London Economics International LLC

Merchant transmission: planning and development *Lessons Learned from North America*

Conference - Integrated Transmission Planning and Regulation

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LEI is looking forward to leveraging its North American transmission experience in the UK/Europe

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- **TRANSMISSION TARIFF DESIGN: LEI has consulted on conventional cost-of-service transmission tariffs, as well as performance based ratemaking, and time-of-use transmission rates to respond to new consumption patterns and policy goals.**
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Agenda

1	**Key messages**
2	Transmission planning – US style
3	Merchant transmission – what is it and where does it fit in?
4	Concluding Remarks

Transmission investment models are evolving as power markets mature

- **Transmission has been a regulated industry, dominated by monopoly providers, providing a service that has been deemed "needed" for primarily reliability/technical reasons – "competition" and "markets" are new concepts for transmission providers**
  - Investor focus has traditionally not been on transmission because of the dominance of incumbent (regulated) utilities and regulatory institutions and because the economic value of transmission was never as apparent (transparent) under the regulated model, prior to start up of wholesale power markets
- **Planning has slowly evolved in the US, although superficial distinctions between reliability and economic transmission projects remain**
  - Planning of new transmission is challenged by the various institutions and numerous (Federal and state) regulators involved, even in restructured wholesale power markets
  - Although reliability projects are subject to same national set of NERC standards, criteria for evaluation of economic project differs by RTO – even metrics differ!
  - With Order 1000, FERC is moving in the right direction, but obstacles remain
- **Many flavors of merchant transmission co-exist in the US**
  - Market efficiency/economic projects have some different traits which may fit better under a variety of business models (regulated ROE, contracts, spot sales); success will depend on market-specific facts
- **Planners and regulators need to recognize some commercial realities**
  - Merchant investment – be that generation or transmission – is challenging, needs security of revenues for financing

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Traditional planning has focused on the reliability needs of the grid

- **Objectives are clear (reliability standards like N-1 and N-1-1 in North America)**
  - Reliability standards require modeling the power system under "stress" conditions, rather than typical operating conditions – key distinction with method of study for economic studies
- **Techniques have also been well-established over many years (engineering tools that study load flows, thermal and voltage violations, stability analysis)**
- **Costs for each proposed solution are identified and evaluated of various alternatives**
  - Historically, vertically integrated utilities would have been incentivized to also consider non-transmission alternatives, but restructuring has changed such incentives
  - "benefits" of reliability typically not monetized
- **Improvements possible –**
  - Economic consideration of reliability benefits could be estimated to the extent that policymakers are willing to monetize reliability benefits (Value of Lost Load)
  - Non-transmission alternatives examined more comprehensively and as a matter of standard practice
  - Economic valuation metrics can be made more consistent across RTOs and given "who pays" principles

Reliability planning proceeds under the implicit presumption that compliance with defined standards yields benefits greater than costs

Economic planning has generally proceeded within the sort of strict financial framework characterizing what is generally referred to as 'cost-benefit' analysis

CAISO was one of the first ISOs in the US to consider evaluation of economic transmission for its planning group

- **Path 15 was one of the first merchant projects approved and built in the US**
  - 500 kV May 20 Upgrade (roughly 1500 MW of additional capacity) between northern and southern California; project technical plans initially proposed in late 1980s
  - DOE directed development in May 2001 due to prior years' congestion costs, private interest was robust – nine participating parties selected initially; approved by CPUC on basis of both reliability and economics
  - original project participants included Western Area Power Administration ("WAPA"), PG&E and Trans-Elect - PG&E performed the substation and 115- and 230-kV system work for18% of the new transmission capacity, WAPA completed all planning work, acquired land rights and managed the construction for a 10% share, Trans-Elect provided the remaining funding for the transmission line and held 72% of capacity(now owned by Atlantic Power)
  - Under the operation of CAISO, FERC-authorized cost-of-service model drives revenues – Atlantic Power currently receiving 13.5% ROE
- **In response to analytical needs identified in Path 15 case, CAISO developed Transmission Economic Assessment Methodology ("TEAM") in 2002-2004**

No universally agreed model for ensuring efficient transmission solely through investment through market instruments	**Prices, consumption and investment in generation set increasingly through private transactions without a regulator**	**Transmission affects generation value. Generation affect transmission value. One may lead the other**	**Regulatory hurdles are key factors in transmission investment, affecting timing, costs and location**
A coordinator is still needed	**Uncertainty and market power emerge as problems**	**Need to resolve the inter-dependencies between different types of investments**	**Need to factor impact of regulation on costs and uncertainty**

Improvements are always possible

FERC Order 1000 suggests that it is possible to reform transmission planning

- Coordination is recommended - transmission owners need to participate in regional and inter-regional planning processes
- Incumbents cannot have Right of First Refusal
- Regional and interregional cost allocation methods should respect beneficiary pays : cost allocation should be "at least roughly commensurate with estimated benefits"
- Cost allocation can vary for different types of transmission projects (e.g., reliability, economic, public policy)

More generally, I would recommend reframing the objective

- Existing planning processes focus first and foremost on reliability considerations, with system economics a subsidiary (and relatively new) concern for system operators
- However, transmission system reliability and economics are both driven by the same basic concern – creating and maintaining uncongested paths for delivery
- Current planning approaches can be reframed: Maximize Economic Net Benefits subject to (1) applicable reliability constraints and (2) applicable policy constraints

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What is a merchant transmission project?

- **Definition of a "merchant" from the Merriam-Webster Dictionary:**

  buyer and seller of commodities for profit

- **Industry lacks agreement on what defines a merchant power plant**
  - Does a merchant generator rely solely on the spot market of electricity?
  - Or can a merchant participate in contracts markets – and if so, do those need to be market-based contracts?

- **Even less consensus on what is merchant transmission**
  - Unlike merchant generator concept, which relies on market sales, a common definition of "merchant transmission" focuses on ownership - a merchant transmission project is one that was built or financed by a third party unrelated to incumbent utilities

- **Variety of merchant models make it difficult to create a universal demarcation**
  - Transmission projects built by an independent, operated by the RTO/ISO and revenues received based on transmission tariff of the RTO/ISO
  - Transmission projects built by an independent, operated by the RTO/ISO, with revenues generated by contracts for transmission service
  - Transmission projects built by an independent, operated by an independent transmission entity (not necessarily RTO/ISO), and revenues generated by contracts for transmission service, including "spot sales" of transmission

In general, there are three potential avenues for securing customers for a "pure" merchant transmission project

- **Anchor tenant agreement**
  - Through bilateral negotiation with potential customers
  - Typically long term (up to twenty years)
  - Buyer needs to be credit-worthy; ultimately credit of utilities buying the energy from generator would be used to secure transmission service agreement
- **Open season**
  - Through a competitive sales process, whereby qualified (credit-worthy) participants are able to bid against each other in an effort to purchase transmission service products in a FERC-approved "auction" process – FERC mandated fairness and transparency
  - Contract terms can range from one year to twenty years
- **Real-time market**
  - Shorter term (e.g. annual, seasonal, monthly, daily, etc.) sales of firm and non firm transmission service
  - Real-time markets will focus on arbitrage of the price difference between "source" and "sink" (i.e., congestion rent)

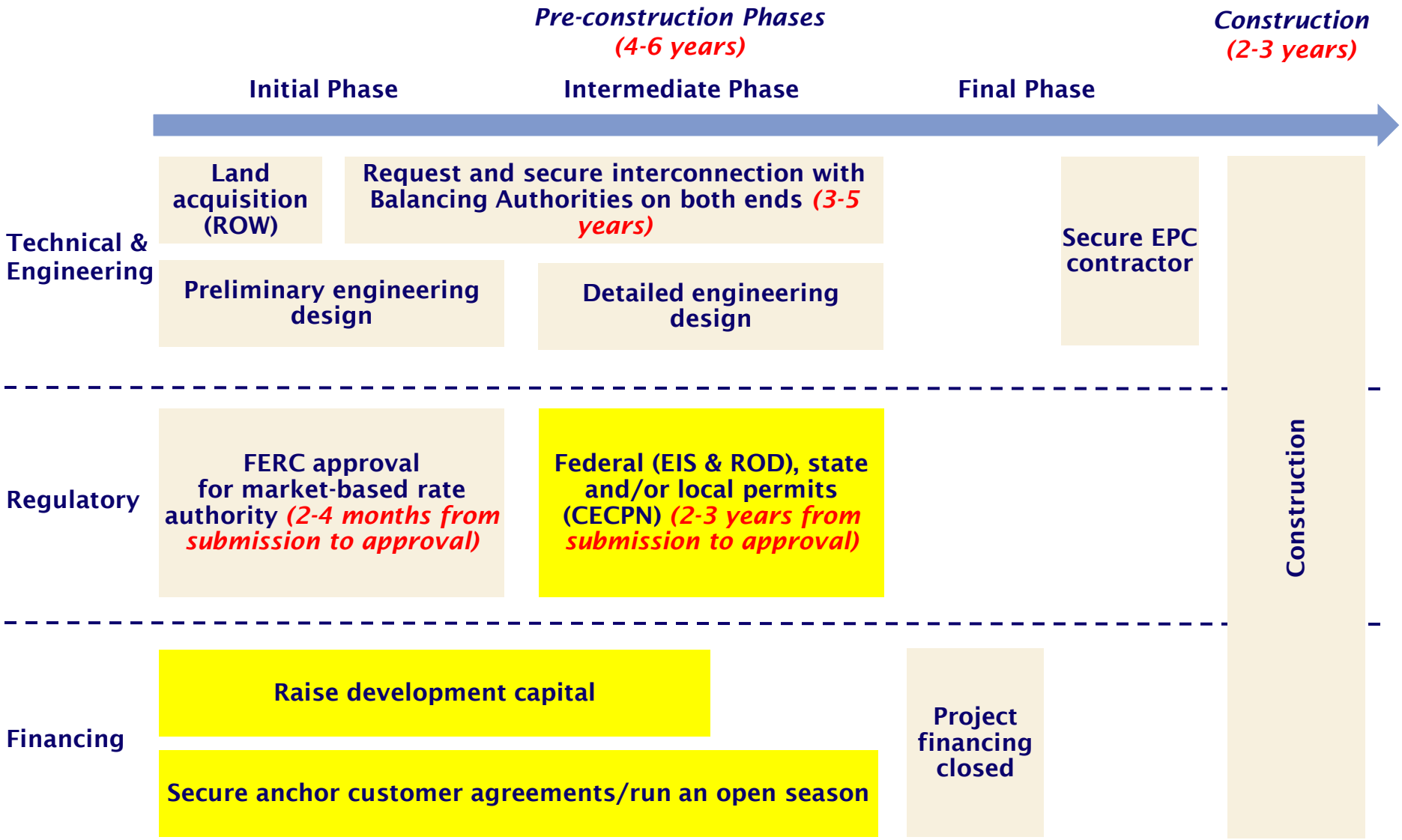
Customers of transmission service on merchant lines originate from a diverse set of potential counterparties

- **Anchor tenant models attract two broad types of customers**
  - Customers may include existing generation owners or generation project developers who would buy transmission service and respond to Request For Proposals ("RFPs") issued by utilities; they typically look for transmission access to deliver the physical power from their assets
    - Zephyr project (now being developed jointly by Duke Energy and American Transmission Co.) has signed precedent agreements for 2,100 MW of the planned 3,000 MW of capacity with Pathfinder Renewable Wind Energy LLC
  - Utilities, retailers or more generally Load Serving Entities ("LSEs") with renewable requirements or energy needs can also become anchor tenants through similar long term arrangement, which gives them access to (renewable) energy
    - NV Energy (a utility company in Nevada) became a partner and bought all the capacity on the southern half of the Southwest Intertie Project
    - Long Island Lighting Company (now Long Island Power Authority) acquired 100% of available firm transmission service capacity from Cross Sound Cable
- **Buyers of short-term transmission rights are more likely to be pure energy traders or owners of merchant generation assets looking to maximize inter-regional trading opportunities and arbitrage congestion**
  - Proof of concept available in the form of FTR auctions within RTOs – many willing buyers who are interested in arbitraging/hedging congestion risk
  - However, no precedent (yet) for merchant transmission project successfully selling short-term transmission service

Under the merchant transmission model, private investors take on certain risks instead of ratepayers

	Regulated transmission model	Merchant transmission model
Objectives	Improving reliability (more focused on technical perspectives)	Economic assessment to capture value of congestion rents and other potential revenues
Owners	Regulated utilities (with some exception - ERCOT)	Private investors (maybe be ITCs, utilities, etc.)
Rates	Cost of service based plus reasonable Rate of Return ("ROR")	Market-based rate, negotiated between seller and buyer of transmission capacity
Customers	Utilities' captive customers (or ratepayers)	Buyers of transmission rights (could be generators, utilities and traders)
Regulator's focus	Reliability (and more recently economics and "policy")	Social benefit (and no adverse effects on competition or rates)
Business Model	Return on investment based on FERC allowed ROE, embedded as part of utility or ISO/RTO tariff (guaranteed)	Market's willingness to pay for transmission service (long term PPA) or locational arbitrage value based on congestion rents (short term), which is relatively risky

Planning of merchant transmission projects in the US involves multiple agencies and parallel processes



Notes: ROW – Right of Way; EIS – Environmental Impact Study; ROD – Record of Decision; CECPN – Certificate of Environmental Compatibility and Public Need

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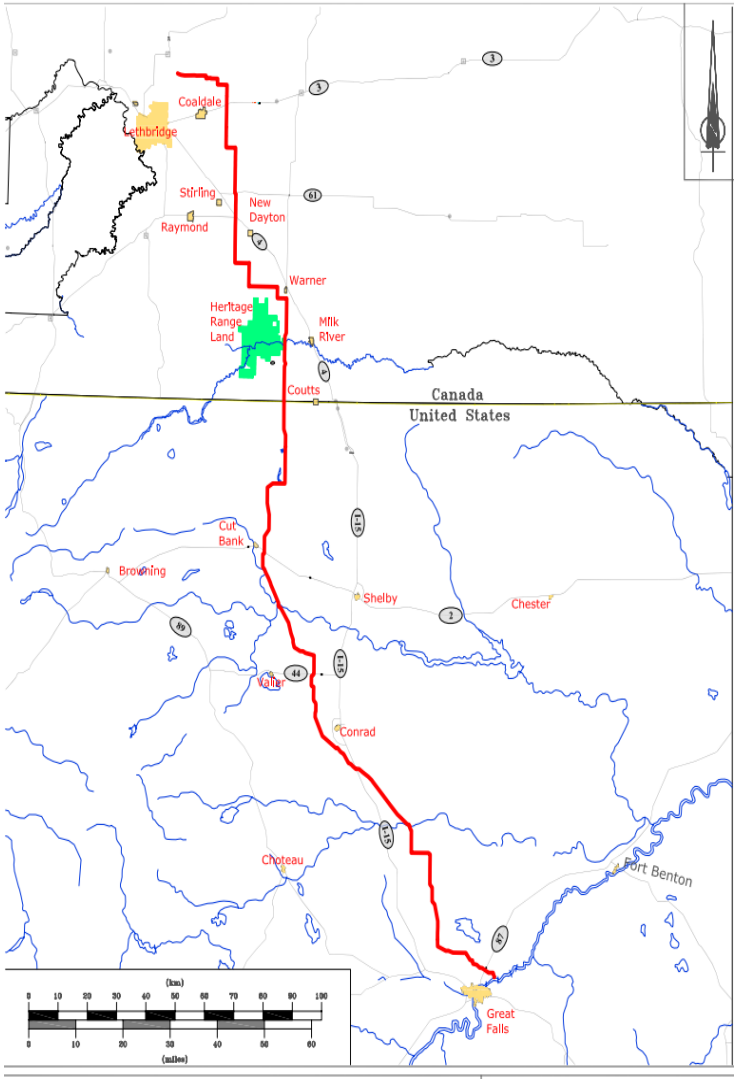
Currently operating merchant transmission projects in the US are concentrated in and around RTOs/ISOs

- **RTO markets provide two-fold advantage: independent entity can operate the assets to fulfill non-discriminatory access requirements of FERC and RTO provides flexibility for business model (regulated ROE option)**
  - CAISO's Path 15 upgrade: FERC-approved cost of service model and incentive-enhanced ROE provided financeable environment for investors
- **Lots of "pure" merchant transmission between PJM/ISO-NE and NYISO**
  - RTO-based power markets provide transparency of arbitrage opportunity - and not only energy market, also capacity commodity
  - New York metropolitan market is "hot" market – less concern from buyers of transmission in open season that arbitrage value will dissipate with time
  - Variety of customers (for example, LIPA for Cross Sound Cable, LIPA for Neptune, ConEd/ Cargill/ Brookfield/ PSEG for Linden VFT in 2007, PSEG for Linden VFT in 2012)
- **Montana-Alberta Tie Line ("MATL") is an example of a merchant transmission that complements generation – effectively gives wholesale spot market access to wind generation in Montana**
- **Merchant transmission projects of the "regulated" flavor being developed in MISO to similarly bring renewables to market**
  - In MISO, Multi Value Projects ("MVPs") have been proposed to facilitate integration of renewable resources and ensure long term reliability. For example ITC's Michigan Thumb Project and Minnesota-Iowa transmission Project and ATC's Pleasant Prairie to Zion Energy

The Montana Alberta Transmission Line is projected to come online in Q1 2013

MATL Project Location



Source: Enbridge; SNL Energy; Trade press

Key Facts

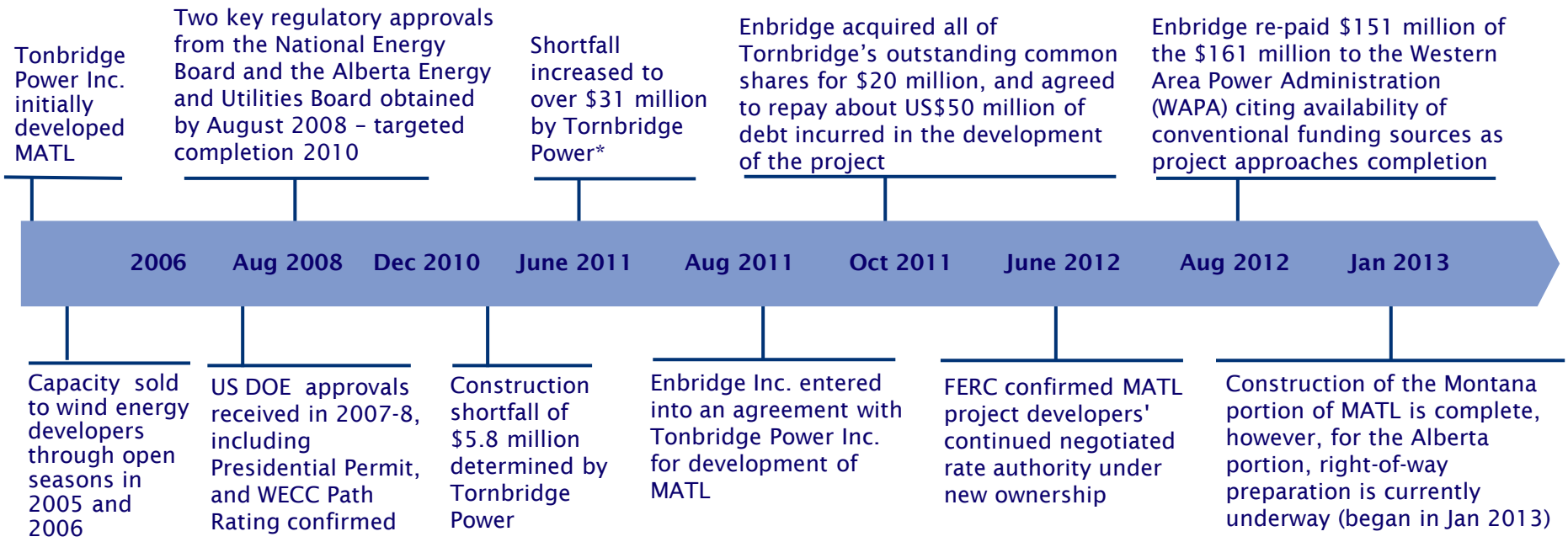
- 213 mile (230 kV / 300 MW bi-directional) merchant transmission line between Great Falls, Montana (MT) and Lethbridge, Alberta (AB)
- All currently contracted shippers are renewable (wind) generators
- Enbridge Inc. purchased MATL from Tonbridge Power Inc. in fall of 2011
- Project is near completion

Regulatory Approvals

- MATL required six major regulatory approvals
  - US Department of Energy (DOE), Record of Decision
  - Montana Department of Environmental Quality (DEQ), Major Facilities Siting Act Certificate of Compliance
  - Western Electricity Coordinating Council (WECC) Path Rating
  - Federal Energy Regulatory Commission (FERC) Tariff Approval
  - National Energy Board (NEB) Approval
  - Alberta Utilities Commission (AUC) Approval
- Various other permits were required for formal regulatory and stakeholder consultation

Over the course of its 8+ year development and construction cycle, the MATL project has gained regulatory approvals in both US and Canada, and overcome financial challenges

MATL Project Evolution



* Shortfall in 2011 reflected a number of issues, including a disruptive court decision regarding eminent domain in Montana, construction contractor disputes, construction and regulatory delays, land access and acquisition of rights of way issues, and materials cost increases

- Alberta power market has traded at premiums to surrounding energy markets in recent years; import capacity is also limited due to Alberta transmission system design
- A key market regulatory decision from the Alberta Utilities Commission is being awaited in 2013 to determine allocation of scarce import transmission capacity into the Alberta market between MATL, once energized, and other interties

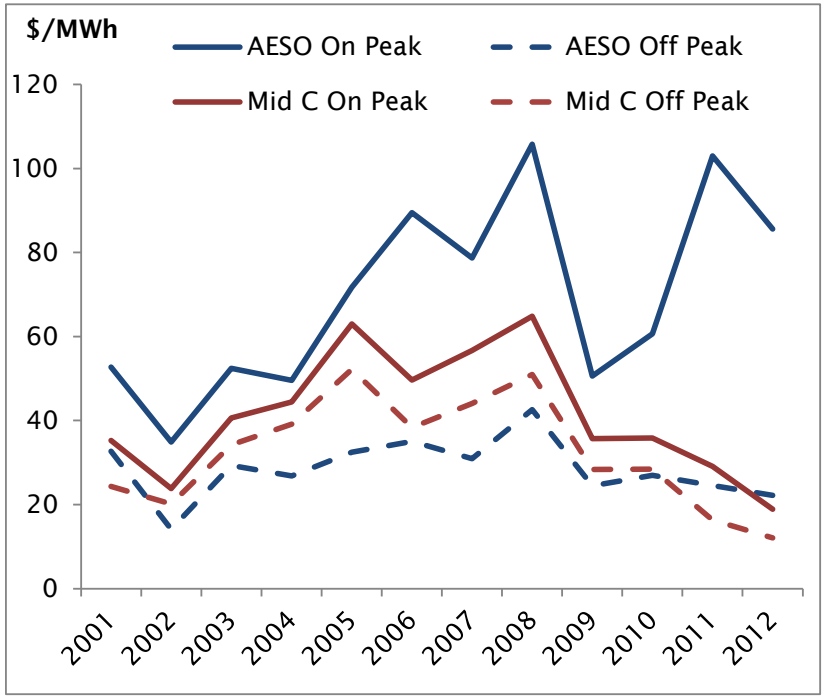
Source: Enbridge; SNL Energy; Trade press

MATL's value proposition is geared to the energy price arbitrage between Alberta and the Pacific US Northwest, but also linked with bringing renewable generation to market

Transmission Capacity on MATL

- A Spanish renewable energy company, Naturener SA acquired 300 MW of northbound capacity by buying the two wind companies that were originally awarded 120-MW and 180-MW shares of the full capacity in 2005/2006 open seasons
- Naturener secured $320 million construction loan from Morgan Stanley for construction of its 189-MW Rim Rock wind project in Montana. Under the terms of that deal, San Diego Gas & Electric Co. (SDG&E) will contribute about $285 million in tax-equity capital, and acquire 100% of the Class B membership interests in Naturener Rim Rock Project Holding Company LLC
- Rim Rock will sell bundled power (shipped via MATL within the Western Interconnection) to SDG&E, and SDG&E will sell the "null" power back to Rim Rock. Morgan Stanley will be the physical offtaker of the power under a long-term fixed power purchase agreement

Historical electricity prices: Alberta vs. Mid-Columbia



- Historical prices in Mid-Columbia and Alberta, show significant energy price differentials, especially in peak hours
- Prior to MATL, Pacific Northwest energy suppliers could access Alberta only via BC Hydro's system

Source: Enbridge; SNL Energy; Trade press

Future merchant transmission in the US will be continue to develop using a mix of regulated and "pure" (arbitrage) business models

- **Northeast state policies on renewables and reliance on gas-fired resources have created appetite for renewable power from Canada**
  - Most of the cross-border projects (Northern Pass, CHPE, Maine Express, etc.) are effectively relying on large anchor tenants signing longer term agreements
  - Economic transmission projects with New England, which are proposing to access local wind resources in northern New England, may have difficulty meeting the RTO "tests" for inclusion into ISO-NE's socialized transmission tariff
- **Mega projects originating out of the Interior due to advantageous wind regimes in central US and state policy-driven demand for renewables on both coasts**
  - ITC's projects in MISO and SPP will continue to leverage the regulated revenue model
  - Some Southwest projects are pursuing a more "pure" model, with open seasons and anchor tenant negotiations
- **Innovative projects are also looking at how to evolve the "pure" merchant model**
  - Tres Amigas is proposing to create a new hub and "spot market" for transmission service
- **Offshore wind development is in its nascent form in the US**
  - Atlantic Wind Connection ("AWC") proposed by TransElect to create off-shore grid connecting multiple projects
  - AWC has applied to FERC for a regulated ROE and would roll its assets into PJM's rate

Champlain Hudson Power Express is example of merchant transmission project, where transmission shippers will take advantage of locational price differences

- Champlain-Hudson Power Express' ("CHPE") transmission customer will be able to capture large energy price differentials between Hydro Quebec system and New York City ("NYC")
- Currently Hydro Quebec is connected with Upstate New York; however, limited existing infrastructure from Upstate New York to NYC is causing significant congestion and LMP differences

Real-time energy price differential (Zone D to J)			
$/MWh	Average	Max	Min
2008	35.2	1377.6	-51.6
2009	13.8	804.7	-51.4
2010	15.1	1104.0	-20.4
2011	13.2	1150.5	-6.5
2012	8.4	1052.5	-10.2

	Congestion Rent ($/MW)	CR*1000 MW ($ millions)
2008	309,078.9	309.1
2009	120,849.5	120.8
2010	132,310.3	132.3
2011	115,689.9	115.7
2012	73,982.9	74.0

- CHPE's transmission customer(s) may also get awarded UDRs for sale of capacity into the lucrative in-city capacity market - on a 1,000 MW, the annual capacity revenues at 2012 prices total $98 million

Price ($/kW-M)	2008	2009	2010	2011	2012
NYC	$4.33	$4.78	$9.22	$5.81	$8.22
LI	$2.83	$2.46	$1.67	$0.29	$1.85
NYCA	$2.17	$2.22	$1.47	$0.29	$1.39

Facts

- **Project size:** 1,000 MW
- **Estimated capital cost:** $2.2 billion
- **Initial commercial operation:** Fall 2017
- **Regulatory status:** FERC authorization in July 2010 to sell transmission service at negotiated rates, and bilateral agreements with "anchor" customers (75%); draft decision issued to grant siting approval in the state "Article 7" proceeding at the NYPSC in December 2012

Champlain Hudson Power Express ("CHPE") will be the first cross-border DC-based transmission investment built in the Northeast since the 1980s

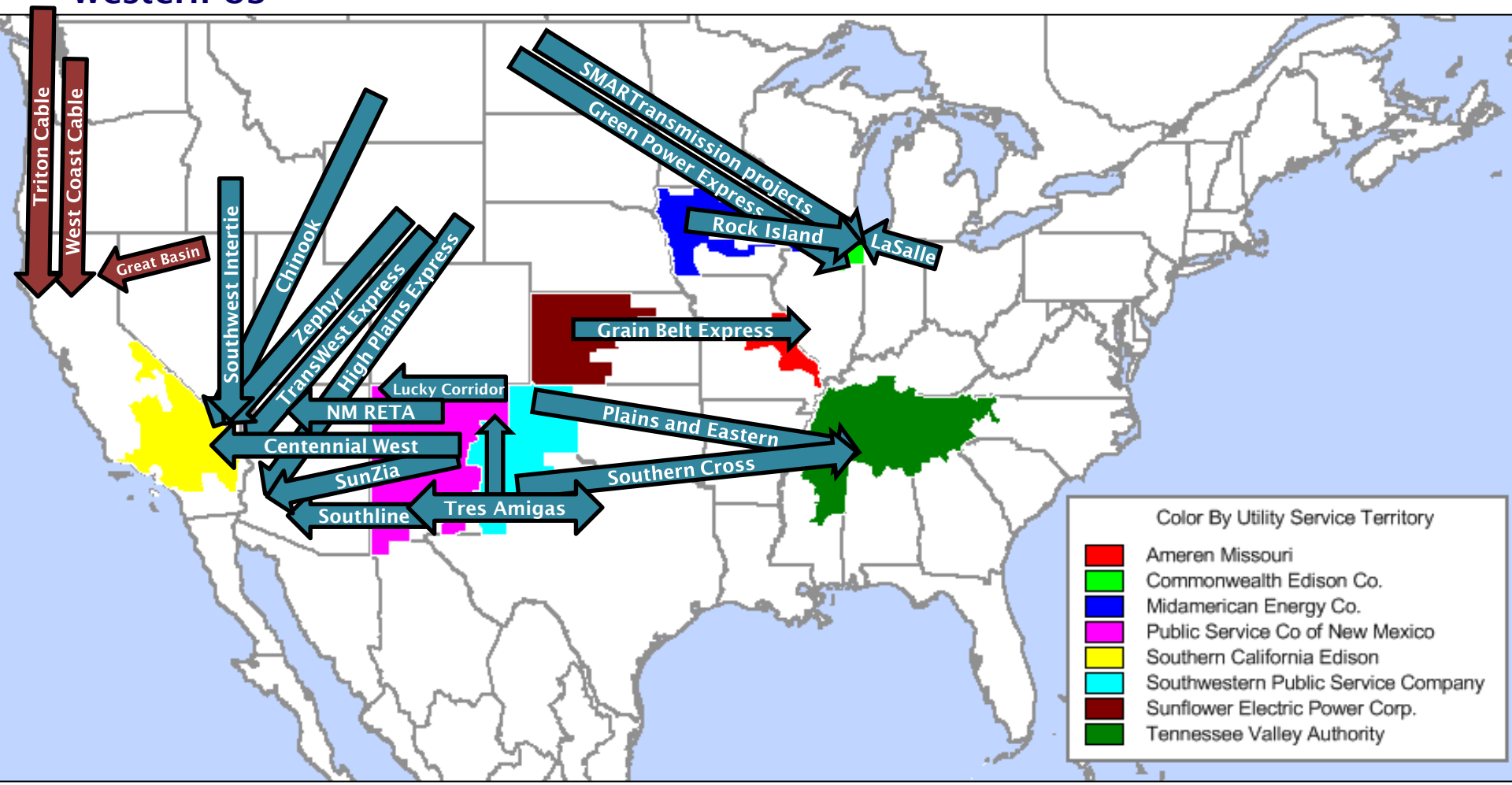
- **CHPE applied at FERC for the authority to sell transmission rights at negotiated rates**
  - This merchant transmission funding structure allows 75% of transmission to be sold an via anchor tenant, and the remaining to be sold in an open season in the future (similar to Neptune and HTP)
- **NY Public Service Commission ("NYPSC"), pursuant to its "Article VII" process, will issue a Certificate of Environmental Compatibility and Public Need containing the terms and conditions under which the Project may be constructed and operated**
  - CHPE had to prove that social benefits of project, despite the fact that ratepayers are not funding the project in NYISO's transmission rates
  - NYPSC staff and TDI (LEI) presented benefits from market impact as well as emissions reduction from the displacement of local, older, less efficient generation; conventional measures like production efficiency gains hard to establish given that Quebec is source market; duration of market impacts questioned; NYPSC staff also conducted long run benefit analysis against alternative but 'similar' technology (CCGT)
- **Merchant transmission applies for interconnection like a generation project, independent of CARIS and regulated transmission processes**
  - Capacity deliverability complicates process – generators and merchant transmission interconnectors are competing for capacity rights (CRIS)

NYISO's Congestion Assessment and Resource Integration Study (CARIS)

- The first stage of CARIS involves the forecast and identification of area's on congestion on the NYISO grid, and a cost-benefit analysis of generic transmission, generation and demand response
- In the second stage of CARIS, developers propose projects which reduce the identified congestion. The NYISO evaluates these projects and determines whether projected benefits, measured in production cost savings, make the project eligible for cost recovery under the NYISO's Tariff

Many competing merchant transmission projects proposing access to renewable generation in the Southwest/Midwest

Sample of merchant transmission projects under development in the Midwest and Western US



Source: Project websites; WestConnect; Western Electricity Coordinating Council (WECC)

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Sample of proposed merchant transmission projects in the Southwest and Midwest US

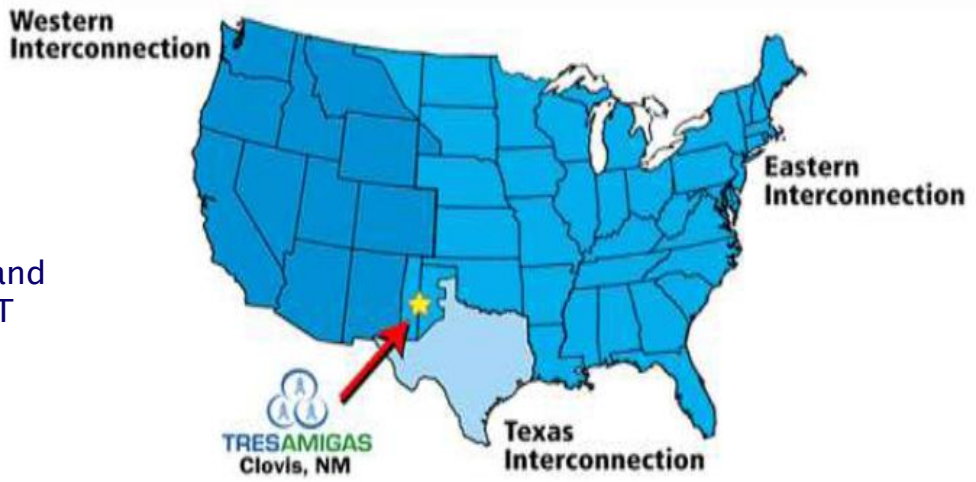
Potential competing projects	Developer(s)	Capacity	Voltage/length	Cost	Origination	Destination	Targeted online date	Status			
								Announ-ced	FERC Approval	Under Construction	Comple-ted
Green Power Express	ITC Holdings	12,000 MW	765 kV/~3,000 miles	$10-12B	Upper Midwest	Midwest and East	2020	●	●	○	○
LaSalle	LS Power	n.a.	345 kV/~160 miles	$200-300 M	Northern Indiana	Northern Illinois	2014	●	○	○	○
Southern Cross	Pattern Energy Group	up to 3,000 MW	HVDC/~400 miles	over $1B	East Texas	Southwest	2015	●	●	○	○
SunZia	Multiple[1]	3,000 /4,500 MW	500 kV or HVDC/~460 miles	n.a.	New Mexico	Desert Southwest	2015	●	●	○	○
Southline	Southline Transmission	750-1500 MW	230/345 kV/~225 miles	n.a.	New Mexico	Desert Southwest	2014	●	○	○	○
NM RETA	NE RETA Goldman Sachs	1,200 /2,400 MW	345kV/~185 miles	$ 350M	Central New Mexico	Desert Southwest	2014	●	○	○	○
High Plains Express	Multiple[2]	1,500 /3,000 MW	500 kV/~1,300 miles	$3.5-5.5B	Wyoming	Desert Southwest	2020-2025	●	○	○	○
Zephyr[3]	TransCanada	3,000 MW	HVDC/~1,000 miles	$3B	Wyoming	Desert Southwest	2015	●	●	○	○
Chinook[3]	TransCanada	3,000 MW	HVDC/~1,000 miles	$3B	Montana	Desert Southwest	2015	●	●	○	○
TransWest Express	Anschutz Corporation	3,000 MW	HVDC/~725 miles	$3B	Wyoming	Desert Southwest	2015	●	○	○	○
Tres Amigas	Tres Amigas LLC	750-5000 MW	HVDC / 22.5 sq miles	~ $2 B	WECC, SPP, ERCOT	WECC, SPP, ERCOT	2016	●	●	○	○
Southwest Intertie[4]	LS Power	2,000 MW	500 kV/~500 miles	n.a.	Idaho	Desert Southwest	2012-2014	●	●	●	○

Source: Project websites; FERC; Developer press releases

1. SouthWestern Power Group, ECP SunZia, Shell WindEnergy, and Tucson Electric Power Company
2. Project participants include Black Hills Corp, Colorado Clean Energy Development Authority, Colorado Springs Utilities, LS Power, NM RETA, Public Service Co of New Mexico, Salt River Project, Tri-State Generation and Transmission Association, Western Area Power Administration, Wyoming Infrastructure Authority
3. Zephyr has signed precedent agreements for the full capacity (3,000 MW) during its open season; During the open season for Chinook, only 1,500 MW of bids were received; however, they were not accepted as the amount was insufficient to justify allocating capacity
4. NV Energy purchased the full capacity of the line. Construction of the line already began.

Tres Amigas will be the first three-way voltage source converter ("VSC") project interconnecting the three power grids in the US

- **Tres Amigas ("TA") plans to utilize HVDC technology to link the Western Electric Coordinating Council ("WECC") with Southwest Power Pool ("SPP") within the Eastern Interconnection, and the Electric Reliability Council of Texas ("ERCOT")**
  - Currently no connection exists between WECC and SPP; connections between WECC/SPP and ERCOT are limited
- **Planning – given its connecting three different grids, TA has had to seek interconnection with each neighboring BAA or control area and will need to be operate its own BAA**
  - Staged development - Phase I will connect SPP (SPS) and WECC (PNM), 750 MW
  - ERCOT interconnection tricky because of Federal versus state jurisdictional issues



Facts

- **Project size:** currently designed at 5,000 MW (can be scaled to 30 GW)
- **Estimated capital cost:** $2.0 billion ($500 million for Phase I)
- **Initial commercial operation:** 2016
- **Regulatory status:** FERC authorization in March 2010 to sell transmission service at negotiated rates, up to 50% of the capacity can be pre-sold via bilateral agreements with "anchor" customers

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Tres Amigas' business model builds on the Anchor Tenant concept but is also gearing to take advantage of "spot" transmission sales

- **Long-term value proposition based on proposition of sourcing renewable generation from low cost, wind rich Texas panhandle area**

Economics of Transmission Service Costs for a Hypothetical Wind Generator

Cost (all values in $/MWh)	40 % Load Factor
Levelized Cost of Generation (at bus bar)	$50.8
PNM & SPP Transmission Tariffs	$12.5
Losses on PNM and SPS	$3.6
Firm 20-year Transmission Service on the Project	$18.6
All-in Delivered Cost	**$85.4**
California Market Referent Prices for a contract starting in 2015	
15 year contract	$95.2
20 year contract	$101.3
Incremental Value	**$9.8 to 15.9**

- **Short-term value proposition is based on hourly price differences (congestion rents)**
  - TA will need to develop system on its OASIS to "price" its transmission service in real-time
  - Optimal transmission price needs to reflect arbitrage opportunity but also ensure that buyer of transmission service can capitalize on that arbitrage opportunity
  - TA is effectively improving market efficiency by facilitating trading
  - In future, removal of rate pancaking among neighboring jurisdictions will increase efficiency
  - Hourly price differences between RTOs/BAAs will persist due to seams issues between markets, as well as fundamentals that create transmission constraints

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Planning methods need to recognize the many "gray areas" of transmission assessment and commercialization

- **Independent central planner necessary even in a world of merchant projects to help coordinate**
- **Transmission projects can have facets that are reliability-driven and also economic or market-driven; do we eliminate superficial classification?**
  - For reliability projects, market perspective can be infused by considering non-transmission alternatives and measuring/monetizing benefits of reliability
  - For economic projects, environment of competition needs to be set up and maintained – including competition with generation and other transmission projects: policymakers don't pick winners, markets must pick winners
- **Planning techniques and regulatory processes need to be applied properly to both identify and value opportunities and risks**
  - Transmission is both a complement and substitute for generation; need to resolve that interdependency in the valuation so that there is not implied bias in investment
  - What's the right metric for measuring benefits of transmission?
  - How to assess trade-offs between regulated and non-regulated/merchant? Transfer of risks.
- **The merchant model is focused on a market-oriented perspective, can current planning models and institutions accommodate that?**
  - Mixed regulatory regimes may be necessary to provide flexibility to developpers given the fact-base in a given market and for a given project – US experience has shown success in both the "regulated" merchant transmission business model and the "pure" merchant transmission model – but is there risk of adverse selection and bias?
  - Is it financeable? Planning cannot not inhibit commercial realization