PIERCE ATWOOD LLP

Thursday, July 15, 2021

Transmission Line Development in the Northeast

Co-presented with Daymark Energy Advisors

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Today's Increasing Transmission Development Opportunities

Key drivers, expanding benefits, and how to engage in the market

JULY 15, 2021

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Our mission

Daymark Energy Advisors brings deep knowledge and an integrated view of **energy infrastructure, regulation, and markets** to help our clients make well-informed **business, capital investment, and policy decisions** in the face of transformative change to achieve decarbonization.

Assessing opportunities and risks in RTOs/ISOs

Daymark Energy Advisors' advisory business is built on a deep knowledge of the Eastern and Midwestern RTOs/ISOs

Power system | Planning and operation, modeling, technologies, expansion

Market structures | Locational pricing, congestion, transmission rights, capacity rights

Policy | State and federal, tax incentives, clean energy policies

Regulation | State and federal, siting, FERC Order 1000, OATT, cost recovery

Business models | Merchant, tariffed, contracted

Complexity and commensurate risk is increasing…

- Key drivers of transmission are expanding in number and complexity
  - Reliability
  - Public policy
  - Market efficiency
  - Resilience
- Long development cycles increase the risk of an uncertain future
- To a transmission developer, 2030 is basically already here!

Different approaches to procuring transmission…

Lack of a clear Federal policy has led states to take the lead…

Image source: ISO/RTO Council

Maine | Potential Aroostook County procurements for transmission & renewable energy

Massachusetts | 83D solicitation (transmission combines with incremental clean energy)

NESCOE transmission system planning public process

New York | Priority projects (Accelerated Renewable Energy Growth and Community Benefit Act)

New York | Tier 4 (RECs into New York City, combined with new transmission)

New Jersey | Integration of public policy and RTEP process for procuring transmission (SAA process)

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Requested benefits are likewise expanding…

With varied approaches to evaluating and procuring transmission comes a wide range of sought-after benefits

- Benefit-cost ratio is still key, but more challenging to calculate in a multi-value world (not necessarily lowest cost)
- Many additional economic and physical benefits sought, not all of which are easily reducible to a single metric:
  - Jobs (and other economic benefits, especially for disadvantaged communities)
  - Carbon reduction/avoided thermal generation
  - LMP reduction
  - Congestion reduction
  - Ability to interconnect supply to meet future policy objectives (e.g., more renewables)
  - Increased transfer capability at key interfaces
  - Winter resource reliability/fuel diversity
  - Resilience

The complexity of benefits evaluation is increasing…

Transmission planning

- Feasibility/due diligence
- Traditional reliability studies
- Capacity and/or energy deliverability
- Power flow under future conditions
- Risk/monte carlo analysis (resilience under extreme conditions)

Energy market benefits

- "With and without" analyses
- Scenarios and stochastic modeling help illustrate robustness of results
- Congestion analysis
- State versus regional benefits (scope of modeling topology)

Economic modeling

- State and regional impacts
- Increased focus on intra-state impacts
- Locating the job impacts
- Illustrating and committing to impacts to disadvantaged communities

What future world should we be planning to?

- State goals will require a radically different system
  - New generation mix
  - New locations for generation and demand
  - Power flows will change, in some cases radically
  - **What will the future grid look like?**
- Markets will change too
  - Less dependent on fuel costs for marginal pricing
  - Will new ancillary services be needed to ensure a reliable grid, and how will they be priced?

Other considerations

- How do we view beneficiaries in a world with multiple benefits?
  - How do we determine who benefits and by how much?
  - What does this mean for indirect benefits?
  - Is there a societal component that should be recognized?
- Should state procurements score the societal (non-electrical) benefits?
  - If so, how do we measure those?
  - How should we consider benefit trade offs?
- What about post “win” risks – how do we plan for potential benefit expansion through the regulatory process?
  - Clear cost of doing business
  - Uncertain exposure going into a competitive solicitation

Differing planning and procurement approaches impact risk

- What are the commercial risks associate with various procurement approaches?
  - Tied to and paid through volumes of renewable energy **(New York Tier 4 approach)**
  - Tied to renewable energy, but paid for through tariff rates **(Massachusetts 83D approach)**
  - Transmission only, paid for through tariff rates **(NY priority projects approach)**
- Approaches to planning the future grid can likewise differ
  - NYISO – Clean Energy Grid of the Future
  - ISO-NE – Future Grid Initiative Key Project
  - New England States Committee on Electricity (NESCOE) – Transmission System Planning public process
- Transmission developers need to engage as key stakeholders to ensure their perspective is considered

Pulling it all together…

- Evaluating the benefit-cost profile of a transmission project is becoming more challenging than ever
- Uncertain market and legislative futures increase risk exposure
- Regional differences further complicate the evaluation of risk for developers
- The regulatory process leads to further uncertainty even in the event of a bid winning in a solicitation
- States and other stakeholders recognize the need for clarity in their planning and procurement processes, but progress takes time
- Modeling and assessing risk across all dimensions is critical to informing decision making and providing the most competitive, commercially viable bidding strategy

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Thank you

Let’s continue the conversation

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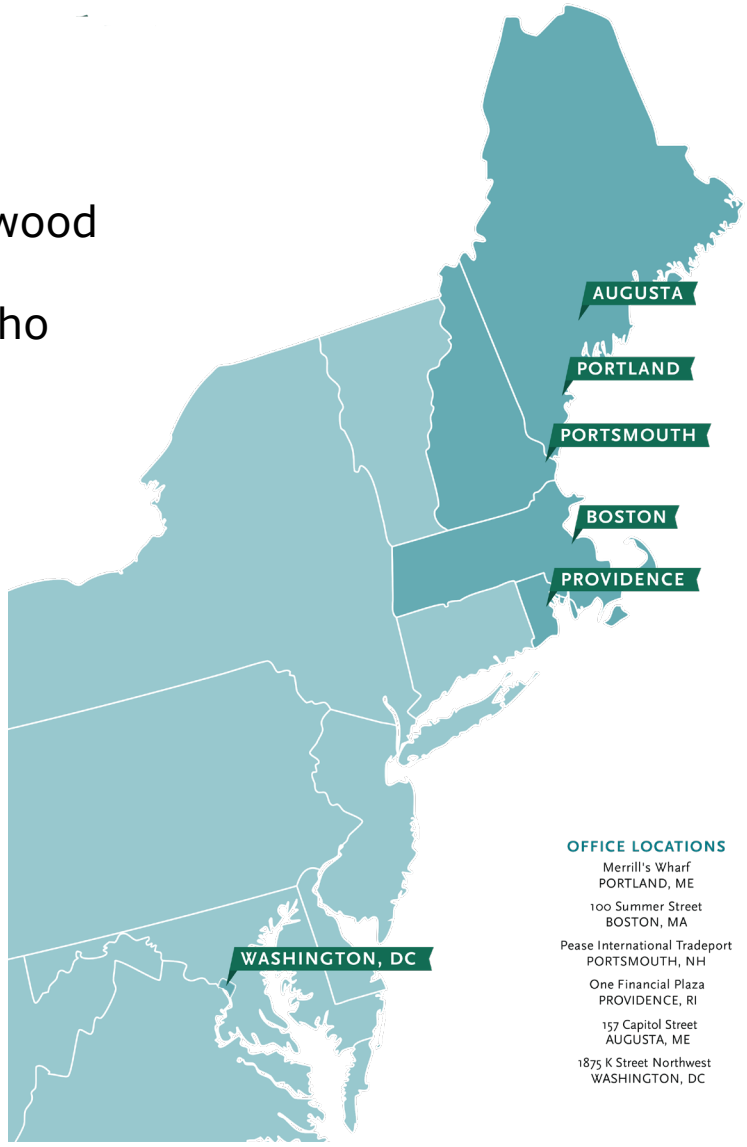
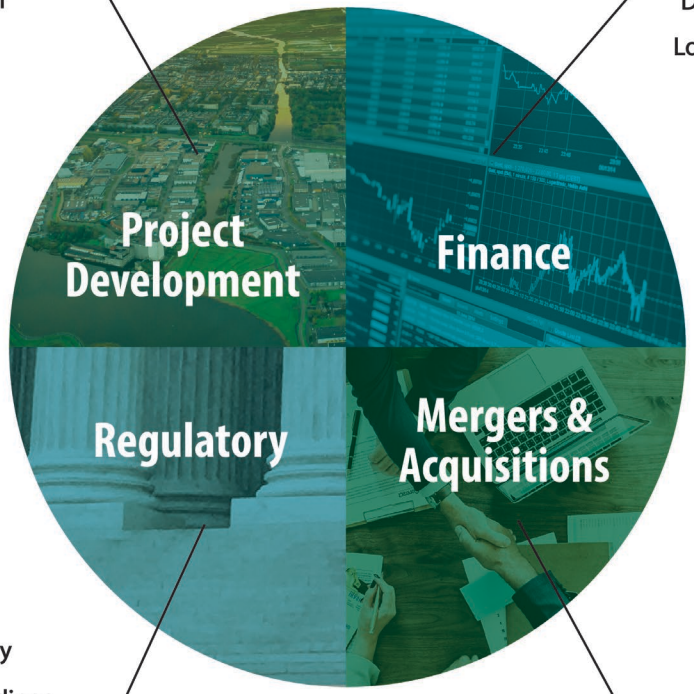
Considerations for Developing a Competitive and Viable Transmission Project

Pierce Atwood LLP

Founded in Portland, Pierce Atwood has expanded to offices in six locations with 150 attorneys who serve regional, national and international clients.



Pierce Atwood's Full Suite of Energy Services



Project Development

- Project documentation (e.g., EPC, PPA, O&M, hedge agreements)
- Renewable energy
- Energy storage
- Real estate, siting & permitting

Finance

- Development loan financing
- Loan & credit documentation
- Tax equity structuring
- Governmental incentives
- Credit assessment & financial structuring
- Diligence & risk allocation
- Asset-backed securities
- Equity offerings

Regulatory

- FERC & state energy regulation
- Interconnection & transmission
- Hedging & risk management
- Climate & energy policy
- Administrative proceedings, litigation & enforcement

Mergers & Acquisitions

- Market evaluation & assessment
- Due diligence & risk mitigation strategy
- Deal negotiation & documentation
- Joint ventures & strategic alliances

For more information, please visit:
https://www.pierceatwood.com/practice-areas/energy-infrastructure-project-development-finance

Key Considerations

- How is the transmission line going to be paid for?
- Why is the transmission line needed (*i.e.*, is there a "public need" for the line)?
- Are there alternatives to the line that will address the need more cost effectively, receive less opposition, or be more easily permitted and constructed?
- What permits and approvals are necessary to construct and operate the transmission line?
- Who will oppose the transmission line and can the opposition's concerns be addressed?
- Will political leaders and the public support the transmission line?

Cost/Investment Recovery

How is the transmission line going to be paid for?

- By retail customers/load or by "participants"?
- Through a FERC-approved Tariff or transmission services agreement and/or some other market mechanism?
- Answers dictate:
  - Who pays;
  - Applicable study/review process before ISOs/RTOs and FERC; and
  - How key risks allocated;

Cost/Investment Recovery

From retail customers / load:

- Through a FERC-approved Tariff
- Cost recovery and risk allocations dictated by Tariff terms and category of transmission project (*e.g.*, Reliability, Market Efficiency, Public Policy, etc)
- Transmission category dictates applicable ISO/RTO study process to identify need, project scope, and necessary upgrades to permit interconnection and cost allocation
- Based on terms of the Tariff, may be:
  - Available to incumbent and nonincumbent transmission developers; and
  - Subject to ISO competitive solicitation requirement

Cost/Investment Recovery

From participants:

- Through a FERC-approved transmission services agreement (TSA) with participants or subscribers (*e.g.*, clean energy suppliers, load serving entities, or other transmission customers/shippers)
- In accordance with FERC 2013 Final Policy Statement, 143 FERC ¶ 61,038:
  - Participants identified through bilateral negotiation and/or open season;
  - Charges may be "cost-based" or the result of sponsor's "negotiated rate authority"
- Agreement terms allocate risks
- Structure appropriate for incumbent, nonincumbent, or merchant developers
- Funding under other market mechanisms possible, including capacity market revenues, congestion revenues (e.g., FTRs or TCCs), but not under typical Transmission tariff cost recovery provisions
- Typically studied by ISOs as part of generation interconnection queue

Cost/Investment Recovery

Pricing & Contract Terms:

- What risks included in pricing?
  - Schedule and permitting risks
  - Transmission availability
  - Generation delivery & market risks (cover damages, basis risks, etc)
- Does the price include amounts for benefits or mitigated solutions (known or unknown) for host communities, project opponents and/or other interested stakeholders?
- How much certainty / flexibility built into price?
- How are cost overruns to be addressed?
- Recovery of abandoned plant?

Siting Approval

- Siting transmission is generally a state-driven decision with limited FERC oversight or involvement
- Depending on the jurisdiction may be "one stop shop" or multiple state/local approvals needed
- Key question – is there a "public need" for the line or is the line in the "public interest"?
  - What is the purpose of the line?
  - Will it serve the public interest?
- State and local land use and environmental permitting requirements typically also must be satisfied

Siting Approval – Public Need / Public Interest Standard

Required showing/elements may not precisely fit transmission lines proposed to meet current/future policy objectives

- **Economics**
  - Customer impacts
    - Cost of transmission facilities recovered through retail rates?
    - Impact on supply prices/LMPs
  - Macroeconomic benefits
    - Taxes, GDP, jobs
- **Reliability**
  - Effects of the proposed line on (1) the reliability of the transmission system as a whole and any relevant portion or subsystem thereof, and (2) the capability of the transmission systems to serve existing and projected loads – addressed with ISO/RTO study processes
  - Necessity or contribution of proposed line for compliance with applicable NERC, NPCC, ISO/RTO and/or TO reliability standards or criteria.
  - Other reliability considerations include resource adequacy, fuel security, winter resource reliability, redundancy, resiliency, and incidental resolution of other identified reliability needs.

Siting Approval – Public Need / Public Interest Standard (*cont.*)

- **Corridor/Route**
  - Proximity to inhabited dwellings
  - Potential impacts on abutting properties (e.g., property values)
  - Proximity to protected / environmentally sensitive areas or resources
- **State Public Policy Goals**
  - Reduction in greenhouse gas emissions
  - Impacts/benefits for renewable energy development & RPS achievement
  - Promotion of adequate, reliable, and diverse electricity supply
  - Promotion of beneficial electrification
- **Public Health and Safety**
  - Electromagnetic Fields (EMF)
  - Fire safety
  - Emergency response during construction

Siting Approval – Public Need / Public Interest Standard (*cont.*)

- **Scenic, Historic and Recreational Values**
  - Visual simulation
  - Undergrounding
  - Corridor access for recreational purposes
- **Alternatives**
  - Nontransmission Alternatives (NTAs) or Nonwires Alternatives (NWAs)
  - Route
- **Other Environmental Impacts/Concerns**

Addressing Opposition

- Transmission projects will have opposition.
- The opposition will likely be fierce.
- The opposition will have various objections, concerns, and motivations.
  - E.g., competitors, impacted market participants, abutters, environmental NGOs, customer groups, local activists, elected officials
- Developers should work to engage early and often with opponents to understand their objections, concerns, and motivations.
- To the extent reasonably possible, the objections, concerns, and motivations should be considered (and ideally addressed) at each stage in development and in each applicable permitting or approval process.

Addressing Opposition

- Communicate, communicate, communicate!
- Find solutions that work for all interested stakeholders and support/improve permitting/approval outcomes
  - Be creative – where can win/wins be created among stakeholders
  - Be consistent, fair and transparent
- Construct an appropriate benefits package
- Plan for such solutions/benefits package in project pricing

Addressing Opposition

How do find the "win/wins"?

Understanding/Foresight/Flexibility

- What are procurement objectives/criteria, if applicable?
- What is legally necessary and practically feasible for each needed permit/approval?
- What are the opponents' concerns or objections?
- How do requirements/concerns/options fit together?
- How will each obligation/commitment impact compliance with other requirements?
- How do the various requirements impact the project schedule and cost?
- Are there solutions that create flexibility / optionality to help address later requirements, hurdles or objections?
- Regularly re-evaluate and adjust the plan based on new developments/circumstances

Public outreach

Outreach

- Objectives
  - Information sharing – keep public informed
  - Compliance – notice requirements of permitting agencies or other regulators
  - Influence decision makers
  - Gain support
  - Sway public opinion
  - Minimize or neutralize opposition
- Tools
  - Regulatory proceedings (including pre-filing meetings)
  - Public information sessions or meetings
  - Traditional media & public relations
  - Social media
  - Thought leaders / champions / influencers

Public Outreach – Recommendations

- Keep the message simple and compelling for the public and elected officials
- Build a strong record of facts supporting the project and use that record publicly
  - Facts remain important even in today's "alternative facts" world

    BUT

  - Be mindful
    - That established "facts" may be ignored or dismissed
    - Of societal biases in communications and impacts on understanding
  - Address mistaken public perceptions
  - Be prepared to rebut false narratives firmly, promptly and repeatedly

Public Outreach – Recommendations (*cont.*)

- Cultivate and empower stakeholder partners / influencers to spread the message and use recognized and respected thought leaders / champions to validate the facts and the message
- Remember that outreach should continue during construction
- Provide notice of construction progress
- Maintain vigilant compliance during construction
- Implement dispute resolution processes

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Environmental Permitting Issues and Challenges

Environmental Permitting: Key Considerations

- What environmental permits do I need?
- Which agencies are my regulators, and how will they coordinate their permitting efforts?
- That sounds complicated, how long will this all take?
- What can I do to try to reduce permitting time?
- What's going on with NEPA?

Environmental Permits

- Federal
- State – varies
  - Maine
    - DEP Site Law and NRPA Permits, in addition to PUC siting approval
    - LUPC Certificate
  - New Hampshire
    - SEC Certificate of Site and Facility

Don’t forget Municipal!

Environmental TL Regulators

State

- States have primary authority over siting and permitting
- Interstate TLs must comply with specific requirements of each state
- Environmental permitting varies – may be addressed in single proceeding or before multiple agencies
- Local municipal zoning and permitting requirements also may apply

Federal

- FERC: responsible for cost recovery / rate regulation; limited siting authority within corridors designated by the DOE
- DOE: coordinates applicable Federal authorizations and related environmental reviews
- Corps: WOTUS permitting and related environmental review
- BLM/USFS: issues rights-of-way where cross Federal lands
- USFWS/NPA: coordinating agencies

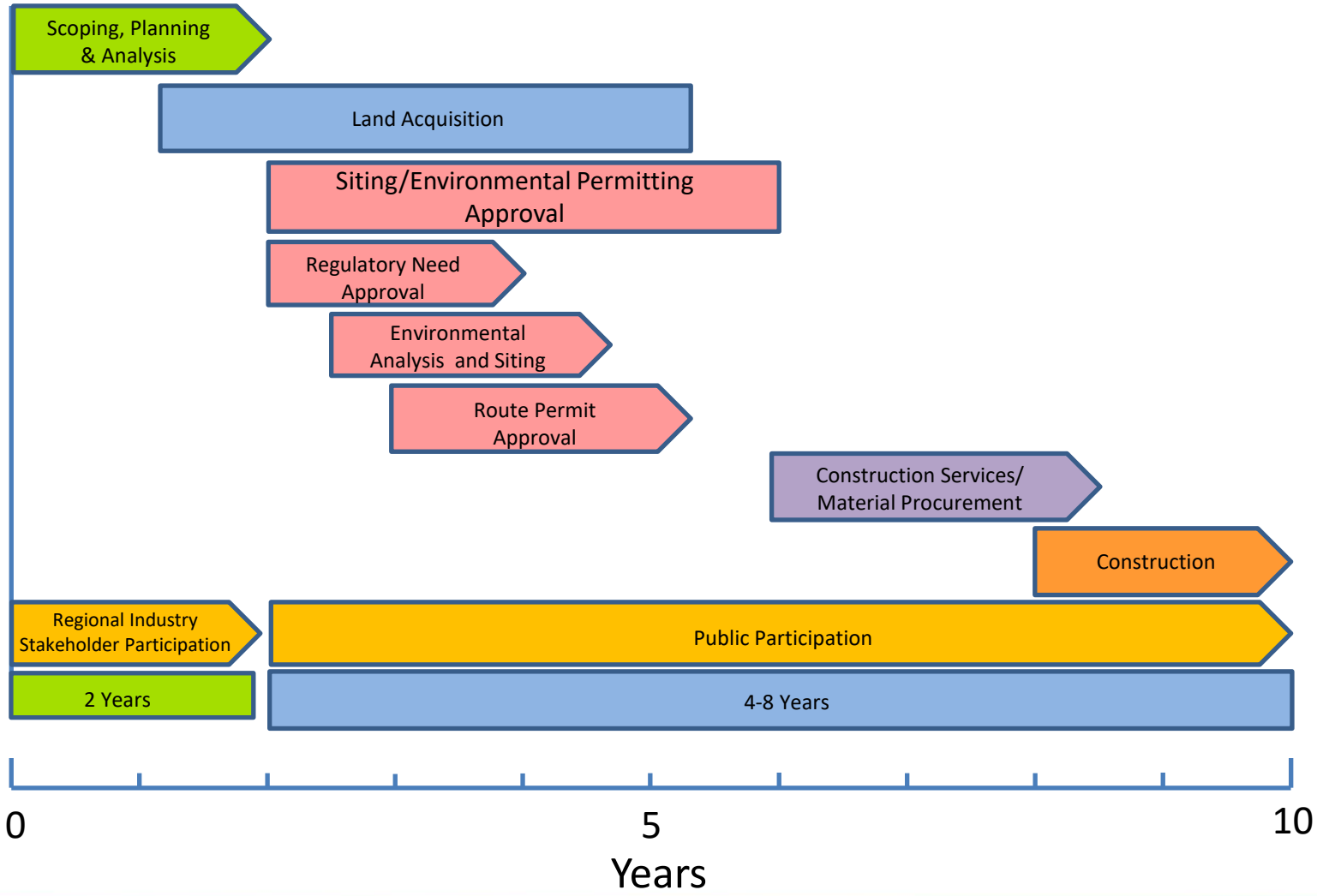
Environmental Regulators

- Federal/state environmental review overlap

NEPA	MEPA
Categorical Exclusion, 40 CFR 1508.4, 40 CFR 1507.3	N/A
Environmental Assessment (EA), 40 CFR 1508.9, 40 CFR 1501.3	Environmental Notification Form (ENF), 301 CMR 11.03, 301 CMR 11.05
Finding of No Significant Impact (FONSI), 40 CFR 1508.13	Determination that project does not require an EIR
Notice of Intent, 40 CFR 1508.22	N/A
Draft Environmental Impact Statement (DEIS), 40 CFR 1502, 40 CFR 1508.11	Draft Environmental Impact Report (DEIR), 301 CMR 11.07(6)
Final Environmental Impact Statement (FEIS), 40 CFR 1502, 40 CFR 1508.11	Final Environmental Impact Report (FEIR), 301 CMR 11.07(6)
Record of Decision, 40 CFR 1505.2	Determination that project adequately complies with MEPA

- "Lead" and "Cooperating" federal agencies, plus coordinating agencies
- Extent of federal jurisdiction over private projects

Timing: Long Path to Approval



Timing: State Review

Major factors:

- Hearing process
- Project revisions
- Public opposition
- Parochial attitudes
- Municipal timing and permit expiration

Case Study 1: Northern Pass

- 192 miles of new HVDC transmission line from Canada to New Hampshire, in part through a national forest
- Would allow for the transportation of up to 1,090 MW of hydropower to the New England power grid

Substantial Delays

- Project sponsor's first proposed route, introduced in ***2011***, subject to strong public opposition from diverse groups such as municipalities, historic trust organizations, and environmental advocacy groups alleging that Northern Pass would have negative or destructive effects on
  - Environmental and natural resources, particularly the White Mountain National Forest
  - Scenic views
  - Tourism
  - Historic preservation sites
  - Public safety and health
- Project sponsor paid more than $40 million for land parcels along the original proposed transmission route, while conservation groups opposed to the project sought conservation easements in the same areas
- Project sponsor introduced a second proposed route in ***2013***, which subject to similar opposition, including litigation in state court, and ultimate rejection by New Hampshire Site Evaluation Committee

Case Study 2: Grain Belt Express

- 780-mile overhead DC transmission line running from western Kansas to Indiana

- Capable of delivering 4,000 MW of renewable wind energy

Certificate Denied: Local Harms Outweigh Benefits

- **March 2014**: Project Sponsor filed request for certificate of convenience and necessity (CCN) with Missouri regulators
- Substantial opposition from intervenors, including:
  - A bed and breakfast owner, who testified that the proposed line would degrade the scenic views from her property and discourage guests from seeking lodging
  - Area farmers, who testified of their concerns regarding the proposed transmission line's soil effects, as well as the project's potential interference with irrigation equipment and aerial applications to crops
- **July 2015**: PSC denies CCN by 3-2 vote, finding that construction of the line was not in the public interest. Failure to demonstrate a benefit to Missouri residents from this merchant line extending from Kansas to Indiana important factor in balancing of public interest. Public opposition outweighed purported but unproven benefits to Missouri.

"GBE touts the Project as a way for Missouri to access affordable clean energy as increasing environmental regulations increase costs for coal plants. It is too soon to say what the impact of the proposal will be on Missouri."

Certificate Denied Again, Then Granted:

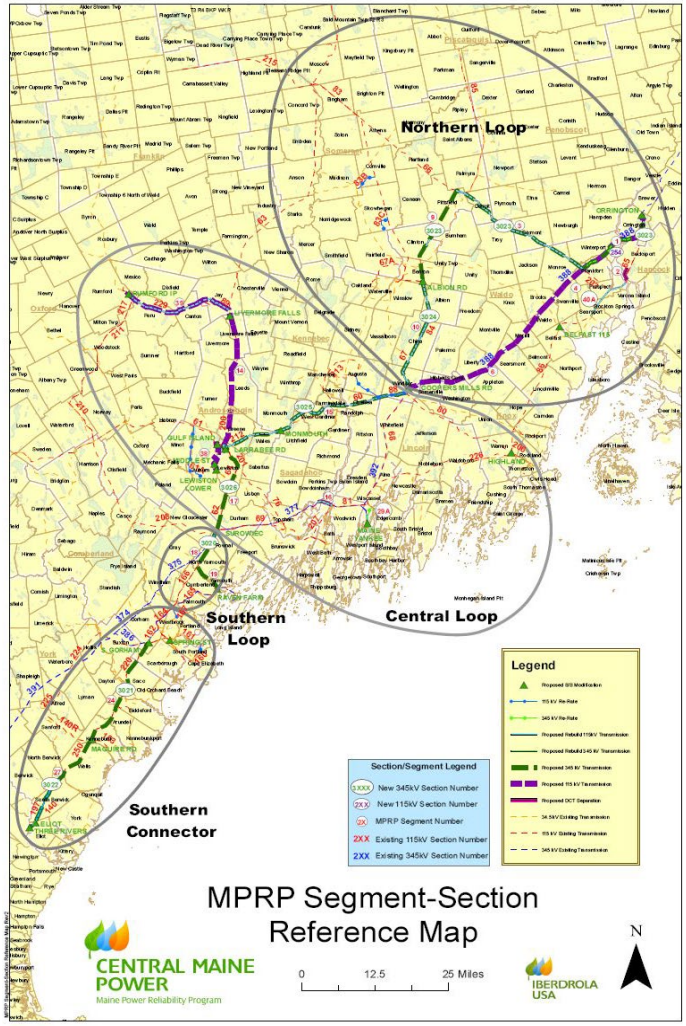
- **June 2016**: Project sponsor submits new application for CCN to the Missouri PSC
  - New application "[r]evis[es] certain aspects of the proposed route of the project as a result of comments by landowners and others collected during public outreach sessions in 2016, as well as during the 2014 Case."
- **August 2017:** Missouri PSC denies on chicken-or-the-egg grounds
- **August 2018:** Successful appeal and remand
- **December 2018:** Evidentiary hearing, again
- **March 2019:** Missouri PSC grants CCN
  - Finds both short-term and long-term benefits to ratepayers and citizens of the state.

"There can be no debate that our energy future will require more diversity in energy resources, particularly renewable resources," said the Commission. "We are witnessing a worldwide, long-term and comprehensive movement towards renewable energy in general and wind energy specifically. Wind energy provides great promise as a source for affordable, reliable, safe and environmentally-friendly energy. The Grain Belt Project will facilitate this movement in Missouri, will thereby benefit Missouri citizens, and is, therefore, in the public interest."

Note the significant shift in perspective – from local "public interest" to global

Case Study 3: Maine Power Reliability Program - A Successful Example

- In 2015, Central Maine Power (CMP), completed the $1.4 Billion Maine Power Reliability Program (MPRP), the largest construction project in Maine's history
- MPRP included the construction and/or rebuilding of approximately 450 miles of transmission line and 12 substations
- ISO-NE approved MPRP as a "Reliability Transmission Upgrade" needed to address significant reliability concerns in Maine's "Bulk Electric System"
- Timeline:
  - 2006: Initial project planning
  - Summer 2008: CPCN/Permit Applications
  - Summer 2010: CPCN/Environmental permits obtained
  - 2010 – 2015: Construction
- CMP completed MPRP **<u>on-time</u>** and **<u>under-budget</u>**
- ***Lessons learned?***



Timing: Federal Review

- Interagency coordination
  - Early and often
- Environmental Assessment and FONSI
  - Scope and applicability
- Environmental Impact Statement

❖You said how many years?!?!?

NEPA Update: A Change in Administration

- Recent NEPA overhaul under the Trump administration
  - Major changes in scope and timing
  - Where do we stand on GHG analysis?
- NEPA commitments by the Biden administration
  - Will the Trump administration overhaul stand?
  - Economic justice and TLs

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