Given that producers and consumers have perfect knowledge, it is assumed that they make rational decisions to maximise their self-interest - consumers look to maximise their utility, and producers look to maximise their profits.*
- 3. There are no barriers to entry into or exit out of the market.*
- 4. Firms produce homogeneous, identical, units of output that are not branded.*
- 5. Each unit of input, such as units of labour, are also homogeneous.*
- 6. No single firm can influence the market price, or market conditions. The single firm is said to be a price taker, taking its price from the whole industry. The single firm will not increase its price independently given that it will not sell any goods at all. Neither will the rational producer lower price below the market price given that it can sell all it produces at the market price.*
- 7. There are very many firms in the market - too many to measure. This is a result of having no barriers to entry.*
- 8. There is no need for government regulation, except to make markets more competitive.*
- 9. There are assumed to be no externalities that is no external costs or benefits to third parties not involved in the transaction.*
- 10. Firms can only make normal profits in the long run, although they can make abnormal (super-normal) profits in the short run.*

Some of these characteristics of competitive markets do not hold for current Australian energy markets.

In particular, the characteristic of “perfect knowledge” does not apply, either to market participants and particularly to end consumers. This is despite the best efforts of the AER through “Energy Made Easy”, the comparator website for household consumers. Rather the breakdown of this characteristic is a function of the complexity of the market and we suggest a lack of commitment to transparency across all elements of energy markets.

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<sup>3</sup> [http://www.economicsonline.co.uk/Business\\_economics/Perfect\\_competition.html](http://www.economicsonline.co.uk/Business_economics/Perfect_competition.html)

We suggest that a critical issue for the emerging distribution market model to deal with, is that of provision of clear and transparent information to all stakeholders, including end consumers.

*Rational decision-making*

The second characteristic also fails to hold for Australian energy markets, due both to the lack of clear information but also because of the complexity of energy markets. Nobel laureate, Daniel Kahneman in his book “Thinking Fast and Slow” suggests that people tend to respond to complex situations by making decisions based on intuition rather than analysis of facts. A clear understanding of how Kahneman’s work applies to decision-making by consumers in energy markets would be very useful.

*No barriers to entry or exit*

This characteristic also fails for Australian energy markets because the high capital cost of entry to the market, and the market power of incumbents means that there are considerable barriers to entry for new firms.

*Homogeneity of production and imports*

These characteristics generally hold

*Many firms – none can influence the market price, or market conditions. Government intervention is not required*

These three characteristics do not apply.

*No externalities*

This characteristic also does not apply to Australian energy markets, as evidenced by the long and painful debates about climate change and associated greenhouse gas emissions. The policy agenda for the Australian Federal government, particularly post Paris climate change agreements means that emissions externalities will continue to be a characteristic of Australian energy markets that receives attention from policymakers as well as investment doors and other stakeholders.

*Firms can only make normal profits in the long run*

This characteristic is the focus of some conjecture between industry and some consumer advocates, with some consumer advocates arguing that supernormal profits have been taken by some energy businesses in the Australian energy market. For example, advocate Hugh Grant is quoted in the Courier Mail<sup>4</sup> claiming excessive profits are being made by Powerlink:

*“His analysis shows Powerlink had a return on equity 23 times higher than construction giant Lend Lease, 15.5 times higher than Telstra, and three times that of Woolworths.*

*“No other ASX 50 stock comes close to Powerlink’s returns,” he said.*

Suffice to say that there are mixed views on levels of energy company profits.

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<sup>4</sup> <http://www.couriermail.com.au/news/queensland/power-corporations-profits-face-independent-probe/news-story/54744b62bc5030fdbec175f4baa102a7>



This brief analysis indicates that most of the generally accepted characteristics for competitive markets do not hold for wholesale and retail aspects of Australian energy markets, the components that are supposed to be competitive. With new technologies and increasing complexity entering Australian energy markets, there is going to need to be careful consideration to the situations where competitive options are not feasible.

**3. *Regulate to safeguard the safe, secure and reliable supply of energy, or where it would address a market failure.***

We agree with this principle and highlight the importance of ensuring that consumer protection safeguards are in place across all aspects of energy markets, irrespective of technology.

**4. *Promote price signals that encourage efficient investment and operational decisions.***

We agree with this principle

**5. *Ensure technological neutrality.***

The concept of technological neutrality needs to be more clearly understood so that there is a common language across all energy market stakeholders. One person's idea of neutrality is unlikely to be shared by another.

The important concept in the notion of technological neutrality is that policy directives do not require a certain technology to be applied, when that technology may not deliver benefits for significant classes of consumers and may become outdated too soon. Some would argue that the rollout of Australia's NBN has used 'old technology' when a preferable technology was available and cost-effective, but became mired in politics, leading to a sub optimal outcome for the Australian public. There was considerable debate and politicking about the technologies of broadband. Some would argue that the technology neutral approach was taken, others will say that the wrong technology was taken, particularly with a medium to longer term perspective.

We agree it is important that governments, or regulators, do not try to 'pick winners' with energy technologies, but it is also important that technological neutrality does not end up becoming support for the status quo. In this situation a 'hands off' approach to technology in fact benefits incumbent businesses and technologies, almost certainly to the longer term detriment of consumers.

Rather than using the language of 'technology neutral', we suggest that the 'gas markets approach to gas reserves is a really helpful perspective. The gas industry talks in terms of the 3P's.

*"There are 3 main reserve categories under the Society of Petroleum Engineers (SPE) definition: proved; probable and possible reserves<sup>5</sup>.*

*For an oil or gas deposit to be classified as "reserves," you first need to establish technical and commercial certainty of extraction using existing technology. Once this has been established, the degree of this certainty is then decided, breaking reserves down into 3 distinct categories:*

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<sup>5</sup> <http://blog.evaluateenergy.com/what-are-3p-oil-gas-reserves-and-why-are-they-important>

- *Proved Reserves, 90% Certainty of Commercial Extraction*
- *Probable Reserves, 50% Certainty of Commercial Extraction*
- *Possible Reserves, 10% Certainty of Commercial Extraction*

We suggest that the ‘3P’ approach also be applied to energy technologies using the language of: “proven technologies, probable technologies and possible technologies, for example:

- Proven technologies include: Solar PV, lithium ion batteries, wind turbines
- Probable technologies include: electric vehicles, redox flow batteries, solar-thermal generation
- Possible technologies include: “hot rocks geothermal”, 4<sup>th</sup> generation Nuclear and tidal generation

We propose applying a 2P approach to technology with the rules and market operator ensuring that all “2P technologies” were able to operate in the market. Determination of whether a technology was 2P or 3P could be vested with a technical advisory committee, located within AEMO and including expertise from CSIRO.

Information about proven probable and possible technologies, the current state of play and known cost of implementation needs to be widely available to stakeholders and end consumers. We regard energy technology communication as a critical new function that needs to be developed, funded and applied. We suggest that the Royal Institution of Australia, RiAus provides a useful model for science communication that could be applied to independent energy technology information and communication.

#### **6. *Prefer simplicity and transparency.***

*“It can scarcely be denied that the supreme goal of all theory is to make the irreducible basic elements as simple and as few as possible without having to surrender the adequate representation of a single datum of experience.” - Albert Einstein, 1933*

We agree that simplicity is important in designing the distribution market model, but that the model is only as simple as is necessary for it to be effective. Simplicity for the sake of simplicity would be counter-productive.

The matter of transparency for consumers is somewhat vexed. It is crucial that consumers and consumer representative groups are able to see all market information impacting on the price and quality of supply, however this should not imply that most consumers are expected to be engaged with the energy market to the extent that they understand the detail and complexity behind their bills. Consumers don’t need to know the build-up of the prices of various services that make up end-user prices (as long as those services are priced efficiently) – they just need the final price signal. Transparency at the same time imposes a discipline on the market and provides clear and accessible information to support consumer engagement and needs to be available to “empowered and autonomous” consumers who have interest in greater detail about their electricity supply.

Transparency also needs to take into account transaction costs which, we suggest, are under recognised in energy markets. The costs for customers of engaging with the market, including search costs for up-to-date and comparable information need to be understood and quantified as part of the transaction costs in energy markets.

## **Missing Principle 1: Consumer Engagement**

In 2012, at the end of a considerable amount of work revising network regulation, the AEMC said:

*“A number of the amendments made also attempt to address a lack of focus on consumer engagement and participation” – AEMC RULE DETERMINATION, National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012 and National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012, 29th November 2012.*

In the same year, the Productivity Commission made the following finding as part of its review of energy network regulation in Australia.

*“the overarching objectives of the regulatory regime is the long term interests of customers. This objective has lost its primacy as the main consideration for regulatory & policy decisions. Its pre-eminence should be restored by giving consumers much more power in the regulatory process” (p 2)*  
Productivity Commission

We strongly suggest that keeping consumers at the centre of debates, discussion and negotiation about future energy markets is as important now as it was when there was major focus on reforming network regulation in 2012/13, noting that some work from that era continues particularly through the power of power of choice developments.

Meaningful consumer engagement must be a central principle for all future energy market developments, noting that consumer engagement is quite different from the principle of “facilitating effective consumer choice.” Facilitating consumer choice is how end customers respond to the market offers that they are given, whereas consumer engagement is a dynamic and ongoing process that includes voices from end consumer perspectives.

In mid-2015, UnitingCare Australia released a paper titled “the DNA approach to energy network regulation”<sup>6</sup> where DNA referred to processes that involved deliberative processes and / or direct negotiation leading to agreements between consumer interests and network businesses. Since releasing this paper, we have been surprised by the extent to which network businesses have indicated interest in these approaches. We are currently documenting recent Australian experience of processes of direct negotiation and trust building with consumer interests. We foreshadow a conclusion that direct engagement with consumer interests has application across the full gamut of energy policy and regulatory processes, well beyond the regulated revenue settings to which these approaches have mainly been considered to date.

## **Missing Principle 2: Equity**

While some may argue that the proposed principles encapsulate the principle of equity, we are convinced that it needs to be overtly set as a principle, on its own. Most of the principles proposed are orientated more to efficiency which is being achieved through market objectives where possible, we accept this but highlight that efficiency and efficient markets do not in and of themselves deliver fair outcomes across the classes of household consumers that we are considered above.

Uniting Communities is currently developing a short paper to further explore approaches to the application of equity of Australian energy markets. We are drawn to a Rawlsian approach to fairness, as articulated by philosopher John Rawls who developed the concept of the “difference principle” arguing that the greatest benefit of any change should go to the most disadvantaged members of

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<sup>6</sup> <http://noshockenergy.org/changing-dna-network-tariff-setting-australia/>

society. Applied to electricity markets, we suggest that this would mean that changes in distribution markets and other energy policy changes should have the least impact on poorer members of the community, those identified as 'vulnerable' in the preceding discussion. We recognise that there are varying approaches to the application of an equity principle, but this does not diminish the importance of capturing equity considerations, particularly in markets in transition.

Consequently we propose the following Principles of good market design:

1. Facilitate effective consumer choice, recognising each of 4 different groups of consumers, with varying capacities to respond to market changes, the customer groups being: Vulnerable, Passive (anxious), Active, Empowered / Autonomous. Strong focus given to access to information for consumers and consumer representative groups.
2. Promote competition where feasible, recognising that many of the criteria for competition do not apply to Australian energy markets and that both supply and demand sides of the market are heterogeneous.
3. Regulate to safeguard the safe, secure and reliable supply of energy, or where it would address a market failure.
4. Promote price signals that encourage efficient investment and operational decisions.
5. Ensure technological neutrality, applying a '2P' (proven and probable) approach to understanding energy related technologies. Also catalysing clear, independent of the industry, understanding about current and emerging technologies, for all stakeholders, including consumers.
6. Prefer simplicity and transparency. Including transparency about transaction costs, particularly with regard to incidence for end consumers.
7. Direct consumer engagement. All developments of market models and functioning to include direct engagement with consumer representative groups.
8. Equity. Changes in market design and function must result in vulnerable consumers being better off.

***Recommendation: That additional principles of "Direct Consumer Engagement" and "Equity" be added to the proposed list of "Principles of good market design"***

**Question 7. Are there any other issues the Commission should have regard to in considering possible market design options?**

There are additional issues that we encourage the Commission to have regard to in considering market design options are both discussed above, specifically

1. Impacts of potential market design options on different consumer groupings, we suggest that the minimum are SME's, large energy users and 4 categories of household consumer: vulnerable, passive (and anxious), active and empowered / autonomous
2. To undertake active consumer engagement in considering all significant market design options both in development and subsequent implementation stages.
3. "Transaction costs". While it is likely that transactions costs will be partially considered implicitly in consideration of potential market design options. With the growing complexity of energy markets it is imperative that transactions costs are considered explicitly and the incidence of these costs clearly identified.

**Question 8. Do stakeholders agree with the Commission's assessment of the technical impacts of distributed energy resources set out above in sections 4.1 to 4.8?**

We agree that the eight technical impacts need to be assessed, these being: voltage stability, the frequency stability, harmonics, flicker, power factor, thermal overloading of equipment, piloting and repurposing, protection.

In addition to these technical impacts, system restart implications also need to be considered. Different combinations of generation mix are likely to impact system restart sequencing, so system restart (black start) also needs to be a consideration.

**Question 9. Do stakeholders agree with the Commission's preliminary assessment of these opportunities, and possible solutions to address the technical impacts of distributed energy resources?**

We agree that the theoretical mix of ways to address supply / demand imbalance are network based, technical and operational solutions, or combinations of these. However we do not regard "operational solutions" that reduce energy exports from distributed energy sources as being optimal or desirable. Operational solutions of this type should be a 'last ditch' option is only. We favour clearly communicated, 'a priori' technical standards that provide reasonable timelines for all energy sources to respond to identified standards.

**Question 10. Do stakeholders have any initial views on who should be responsible for managing these opportunities, or implementing possible solutions to the technical impacts?**

The setting of technical standards should be able to be set by collaboration across stakeholders, including groups representing consumer interests, with collaboration the preferred approach. We suggest that the collaboration could be initiated and managed by AEMO, with them having the ability to reject a standard that was unworkable.