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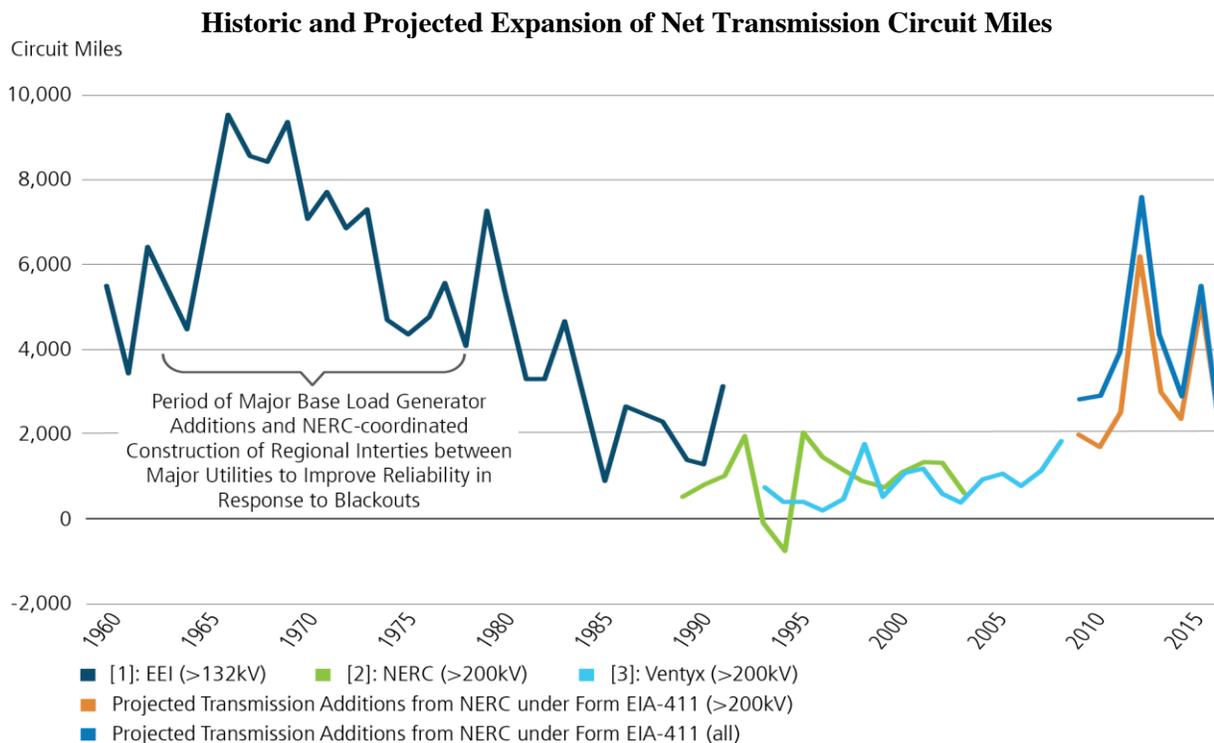
# MODERNIZING OUR ELECTRIC TRANSMISSION INFRASTRUCTURE AND DRIVING THE DEVELOPMENT OF CLEAN ENERGY

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JULY 2015

Since President Obama took office, the Administration has made tremendous progress improving the nation's electric transmission infrastructure. Building greater transmission infrastructure will facilitate, among other things, increased reliability and the greater integration of renewable sources of electricity into the grid, catalyzing the transition to a clean energy economy and reducing the carbon pollution that is leading to climate change. Since 2008 alone:

- The Department of the Interior's Bureau of Land Management (BLM) approved 46 major electric transmission line projects, of which 29 are currently in service. Cumulatively, the 46 projects total over 2,300 miles, 1,300 miles of which cross BLM-managed lands. From 2012 to 2013 alone, the BLM approved permits which will enable construction of nearly 1,000 miles of transmission lines across Federal lands in several states;
- The Department of Agriculture's Rural Utilities Service financed nearly 7,400 total miles of transmission and distribution lines;
- The U.S. Department of Energy (DOE) issued 3 Presidential permits for the construction, operation, connection and maintenance of electric transmission lines crossing the U.S. international border, spanning approximately 551 miles. Through the Western Power Marketing Administration's (WAPA) Transmission Investment Program(TIP), the DOE invested \$251 million in two transmission projects, totaling 323 miles;
- After over a decade of lower build-out, the amount of new circuit miles to the Nation's transmission system increased in recent years; and
- Investor-owned utilities spent a record high of \$16.9 billion on transmission in 2013, up from \$5.8 billion in 2001.



Source: QER, 2015<sup>i</sup>

## KEY ADMINISTRATION ACTIONS TO MODERNIZE TRANSMISSION INFRASTRUCTURE

While the development of transmission infrastructure is largely dependent on the private sector and state and local government decisions, the Federal Government has taken a number of actions to modernize transmission infrastructure to create a cleaner energy future. In particular, the Administration has undertaken an ambitious effort to modernize the Federal Government's role in the permitting and review processes.

In [October of 2009](#), nine Federal agencies; the U.S. Department of Agriculture, Department of Commerce, Department of Defense, Department of Energy, Environmental Protection Agency, the Council on Environmental Quality, the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and Department of the Interior signed a memorandum of understanding with the goal of reducing approval time off the normal Federal permit process and help break down the barriers to siting new transmission lines. After which, on Aug. 31, 2011, a Presidential Memorandum Speeding Infrastructure Development through More Efficient and Effective Permitting and Environmental Review called for expedited review of "priority projects" and "instruct[ed] agencies to (1) identify and work to expedite permitting and environmental reviews for high-priority infrastructure projects with significant potential for job creation; and (2) implement new measures designed to improve accountability, transparency, and efficiency through the use of modern information technology. On March 22, 2012, the President signed [Executive Order No. 13604, Improving Performance of Federal Permitting and Review of Infrastructure Projects](#), that directed Federal agencies to improve the efficiency and transparency of Federal permitting and review processes for infrastructure projects, as well as to cut through red tape and get more timely decisions, while producing measurably better outcomes for communities and the environment.

Since 2012, the President has issued several subsequent executive directives to improve the Federal permitting and review process. On May 17, 2013, [the President released a memorandum](#) directing an interagency steering committee to develop a plan to turn permitting and review best practices identified by the Federal agencies—focused on early collaboration, increased transparency and accountability, and greater consideration of citizens' interests—into standard practice for all major infrastructure projects. On June 7, 2013, the President issued [a separate but related memorandum](#), directing Federal agencies to "develop an integrated, interagency pre-application process for significant onshore electric transmission projects requiring Federal approval." The Administration has already taken the following actions to implement the Presidents's direction, including:

- **Establishing an Implementation Plan to Modernize Permitting.** On May 14, 2014, the Interagency Infrastructure Steering Committee released "Implementation Plan for the Presidential Memorandum on Modernizing Infrastructure Permitting" This Implementation Plan identified four strategies, 15 reforms, and nearly 100 near-term and long-term milestones to modernize the Federal government's role in permitting and review processes. The reforms contained in this Implementation Plan help the Federal agencies involved in the review or authorization of infrastructure projects do so more efficiently. This plan provides Federal agencies with ways to better synchronize and align their permitting and review responsibilities while ensuring that potential impacts on safety, security, and environmental and community resources such as air, water, land, and historical and cultural resources are considered and minimized.
- **Creating a Permitting Dashboard.** The Administration launched a Federal Infrastructure Project Permitting Dashboard to track the permitting and environmental review schedules (milestones and timelines) for designated infrastructure project schedules. The dashboard also hosts a "Permit Inventory"—a searchable database of required permits and approvals. To date, agencies have expedited the review and permitting of more than 50 selected major infrastructure

projects, including bridges, transit projects, railways, waterways, roads, and renewable energy generation projects. Additional information is available at [www.permits.performance.gov](http://www.permits.performance.gov).

- **Developing an Interagency Rapid Response Team for Transmission.** The Administration created a Rapid Response Team for Transmission (RRTT) that aims to improve the overall quality and timeliness of electric transmission infrastructure permitting, review, and consultation by the Federal government on both Federal and non-Federal lands. The interagency team improved quality and timeliness through: (1) coordinating statutory permitting, review, and consultation schedules and processes among involved Federal and state agencies, as appropriate, through Integrated Federal Planning; (2) applying a uniform and consistent approach to consultations with Tribal governments; and, (3) resolving interagency conflicts and ensuring that all involved agencies are fully engaged and meeting timelines. In October, 2011, the RRTT announced seven pilot projects, selected in part due to their unique permitting challenges, near-term critical milestones and opportunities to support renewable energy development and grid reliability. Records of Decision (RODs) have been issued for three of these projects, out of which Susquehanna-Roseland is already in service and Hampton-Lacrosse is under construction. For the remaining three active projects, BLM anticipates that the RODs for Transwest Express will be complete in the fall/winter of 2015 and Boardman-Hemingway and Gateway West segments 8 and 9 will be complete in winter of 2016.

**CAPX 2020 Hampton-Rochester-La Crosse**

In January 2013, the U.S. Army Corp of Engineers and the U.S. Fish and Wildlife Service issued a Record of Decision for the CAPX 2020 Hampton-Rochester-La Crosse transmission line, a RRTT pilot project. The line, which is 156 miles, will improve reliability and meet growing energy demand in the Twin Cities, Rochester, and La Crosse Wisconsin areas. As designed, the line also will improve access to generation in southeastern Minnesota, including access to wind energy.

- **Designating corridors for pipelines, electric transmission lines, and related infrastructure.** The Department of the Interior and the Department of Agriculture are conducting a periodic review of the Western energy rights-of-way corridors designated in 2009. As directed in the June 2013 Presidential Memorandum, DOE issued two reports—[one for assessing potential corridors in the West](#), as analyzed by the Western Electricity Coordinating Council, [and one for the rest of the United States that looks at current and potential crossings for transmission lines and oil and gas pipelines on federally protected national trails](#). The Bureau of Land Management (BLM) and Forest Service (FS) very recently began collecting information for an August kick-off of the first regional review of energy corridors established in response to Section 368(a) of the Energy Policy Act of 2005. This first regional review is anticipated to be completed by the end of 2016, subject to the availability of appropriated funds. The corridors provide linear pathways for siting infrastructure projects like high voltage transmission lines and energy pipelines. The BLM and the FS developed a framework to prioritize their efforts for conducting the reviews by establishing six regions that cover the Western U.S. These priority areas are those with the greatest opportunity for new renewable energy development, highest need for new energy transmission projects to bring renewable energy to load centers, and the best chance to resolve important resource conflict and congestion issues. In June, the agencies began engagement with the appropriate Resource Advisory Councils to begin planning to initiate the first of these regional reviews covering the desert southwest (encompassing southern Nevada, western Arizona, and southern California). This region is where many of the BLM's transmission and renewable energy projects exist or are planned and numerous energy corridors are designated in agency land use plans. The desert southwest was selected because the area has substantial

opportunities for development of new utility-scale renewable energy projects as well as a high demand for new energy sources in major load centers.

- **Undertaking landscape- and watershed-level mitigation and conservation planning.** Federal land management agencies have begun to implement mitigation and conservation planning at the landscape, ecosystem, or watershed level. For example, in March 2014, the Department of the Interior released the Solar [“Regional Mitigation Strategy for the Dry Lake Solar Energy Zone.”](#) and in April 2014, Secretary Jewell issued the [“Strategy for Improving the Mitigation Practices of the Department of the Interior.”](#)

- **Promoting grid modernization.** DOE has made a comprehensive grid modernization proposal in the President’s Fiscal Year (FY) 2016 Budget request. The crosscutting proposal supports strategic DOE investments in foundational technology development, enhanced security capabilities, and greater institutional support and stakeholder engagement, all of which are designed to provide the tools necessary for the evolution to the grid of the future.

- **Developing Tools and Expanding Data Availability.** The Administration has financed the development of a number of mapping tools that enable transmission planners and regulatory officials to study and compare alternative transmission line routes more efficiently and systematically. In addition, the Administration has identified a number of actions and policies to facilitate adequate collection, integration, and sharing of the best available data to assist project sponsors in siting projects in order to minimize resource impacts and to support Federal decision making, including:

- The Eastern Interconnection States Planning Council **Energy Zones Mapping Tool**, funded by DOE, is a free online mapping tool that identifies potential clean energy resource areas within the Eastern Transmission Interconnection. This website provides information about the study, background on the energy resources, and details on the data layers used in the tool. The tool includes 273 GIS data layers and links to policies and regulations, printable maps, and related documents. The tool can be accessed at [eispctools.anl.gov](http://eispctools.anl.gov);
- The Western Governors Association developed the [Regulatory and Permitting Information Desktop \(RAPID\) Toolkit](#) using American Recovery and Reinvestment Act Funding. The toolkit offers one location for agencies, developers, and industry stakeholders in the Western Interconnection to work together on renewable energy regulatory processes by using a wiki environment to collaborate on regulatory processes, permit guidance, regulations, contacts, and other relevant information.
- The **Energy Zones Mapping Tool (EZMT)** is a free online mapping tool to identify potential clean energy resource areas within the Eastern Transmission Interconnection. The Web-based EZ Mapping tool looks at nine clean energy resource for development in

#### **Champlain Hudson Power Express**

In October 2014, the Department of Energy issued a Presidential Permit for the Champlain Hudson Power Express, a transmission line that will deliver renewable hydropower from Quebec to meet New York City’s growing energy demand. The project developers estimate that the 1,000-megawatt transmission line will save consumers \$650 million each year and cut carbon pollution 2.2 million metric tons.

And we’re taking action to drive reliable, affordable, and sustainable hydropower at home. Since the President took office, DOE has provided awards to support more than 30 hydropower projects.

the East. Developed by Argonne National Lab for Eastern Interconnection Planning Collaborative (EIPC) using ARRA funding. It is being used in the Eastern Interconnection but leveraged more broadly. Evaluation of potential transmission facility locations in sensitive or resource-constrained areas. Produces user-customized maps of areas that fit the screening factors and criteria for various electrical power generation technologies. Argonne National Lab continues its stakeholder outreach campaign and technical assistance for the EZ Mapping Tool, available at <http://eispctools.anl.gov/>.

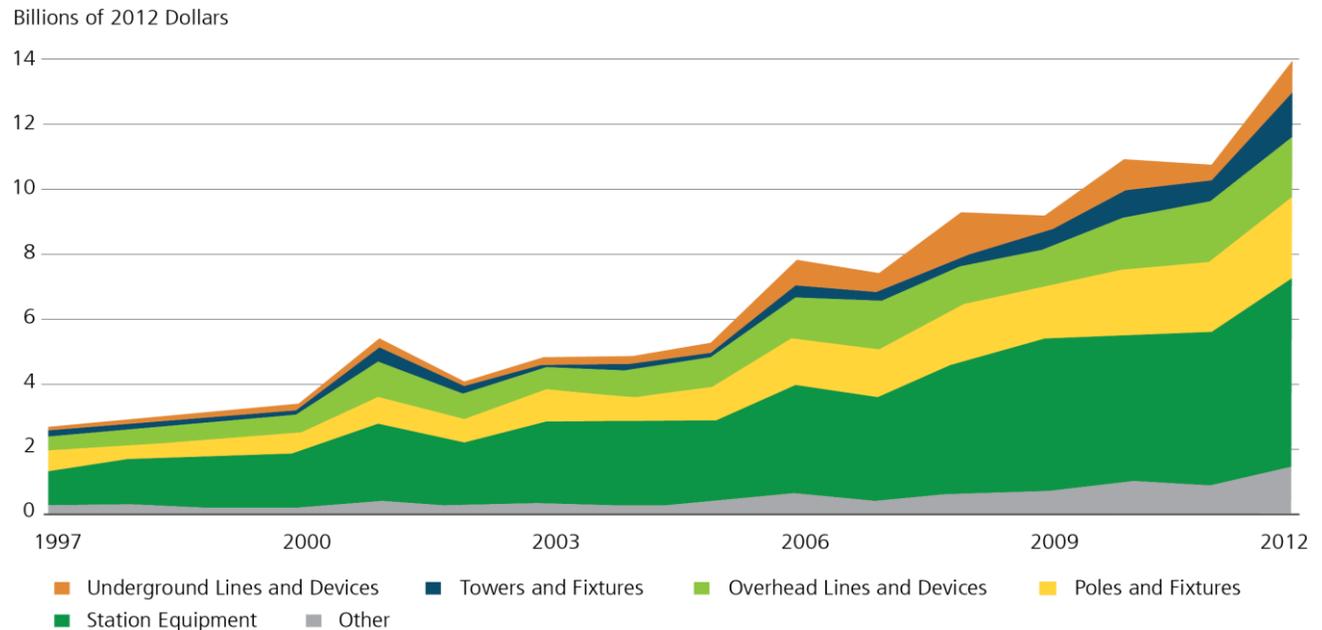
The Department of Energy has developed **NEPAnode**, an interactive mapping tool, containing 278 data sets/layers, as part of pilot effort to evaluate providing IT web services as a shared service, hosted on the cloud, and using only Free and Open Source Software (FOSS). Available at [nepanode.anl.gov](http://nepanode.anl.gov), the site is a collaborative data and document sharing platform where data is made publically available as a downloadable file or as a web service;

- The Fish and Wildlife Service **Information, Planning, and Conservation Tool**, an interactive, Web-based tool illustrating the natural resources for which the Fish and Wildlife Service has trust or regulatory responsibility. The tool allows interested parties to access a public website to determine if there are any Fish and Wildlife Service trust resources, including endangered and threatened species, in a potential project area before beginning the project design. In addition, project sponsors can get information about a species and its needs, as well as measures they can take to help protect and conserve the species when designing and constructing their project. The tool can be accessed at [ecos.fws.gov/ipac](http://ecos.fws.gov/ipac);
- The EPA's **NEPAssist**, a Web-based mapping tool to facilitate efficient and effective environmental reviews and project planning. The tool is part of an initiative developed by the Environmental Protection Agency and selected as a pilot by the Council of Environmental Quality to showcase its potential to modernize and reinvigorate Federal agency implementation of NEPA through innovation, public participation, and transparency. The tool can be accessed at [www.epa.gov/compliance/nepa/nepassist-mapping.html](http://www.epa.gov/compliance/nepa/nepassist-mapping.html);
- The Army Corps' **Federal Support Toolbox**, launched in May 2013, is a comprehensive "one-stop-shop" online water resources data portal with direct links to valuable data, state-of-the-art models, and tools for utilization in information sharing and collaboration for the water resources community in the United States and internationally. It serves as a single point of entry to comprehensive information about water resources programs, initiatives, legislation, policies, regulations, collaborations, partnerships, databases, tools, models, data, research and development, education, and leadership that is housed on a participating agency's or organization's own server.
- The Western Governors' Associations' **Crucial Habitat Assessment Tool**, an online system of maps that displays crucial wildlife habitat based on commonly agreed upon definitions developed by the Western Governors' Wildlife Council. The tool provides information across 16 Western states and links to five state-level Crucial Habitat Assessment Tools; it will link to new state Crucial Habitat Assessment Tools as they become available. The tool can be accessed at [www.westgovchat.org](http://www.westgovchat.org).

## CONTINUING TO DRIVE IN INVESTMENT IN TRANSMISSION FOR CLEAN ENERGY

The [Quadrennial Energy Review](#) found that investments in transmission and distribution upgrades and expansions will grow. It is anticipated that in the next two decades, large transmission and distribution investments will be made to replace aging infrastructure; maintain reliability; enable market efficiencies; and aid in meeting policy objectives, such as GHG reduction and state renewable energy goals. Recent increases in investment in transmission infrastructure by investor-owned utilities are shown in the figure below.

**Investment in Transmission Infrastructure by Investor-Owned Utilities, 1997 – 2012**



Source: QER 2015<sup>ii</sup>

A key take away from the QER was that both long-distance transmission and distributed energy resources can enable lower-carbon electricity. The transmission network can enable connection to high-quality renewables and other lower-carbon resources far from load centers; distributed energy resources can provide local low-carbon power and efficiency. The potential range of new transmission construction is within historic investment magnitudes. Under nearly all scenarios analyzed for the QER, circuit-miles of transmission expected to be added through 2030 are roughly equal to those needed under the base case, and while those base case transmission needs are significant, they do not appear to exceed historical yearly build rates. To continue this progress, the QER recommended taking the following actions:

- Conduct a national review of transmission plans and assess barriers to their implementation. DOE should carry out a detailed and comprehensive national review of transmission plans, including assessments on the types of transmission projects proposed and implemented, current and future costs, consideration of interregional coordination, and other factors. A critical part of this review should be to assess incentives and impediments to the development of new transmission.
- Provide state financial assistance to promote and integrate TS&D infrastructure investment plans for electricity reliability, affordability, efficiency, lower carbon generation, and environmental protection. In making awards under this program, DOE should require cooperation within the

planning process of energy offices, public utility commissions, and environmental regulators within each state; with their counterparts in other states; and with infrastructure owners and operators and other entities responsible for maintaining the reliability of the bulk power system.

- Allocate resources to key Federal agencies involved in the siting, permitting, and review of infrastructure projects. Federal agencies responsible for infrastructure siting, review, and permitting have experienced dramatic appropriations cuts and reductions in staff. Many of the components of the overall effort to improve the Federal siting and permitting processes have been stymied in recent years by appropriations shortfalls. Congress should fully fund these priorities.
- Prioritize meaningful public engagement through consultation with Indian Tribes, coordination with state and local governments, and facilitation of non-Federal partnerships. Early and meaningful public engagement with affected residential communities, nonprofit organizations, and other non-Federal stakeholders through the NEPA process and other forums can reduce siting conflicts. Federal agency coordination with state and local governments and government-to-government consultation with affected Indian Tribes should remain a Federal Government priority. When possible, Federal agencies should co-locate energy infrastructure environmental review and permitting staff from multiple Federal agencies' regional and field offices.
- Expand landscape- and watershed-level mitigation and conservation planning. When adverse impacts to the Nation's landscape cannot be avoided or minimized any further, Federal agencies should seek innovative approaches to compensate for adverse project impacts commensurate with the scope and scale of the project and effects to resources. Through mitigation planning at a landscape, ecosystem, or watershed scale, agencies can locate mitigation activities in the most ecologically important areas.
- Adopt Administration proposals to authorize recovery of costs for review of project applications. Consistent with the proposal in the President's FY 2016 Budget Request, additional flexibility for certain agencies to accept funds from applicants would be appropriate and could expedite the Federal permitting and review process.
- Enact statutory authorities to improve coordination across agencies. Congress should authorize and fund the Interagency Infrastructure Permitting Improvement Center in DOT, as set forth in Section 1009 of the Administration's draft legislation for the GROW AMERICA Act.

## Citations

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