



7 February 2014

Energy White Paper Taskforce  
Department of Industry  
GPO Box 1564  
CANBERRA ACT 2601

Via email: EWP@industry.gov.au

Dear Taskforce members,

### Energy White Paper – Issues Paper

SP AusNet welcomes the intention of the Australian Government to develop a comprehensive Energy White Paper and values this opportunity to provide comments on the Issues Paper. Our submission on the Issues Paper is attached.

The electricity industry is faced with a period of unprecedented change and uncertainty. Rapidly advancing technologies and increasingly engaged customers provide the impetus for change, driven by environmental and economic issues.

The Issues Paper raises a number of important issues that deserve attention and debate. Some of these are shorter term in nature. In our submission, SP AusNet urges the Government to use the development of a White Paper as an opportunity to also take a longer term perspective, and to develop a vision for the future.

SP AusNet looks forward to active participation in the development of the Energy White Paper. We would be pleased to discuss our submission with you, and request that you contact Kelvin Gebert, our Manager Regulatory Frameworks on 03 9695 6603, if we can assist you in this way.

Yours sincerely,

**Alistair Parker**  
**General Manager Asset Management**

Attachment: SP AusNet Response to the Energy White Paper - Issues Paper



## Energy White Paper

### SP AusNet Response to Issues Paper

‘Complex and unprecedented issues are confronting Australia’s electricity system. They span climate change, changing energy consumption patterns, fuel source diversity, rising costs, social inequity, and accommodating new technologies and the digital age. Some of these issues have been at play over the past five years; some are more recent and continue to evolve’<sup>1</sup>.

#### Executive Summary

SP AusNet welcomes the intention of the Australian Government to develop a comprehensive Energy White Paper and values this opportunity to provide comments on the Issues Paper. SP AusNet urges the Government to use the White paper to articulate a clear perspective on the most desirable future of energy in Australia and the policy positions that will be developed to support it.

The electricity industry is faced with a period of unprecedented change and uncertainty. Rapidly advancing technologies and increasingly engaged customers provide the impetus for change, driven by environmental and economic issues.

SP AusNet considers that the current market structures have worked well, and delivered substantial benefits to customers and the Australian economy more broadly. SP AusNet agrees that the best economic outcome will generally be achieved if a competitive market framework is established and businesses operate in accordance with the incentives that are provided. The role for Government is to facilitate effective competition where possible, and ensure that appropriate competitive market structures, governance and administrative arrangements and regulatory frameworks are in place to allow competition to thrive.

The range of credible future scenarios is so diverse and uncertain that SP AusNet considers it highly desirable to develop and articulate a longer term vision for the electricity sector. This could be used to examine the extent to which changes may be required in the current market, governance and regulatory framework to maximise the possibility that a more efficient and economic industry will emerge.

However SP AusNet strongly believes that a vision for the longer term future that considers the range of future scenarios that may emerge and provides clarity on the likely policy developments to facilitate good future outcomes. This will provide stakeholders with improved understanding regarding shorter term stability in the industry framework and longer term transition envisaged.

The Issues Paper raises a number of important issues of a shorter term nature and suggests that more attention is necessary. SP AusNet would like to reiterate the importance of a stable regulatory framework to provide the necessary certainty for continued and necessary investment in network assets, at least for the short and medium term. SP AusNet considers that there have been a large number of recent reviews into

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<sup>1</sup> CSIRO, December 2013, Change and choice  
The Future Grid Forum’s analysis of Australia’s potential electricity pathways to 2050, Page 17

network regulation which have resulted in changes designed to improve outcomes for customers, and that these reforms should be allowed time to take effect.

However, one area where work is urgently required is in the area of tariff reform. This is currently being addressed by the AEMC in response to a SCER proposed rule change. Tariff reform is urgent, because existing tariffs have significant levels of cross subsidies. With the ability of customers to respond increasingly to price signals retention of these tariffs will lead to uneconomic and inequitable outcomes over the longer term. The White Paper could usefully provide a perspective on tariff reform and particularly the balance between economic and social policy objectives.

SP AusNet commends the Australian Government on this initiative and looks forward to active participation in the development of the Energy White Paper.

## **1 Introduction**

SP AusNet welcomes the intention of the Australian Government to develop a comprehensive White Paper to provide clarity on the future policy positions in relation to the development of the energy sector in Australia. SP AusNet is pleased to have the opportunity to provide perspectives on a number of key issues identified in the Issues Paper, including specific questions that have been raised.

SP AusNet is a diversified energy network business and owns and operates the Victorian electricity transmission network, an electricity distribution network in the eastern half of Victoria and a gas distribution networks in the western half of Victoria.

This submission focusses on those aspects that fall within SP AusNet's primary areas of business interest and involvement in the stationary energy sector. Further SP AusNet considers that electricity transmission and distribution issues are likely to impact its business more significantly than gas distribution because of the relatively greater level of change in the electricity sector. Consequently this submission focusses more strongly on electricity than gas. While SP AusNet's business is related solely to energy transport, network issues impact across the energy and gas market value chain, and as a consequence this submission touches on some broader but related matters.

## **2 General Remarks**

### **2.1 Significant Change is Occurring in the Energy Supply Sector**

The timing is right to consider the future energy sector in a comprehensive manner, and to take a strategic perspective. In fact SP AusNet considers this is an imperative.

The electricity supply sector and to a lesser extent the gas sector are facing a time of unprecedented change and uncertainty.

The way in which electricity consumers obtain and use energy is changing, and is likely to change dramatically in the period which the White Paper is intended to cover, which we take to be approximately 25 years. There are a number of recent studies that have focussed on the future of the electricity supply industry. The most recent and credible study was undertaken by the CSIRO Future Grid Forum. This Forum developed a range of possible future scenarios and examined the possible impacts and implications of each.

The final report of the Future Grid Forum released in December 2013 observes that

'Complex and unprecedented issues are confronting Australia's electricity system. They span climate change, changing energy consumption patterns, fuel source diversity, rising costs, social inequity, and accommodating new technologies and the digital age. Some of these issues have been at play over the past five years; some are more recent and continue to evolve'<sup>2</sup>.

The report outlines the significance of these issues under the headings "price shock in electricity supply", "decline in peak demand and consumption", "lack of connection between consumer prices and costs of services delivered", "greenhouse gas emissions, carbon policy and climate change vulnerability", and "shifting attitudes to reliability and its cost".

## **2.2 A Longer Term Vision is Needed**

While significant industry changes may take some time to emerge fully it is important to provide some leadership and guidance for industry to ensure that the future development is as productive as possible. With the potential for changes that result in the electricity industry being very different from today it is necessary to consider whether the current administrative, governance and market structures will continue to be applicable, or whether modifications will be necessary. SP AusNet considers that this requires very careful consideration as part of developing a vision of the future for the electricity sector in Australia. While it may take some time for the future direction to become clearer the supporting structures generally take a protracted period to achieve change, and if initiated now there is the benefit of having the time available to consider these issues thoughtfully.

The Issues Paper correctly identifies a number of industry developments that appear likely to accelerate. A heightened level of uncertainty will accompany these changes. There is a need for the White Paper to recognise this uncertain future and promote a policy framework for the future, which has the flexibility to accommodate possible future scenarios.

Above all SP AusNet considers that the White Paper provides the opportunity for the Australian Government to set out a longer term vision for the development of the energy sector, and most specifically the electricity market in Australia. Consideration of policy options to facilitate future arrangements will allow the most desirable future for the energy sector in Australia to emerge in the changing environment.

It is also acknowledged that the electricity market has been frequently reviewed to improve its operation. While this has been successful in addressing some of the existing anomalies such an approach is unlikely to be able to achieve the fundamental change to market structures, governance and regulatory frameworks required to facilitate the emergence of a significantly different industry. It is essential for policy development to take a long term view of the future, and to ensure that options are developed that will have the flexibility to encourage and support efficient future changes, many of which may not yet even be able to be envisaged. The White Paper provides the ideal opportunity to develop a longer term perspective, which in turn could allow continued evolution of the current market with more clarity of the longer terms directions and outcomes.

## **2.3 Specific Policy Options should be Developed**

Often where projects have been carried out to consider longer term industry direction there has been a tendency to consider it at too high a level, and in a generalised manner.

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<sup>2</sup> CSIRO, December 2013, Change and choice  
The Future Grid Forum's analysis of Australia's potential electricity pathways to 2050, Page 17

Ideally either through the process of developing the White Paper, or through a subsequent process which it might prescribe, it is desirable to develop some more tangible and detailed policy options for ensuring the effective development of the sector.

SP AusNet considers that with the rapid change and uncertain future it will be important to be more prescriptive, at the earliest possible time to provide some direction and clarity as the electricity industry is transformed. This will provide stakeholders with improved understanding regarding shorter term stability in the industry framework and longer term transition envisaged.

#### **2.4 Attention to both Short and Long Term Considerations is Necessary**

Two different timeframes apply to consideration of future change. In the nearer term time frame it is important to ensure that detailed plans are developed to achieve the desired short and medium term outcomes within the current market framework and operating environment.

The longer term consideration needs to focus on whether or not future changes in the environment or objectives requires a fundamental change to the market frameworks and regulation, and include identifying and promoting policy approaches that may be necessary to support these.

It is important that the White Paper gives due attention to the longer term issues and developing a longer term vision with relevant policy options, especially as the existing market governance framework has proven to be capable of managing the current reviews.

#### **2.5 Recent Reviews have Reformed Economic Regulatory Processes**

Considerable attention has been given to the shorter term issues through the current institutional arrangements. A large number of reviews have been conducted recently, particularly focussed on network regulation to address general concerns regarding the rapidly increasing costs of energy, and the claim that this has been predominantly driven by increasing network costs. This has resulted in changes to many elements of the regulatory framework for networks. The areas reviewed include revenue setting, the merits appeals mechanism, customer engagement, network reliability standards, network investment policies, demand management and energy and network efficiency.

The following comments are relevant to the Reviews that have already occurred:

These reviews have been conducted in a rigorous manner by the existing market institutions that have this responsibility;

They have involved extensive stakeholder consultation, in accordance with the Rules;

The key drivers of the reviews was broad concern relating to energy prices, and as a result they focussed very clearly on addressing this to the maximum extent possible, given the legitimate competing interests across all stakeholders, and with appropriate consideration of long and short term issues;

The reviews led to a number of recommendations which have recently been implemented, or where implementation is in the final planning stages. It is anticipated that these changes will increase the rigour in regulatory processes although it is premature to judge whether or not significant improvement in the electricity market has been achieved in practice;

It is an endorsement of the current governance arrangements that such a comprehensive series of reviews could be envisaged and successfully conducted within a relatively short

time frame. This in itself should give a high level of confidence in the basic industry structure that has developed over the life of the National Electricity Market, although this does not necessarily mean that it will not require later modification to ensure consistency with longer term industry development.

SP AusNet considers that while it is reasonable for the White Paper to identify some of the issues considered by these reviews as critical for the future of the electricity sector, it is not necessary to develop alternative approaches for imminent implementation. It is relevant to foreshadow future developments or assess the likelihood that these initiatives can continue to support the industry with alternative long term futures.

## **2.6 A Stable Regulatory Framework is Necessary**

A key objective of network regulation is to provide a stable regulatory environment. This is necessary to allow network owners to invest with confidence in the capital intensive and long life network infrastructure that is still central to the delivery of energy at lowest cost to customers. A stable regulatory environment has been a feature of the Australian electricity market and has a diversity of investors to enter the market and efficiently fund necessary network augmentation and asset maintenance and replacement programs.

This investment has been significant over the past decade. Despite the emerging trend of reducing electricity consumption, and the economic incentives to further develop approaches to entrench this trend, it will take a significant time to impact fundamentally. While this submission points to significant industry change over the next decades even in the most aggressive scenarios traditional network infrastructure will be required to support efficient energy transfers for many years. There will be an increasing focus on alternative means of meeting energy transfer needs, which also require investment, but it is a fact that significant investment will continue to be required, to ensure efficient operation of the NEM and to provide lowest costs to customers.

SP AusNet carries out detailed economic analysis of all network investment proposals to ensure that they are justified and eligible to be treated as a regulated investment. Whilst the scale of the capital works program required to augment the network has reduced with falling demand and is more concentrated to urban fringe corridors where rapid growth is still occurring, significant capital works continue to be required. These are associated with the renewal of parts of the network that have reached the end of the technical lives of the assets and to ensure that the network continues to be operated safely and reliably.

Any additional risk that is perceived in the regulatory frameworks increases the financing costs of such investment, ultimately increasing the cost to customers or even delaying the investment in the required infrastructure.

Continuing reviews of the sector create additional uncertainty and contribute to perceptions of additional levels of risk to investors. This occurred during the recent intensive round of reviews and coupled with continuing downward pressure on the WACC parameters by regulators has the potential for this investment to become less attractive.

This submission identifies the high degree of uncertainty that exists in the energy sector regarding the longer term development of the industry and the need for a review of the possible longer terms outcomes and approaches. However this does not need to be done in a way that increases the uncertainty in the shorter term. SP AusNet considers that the finalisation of the current reviews and experience through their implementation, together with addressing network tariffs (discussed later in this submission) provides a very sound basis for a stable and robust regulatory framework in the short to medium term.

Therefore SP AusNet strongly believes that the vision for the future developed in the White Paper should reiterate the continued adherence to the established regulatory framework (as recently modified) in the short to medium term while providing clarity on some of the policy directions that are proposed to deal with the longer term industry transformation. This will provide some certainty to investors in long term network assets. Confidence can be improved by providing assurance on shorter term arrangements in this way, while tempering uncertainty about possible longer outcomes through the provision of information on policies to be adopted.

Nevertheless, SP AusNet recognises it is a potentially challenging task to embark on a series of longer term reviews without negatively impacting on the necessary level of certainty and risks that are perceived by investors in the short term. This will need to be carefully considered when any recommendations for such work are developed.

## **2.7 Summary of Remarks**

In summary SP AusNet considers that the primary purpose of the Energy White Paper is to provide a longer term vision for the future, and to identify appropriate Policy approaches that may need to be considered to ensure that the vision can be achieved. Too much focus on short term issues will compromise the ability of the document to achieve this broader objective.

## **3 Future of the Electricity Sector**

### **3.1 The Future Network will be Part of a Transformed Electricity Industry**

It is almost certain that the electricity industry is poised for major transformation over the next 25 years. It is likely that there will be changes in the way electricity is generated and transported, but more importantly in the way it is managed and used by customers. It is impossible to accurately predict all the innovations that will occur, but it is possible to articulate some of the likely characteristics of the electricity sector, and electricity networks of the future.

The future is likely to be characterised by significantly increased diversity and choice for electricity supply and generation options, with customers having sufficient knowledge and information to become extensively involved in arranging their own energy needs. In this respect it could be expected that effective customer markets will develop, with increasing competition supported by extensive information, including that sourced from smart meters.

Technology advances are driving the need for change as well as representing a tremendous opportunity for developing an advanced energy delivery system. Technologies already include solar photovoltaic generation, efficient lighting, electric vehicles and energy management systems. Batteries could be employed to increase the flexibility of networks. Electric vehicles, with significant charging demands could become much more commonplace in the future.

Customers may employ sophisticated energy management systems to optimise their energy needs. Such systems could be “set-and-forget” devices responding to information supplied by a smart meter or through the internet. This may include additional control through remote access capability.

Technology advances in control and communications within networks will be vital to support matching of supply and demand within networks and ensuring stable power

system operation. Some network businesses are already making advances in developing automated systems which minimise the number of customers and duration that are off supply due to an unscheduled event. Other intelligent applications are already being developed to predict and schedule work crews to minimise outages. As populations grow and weather events become more disruptive the ability of a network to be highly resilient is extremely important as customers increasingly expect uninterrupted supplies of stable power.

The network of the future will become more complex as it deals with highly variable flow patterns arising from the geographical diversity and the variability of many more individual generation and supply points. The network will employ intelligent monitoring, control and communication systems to ensure it can manage the dynamic demand and supply capabilities by intelligently utilising information from a communications system interfaced to sensors, controllers and meters. This will be necessary to allow the networks to be operated efficiently within the constraints that are imposed on it.

For example the provision of intelligent controls that integrate with each other and with the network could be employed to control the charging (and perhaps discharging) of electric vehicles. This control would ensure that network capacity problems are managed during the charging cycles (by ensuring that charging is not permitted at times of system peak) but may also be used to export power into the network at times of peak loading, thereby reducing network stresses, and ultimately the need for augmentation. There are a range of similar possible applications for other technologies. Technology advances in control and communications within networks will be vital to support matching of supply and demand within the network and to ensure stable power system operation.

Participation by customers will be required to manage energy into the future. A range of new technologies will be employed across the entire energy value chain (but particularly at the customer end) with data, information and communication systems that allow a diverse range of capability to operate together. It will provide a substantially increased level of engagement by a wider range of industry participants, but in particular providing substantially increased opportunity for customers to have access to information and technology that allows them to interact with a customer market.

In summary, while it is difficult to be precise regarding the nature of the future network, it is likely to exhibit the following characteristics:

- Multi-Directional Energy Flow:

In the future the flow of energy will be increasing both to or from the customer (who has local generation) or even between customers, between communities; essentially to and from any direction where there is a viable supply connection.

- Multi-Directional Data and Information Flow:

The future network will be supported by the movement of data and information, similarly to the energy flow, in all directions including appliance to appliance, appliance to the consumer, appliance to its manufacturer and business to home.



- Active Balancing of Supply and Demand:

The future network will allow for active demand response from appliances, customers, businesses, equipment and communities to adjust their energy demand to take advantage of whatever form of energy is abundant and/or to better match demand with supply.

The key components of the future network may include:

- Distributed generation technologies;
- Network batteries;
- Electric vehicles;
- Advanced meters;
- Customer systems, including energy management systems;
- Demand response;
- Distribution Management Systems and Distribution Automation;
- Transmission Enhancement Applications;
- Asset and system optimization; and
- Information and communications systems.

### **3.2 There are Clear Implications for the Network Businesses**

The rapid evolution of networks, underpinned by various technology developments, has significant potential to revolutionise network service provision, and facilitate a significantly enhanced customer service offering and relationship. The following are examples of the manner in which the role of the network businesses and the services provided may change in the future, and where consideration may be required in the White Paper.

The National Energy Customer Framework already encompasses a triangular relationship between customer, network service provider and retailers. However this may not be sufficient to support broader customer engagement with networks in the future.

Some customers may become market players with distributed generation, and choice of usage and retailer or supplier options. The form, structure and the role of networks may change, including the potential for significant blurring of what may currently be considered a relatively clear distinction between regulated and competitive services. It is possible that networks may offer services that interact strongly with the energy market, and the regulatory framework may need to evolve to support such activity which enhances energy services value to customers. For example the network may become a back-up supply for customers, an integrator of distributed renewable generation, a supply/demand balancer and an information provider to allow energy management.

These functions have not traditionally been critical to the operational management of the distribution network, however with significant distributed generation the network as the core of a distribution system may very well emerge. Distribution networks may be required to optimise and control energy resources.

The viability of alternatives to network services will increase as technology develops. The reducing cost of photovoltaic generation as a result of technological improvement and large scale production has been dramatic. Future advances in battery technology may similarly improve the viability of alternative energy solutions, by providing economic

storage capability. At the same time such technologies can also support enhancement of network services.

SP AusNet considers it likely that changes in the market and governance arrangements will be necessary to provide consistency with these likely future changes, but time will be required to investigate the issue in detail, and arrive at appropriate policy positions.

### **3.3 There are also Clear Implications for the White Paper**

The future shape of the electricity industry will be influenced by the policy options adopted to facilitate its transformation. The development of an Energy White Paper provides the appropriate mechanism to highlight an energy vision and identify some longer term planning to facilitate change and make transition as smooth and effective as possible.

The previous discussion on the potential future for the industry cannot be claimed to provide a high level of certainty regarding the nature of the industry in the future. Nevertheless it is important for the White Paper to recognise the possible future trends and to develop policy positions that may facilitate the development of those positions that are considered desirable, or at the very least remove any clear obstacles that may inhibit desirable positions being achieved.

The Issues Paper identifies some of the potential changes in the electricity sector that may require changes in policy direction. However some of these are considered with a relatively short term focus, identifying potential changes that are in many cases already evident, and frequently where some action is already in train.

The changes outlined are likely to impact the entire energy value chain, and an end to end review of the energy sector is desirable. It would not be surprising to find that adjustment is necessary to ensure that economic and customer focussed changes are not prevented from occurring. Given the protracted time for such reviews to take place and to be implemented it is desirable to commence this as soon as possible, and the White Paper would seem an appropriate vehicle to at least signal initial intentions.

## **4 Specific Issues for Consideration**

Given the possible future development of the electricity sector as briefly outlined above this section includes further discussion on some of SP AusNet's perspectives on matters raised by the Issues Paper. Many important aspects are raised in the Issues Paper, and it is useful to consider them in the broader context of significant future change. One thing to be cognisant of is that there are significant links between individual issues and policy direction may require an integrated rather than an individual issues based response. While it is useful, and from a practical viewpoint perhaps necessary, to consider aspects individually it will be important to draw these together to support the future direction of energy in Australia.

The discussion in the following sections attempts to identify some key overarching themes and how some of the issues raised fit within these.

## **4.1 Security of Energy Supplies**

### **4.1.1 An Incentive-based Distribution Network Reliability Standards Framework Will Deliver Efficient Outcomes**

The Issues Paper discusses the linkage between electricity network prices and the reliability standards that underpin network service level. It notes in-principle agreement by the jurisdictions to adopting a national reliability standards framework. This is a short term issue for consideration by the Standing Council on Energy (SCE).

A framework for electricity distribution network reliability standards has been developed by the AEMC and is currently being considered by SCE. In SP AusNet's view the recommended framework is cumbersome, disconnected from key economic incentives for management of networks and likely to result in confusing signals for networks and consumers. This is in contrast to the approach recommended by the Productivity Commission in its review of Electricity Network Regulation.

SP AusNet supports the interim recommendations made by the AEMC, which the SCER agreed to implement late in 2013. These are for assignment of responsibility for establishment of VCR values (customer surveyed determination of the value customers place on the value of reliability) and for development of a consistent set of reliability measures to be applied.

For further consideration of a national reliability standards framework SP AusNet submits that best practice and efficient outcomes will be achieved by arrangements which base reliability performance on economic incentives to maximise benefit of service to customers in alignment with VCR.

## **4.2 Regulatory Reform**

### **4.2.1 The Economic Regulatory Model Should Develop to Align with Future Scenarios**

The Issues Paper seeks comment on issues relating to the regulation of energy infrastructure.

This is an important issue for the energy sector and as already noted, has been the subject of extensive reviews in recent years, aimed at addressing the substantial and increasing price rises for energy, and in the network component of those costs. There seems to be a preconceived notion of what might constitute a "reasonable" cost for provision of networks, and to the extent that the changes proposed to the network regulation arrangements do not appear to be delivering this outcome it is concluded that the network regulation regime is not satisfactory and requires further review and change.

It must be recognised that the objective of lowering network charges to customers, while perhaps the most significant objective of good network regulation is not the only objective. Two other important issues that must be considered is the quality (or reliability) of the service provided, and to ensure that the arrangements deliver outcomes which are sustainable in the long term as well as the short term. Indeed the Issues Paper recognises these aspects as it notes that it is important to have a regime that encourages the correct level of investment.

It is reasonable to expect that the recent reviews into network regulation have delivered the best possible outcomes. Conversely it is not reasonable to suggest additional reviews with similar terms of reference will further improve regulatory outcomes. In other words the outcomes of the recent reviews should be accepted as the best outcomes that

could be delivered by a rigorous analysis process within the current environment and market frameworks. The rationale for this view has been outlined earlier in our submission.

However SP AusNet considers that it is important to consider, or to establish a process to consider alternative forms of network regulation and market design to facilitate and support the longer term vision of the electricity sector. While the future of the industry is very uncertain, as previously noted there are a number of very credible scenarios under which the electricity sector will be vastly different in the future, and where the network sector in particular may provide a significantly different role with a different set of services. It is likely with increased consumer engagement there will be competition in network and network related services, which will inherently call into question the entire basis and rationale for network regulation.

SP AusNet therefore considers that the Energy White Paper needs to provide some policy direction and guidance for the possible future of network regulation and market structures that might be necessary to support the future industry direction. This is considered particularly prudent given the complexity of network regulation and the interaction with energy markets, and the extended timeframes generally associated with achieving changes in regulation.

A challenge in identifying significant change in regulation is to do this in a manner which does not unnecessarily disrupt the continuing provision of network services. A stable regulatory environment is key to the continuing investment in regulated network assets. Even the most extreme future changes that can be envisaged take an extended period of time to unfold, and requires a high level of dependence on centrally supplied transmission and distribution networks. A stable regulatory framework that allows network businesses to recover all investment costs is required for a strong and stable investment climate.

A very significant issue is the future recovery of the investment previously made in the current regulatory environment. There is rising disquiet that reductions in network use as (and if) demand continues to reduce may result in a focus on this issue. Investors must be confident that these costs will be fully recovered over the long life of the assets involved to ensure essential investments continue to be made, and/or the costs of capital do not blow out.

The early articulation of some of the options for the future of the energy sector and the implications for networks and the manner in which they are developed and implemented will be valuable in allowing early adjustments to current practices. It will allow some potentially significant risks associated with reducing network utilisation to be better managed in a measured way. For example the existing regulatory framework provides some incentives to drive better network performance, increase its utilisation and achieve greater cost efficiencies through use of new technologies. However there is likely to be much stronger emphasis required for this in the future.

#### **4.2.2 There is Urgent Need for Fundamental Electricity and Network Tariff Reform**

Tariff reform may be considered a specific area of network and energy price regulation, but it is relevant to treat it separately. It is addressed as a separate issue within the Issues Paper and has been the subject of increasing interest as the electricity environment becomes more competitive and additional choices become available.

Tariff reform is currently being addressed through a rule change process arising from the Power of Choice Review, however there is concern that the current review may not take a

sufficiently broad perspective. It is also not evident that the broader tariff reform need is achieving the necessary level of urgency.

Tariff reform is becoming urgent in order to address the growing disparity between the network costs and the manner in which they are recovered from customers. There has always been a disparity, in part driven by the complexity, impracticality and the public policy issues associated with aligning costs and prices. The current urgency arises because customers are now willing and able to respond to incentives delivered through price signals and to the extent that they do this in response to inappropriate price signals there is potential for uneconomic outcomes, both for the customer and the overall electricity system.

Therefore the need for genuine tariff reform is primarily driven through the theme previously identified, that is, the increasing interest and ability of customers to become involved in sourcing their electricity supplies. The outcome is that customers may be required to meet the costs of network provision imposed by other users, or respond by taking action to reduce their usage, perhaps through the installation of solar cells or other on-site generation even though this will not change the network costs, the majority of which are sunk costs.

There are two main factors that lead to the distortion in the current tariff structures, and where reform is necessary to mitigate the uneconomic impacts of reducing network use:

(i) Network prices do not reflect costs

Network costs are largely fixed in the short term, and a considerable portion is also fixed in the long term as well. However under typical tariff arrangements the major portion of these is recovered from customers through variable energy based usage charges. The reason for this is largely historic as fixed price components are unpopular with customers and policy makers as they are considered regressive, penalising lower users of energy. Fixed network charges also present a problem for retailers as they are restricted in their ability to pass these through to customers for the reasons noted above.

However from a network perspective the recovery of fixed costs through an energy charge is distortionary. It signals to users that they can reduce their charges by reducing their energy use, perhaps by substituting network supplied energy by their own source, when in fact it does not reduce the cost of providing them with the network service.

Tariff reform is required to remove this distortion as soon as possible as it has already led to energy sourcing investment which is uneconomic. As noted, achieving such a change can be expected to be challenging from social and political perspectives.

(ii) There is substantial geographic price distortion

The costs of providing a network vary greatly with location. There are many more assets required to provide supply to a remote rural location compared to an inner urban area. In addition the customer base from which these costs would ideally be recovered is very much smaller than is the case in an urban area. Therefore it would be expected that the actual unit costs of providing network services to a remote rural area would be very much higher than for a densely populated urban area.

A possible outcome from this distortion is that urban customers, who have a reliable low cost network based supply, have additional incentives to reduce their consumption or supply their own energy needs as a result of the relatively high network charges (compared to the actual cost) imposed on them through the averaged tariff. There is no economic case for this.

Conversely remote rural customers have an incentive to reduce usage, but the incentive is very much less than the actual cost of providing the network. There are some circumstances where it may be economic and beneficial to replace network supplied electricity with self-sufficiency, but the signal to do so is dampened by the averaging that is applied to network prices across the franchise region. In other words the price signal might be dampened.

A significant issue that emerges for network businesses is the potential to drive a cycle of significantly increasing network prices, as network costs are recovered through a decreasing number of units. In other words the unit costs of the network, recovered through prices for consumers will continually increase as the base decreases. This is further exacerbated by the fact that these “units” are not strongly related to the network cost drivers under the tariff structures that have generally been adopted.

Industry commentators are drawing attention to this issue. It will require careful planning to ensure that the utilisation of network assets is maximised, and effective use is made of available assets where the costs have been sunk. However in the meantime it would be very unfortunate if the issue is further exacerbated through customer response to the imperfections in the incentives placed on them through current distribution network tariffs.

A challenge to achieving economically desirable tariff reform arises from the need to provide practical solutions which can be implemented from a social policy objective. This has always been an issue in the area of electricity tariffs where there is a history of situations where legitimate social policy objectives have led to compromise outcomes for tariff design. The most obvious example is the uniform tariff policies that have persisted for many years and the relatively low fixed charge applied to network bills despite the fact that a large portion of the cost is fixed.

However, with customers who are knowledgeable and able to engage in their energy planning and use, lowering their contribution to meeting the fixed cost of providing network services, the historical approaches are impacting those more vulnerable customers they were intended to protect.

The development of the White Paper provides an opportunity to highlight the issues associated with the existing tariff structures and explore the potential for taking the public policy debate forward in a constructive manner.

#### **4.2.3 Separation of Network and Energy Bills would Benefit Customers**

One approach that SP AusNet considers is worthy of further consideration as part of a broader review of tariffs, and perhaps industry structure in general is the potential for unbundling of the network and energy tariff. In fact SP AusNet believes that the option of separate billing for energy and network services may be an appropriate change that is more consistent with the changes likely to occur in the nature of the industry in the future, the blurring of services between energy and network services and the desire to further develop the competitive nature of the industry, particularly with proposals for smart metering to be rolled out on a competitive basis in the future.

SP AusNet considers separate network billing may offer the following advantages in the future:

It ensures that the price signals established for the use of the networks (as agreed by regulators) can be passed on directly to customers without being potentially distorted in the way they are passed through by retailers;

It allows additional network services and benefits to be offered to customers by network businesses;

A direct customer relationship will ensure that network businesses become more customer orientated and improve the delivery of regulated services, and promote recent Rule Changes to ensure customer engagement is part of the regulatory determination processes;

It will facilitate effective competition in the delivery of in-home energy services and achieving effective demand management and energy efficiency outcomes;

It facilitates the integration of network benefits and energy market benefits, which will be the key to unlocking the maximum potential from future innovations.

SP AusNet acknowledges that this matter would require much more detailed consideration in a broader review of the future of the industry before it could be seriously contemplated.

#### **4.2.4 Entities Driven By Strong Governance Obligations Face and Respond to Strong Efficiency Incentives**

The Issues Paper raises the question of the scope and benefits of privatising additional Government services.

In principle the regulatory framework applying to electricity network regulation in the NEM was developed to apply transparently and uniformly across the network sector, and has been applied by regulators on this basis since the inception of the NEM.

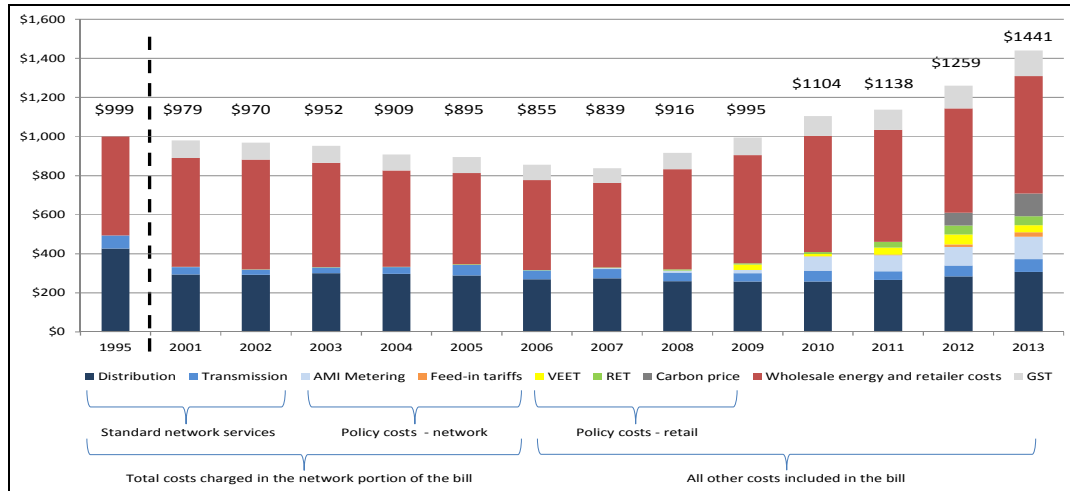
It is useful to consider the outcomes that have been achieved by the privatised industry in Victoria compared to the non-privatised businesses. The Victorian distribution network businesses recently commissioned a report by Oakley Greenwood<sup>3</sup> to compare the price impacts of distribution networks in Victoria compared to the other States, and the relative contribution to electricity bills since the privatisation of the industry in Victoria.

Figures 1 and 2 below are drawn from the Oakley Greenwood report, and show the composition of electricity bills in Victoria.

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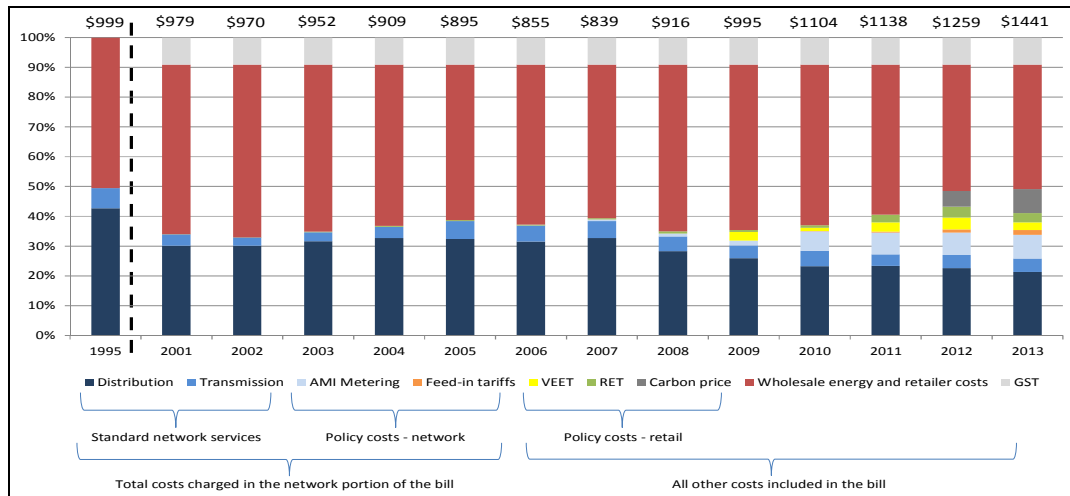
<sup>3</sup>Report "Causes of residential electricity bill changes in Victoria, 1995 to 2013" prepared by Oakley Greenwood for the Victorian electricity distribution businesses, Updated Version February 2014

**Figure 1: Composition of the annual residential electricity bill in Victoria (4,000 kWh; without electric off-peak hot water), FY1995 and FY2001 to FY2013 (2013 dollars)**



Note: The figures at the top of each bar show the total annual bill for a residential electricity customer in Victoria without electric off-peak water heating that uses 4,000 kWh over the course of the year.

**Figure 2: Per cent composition of annual residential electricity bill in Victoria (4,000 kWh; without electric off-peak hot water), FY1995 and FY2001 to FY2013 (2013 dollars)**



Note: The figures at the top of each bar show the total annual bill for a residential electricity customer in Victoria without electric off-peak water heating that uses 4,000 kWh over the course of the year

The trend in the cost of electricity in Victoria is explained in the following excerpt from the report.

*“As can be seen in Figure 1, the annual bill of the average Victorian residential electricity consumer on a single rate tariff using 4,000 kWh per year has increased by \$442 from 1995 to 2013 – an increase of 44.2%. However, the different components of the bill have not changed at the same rate over that timeframe.*



*Since 1995, network-related costs in total – including the cost of the Victorian Government’s smart meter program and solar feed-in tariff – have increased by only 3.0% - an increase of just \$15 over those years. The non-network related components of the bill – the cost incurred by retailers in purchasing electricity from the wholesale market for use by residential customers and maintaining customers’ accounts, plus the costs of policy initiatives that affect the wholesale and retail portion of the bill – increased by \$295 (58.4%) over the period.*

*More specifically:*

*Although the cost of all network-related services increased by \$15 over the 1995 – 2013 period, the cost of ‘standard’ network-related services actually declined by \$122 in real dollar terms over the period, a reduction of 24.7%. This reduction was almost fully offset, however, by the introduction of two initiatives by the Victorian government: (a) the mandated roll-out of smart meters, which included the cost of purchasing and installing the meters, and the communications and IT infrastructure required for their operation, and (b) Premium Feed-In Tariff, which provides incentives to households whose small-scale solar PV systems feed electricity back into the grid. The costs of both of those programs were recovered through charges that affected the network portion of consumers’ bills. These programs have added \$137 in costs to the annual bill of the average residential customer by 2013.*

*In terms of their contribution to the total bill of the average Victorian residential electricity user, network-related costs – including the costs of policies that are included in the network portion of the bill - have decreased over the 1995 – 2013 period, from 49.5% to 35.4% of the bill.”*

This indicates that in practice the outcomes in the privatised sector have been significantly different to those from Government owned businesses. Investor owned business appears to respond more to the incentive based regulatory regime, which has resulted in lower network costs. Strength in governance arrangements and the disciplines of participating in capital markets are factors commonly observed as contributing to a strong business driver for efficiency improvement and responsiveness to efficiency incentives in the regulatory regime.

SP AusNet considers that different ownership structures has resulted in more cumbersome regulatory arrangements. The most recent example is the reliability frameworks for distribution networks. The AEMC’s proposed national reliability framework would seek to extend this to the privately owned sector, where incentive based regulation is effective. In other cases, it is possible to postulate that some controls within the national regulatory framework have arisen in response to the purported excesses arising in conjunction with state ownership.

SP AusNet concludes that the different ownership structures have placed an additional and unnecessary burden through increased regulatory obligations on the whole of networks sector. Future regulatory developments should seek to ensure that the principles of competitive neutrality are strengthened to ensure governance disciplines and response to incentives are fully embraced.

## **4.3 Driving Energy Productivity**

### **4.3.1 Electricity services are increasingly driven by customers**

Customers have both increasing motivation and increasing capability to become much more strongly engaged in the provision of their energy needs. The increased motivation

comes primarily from increasing electricity prices. This is possible as a result of the significant level of information that is now available to them on their energy needs and usage. In addition technology development is facilitating a significant level of customer participation.

These factors are causing customers to take a much greater role in defining their needs and drive the energy services they require, including seeking alternative ways of meeting their electricity needs. This trend may accelerate given the continually increasing pace of change in technological development.

Potential future energy supply scenarios have been discussed earlier in our submission. The Issues Paper identifies customer issues in a number of areas.

This includes taking an active role in determining their energy reliability requirements as a key input in developing a consistent national framework for network reliability.

The increasing level of customer choice and engagement represents a very significant paradigm shift in the electricity industry. While circumstances and motivation may be considered to make this an inevitable trend the future performance of the sector may be greatly enhanced through appropriate policy measures and specific customer education that will:

Provide an effective framework to allow customers to participate directly in a “market” for electricity; and

Provide customers with the skills, information and tools to allow them to interact as efficiently as possible within a customer market framework.

Implicit in this development is the notion that customers will have the ability to determine their preferred energy services, taking into account the costs, reliability and sustainability of services currently provided by the network compared to other sources, as well as the ability to optimise the performance of their chosen source.

In the ultimate this will provide a clear view of customer expectations regarding their electricity services, including the desired level of reliability and security, through competitive market discovery.

Recent regulatory reforms have introduced a number of avenues for customers to better understand and engage with the networks sector. These include the establishment of the Consumer Challenge Panel within the Australian Energy Regulator, requirements in the revenue setting process for network businesses to consult with consumers, and enhanced reporting and engagement requirements in annual network planning and investment assessment activities.

SP AusNet considers that it would be valuable for the White Paper to articulate a vision of a customer led energy sector and broadly identify some of the key policy direction that may be necessary to facilitate this outcome.

#### **4.3.2 The Role of Energy Networks is Changing**

Section 3 provided some of SP AusNet’s perspectives on some of the possible future characteristics of the electricity system and the electricity networks in particular. It is evident that there are many possible changes in the structure and the services provided by networks and potentially other parties.

These issues are not new. It has always been recognised that there is a significant interaction between the regulated network sector and the competitive market. The principle in establishing the existing regulatory framework was to expose as much of the

market and the range of services to competitive pressures as possible, and to minimise the extent of the scope of regulated services. Notwithstanding this there are inevitably interfaces which have been difficult to manage. Perhaps the best example is the interaction of the transmission network, both operational and augmentation planning with outcomes in the wholesale market. Indeed the interaction between the wholesale market and the transmission sector remains an unresolved matter in electricity markets throughout the world, and is continuing to be addressed in the NEM, most recently through the proposed joint AEMC/AEMO work to consider Optional Firm Access.

These issues are likely to become more challenging in the future as the range of services and the nature of networks change. There will be an increasing number of options and services in the future that can potentially provide an option to network development (i.e., compete with networks) and others that may provide a range of benefits across the energy value chain.

The range and possible benefits of such service is likely to grow over time. In essence it is likely to mean that there is a high degree of blurring between services or options that retailers and customers may favour to provide them with energy market benefits, and which networks may also wish to employ to address a network constraint. In such circumstances there is clearly an interaction between the competitive and regulated sectors. This is likely to raise other issues including appropriate ring-fencing arrangements on one hand, while increasing the potential for suboptimal outcomes on the other.

In addition to this increasing level of blurring between regulated and retail services the nature of network services may also change in the future. This includes for example the extent to which the future network provides stand-by capability as an insurance against outage of a customer's on-site generation for example rather than a traditional energy transfer service.

The question of the services provided by networks, and to a lesser extent the role of networks has already been addressed through a number of recent market and regulatory reviews. There seems to be a continuing trend to extend the scope of competitive services wherever possible (in line with the principle adopted at the time of the development of the NEM), however it is not always clear that this will provide the most efficient or economic outcomes.

Recent examples include the conclusions arising from the AEMC Power of Choice Review. There are questions on the ultimate efficiency and effectiveness of recommendations relating to provision of smart meters on a contestable basis, and demand bidding. The demand bidding recommendation from the Power of Choice Review is currently subject to cost benefit assessment. The national smart metering deployment framework has yet to provide the necessary confidence that the considerable benefits to networks via the technology will be accessible.

Therefore we note and support the Issues Paper where it points toward "reform of the electricity and gas markets to improve efficiency and user choice"<sup>4</sup>. Our concern is however that here have been some instances via recent decision making where outcomes focussed toward greater consumer choice may not actually lead to improved efficiency. SP AusNet urges that any reforms need to ensure the best interests of consumers are reflected, based on testing of likely industry outcomes and impacts. This is likely to become a much more significant issue in the future as the range of services and overlap between them is likely to be much more extensive.

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<sup>4</sup> Energy White Paper Issues Paper, page i

We also note that the Issues Paper discusses the government's desire to encourage demand side participation, and references the Power of Choice recommendations. One of these recommendations was for the correct regulatory incentives to be placed on DNSPs such that they are equally rewarded for taking demand side solutions. This is an important aspect to progress, and we understand SCE has recently presented a rule change to the AEMC on this matter. Network businesses need to be able to diversify away from traditional network solutions, and make that part of their business model, to ensure they provide the most economic solutions, accounting for near term requirements and having regard to longer term energy supply scenarios, as this will provide more efficient and lower cost outcomes for customers.

There are already requirements in the National Electricity Rules to ensure that networks seek the most economic alternative when identifying the need for network augmentation. However as the range of options increases through technology development, the number of parties that might provide them expands and the value and the overlap of benefits increases. This needs to be revisited to ensure economic solutions of providing energy related services that include more economic alternatives to networks are not inhibited.

#### **4.3.3 Distributed Energy Resources Will Benefit from Integration and Optimisation**

One matter that SP AusNet believes will be critical in developing future industry arrangements is the level of integration and optimisation that can be achieved between individual devices and systems. Power systems are complex and require a degree of integrated system planning and operation to ensure that it operates safely, securely, reliably and efficiently. This has been achieved in the past at the wholesale level by detailed system planning of the transmission network and the establishment of the transmission and system operator functions, which are now carried out by AEMO.

This function is essential both in terms of day to day operation to ensure matching of supply and demand, to provide for the reliable operation of the overall system and to optimise the cost of providing the required energy, for example through the generation dispatch function.

There are also medium and longer system planning aspects associated with these functions to ensure that the system can continue to be operated reliably and efficiently in the future. This does not extend to actual planning responsibility in most cases, but does require the specialist system oversight to ensure that appropriate supporting systems are in place, perhaps including control software and equipment, or if this is not going to be the case to identify to the market the restrictions that may result, and ultimately to impose any limits that may be required.

In a future market framework with a significantly increased level of customer sophistication and involvement there is likely to be the expectation that parties including individual residential customers will be able to connect generating and demand equipment to the networks, and that these will operate to provide the benefits that they anticipate from it. This may include a plethora of new generation alternatives, battery storage and electric vehicles, as well as much smarter and sophisticated electricity appliances.

It is possible that this degree of choice and diversity may be able to be effectively administered through existing open access approaches. Individual network businesses would need to manage the new connections subject to technical connection standards and would need to develop and operate the system to facilitate energy transactions and

network transfers that facilitate reliable generation and supply of energy. AEMO could continue to ensure security and reliability at the wholesale level.

It seems likely that the adoption of such an ad-hoc approach would miss out on some opportunities for optimised and integrated outcomes. There is likely to be substantial benefits to be achieved through much closer coordination, including integrated and real time monitoring and control of the equipment at a disaggregated level. Consideration may need to be given to significantly increased benefits and efficiency that could be achieved through integration and optimisation of the operation of the system with the large number, diversity and the individual controllability of the various generation, demand, network and control options.

It is not clear whether such an approach is required for networks to ensure they can continue to provide a reliable service in a transformed energy sector. However, the central point of this discussion is that SP AusNet believes it should be considered, ideally in conjunction with the evolution of the smarter networks.

#### **4.3.4 It is Not Clear that the Framework Provides a Basis for Efficient Demand Management**

Increasing energy productivity is a highly desirable objective and a key component in reducing costs for customers while continuing to provide reliable and sustainable energy supplies. The Issues Paper includes network related examples where improved energy productivity will lead to reduced need for peak capacity in energy infrastructure and as a consequence a potential reduction in costs.

It is also noted that there has been a considerable amount of work carried out since the inception of the electricity market to encourage the development and implementation of effective demand management strategies. However these have been very slow in developing and frequently there have been claims that there has been insufficient support for demand management initiatives, and even claims of active discrimination against these approaches.

It is perhaps more likely that demand management alternatives were not economic and economically justified to the extent that they became an entrenched option. SP AusNet supports the development of demand side options but only where they are demonstrated to provide economic benefits. Some limited additional support may be warranted to remove any initial hurdles, but care needs to be taken to avoid sustained and ultimately unwarranted subsidies that distort market outcomes and the development of efficient demand management response.

It is more likely that efficient demand management response approaches will emerge from the evolution to a more customer based market, and from the economic price signals that will be developed through reform of the current tariff structures. This is an area where information on prices and the incentives will be much more readily available to customers, and new tariff structures, which seek to remove the distortionary price signals, will each act to ensure that demand management is developed where it is appropriate.

However this revolves heavily on the ability to develop tariff arrangements that correctly align charges and costs such that customers see the direct impact of the choices that they make, as discussed in section 0.

## **4.4 Workforce productivity**

### **4.4.1 Support for Critical Industry Skills should be Enhanced**

Developing and maintaining expert technical knowledge is an ongoing challenge that has been exacerbated through the disaggregation of the industry and the formation of a number of smaller business entities, which operate in a competitive or pseudo competitive environment. This has resulted in what was already a relatively small number of power system “experts” being separated into smaller businesses, each with a reduced scope of functionality. This in turn has reduced career opportunities for technical specialists, discouraged the degree of specialisation that could previously be practiced, and reduced the availability and scope of on the job training.

These changes and reform of the industry was also accompanied with a period of very limited recruiting as businesses responded to the challenges on increasing their productivity. This reduced the opportunities for new graduates, trainees and apprentices within the sector, ultimately dampening the interest of students to study in these areas, to the point where many of the courses have been discontinued or changed significantly.

As a separate issue the technology changes and the significant growth in computer and IT technologies became more attractive to students, who gravitated to these interesting and exciting frontier fields of study, when compared to the more traditional skills that were considered to be relevant to power system experts. The effect for most utility businesses in Australia is that the detailed technical skills and expertise required for the development and operation of the sophisticated power systems is gradually being eroded.

The procurement of the skilled staff and ongoing training to ensure the continued development and operation of the power system will be an ongoing issues. This may require a more coordinated industry and Government response, together with tertiary institutions. Many of the utility businesses are tackling these issues through internal approaches including mentoring and development of alumni arrangements that allow businesses to call on experts who have left the businesses and industry for specific advice.

There have been various approaches where the industry has collectively supported tertiary institutions in the teaching courses to ensure that graduates and trainees would become available to the industry, however these have had varying levels of success and many have been discontinued. An active and effective approach is the Australian Power Institute (API), which represents 35 major Australian companies in addressing the skills gap. The API’s activities include primary and secondary school student awareness of an exciting future in science and mathematics based pursuits, a bursary program for engineering students to promote power engineering, and seeking to increase the representation of women in power engineering.

With potential changes to the industry as outlined in previous sections of this submission there appears to be a significant opportunity to ensure that the necessary skills can be available to ensure the effective development of the industry, but careful management may be necessary. Policy approaches which enhance industry led initiatives such as the API will help the industry to maintain its service capability and exploit technological change for the future.

The following are observations relevant to skills development in the future, outlining both a range of challenges and opportunities that may arise:

The future of the electricity sector is likely to become much more competitive, with the significantly increased diversity also resulting in an increase in the types of services and range of options available.

The focus of many of these changes will be on new innovation in IT, communications and equipment technologies, which may be more closely aligned to the interests of current students;

The presence of strong competition and third party involvement in the sector will increase innovation and in turn provide opportunities for technical growth and expertise in this area;

There may be niche skills and new product development that could support new industry development, perhaps extending to export potential.

## **4.5 Alternative Energy Sources and Technology**

### **4.5.1 A Vision for the Future would Encourage Implementation of Smart Network Capability**

In section 0 we have presented some thoughts on the future development of the electricity industry and electricity networks in particular. Various technological development is occurring and there are a number of parties, both in Australia and internationally that are involved in technology development.

Accordingly SP AusNet considers that the necessary evolution of the sector will emerge in time without any substantial additional Government assistance. The drivers include increasing energy prices, concern over the environment, the increasing availability of new technologies and energy information and increased interest in energy efficiency. A future smarter network is central to this future as it is required to allow the effective integration of a diverse set of new technologies to operate in a coordinated manner to improve reliability, lower costs and enhance the customers experience in managing their own energy.

Industry participants have been active in planning and developing smart networks in Australia. Many utilities, manufacturers, suppliers and academic institutions have carried out trials, developed smart network initiatives and demonstrate practical achievements and benefits. However the main focus to date has been on proving specific concepts, including implementing new technology and systems, and obtaining a better appreciation of customer needs.

It is recognised that the Smart Grid Smart City initiative funded by the Federal Government was an important initiative at the time, and has taken the first steps to highlight the benefits and challenges associated with implementing a smart network on a broader scale, provided an actual example of networks of the future.

SP AusNet considers that a long term vision and framework for the future of the networks would be an important step to provide further direction in progressively implementing smart network capability. With the detailed analysis and trials already carried out it is now desirable to develop a clear and holistic vision for the future power system and the networks. The priority to achieve this must be to bring together the knowledge and experience already gained from analysis, testing and trials, including the experiences gained from Smart Grid Smart City initiative. The White Paper could establish a process that will allow this to develop.

A specific technical issue worthy of some further attention is to ensure that appropriate standards are developed for connection to the future smart network. As previously

outlined it might be expected that the number and type of devices to be connected to the network will grow exponentially over time. To maximise the benefits of these developments it is desirable that individual devices be integrated to the maximum extent possible. To facilitate this it is necessary to define and implement common interface standards. While there has been some attention paid to this requirement both within Australia and internationally SP AusNet considers that additional focus and central coordination may be required to ensure that the potential benefits can be maximised in the longer term.

Further while it is accepted that there has already been some investment in trials and testing of smart network devices and concepts there may be a case to encourage more specific testing of devices and new technologies in specific circumstances. There are some devices where the spread of benefits is relatively broad and/or where development and implementation risks are significant that may warrant some central support. Some facilitation may be required to ensure that specific and limited trials are conducted to promote earlier development of new devices and/or processes particularly where there are regulatory or commercial barriers that may inhibit their development.

Some practical support for ensuring that a future and improved vision for a new paradigm for the power system to meet customer needs may provide a clearer signal that leadership and direction is being provided to facilitate a better energy future.

## **5 Conclusion**

It is very timely for the Australian Government to be focussed on an Energy White Paper from the electricity industry perspective.

The electricity industry is faced with a period of unprecedented change and uncertainty with rapidly advancing technologies and increasingly engaged customers providing the impetus for change, driven by environmental and economic issues.

The extent of possible future change is however so diverse, different and uncertain at present that we consider it is highly desirable to develop and articulate a longer term vision for the electricity sector. This could be used to examine the extent to which changes may be required in the current market, regulatory and governance structures to maximise the possibilities for a more efficient and economic industry emerging from the broad range of opportunities that are currently presenting themselves, and are likely to continue to do so at an increasing rate.

The Issues Paper raises a number of important issues that deserve attention and debate. Some of these are shorter term in nature, and in some cases are the subject of established processes. There are a number of areas where immediate attention is desirable, and we have discussed those of relevance to the electricity sector in this submission.

SP AusNet urges the Government to use the development of a White Paper as an opportunity to take a longer term perspective, and to develop a vision for the future. In some cases it may be appropriate to initiate parallel processes to consider some of the matters in more detail than can be covered in the White Paper.

SP AusNet commends the Government for the initiative, and looks forward to continued involvement with the process to provide a future perspective on the development of the energy sector in Australia.