

Broadband Policy and the Smart Grid

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Opinions expressed are those of the author alone

National Broadband Plan (NBP)

- The 2009 ARRA required the FCC to write this nation's first *National Broadband Plan*
- The NBP will provide a cohesive set of recommendations on broadband-related policy
 - A national plan is not a funding program
 - A national plan is not a report
 - A national plan is not an FCC plan
- Chairman calls this most important thing the FCC has done since the 1996 Telecom Act

Broad Scope of NBP

- NBP will include strategies intended to
 - extend broadband access to all
 - improve affordability and maximize utilization of broadband
 - use broadband to achieve important “national purposes”
- One important national purpose the NBP will address is *energy independence and efficiency*
- Broadband can greatly improve energy independence and efficiency by
 - improving the efficiency of the power grid
 - reducing peak-hour electricity consumption by time shifting
 - facilitating use of intermittent energy sources, e.g. wind, solar
 - facilitating use of rechargeable batteries, esp. electric vehicles
 - empowering consumers to make better use of energy

Beyond the NBP

- FCC involvement with the smart grid will not end with the National Broadband Plan
- FCC manages spectrum
 - spectrum licensed to utilities
 - spectrum licensed to carriers used by utilities
 - unlicensed spectrum
- FCC regulates wireless and wired carriers
 - Commercial carriers play a role in smart grid communications
- FCC fosters communications for public safety and homeland security

FCC Solicited Info on Communications

- Wired is useful. Wireless is also needed.
- Utility-run wireless systems are in use.
 - In both licensed and unlicensed spectrum
 - Must meet *requirements for interference, QOS, capacity*
 - Equipment should be available, at reasonable price
 - Costs go down if equipment has a broader market
- Commercial wireless services are expanding
 - Available to 99.8% of Americans (within census block).
 - Can other requirements be met?
 - Coverage: Unpopulated areas; 8% of Americans do not yet have 3G cellular
 - Dependability: Back-up power, Redundancy
 - Quality of service: priority in periods of congestion

Range of Communications Systems

- Public safety wireless systems sometimes used
 - There are some communications systems used by both utilities and public safety agencies.
 - Public safety systems and smart grid have some common requirements and challenges
 - Both need dependability, security, QOS when and where needed
 - Both need broad coverage, including areas with low population density
 - Both are currently seeking innovative ways to use broadband technology
 - But they have very different policy and governance environments.

Which Way to Wireless?

- Utilities currently use all three of these approaches. Which should grow in importance?
- It may depend on
 - the specific portion of the smart grid
 - transmission network
 - distribution network
 - meter infrastructure
 - the environment, e.g. urban or rural
 - *precise technical requirements*

Summary

- The National Broadband Plan will make policy recommendations on how to use broadband to improve energy independence and efficiency.
 - Expected in March 2010
- Beyond the NBP, the FCC will continue to play a role in the smart grid development through the FCC's authority over communications

Summary

- Communications associated with the smart grid will occur over some combination of
 - Systems operated by utilities
 - Commercial or municipal public communications systems
 - Systems designed for public safety communications
 - Home/enterprise local-area networks
- Policymakers will consider how to make each of the above suitable for meeting smart grid requirements
- Effective policies will depend on a detailed understanding of actual requirements.

The FCC Welcomes Input

- National Broadband Plan
 - www.broadband.gov
- Electronic Comment Filing System
 - <http://fjallfoss.fcc.gov/ecfs2>