BEFORE THE
DEPARTMENT OF ENERGY

In the Matter of	)	
	)	
Implementing the National Broadband	)	**Re: NBP RFI:**
Plan by Studying the Communications	)	**Communications Requirements**
Requirements of Electric Utilities to	)	
Inform Federal Smart Grid Policy	)	

COMMENTS OF AT&T INC.

AT&T Inc., on behalf of itself and its affiliates ("AT&T"), respectfully submits these comments in response to the Department Of Energy's Request for Information ("RFI") on the communications requirements of utilities.[1] AT&T supports DOE's efforts and coordination with various Federal, State and private initiatives to implement the Smart Grid. We appreciate the opportunity to inform federal Smart Grid policy by participating in DOE's examination of the communications requirements of electric utilities deploying Smart Grid capabilities in their networks.

I. INTRODUCTION

AT&T is an emerging leader in network and managed services for Smart Grid devices, and its extensive assets and capabilities make it an ideal partner for other innovators that are working to advance Smart Grid technologies. As such, AT&T has a direct interest in assisting DOE and other stakeholders to achieve efficient and effective Smart Grid deployment.

AT&T is already providing an extensive array of communications services to permit more robust operation of various Smart Grid technologies throughout the power grid and to bring

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[1] Request for Public Comment on the Department of Energy's Implementation of the National Broad Plan by Studying the Communications Requirements of Electric Utilities to Inform Federal Smart Grid Policy, 75 Fed. Reg. 26206, 26208 (2010) ("Request for Information").

the Smart Grid's promise to utilities and their customers across the country. For example, over the past year AT&T has announced formal partnerships with several industry leading Smart Grid solutions providers – SmartSynch, Cooper Power Systems, Silver Spring Networks, ITRON, and Current Group – to allow electric utilities to install Internet protocol ("IP") based Smart Grid technology. This technology, along with the extensive array of AT&T network services (including wireless and wired connectivity, Virtual Private Networking, private line service, managed security, hosting and computing services) will enable utilities, businesses and homeowners to obtain more detailed and real-time information about energy generation and consumption enabling improved energy efficiency and reduced costs. AT&T continues to look for new ways to leverage its experience and assets in advancing Smart Grid deployment.

II. DISCUSSION

A. Commercial Communications Providers Are Uniquely Suited to Support the Current and Future Needs of the Smart Grid.

The Smart Grid is not a one time implementation of technology into the electric grid but rather the continuing application of advanced information and telecommunications technologies (both wireline and wireless) to the utilities industry. Consequently, the Smart Grid will develop rapidly over the next few years and continue to evolve over the coming decades. Smart Grid technology will grow to encompass many different aspects and business processes of the utilities industry and the household management of energy usage. The specific network requirements for each application will differ and the needs of today will differ from those of tomorrow. The potential changes are of such a scale and the supporting technology is changing so rapidly that prior communications needs of the electric industry will not be an accurate predictor of future requirements. For example, prior communications requirements of utilities were not challenged with the need to rapidly scale and enhance communications capabilities; inserting new communications technology to meet new applications requirements while assuring security and making the adaptations in a manner that is transparent to the end user. Commercial communications service providers understand the complexity and criticality of meeting such customer needs in a rapidly changing environment. They possess the technological and human resources necessary to help utilities build a Smart Grid that remains “modern” and continually capable of adapting in a cost effective manner, rather than becoming anchored to a technology choice or frozen into inaction by uncertainty.

High performance, high reliability, adaptive and secure communications requirements are not unique to the Smart Grid. Communications technology exists and has been employed by commercial communication providers to meet the needs of similarly demanding applications in numerous other industries, such as in the finance, government and health care industries. While these applications may not be identical to the Smart Grid, particularly given that the specific requirements of the Smart Grid are still evolving, they demonstrate that commercial networks are capable of meeting extraordinarily high and demanding standards of performance while assuring security and providing cost-effective and scalable communications solutions.

In examining the implementation of the Smart Grid, much attention is rightfully being directed to wireless technology. In just the past few years wireless coverage has expanded rapidly, and wireless bandwidth and reliability have improved by orders of magnitude. Commercial wireless services are now being adopted to serve needs previously addressed only by wireline facilities. While wireless offers new and improved ways of delivering communications services – such as the machine-to-machine communications that will likely prevail in the mature Smart Grid – it is not the only mechanism for meeting Smart Grid communications needs. Rather in all instances, the right technology solution must be matched to the particular needs of the application being supported. In some cases wireless service may be the primary solution and in other instances it may be the back-up solution. The point is that making generalized statements or drawing sweeping conclusions about the communications needs of the Smart Grid based on one technology, applications as we understand them today or a narrow set of attributes risks trivializing the complicated needs and solutions that will be required for a fully functioning Smart Grid. Resorting to generalization will likely narrowly prescribe the evolution of the Smart Grid and sub-optimize the benefits. Adaptability and flexibility, without compromising security and performance, is key to a cost effective and nimble Smart Grid.

No particular entity, whether a commercial service provider or an electric utility, possesses unique access to communication technology upon which communications capabilities are built. Accordingly, the question is more so one of whether any party possesses a compelling long term ability to optimally assemble and support the technology that meets the needs of the Smart Grid and the various constituencies it will affect. Critical to success in these areas is the ability to address the following considerations tempered by the specific needs of each supported application: (1) operating characteristics (including coverage, bandwidth, latency, jitter); (2) business continuity considerations (availability, reliability); (3) security and interoperability; (4) scalability; (5) technological longevity (including backwards compatibility);and (6) life cycle costs.

Commercial communications service providers have extensive experience meeting customer needs while optimally balancing the preceding considerations. Past and current experience abundantly demonstrates the ability of commercial communications service providers to deliver cost-effective communications solutions for the majority of the Smart Grid needs of the electric utility industry.

B. Commercial Communications Providers Today Have Platforms That Are Adaptable to the New and Potentially Numerous Devices That Will Interact With the Smart Grid Without Risking Significant Disruption to Existing Applications.

Today, Smart Grid deployments are primarily focused on Advanced Metering Infrastructure ("AMI"), which typically involves the installation of Smart Meters at the customer premises. AMI is a necessary first building block to a fully functional Smart Grid. Although it has been estimated that AMI comprises approximately 5% of all electric meters,[2] there is no question the base is rapidly growing. AMI allows utilities to remotely monitor electrical usage, reducing the operational expenses associated with reading meters. AMI also allows utilities to see when a cluster of homes loses power, facilitating faster trouble recognition, isolation and restoral. It also potentially allows utilities to communicate usage levels to customers, so they will have the information to alter energy use behavior. Broadly deployed AMI allows both consumers to use electricity more efficiently and utilities to operate the electric grid more efficiently.

Two platforms are typically used for AMI: a mesh network or a point-to-point network. Both employ wireless technology. In a mesh network, connectivity between smart meters and the neighborhood hub typically occurs using single purpose network operating in unlicensed radio spectrum. The utility owns and operates the radio network or subcontracts operation to a third party. Backhaul from the hub to the utility back office infrastructure generally will use

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[2] *See* Statement of Patricia Hoffman, Acting Assistant Secretary of Electricity Delivery and Energy Reliability, Department of Energy before the Subcommittee on Energy and Environment, Committee on Science and Technology, U.S. House of Representatives, p. 2 (July 23, 2009), *available at www*.congressional.energy.gov/documents/7-23-09_Final_Testikmony_(Hoffman).pdf.

commercial wireless connectivity provided using licensed spectrum. In a point-to-point configuration, the meter connects directly to the utility back office infrastructure over the commercial wireless provider's using licensed spectrum.

Presently, AMI data and bandwidth requirements are low – a few hundreds of bytes per second for individual meters in point to point configurations to a few thousands of bytes per second for concentrators and access control points (i.e., the hubs) in mesh topology networks. The critical requirements of the AMI application are driven by the ability to rapidly scale deployments to reach a wide base of customers and a need for reliable and secure transfer of data (in close to real time). And al this must be accomplished at a low cost per subscriber ideally using equipment with a long useful life. Those requirements are readily supported by today's commercial communications networks, in particular by using wireless connectivity between the customer meter and the core infrastructure of the utility.

The common thread running through many of the fundamental attributes of a Smart Grid is the idea that the technology must be flexible enough to accommodate evolving devices and applications. Many of the devices that the communications platform will need to support are still being developed. For example, the communications technology will play a key role in the control of energy storage, such as battery storage technology of the utility, which permits off-peak banking of energy to reduce on-peak generation needs. Communications networks likewise will be crucial to the integration of alternative energy/distributed generation, and remote sensors for equipment. In other words, Smart Grid technologies must be able to adapt to meet the needs of future Smart Grid applications without significantly disrupting existing applications or rendering prior choices incompatible or obsolete. Commercial service providers are attuned to such customer needs. Commercial carriers continually upgrade technology used in the wired and wireless networks in order to enhance service performance, coverage and reliability and drive down costs.

Commercial service providers have often demonstrated the ability to implement new technology in a non-disruptive manner in order to assure a modern and robust communications infrastructure. For example, the wireline network evolved from analog to digital technology and transitioned from circuit switched to packet platforms. These massive transitions were accomplished while continuing to deliver service to existing customers and expanding the options for new services. The same is true for wireless networks, where the transition has been from 2G to 3G and soon to 4G platforms, all while improving service and capabilities for customers. These changes were necessary to meet the rapidly changing and more demanding needs of communications users.

Commercial providers will bring this same ability to embrace revolutionary network changes to their work on the Smart Grid. They are more than equal to the challenges the Smart Grid presents – the convergence of newly emerging applications, rapidly changing technology and exponentially expanding number of devices and networks that need to communicate and interoperate. Add to this the challenges a utility faces in expanding generation capacity, upgrading IT infrastructure, incorporating distributed generation capabilities, supporting electric vehicles and protecting against cyber attacks. It is clear that electric utilities need a reliable partner to meet their communications needs – and commercial service providers stand ready to respond.

Compared to current applications, future Smart Grid applications will place new and largely currently unknown demands on the existing communications platforms of electric utilities. Some applications, such as those used for utility infrastructure management and control, may require low latency and high availability. Other applications, such as those used for demand response and remote meter disconnect, may have low bandwidth requirements and limited need for real time transactions. Other applications, such a those associated with recharging of electric vehicles, whether at home or at a remote location, are still in the formative stages where precise requirements are yet to be defined. Here again, the communications network supporting the Smart Grid must be highly adaptable, with a heavy emphasis on scalability, flexibility, backwards compatibility and security – something difficult to achieve through a private, purpose built network, especially when utilities will find it necessary to interoperate in new ways with other utilities on the national grid.

Commercial communications service providers have a proven track record in this area. For example, commercial wireless customers grew from less than 100 million subscribers in 2000[3] to over 270 million as of December 2008.[4] During that period, commercial wireless service providers added over 240,000 cell sites across the country[5] with the result that at least three commercial communications operators provide wireless service in census blocks that cover more than 95 percent of the U.S. population.[6] Moreover, commercial communications operators are continuing to invest in their networks. For example, AT&T plans to invest another $18

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3 *History of Wireless Communications, From Building the Wireless Future to Expanding the Wireless Frontier*, CTIA Website, *available at* http://www.ctia.org/media/industry_info/index.cfm/AID/10392.

4 Press Release, *CTIA – The Wireless Association Announces Semi-annual Wireless Industry Survey Results* CTIA website (April 1, 2009), *available at* http://ctia.org/media/press/body.cfm/prid/1811.

5 Ex Parte Letter from Christopher Guttman-McCabe to Chairman Julius Genachowski (July 9, 2009/, *available at* http://files.ctia.org/pdf/filings/2009_Wireless__Economic_Contributions.Letter.Final.pdf ("CTIA Ex Parte").

6 *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Radio Services, WT Docket No. 08-27, Thirteenth Report, DA 09-65, p. (rel. Jan. 16, 2009).*

billion in its wireless and wireline infrastructure this year.[7] By relying on commercial communications networks, utilities will benefit from this expanded coverage and scale economies, driven by both the utilities' needs and the needs of hundreds of millions of other commercial customers. Utilities will also benefit from commercial carriers investing to satisfy the emerging applications needs of society as a whole.

The recent experience of Texas New Mexico Power specifically illustrates how commercial service providers can further Smart Grid deployment in a rapid and cost-effective manner. Texas-New Mexico Power, a subsidiary of PNM Resources, provides transmission and distribution services to approximately 230,000 customers in 76 cities in the state of Texas. Last fall, it installed 10,000 smart meters throughout its service territory, covering various types of terrain and population densities. AT&T provided wireless connectivity for these meters. Results of the pilot which were released in May of this year showed the system achieved a 99.96% success rate on average daily reads. Based on the strong results of the pilot project, TNMP is now seeking approval of the Public Utility Commission of Texas to deploy smart meters riding on the AT&T network to the rest of the utility's customers in Texas.[8]

C. Commercial Communications Providers Have Extensive Experience in Developing Comprehensive Security Solutions.

Beyond the proven adaptability, scalability, performance and on-going upgrade of technology, commercial communications service providers typically offer sophisticated cyber security protections that will help utilities protect their business operations as well as protect the

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7 Press Release, *AT&T to Invest More Than $17 Billion in 2009 to Drive Economic Growth* (March 10, 2009), *available at* http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=26597.

8 See SustainableBusiness.com news article available at http://www.sustainablebusiness.com/index.cfm/go/news.display/id/20407.

privacy of consumer and operational data. Commercial service providers have extensive experience in developing comprehensive security solutions for complex network environments. Such capabilities provide a crucial added layer of defense for the security steps a utility can and should take to protect the assets and systems under its direct control. Importantly, AT&T works constantly to assure it is capable of detecting and dealing with evolving cyber threats. For example, AT&T's wireline and wireless networks are supported by a comprehensive global security organization comprised of over 700 security professionals. This '24x7' organization is dedicated to the physical and logical security of the AT&T global network and its service offerings. The team constantly analyzes the network, looking for any unexpected pattern changes and then assessing if the change could indicate an emerging cyber security threat.

D. Commercial Communications Providers Have In Place Tested and Robust Networks that Can Meet and Exceed the Communications Requirements of the Smart Grid.

In the past, some parties have expressed high level reservations regarding the suitability of commercial services for support of the Smart Grid. The expressed concerns tend to focus in four general areas: including network survivability, coverage, congestion and service restoration. Indeed, some parties with reservations about using commercial services point out that electric utilities engineer their private communications networks to withstand substantial wind gusts such as those occurring in a hurricane, that extensive emergency power back-up is deployed, and that the utility may have equipment and customers in remote localities. Naturally, network survivability, coverage, congestion and service restoration are all critical considerations for assessing the needs of a particular application. These concerns do not, however, show that commercial carrier network towers are less rigorously engineered,[9] that commercial network

[9] For example, AT&T engineers it towers to meet ANSI TIA TR 14.7 standards. Such standards address wind load, ice load and other factors (e.g., terrain and height) which dictate the minimum strength required for the

emergency power is insufficient or that commercial service coverage is lacking or cannot be augmented to meet the needs of utilities.

1. Network Survivability

By far, the greatest issue for communications providers to address following a severe weather event is the loss of commercial power. To address this, AT&T has invested billions in reserve power infrastructure and deployable (portable) power generating equipment. Over 99% of AT&T wireless sites are engineered with reserve batteries and/or permanent generators. AT&T switching centers are typically equipped with redundant permanent generators with local fuel supply to allow greater than 4 days of run time. With regular refueling, these generators can maintain power at a location virtually indefinitely until commercial power is restored. In the unlikely event that both permanent generators sustain damage, each switching site is equipped with 8 hour battery reserve. Supplementing the preceding steps, AT&T maintains a rapid response fleet of portable generator assets to augment permanent systems as needed.

Where large scope events may impact the network, AT&T has extensive Network Disaster Recovery ("NDR") capabilities in place. While AT&T takes measures on a day-to-day basis to help ensure the physical survivability of its network infrastructure, it must – and does – prepare for natural and man-made disasters that could cause damage to the network. By investing extensively in its disaster recovery program, engaging in regular training, preparing for imminent threats, and moving quickly after a disaster, AT&T generally is able to rapidly restore communications capabilities in the case of any incident causing physical damage to its network.

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structure based on local conditions. Indeed, it is not uncommon for towers to be designed to withstand wind gusts in excess of what could be encountered in a hurricane.

Over the past 20 years, AT&T has invested over $500 million in its NDR program and continues to invest in this initiative, through which AT&Tstrives to deliver the highest levels of service, quality, and reliability under the most difficulty of circumstances. This program has three primary goals: (1) to route traffic around affected areas; (2) to give the affected area communications access to the rest of the world; and (3) to recover communications service to a normal condition as quickly as possible through restoration and repair.[10]

AT&T's NDR program maintains an inventory of more than 300 technology and support trailers that can be deployed quickly to respond to disaster situations such as hurricanes, wildfires, and floods.[11] Specially-designed tractor-trailers are strategically located around the U.S. for dispatch, as needed, to act as a virtual network office. Each trailer has self-contained or dedicated power and environmental capabilities, and each houses a component of the network technology that would normally be a part of a permanent office. Once these trailers are deployed to a site, the individual components are interconnected to recreate the configuration of the damaged or destroyed network office.[12] In addition, AT&T's mobile command centers provide disaster response teams with fully equipped and controlled work space in the event of a disaster. AT&T also supplies self-contained mobile cell sites – such as cells on wheels ("COWs") and cells on light trucks ("COLTs"), which can replace a failed cell site – and emergency

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[10] AT&T Network Disaster Recovery, *at* http://www.corp.att.com/ndr/ (last visited June 12, 2010).

[11] AT&T Vital Connections, Emergency Communications, *at* http://www.att.com/gen/general?pid=1325 (last visited June 12, 2010).

[12] AT&T Network Disaster Recovery, Recovery Equipment, *at* http://www.corp.att.com/ndr/team_equipment.html (last visited June 12, 2010).

communications vehicles that use a satellite link to provide voice and data service within 30 minutes of arriving on site.[13] AT&T maintains additional emergency equipment at designated locations, including portable generators, chillers, pumps and fuel cells at at-risk network offices, and permanent generators and battery backup at all wireless switches and many cell sites.[14]

The NDR program includes a team of more than 50 managers, engineers, and technicians, which has held at least three full-scale disaster recovery exercises each year since 1993.[15] These exercises "test as many of the NDR processes as possible, from the initial call out, to equipment transportation and setup, to technology turn-up and testing" and "team members are given hands on training on new technologies and the recovery equipment is operated in field conditions."[16] AT&T designs these programs such that employees encounter various environmental conditions and different network asset restoration scenarios. After each exercise, results are reviewed to determine lessons learned, and new practices are adapted as appropriate to resolve future. recovery events.[17]

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[13] *Id*.

[14] Comments of AT&T Inc. – NBP Public Notice #8, GN Docket Nos. 09-47, 09-51, and 09-137, at 14 (Nov. 12, 2009).

[15] AT&T Network Disaster Recovery, Recovery Exercises, *at* http://www.corp.att.com/ndr/exercises.html (last visited June 12, 2010).

[16] *Id*

[17] So far in 2010, AT&T has conducted a recovery exercise in New Orleans, LA, in which the team tested three new technology trailers, a new power distribution trailer, and a new team rehab trailer. Recovery Exercise, 2010 – New Orleans, LA, *at* http://www.corp.att.com/ndr/exercises_2010q1.html (last visited June 12, 2010). AT&T's Special Operations Team held classes and hands-on training, and Operations team members received technology training at the site and first aid training at the team hotel. *Id*. AT&T also held a recovery exercise in the Detroit metropolitan area, intended to test and refine the NDR team's speed and efficiency in restoring network operations in the event of a disaster, and which "feature[d] more than 25 disaster recovery trailers and vehicles, including emergency communications vehicles, and a variety of smaller utility and support trailers, as well as a searchand-rescue dog team demonstration." Press Release, AT&T, "AT&T Recovery Exercise To Simulate Metro Detroit Network Disaster" (May 11, 2010), *available at* http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=30798 (last visited

2. Coverage

Coverage, or more precisely service availability, is a legitimate consideration but is not a barrier to utilizing commercial services for the Smart Grid. Within a commercial service provider's operating territory, it is always an option for the customer seeking wireline service to contract with the commercial provider to undertake special construction to deliver service in an area previously beyond the reach of the current network. In the case of wireless service coverage, the first consideration is whether or not the application connects mobile or stationary devices and whether the application is voice or data oriented. Mobile coverage must sustain service reliably when the device moves among cell towers at highway speeds. This requires that the hand-off between the two base stations occur seamlessly, otherwise the connection is dropped. On the other hand, a machine-to-machine wireless connection is frequently both stationary and supports a data rather than a voice application. Both these factors tend to improve data coverage vis-à-vis what might be experienced for voice applications. In addition, where wireless coverage may not be sufficient, options exist to augment coverage through commercial agreement. And as the FCC makes more spectrum available and consumer demand for wireless voice and data service expands, wireless coverage should continue to expand and improve.

3. Congestion

Some concerns have been expressed that mission critical utility applications might be adversely impacted by congestion in commercial carrier networks. As a first consideration, commercial carriers can and do provide dedicated connectivity that is unaffected by load on the commercial network in general. Dedicated connectivity is always an option and, provided the

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June 12, 2010). Most recently, AT&T provided a COW in Langley, Arkansas in response to flash floods in the Little Missouri River Caddo Gap area. This COW enabled emergency crews that lacked communications to respond to the flood and assist with recovery.

utility has installed a connection of sufficient capacity for its needs, the application will not be impacted by shared network congestions. On the other hand, should a utility want the economies of a shared network, the utility has the option to subscribe to a managed virtual private network (VPN). In this case, the utility's application should be unaffected by shared network congestion provided, again, that the utility has taken steps to assure its network is properly sized. Moreover, for further assurance that its mission critical applications are insulated from congestion, the utility can subscribe to differentiated service handling of the traffic on its VPN. Differentiated service handling allows the utility to collaborate with the commercial service provider to manage the capacity on the VPN. The utility defines the traffic that it will generate by different service classes and marks its data packets accordingly. This allows the utility to size its VPN. The utility can prioritize the applications running on its VPN so that the commercial service provider can manage the traffic of the utility so the highest priority service classes should not encounter congestion.

4. Service Restoration

Complementing these preceding measures electric utilities may take to minimize the impacts of congestion upon mission critical applications, commercial communications carriers also take extensive steps to assure the availability of the underlying network infrastructure for its customers and services. These steps include, but are not limited to, requiring equipment be designed to remain operable even when heating/cooling is temporarily lost; requiring that spare plug-in circuit boards for equipment be available – many times on a hot swap basis – to replace defective boards; and implementing technology such as bi-directional fiber rings that redirect traffic automatically when a fiber failure is detected. The fundamental objective is to deploy highly reliable elements and minimize the likelihood of a single point of failure. Moreover, the operation of the network is continually monitored for alarms indicating equipment/facility anomalies and/or load conditions that are outside the norm. This allows providers to proactively take steps to maintain services and minimizes the risk of congestion.

It should be noted that some of the concern related to congestion may be rooted in a flawed assumption that mission critical application will be placed on the Internet. Obviously, if a utility elected to take this route, it could. However, it is extremely unlikely that the Internet would be the first choice connectivity for a mission critical application. Rather, the application would likely employ a managed service such as a VPN for the reasons discussed above.

Nevertheless, if a utility wants additional protection against congestion risk, it can take additional steps. The National Communications System (NCS) manages three programs to address communications priorities during emergencies. This includes options for the utility to classify critical dedicated circuits for priority restoration treatment (Telecommunication Service Priority (TSP)), obtain priority handling for TDM voice (Government Emergency Telecommunication Services (GETS)) or wireless voice (Wireless Priority Service (WPS)). AT&T is also encouraging the FCC to work with the appropriate government agencies to establish a similar system for prioritizing IP-based communications.

Despite all the preceding steps, events may occur that cause a service outage that requires restoration. All commercial carriers will respond as promptly as possible to restore service to customers. Even the best restoral efforts, however, do not change the fact that an outage has occurred. This is where business continuity planning becomes important. AT&T strongly encourages customers to engage in business continuity planning directed at identifying vulnerabilities to continued operation of a business/application. Where weaknesses are identified, cost effective steps are identified to reduce the risk to acceptable levels.

In summary, commercial communications service offer all of the features needed for a fully operational Smart Grid – coverage, performance, security, and emergency preparedness and response. And equally important, the capabilities of the commercial services will continue to improve and keep pace with the needs of the Smart Grid. It would be difficult, if not impossible, for a utility to economically and comprehensively replicate these features in a dedicated single use network. By collaborating, utilities and commercial communications operators can achieve quicker and more economical full Smart Grid deployment.

III. CONCLUSION

As the Smart Grid evolves and demand for network connectivity increases, utilities can leverage new network technologies deployed by commercial communications operators and optimize their network strategies and Smart Grid applications deployments. This allows utilities to concentrate on assuring the reliable delivery of electricity to consumers, optimizing energy utilization within the existing electrical grid, and implementing new information technologies that will allow utilities to enhance billing, customer relationships, demand response and management systems and energy management systems. Policy makers, including the DOE, should encourage the serious consideration of commercial services for Smart Grid applications. While private utility communications networks exist today, that does not validate the need for expanded use of such networks for the future Smart Grid.

AT&T appreciates the opportunity to contribute its views on these important issues and looks forward to continued engagement with the DOE and policy makers throughout state and federal government as the conversations about the implementation of the Smart Grid continues.

Respectfully submitted,

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