



## **The Blueprint Electricity 2.0: NDN's Acceleration Agenda**

Like it or not, the energy and electricity business is heavily driven by the rules of the road set by local, state and federal policy-makers and regulators.

The Acceleration Agenda provides a go-fast roadmap to remove barriers to transmission and renewable power, promote wireless smart grid technology, increase R&D, and spur microgrids and other innovative new electricity products and services.

### **The Goal of Electricity 2.0: Create a Clean, High Performance Economy**

Electricity 2.0 has the potential to:

- create wealth and jobs by driving innovation in electricity and improving the competitiveness of the power-hungry US economy
- enhance energy security by increasing network resilience and reducing demand for resources
- aid the climate by reducing greenhouse gas emissions

To accomplish these broad goals, it must promote:

- Cheaper, more abundant electricity
- The proliferation of new electricity-related services and functionality
- More efficient, smarter delivery of electricity
- Greater electricity network reliability and resilience
- Cleaner, more environmentally friendly power

## **Approach: Grow New Platforms for Economic Activity**

History has shown that the fastest way to drive innovation in a sector is to create open “platforms” for economic activity with no-or-low barriers to entry that reward risk-taking and investment and draw new players, ideas and capital into the sector. The 120 volt platform has been a success but is a century old.

It is time to create new, open platforms beyond the plug to include:

- Network-wide electricity management software
- Microgrids at universities, corporate campuses, government facilities, real estate developments and high tech buildings that integrate electricity production, load and management
- Enterprise level networks spanning multiple geographic locations
- Localized, home and office energy networks
- Electricity trading platforms to connect new producers and end users in order to expand the market for the former and increase buying options for the latter
- A low voltage DC platform to run the plethora of low voltage devices now in use

The existing 120 and 240 volt “platforms” should be enhanced as well to provide improved reliability, new features, intelligence and other value added services.

## **Policy Changes: Eliminate Barriers**

Accelerating Innovation and opportunities in the utility sector will take success on many levels —both in Washington, DC and in states and regions. What can link all this work is the identification and elimination of common barriers.

- Increased R&D for electricity
  - Under the rate-base system, governed mostly by local public utility commissions, utilities receive no economic reward for the risk of investing in new technology and little support from regulators for investing in R&D. Lack of R&D has limited advances in the science and technology of electricity delivery. Its little wonder that utility R&D (less than 1% of revenue) lags severely behind automobiles (3.3%) and high tech industries (typically 15% or higher).

- To address the R&D gap, the government should increase electricity R&D spending tenfold. Longer term, the architecture of the system must be reformed to provide utilities and others a return for R&D expenditures and technological risk taking.
- New Rate Structures
  - In most industries, interstate commerce protections are understood to extend to end users. In electricity, they only extend to bulk purchases. Interstate commerce protections and related tariffs should be extended to entire transactions.
  - FERC should create tariffs to allow utilities to service regional or national customers.
- Eliminate Microgrid Barriers
  - The inability of non-utilities to move power across public thoroughfares is a cross cutting barrier to innovation, blocking microgrids and enterprise power. A transparent permitting process is needed to allow private networks to cross public thoroughfares. Producers of onsite power should be able to sell that power back to the grid or to other users.
- Public Investment in Microgrids
  - DOD and the GSA should lead the way in the development of microgrids to efficiently manage electricity generation and load.
- Increased access to long distance power on the transmission grid
  - Commercial and industrial users situated near transmission wires are currently unable to access power directly from the transmission grid but instead must pay local transportation charges even when they do not require local transport. In contrast, commercial facilities locate next to Interstate highways or railways precisely to gain access to lower cost transportation. As transmission capacity is increased, access should be made available to end users.
- The new generation of planning mechanisms
  - Meeting future electricity demands and accelerating innovation will require wise planning linking public and private partners. Different regulatory and planning mechanism structure demands a fresh look at how we organize and build new generation transmission and customer engagement platforms.

## Create New Rules of the Road

Modernization of America's electricity infrastructure requires:

- Targeted federal legislation to provide
  - Enhanced FERC authority
  - *Race-to-the-top* funding to drive action at the state and local level
  - Improved linkages between DOE labs, universities and the private sector
  - Investment for Research and Development
- FERC rulemaking consistent with legislative authority
- State level legislation to foster innovation
- State PUC action to facilitate innovation
- ISO rulemaking to foster innovation
- Action to accelerate innovation and adoption of clean energy by
  - municipal utilities,
  - investor owned utilities,
  - Rural cooperatives and the USDA Rural Utilities Service
  - Federal power agencies
  - Global outreach through the International Energy Agency and international process launched at the First Energy Ministerial

About NDN and The New Policy Institute

NDN's New Policy Institute is a think tank based in Washington, D.C. The Electricity 2.0 initiative was launched this year to modernize America's Electricity network and unlock the economic potential of an open, innovation and renewable, friendly electricity network. NDN will be working with industry and NGO partners to unlock the economic potential of open electricity networks.

For further information about NDN Electricity 2.0 efforts in your region, please contact Clare Giesen at 202-384-1216.