HPX
High Plains Express

Stage 2 Stakeholder Kickoff Meeting
April 17, 2009

Teresa Mogensen, Xcel Energy
Jerry Vaninetti, Trans-Elect

Welcome

- Thanks for taking the time to participate!
- Introductions

Purpose of Meeting

- Stakeholder kickoff for HPX Stage 2 Feasibility Assessment
  - Review Stage 1 results
  - Preview Stage 2 planned activities
  - Solicit your feedback to shape our work
- WECC Regional Planning Process kickoff for HPX

Agenda

- Opening Perspectives
- Status Report
- Feasibility studies & Work Plans
- Stakeholder Feedback
- Closing Comments

Utility Perspective

- Commitment to meet local and regional transmission needs
- Commitment to renewable energy leadership
- Commitment to do what makes sense
  - Efficient
  - Cost Effective
  - Integrated
  - Aligned

Merchant Transmission Perspective

- Ownership
  - Joint ownership, segments, components, or circuits not owned by utility participants
- Situations
  - Overbuilding, second circuits, export lines
- Mechanisms
  - Anchor shippers, OATT customers, public/private partnerships, investors

State Transmission Authority Perspective

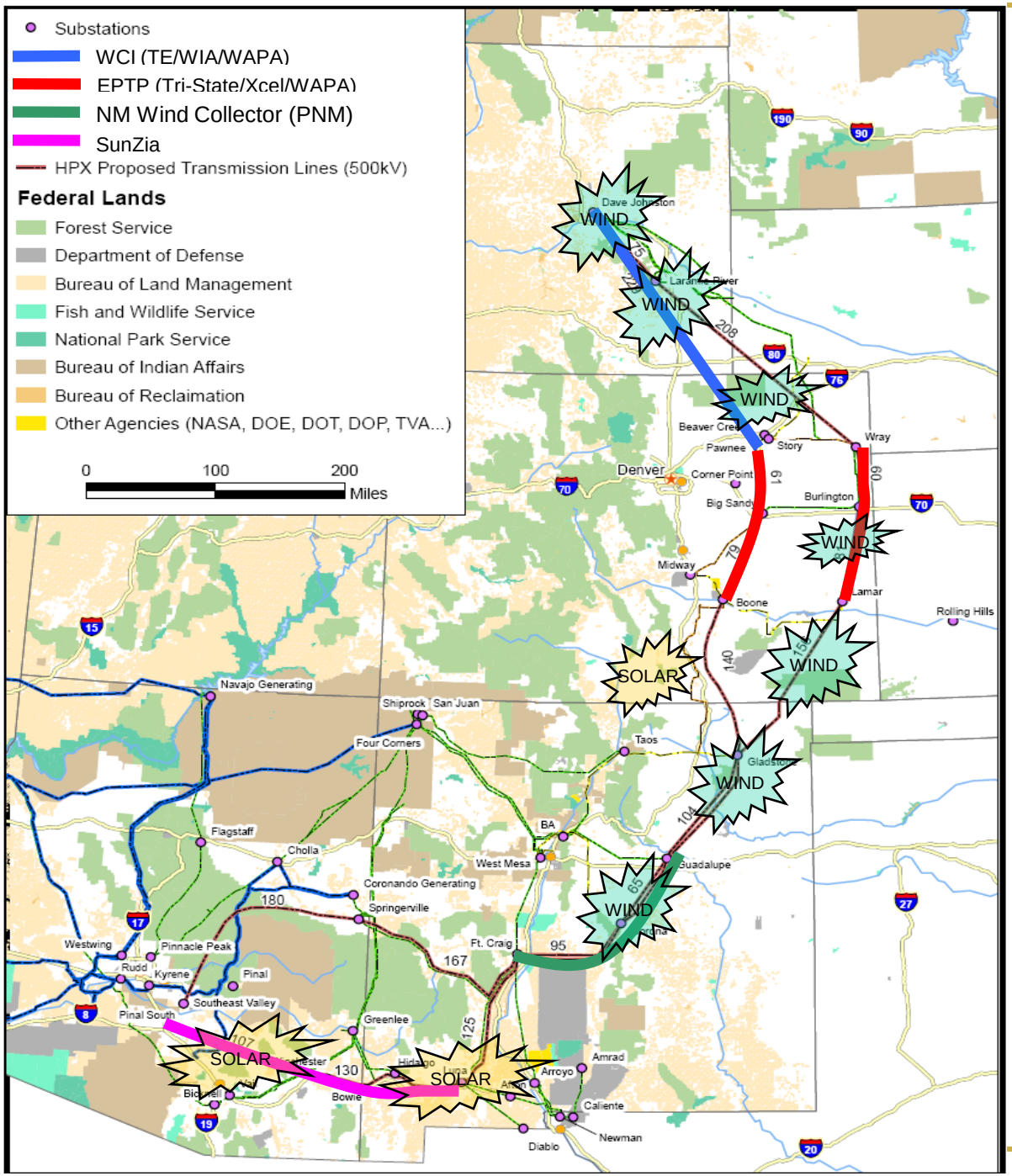
HPX
High Plains Express

Status Report

- HPX Overview
- Stage 1 Feasibility Study results
- Stage 2 Feasibility Study plans

Vision

- The HPX initiative is a proactive plan for the expansion and reinforcement of the transmission grid in the states of Wyoming, Colorado, New Mexico and Arizona.
- The goal is to develop a high-voltage backbone transmission system that will
  - enhance reliability,
  - provide economic benefits to consumers,
  - increase access to renewable and other diverse generation resources within regional energy resource zones, and
  - complement and coordinate with other regional transmission projects.



High Plains Express Initiative

A Roadmap for Regional Transmission Expansion

- **Description**
  - Two 500 kV AC Lines
    - Exact Routes TBD
  - ~3,500 MW Capacity
  - ~$5 Billion
- **Benefits**
  - Renewable development
  - Enhanced reliability
  - Consumer savings
- **Participants**
  - 7 Utilities
  - 3 State Agencies
  - 1 Transmission Developer

HPX Description

- An AC system enhancement to further connect the states of Arizona, New Mexico, Colorado, and Wyoming
- Two 1,250 mile long, 500 kV, AC transmission lines
  - Double-circuit 345 kV option to be considered
- Modeled as interconnected with the existing grid at 14 substations, where power would be uploaded and downloaded
- 3,500 – 4,000 MW of transmission capacity
- $5.1 billion cost estimate; modeled 2017 operation
- Potential to integrate with four transmission projects already under study or development within the HPX footprint
- Open planning process vetted with stakeholders

Anticipated Benefits

- Enhanced reliability
- Improved access to renewable energy
- Consumer savings in all HPX states
- Economic stimuli for all HPX states
- Roadmap for regional transmission expansion

HPX Initiative Participants

HPX High Plains Express

Xcel Energy®
RESPONSIBLE BY NATURE™

SRP®

PNM® A personal commitment to New Mexico

TRI-STATE Generation and Transmission Association, Inc.
A Touchstone Energy® Cooperative

TRANS-ELECT, LLC.

Colorado Springs Utilities
It's how we're all connected

Black Hills Corporation

Western Area Power Administration

Wyoming Infrastructure Authority

Governor's Energy Office

New Mexico RETA
renewable energy transmission authority

1st Stage Feasibility Results

- Technical Studies
  - Operationally feasible
- Cost/Benefit Studies
  - Benefits outweigh costs
- Conceptual Routing
  - No apparent fatal flaws
- Next Steps (2nd Stage Feasibility)
  - More detail needed to confirm feasibility
  - Identification of commercial arrangements
- Report issued June 2008

Next Steps

- Constructing individual segments over time following a “roadmap” approach to transmission expansion suited to each HPX state’s needs
  - Modeling of sequential injections from south-to-north?
  - Telescoped approach, with greater capacity in south?
- Assessing the performance and costs of renewable resource integration and dispatch
  - To what extent are dispatchable resources required?
- Assessing public and regulatory policies potentially applicable to HPX
- Further quantification of the overall cost impacts and benefits that could be achieved from the HPX initiative
  - Include benefit/cost modeling of various resource mixes

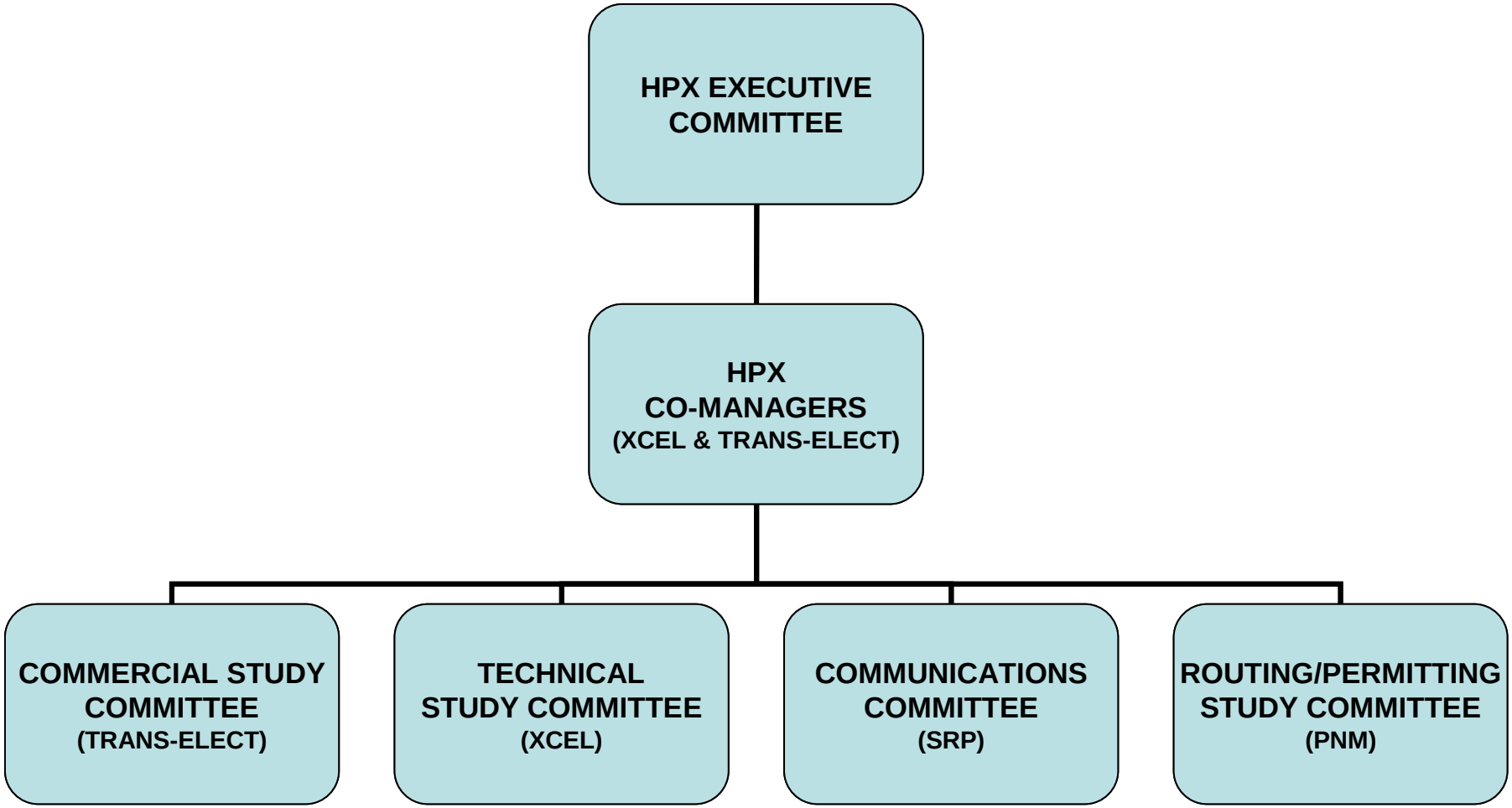
Next Steps, cont.

- Investigation of cost allocation and recovery mechanisms, including potential for a regional tariff for segments and/or the entire HPX initiative
- Continuing an open stakeholder approach and outreach to secure input on the transmission planning process
- Identifying business structures, ownership shares, development funding requirements, work plans and project development schedules for consideration in further assessing the viability of the HPX initiative

Stage 2 Feasibility

- MOU
- Timeline: 2009 - 1Q 2010
- Detailed studies conducted by independent parties, organized under 4 committees
- “Component projects”
  - WCI
  - EPTP
  - NM Wind Collector
  - SunZia
- Extensive legislative activity focused on renewable energy and transmission
  - Planning, Siting, Cost Allocation

HPX Stage 2 Organization



HPX
High Plains Express

Questions

Technical Study Committee Stakeholder Update April 17, 2009

Thomas Green, Xcel Energy
Committee Chairman

Technical Members / Participants

Members:

Thomas Green (Chair)	Xcel Energy
Andy Leoni	Tri-State
Johnny Hernandez	Salt River Project
Tom Duane	Public Service of New Mexico
Bill Pascoe	Trans-Elect
Loyd Drain	Wyoming Infrastructure Authority
Bob Easton	Western Area Power Administration
Cliff Berthelot	Colorado Springs Utilities
CEDA	
RETA	

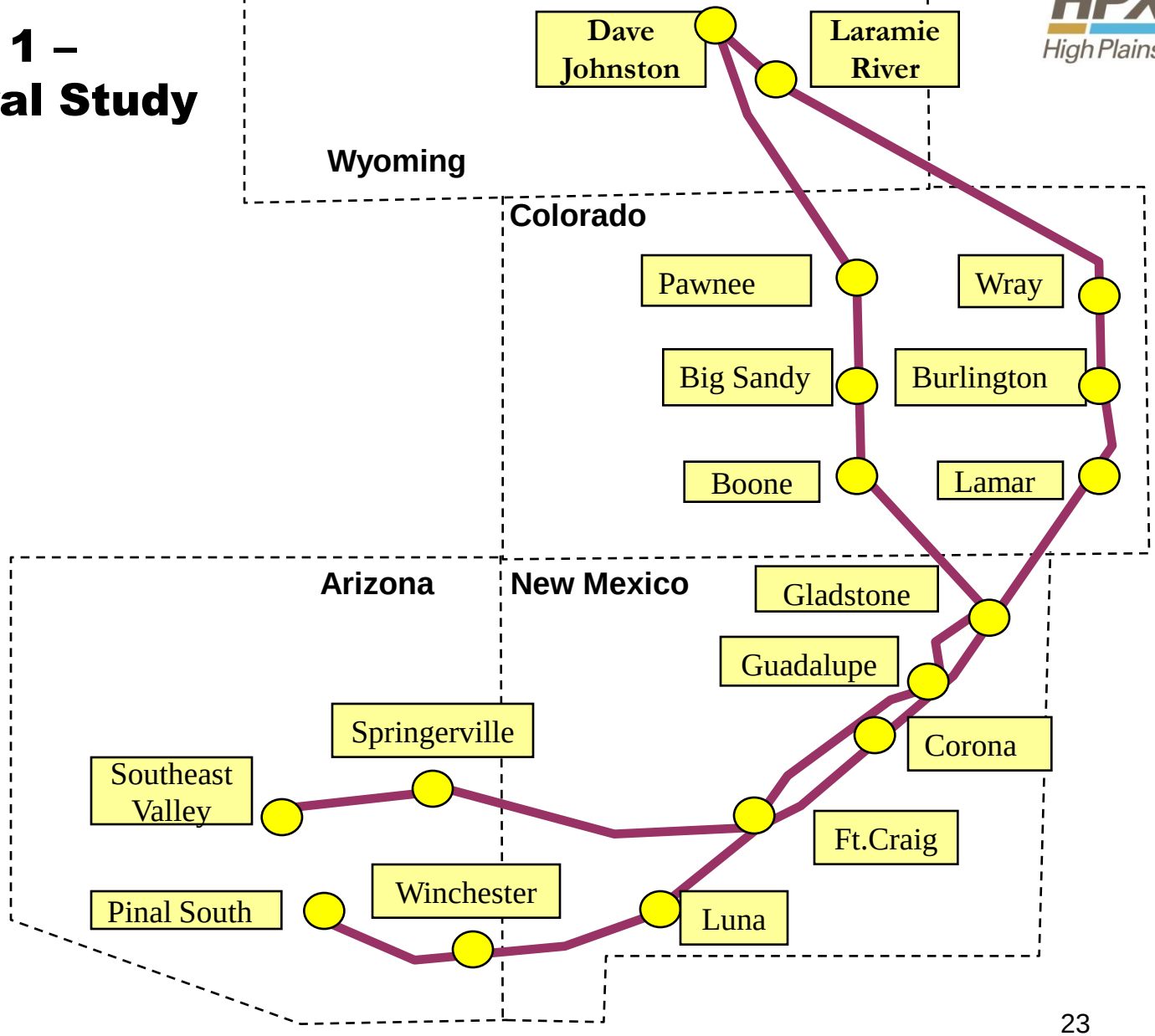
Participants:

Andy Schaller	Xcel Energy
John Collins	Platte River Power Authority
Peter Krzykos	Arizona Public Service
John Kyei	SunZia
Ed Beck	Tuscon Electric Power
Dennis Malone	El Paso Electric
Inez Dominguez	Colorado Public Utilities Commission
Arizona Corporation Commission	

Stage 2
Technical Studies

- Recap Stage 1 Results
- Stage 2 Work Plan
- WECC Regional Planning
- Schedule
- Feedback

Stage 1 – General Study Map



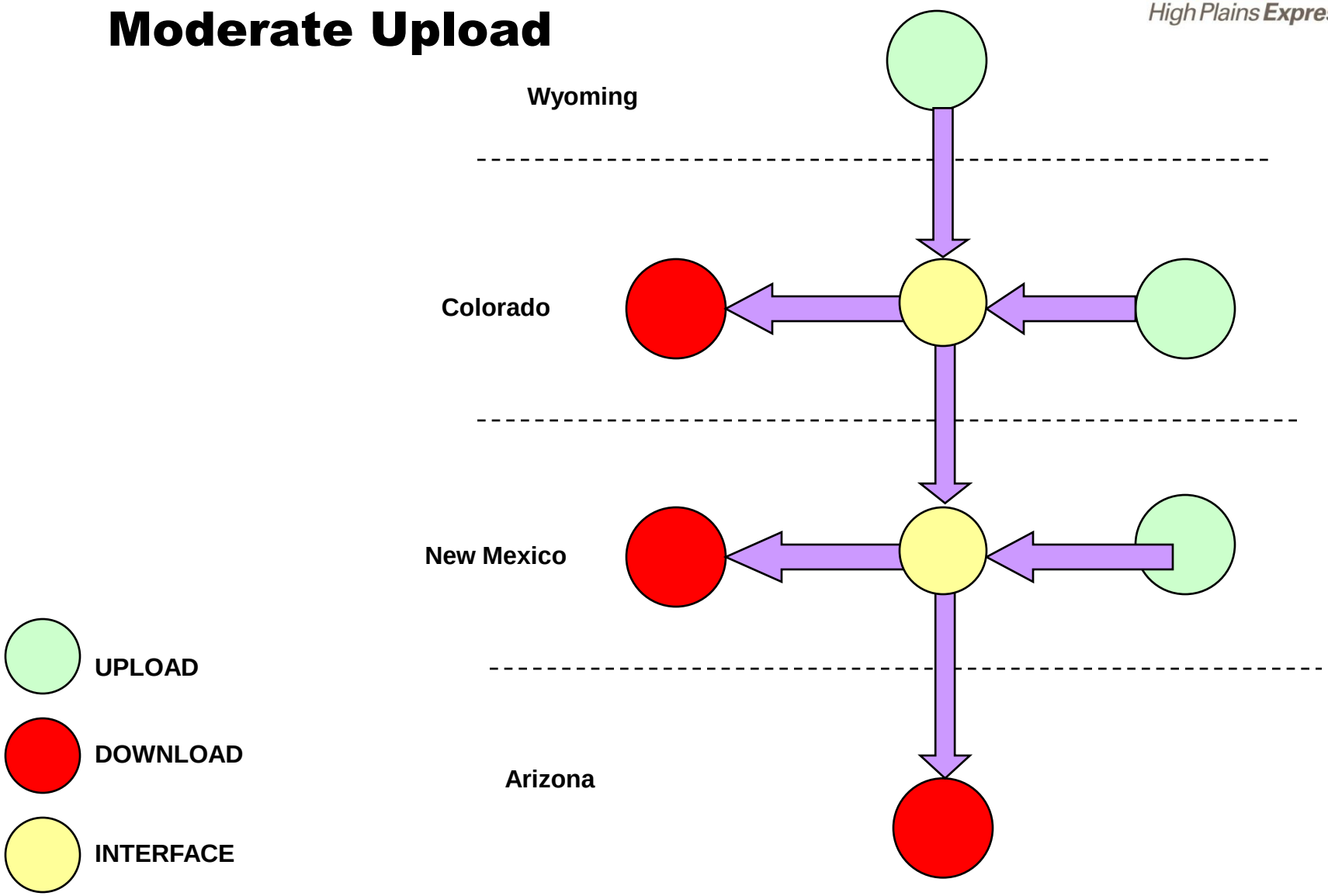
Stage 1 Studies – Alternatives

- A/C Transmission Only
- Single 500kV
- Two Single-circuit 500kV
- Two Double-circuit 500kV
- Series Compensation:
  - 0%, 50%, 70%

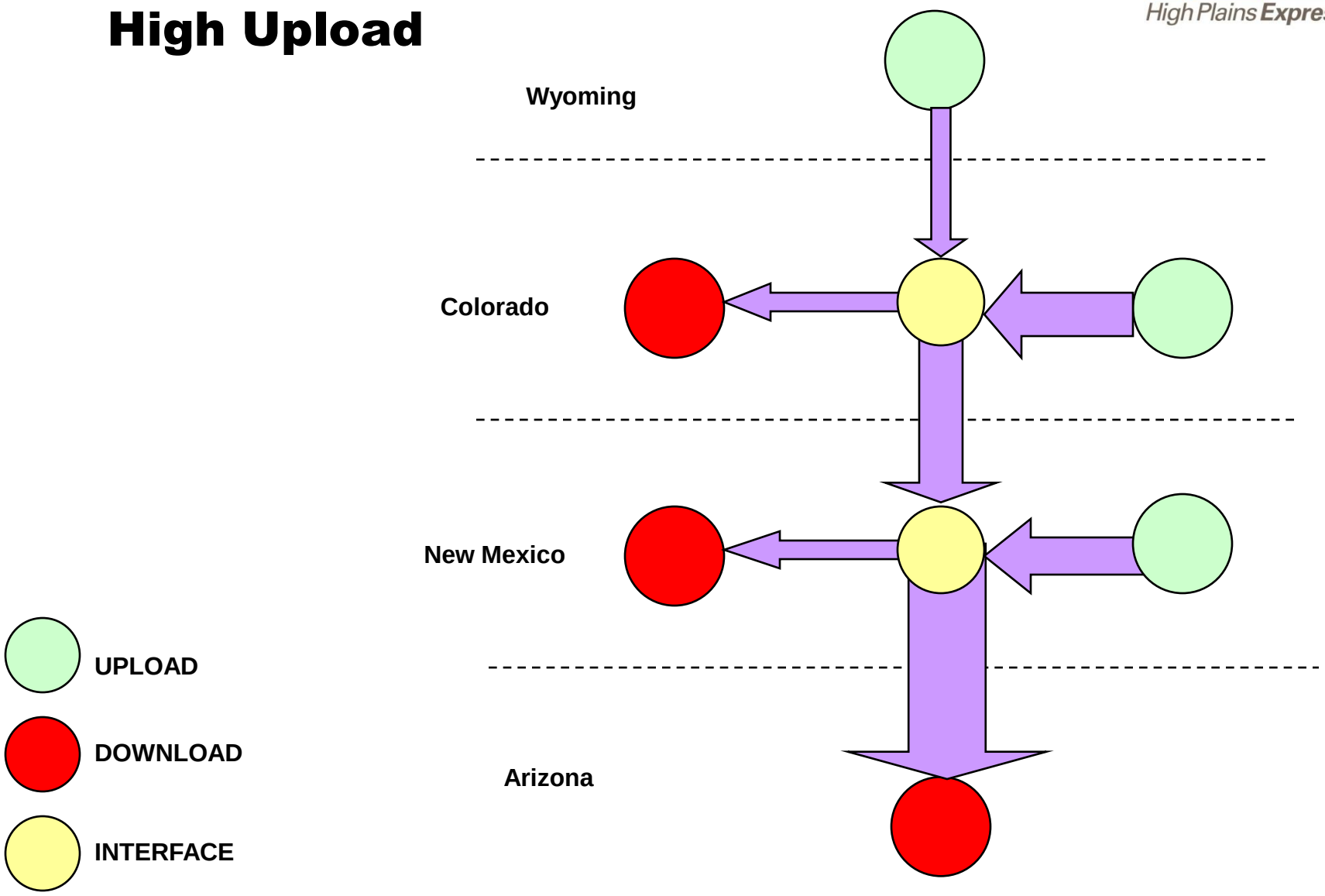
Stage 1 Studies – Scenarios

- Flowability
- Moderate Upload
  - (Upload = Download)
- High Upload
  - (Upload > Download)

Moderate Upload



High Upload


Wyoming
Colorado
New Mexico
Arizona
UPLOAD
DOWNLOAD
INTERFACE

Stage 1 Studies – Results

- 500kV AC
  - One Single Circuit: 1000 - 1500 MW
  - Two Single-Circuit lines: 3500 – 4000 MW
  - Two Double-Circuit lines: 6500 – 7000 MW
- Series Compensation
  - Sensitivities with 0%, 50%, 70%
  - S.C. modeled on all lines
  - Will need to optimize with detailed studies

Stage 1 Studies – Cost Estimate

- Two separate 500 kV AC lines
- $1.5 Mil/mile for 1,280 miles x 2 = $3.84 billion
- Substations (10 new / 5 upgraded): $640 million
- Series Compensation: $512 million
- SVC: $140 million
- Total Costs: $5.13 billion

Stage 1 - Synergies

- Wyoming /Colorado Intertie
  - Potential Leg of HPX
  - Build for 500kV Capability – Operate 345kV
- Eastern Plains Transmission Project
  - Potential Building Block of HPX
  - Planned for 500kV
- New Mexico Wind Collector System
  - Potential Leg of HPX
- SunZia
  - Potential Building Block of HPX
  - Planned as 500kV

Stage 2
Technical Studies Work Plan

- Study Scope
- Consultant Acquisition
- Model Development
- Resource Integration
- Benchmark
- Alternative Analyses
- Sensitivity Analyses
- Report

Stage 2: Alternative Analyses

- (2) Single-Circuit 500 kV
  - Verify Feasibility
- (2) Double-Circuit 500 kV
  - Legislation agendas
- Progressive Plan
  - (1) WY-CO; (2) CO-NM; >2 NM-AZ
- (2) Double-Circuit 345 kV
- Other (Lower Priority)
  - 765 kV AC
  - DC

Stage 2: Sensitivity Analyses

- Series Compensation
- FACTS, PST
- Transient Stability
- Lighter Load / Higher Transfer
- Operational Studies

Stage 2 – Process Considerations

- Regional Project Coordination
  - WCI, EPTP, SB100, NM Renewables, SunZia
- WECC
  - Regional Planning
  - Project Rating
- WestConnect
  - 10-Year Plan
  - CCPG, SWAT

Regional Planning Review Process Purpose

1. *Foster broad planning perspective;*
2. *Promote efficient system operation;*
3. *Ensure all relevant planning issues considered;*
4. *Provide procedures for coordinated planning;*
5. *Involve Member Representatives, member executives, regulators, existing planning bodies, environmental groups, land use groups, and other non-utility interest groups in the process;*
6. *Allow stakeholders to identify efficiencies;*
7. *Provide for dispute resolution.*

Regional Planning Review Process Initiation

1. *Start when a project is in the conceptual level of project development.*
2. *Sponsor notifies PCC and TSS members of their desire to initiate the Process*
3. *Sponsor notifies PCC of the purpose of the project*
4. *Invite members to join a Regional Planning Review Group to identify opportunities to incorporate multiple interests and multiple needs into a single project*

Regional Planning Guidelines

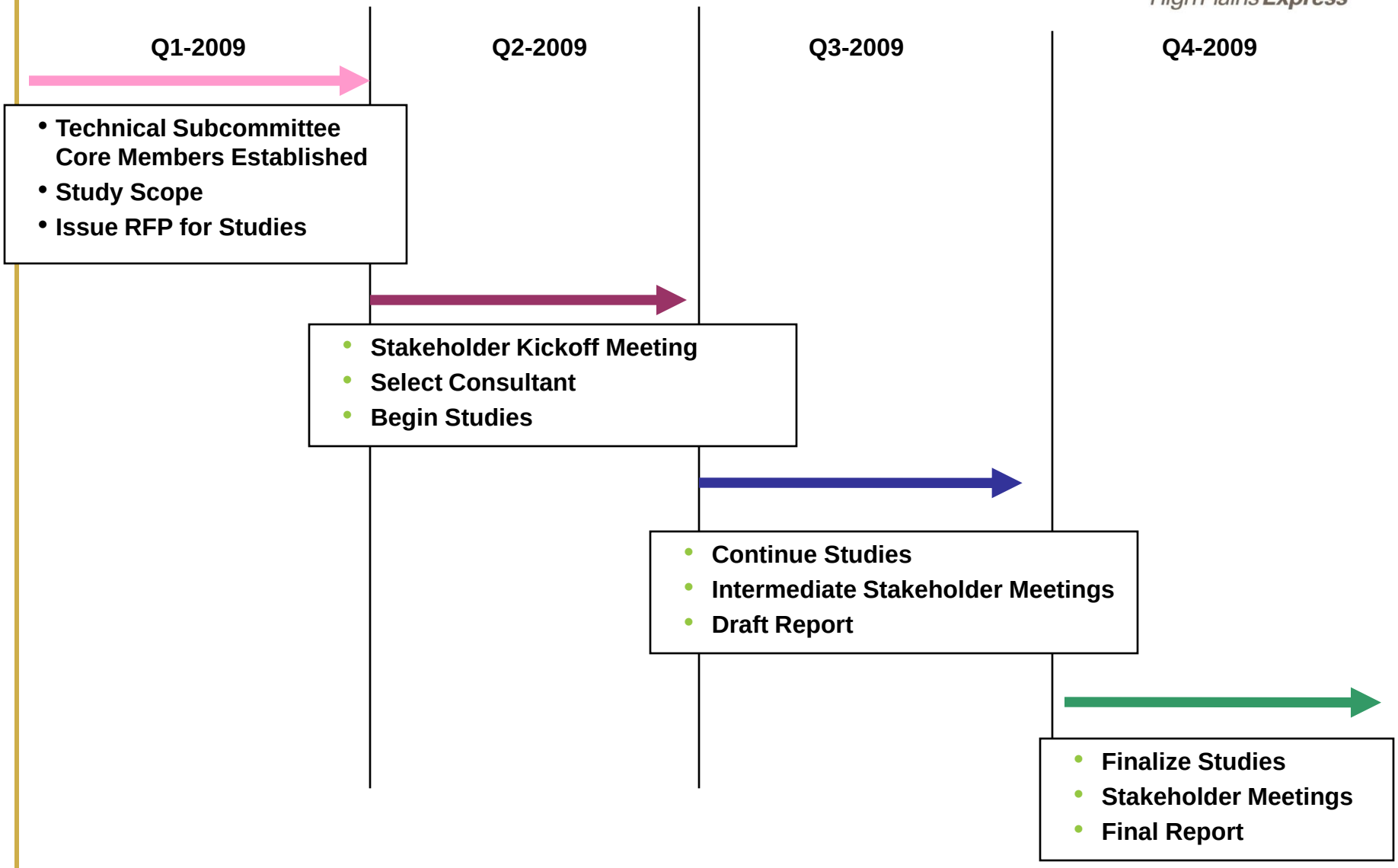
1. *Take multiple project needs and plans into account, including identified utilities' and nonutilities' future needs, environmental and other stakeholder interests;*
2. *Cooperate with others to look beyond specific end points of the sponsors' project to identify broader regional and subregional needs or opportunities;*
3. *Address the efficient use of transmission corridors (e.g., rights-of-ways, new projects, optimal line voltage, upgrades, etc.);*
4. *Identify and show how the project improves efficient use of, or impacts existing and planned resources of the region (e.g., benefits and impacts, transmission constraint mitigation);*
5. *Cooperate with Regional Planning Review Group members in determining the benefits and impacts due to the project;*
6. *Identify transmission physical and operational constraints resulting from the project or that are removed by the project;*

Regional Planning Guidelines

HPX High Plains Express

7. *Coordinate project plans with and seek input from all interested members, subregional planning groups, power pools, and region-wide planning group(s);*
8. *Coordinate project plans with and seek input from other stakeholders including utilities, independent power producers, environmental and land use groups, regulators, and other stakeholders that may have an interest;*
9. *Review the possibility of using the existing system, upgrades or reasonable alternatives to the project to meet the need (including non-transmission alternatives where appropriate);*
10. *Indicate that the sponsor's evaluation of the project has taken into account costs and benefits of the project compared with reasonable alternatives;*
11. *Coordinate with potentially parallel or competing projects and consolidate projects where practicable.*

Technical Study Schedule



Questions/Feedback

Contact:
Thomas Green
Work: 303-571-7223
Fax: 303-571-7141
thomas.green@xcelenergy.com

HPX
High Plains Express

Routing/Permitting Study Committee Stakeholder Update April 17, 2009

Doug Campbell, PNM

Committee Chairman

Work Plan

- Define a robust Study Area within which future phases of the project route analysis and outreach would be constrained. The Study Area will need to be aligned with Technical Studies regarding interconnection opportunities.
- Prepare Routing Study Report detailing siting criteria, major issues and opportunities, political, social and environmental fatal flaws or avoidance zones and other routing sensitivities.

Work Plan, cont.

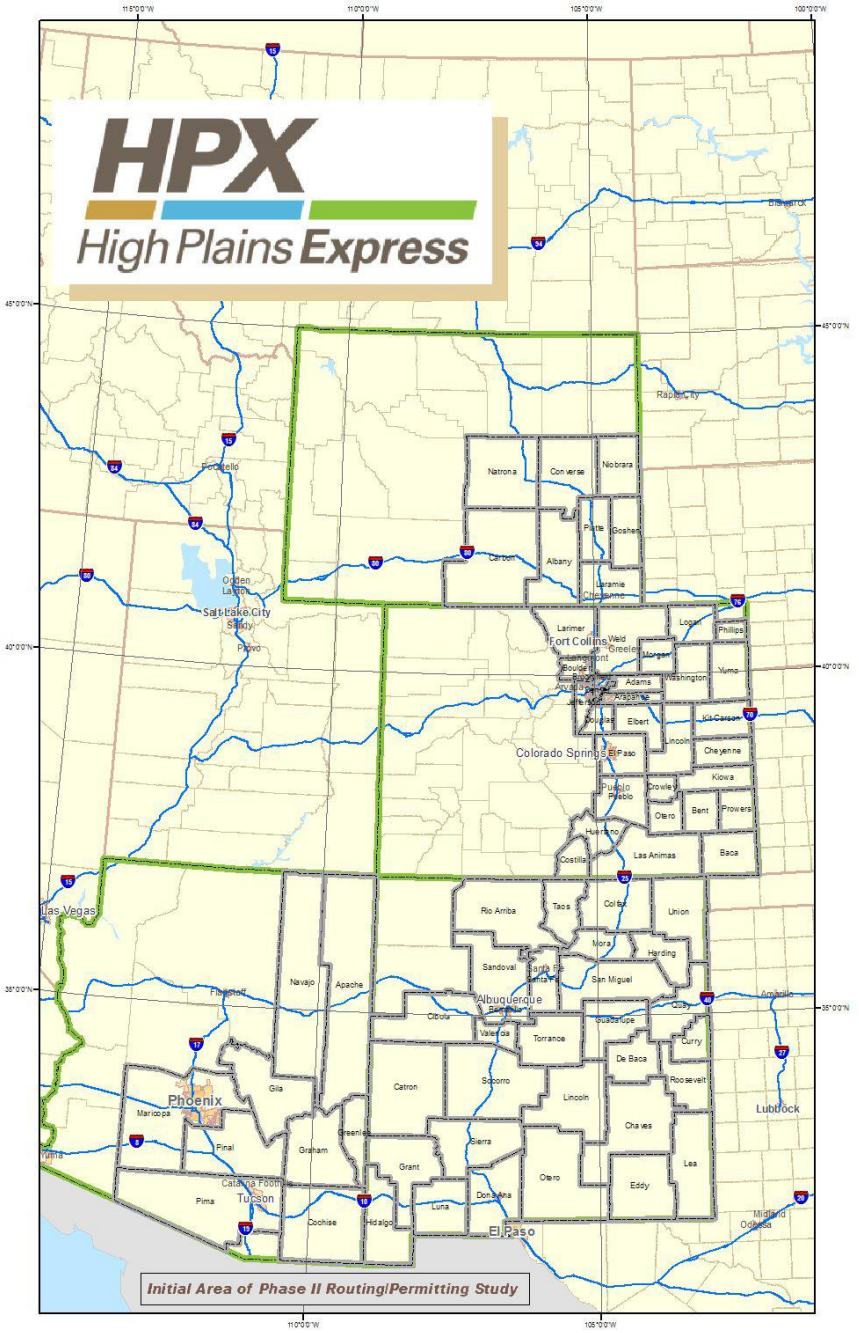
- Develop a Regulatory Permitting Matrix and report detailing permitting requirements, data needs, timing, estimated durations and costs.
- Document the Land Rights Acquisition issues including details of land values, estimates of costs and durations to acquire land rights, and negotiation and acquisition strategies and philosophy, including use of eminent domain.

Routing/Permitting efforts

- Inventory and assessment of individual member resources and availability
- Short listing of environmental consultants
- GIS data compilation and discussions
- Land values data availability discussions
- Inventory of web-enabled counties

Initial data collection process initiated

- Intent is to use same or better data than stakeholders
- Data collection presents opportunities for stakeholder engagement
- Will coordinate contacts with Communications Committee



County web inventory example

HPX High Plains Express

NAME_32	STATE_NAME_25	POP2007_20	WEB_HOME_YN_20	HOME_ADDR_100	WEB_PLAN_YN_20	PLANNING_HOME_100	WEB_GIS_YNM_20	GIS_H
Apache	Arizona	71642	Y	http://www.co.apache.az.us	N		Y	http://w
Cochise	Arizona	132044	Y	http://cochise/az/gov	Y	http://cochise.az.gov/cochise_planning_zoning.aspx?id=3	N	
Gila	Arizona	53308	Y	http://www.co.gila/az/us/index/html	N		Y	http://n
Graham	Arizona	34318	Y	http://graham.az.gov	Y	http://www.graham.az.gov/Graham_CMS/display.aspx?id=	Y	http://w
Greenlee	Arizona	8024	Y	http://www.co.greenlee.az.us	Y	http://www.co.greenlee.az.us/PlanningZoning/PlanningZon	N	
Maricopa	Arizona	3901548	Y	http://www.maricopa.gov	Y	http://www.maricopa.gov/planning/PublicMeetings/Planning	Y	http://w
Navajo	Arizona	113243	Y	http://www.navajocountyaz.gov	Y	http://www.navajocountyaz.gov/pubworks/pz/	Y	http://n
Pima	Arizona	976521	Y	http://www.pima.gov	N		N	
Pinal	Arizona	262209	Y	http://pinalcountyaz.gov	Y	http://pinalcountyaz.gov/DEPARTMENTS/PLANNINGDEV	Y	http://p
Adams	Colorado	423639	Y	http://www.co.adams.co.us/	Y	http://www.co.adams.co.us/index.cfm?d=standard&b=3&c	Y	http://w
Arapahoe	Colorado	552801	Y	http://www.co.arapahoe.co.us	Y	http://www.co.arapahoe.co.us/Departments/PW/Planning/	Y	http://w
Baca	Colorado	4178	Y	http://www.bacacounty.net	N		N	
Bent	Colorado	5947	Y	http://www.bentcounty.org	N		N	
Boulder	Colorado	285787	Y	http://www.bouldercounty.org	Y	http://www.bouldercounty.org/lu/zoning/index.htm	Y	http://w
Broomfield	Colorado	48974	Y	http://www.ci.broomfield.co.us	Y	http://www.broomfield.org/planning/	Y	http://w
Cheyenne	Colorado	2148	N		N		N	
Costilla	Colorado	3573	Y	http://www.costilla-county.com	Y	http://www.costilla-county.com/planningandzoning.html	Y	http://s
Crowley	Colorado	5579	N		N		N	
Denver	Colorado	578062	Y	http://www.denvergov.org	Y	http://www.denvergov.org/TabId/37910/TopicId/904/default.a	Y	http://w
Douglas	Colorado	276640	Y	http://www.douglas.co.us	Y	http://www.douglas.co.us/community/planning/index.html	Y	http://w
El Paso	Colorado	593415	Y	http://www.elpasoco.com	Y	http://adm.elpasoco.com/Development_Services/Devlopme	N	
Elbert	Colorado	23823	Y	http://www.elbertcounty-co.gov	Y	http://www.elbertcounty-co.gov/dept_building.php	N	
Huerfano	Colorado	7886	Y	http://www.huerfanocounty.org/gov/index.htm	N		N	
Jefferson	Colorado	534512	Y	http://www.jeffco.us	Y	http://www.jeffco.us/planning/index.htm	Y	http://je
Kiowa	Colorado	1531	Y	http://www.kiowacountycolo.com	N		N	
Kit Carson	Colorado	7722	Y	http://www.kitcarsoncounty.org	Y	http://www.kitcarsoncounty.org/kcc_files/planning.html	N	
Larimer	Colorado	288955	Y	http://www.co.larimer.co.us	Y	http://www.co.larimer.co.us/planning/planning/	N	http://w
Las Animas	Colorado	15804	Y	http://www.trinidadco.com/main/citycounty/asp	N		N	
Lincoln	Colorado	5794	Y	http://www.lincolncountyco.us	N		N	
Logan	Colorado	20736	Y	http://www.loganco.gov	Y	http://www.loganco.gov/PLANNING/index.htm	N	
Morgan	Colorado	28637	Y	http://www.co.morgan.co.us	Y	http://www.co.morgan.co.us/planning.html	N	
Otero	Colorado	19545	N		N		N	
Phillips	Colorado	4719	Y	http://www.phillipscountyco.org	N		N	
Prowers	Colorado	13965	N		N		N	
Pueblo	Colorado	154712	Y	http://www.co.pueblo.co.us	Y	http://www.co.pueblo.co.us/planning/default.aspx?id=741	N	
Washington	Colorado	4796	Y	http://www.co.washington.co.us	Y	http://www.co.washington.co.us/County_Services/pzplan.h	N	
Weld	Colorado	249299	Y	http://www.co.weld.co.us	Y	http://www.co.weld.co.us/departments/planning/	Y	http://w
Yuma	Colorado	9901	Y	http://www.yumacounty.net	N		N	

External efforts significantly inform HPX routing studies

- NREL's Wind and Solar Integration Study
- WGA WREZ/QRA, wildlife sensitivities, transmission corridors, etc.
- Co PUC Transmission Investigatory Docket
- West-wide federal corridor designation
- 2009 NEITC Studies DOE
- Others – your input?

ALAP routing work yields more robust analysis

- Routing analysis is time sensitive.
- Delays between data gathering and route development leads invariably to higher costs.
- WREZ will gather higher level (federal, regional, state) concerns for easy digestion by HPX.
  - 70 + classes of avoidance areas already suggested
    - www.westgov.org/wga/initiatives/wrez/enviro/products/Screens12-9-08.xls
- Local jurisdiction is variable with respect to authority and transmission regulation.
- CFS (corridor fatigue syndrome) may occur as other projects with less capacity develop.

Schedule

- First half 2009
  - Gather initial available information from project participants and agencies, local governments and other sources.
  - Focus work on project philosophy deliverables, develop the tone of public and agency engagement.
  - Develop contractor scope of work based on input from project participants and stakeholder feedback.
  - Issue focused Land Rights questionnaire to HPX member utilities.

Schedule, cont.

- 2nd Half 2009
  - Issue consultant work assignments, modified as appropriate on the basis of interim WREZ study results and data gathered to date.
  - Compile available land values information provided by member utilities and other sources. Develop draft land rights acquisition, compensation and ethical conduct philosophy.
  - Initiate land values contract work building upon results of data provided by utility members as necessary.
  - Receive draft Permitting Matrix Report from consultant.
  - Receive draft Routing Study Report from consultant.

Schedule, cont.

- 1st Quarter 2010
  - Develop Final Land Rights Acquisition report
  - Finalize all reports and develop work summaries for stakeholder meetings.
  - Present Study area and first order siting considerations (fatal flaws) at Final Phase II Stakeholder Meeting

Questions???

Contact information:
Doug Campbell
doug.campbell@pnmresources.com
(505) 241-2025

Commercial Study Committee Stakeholder Update April 17, 2009

Jerry Vaninetti, Trans-Elect
Committee Chairman

Stage 1
Commercial Feasibility

- Benefits outweigh costs for a wide range of resource mixes
  - Value of reliability & other factors not assessed
- Benefits anticipated for each HPX state
- Next steps
  - More detailed study by consultants
  - Modeling of various resource mixes
  - Sequential development options
  - Commercial considerations

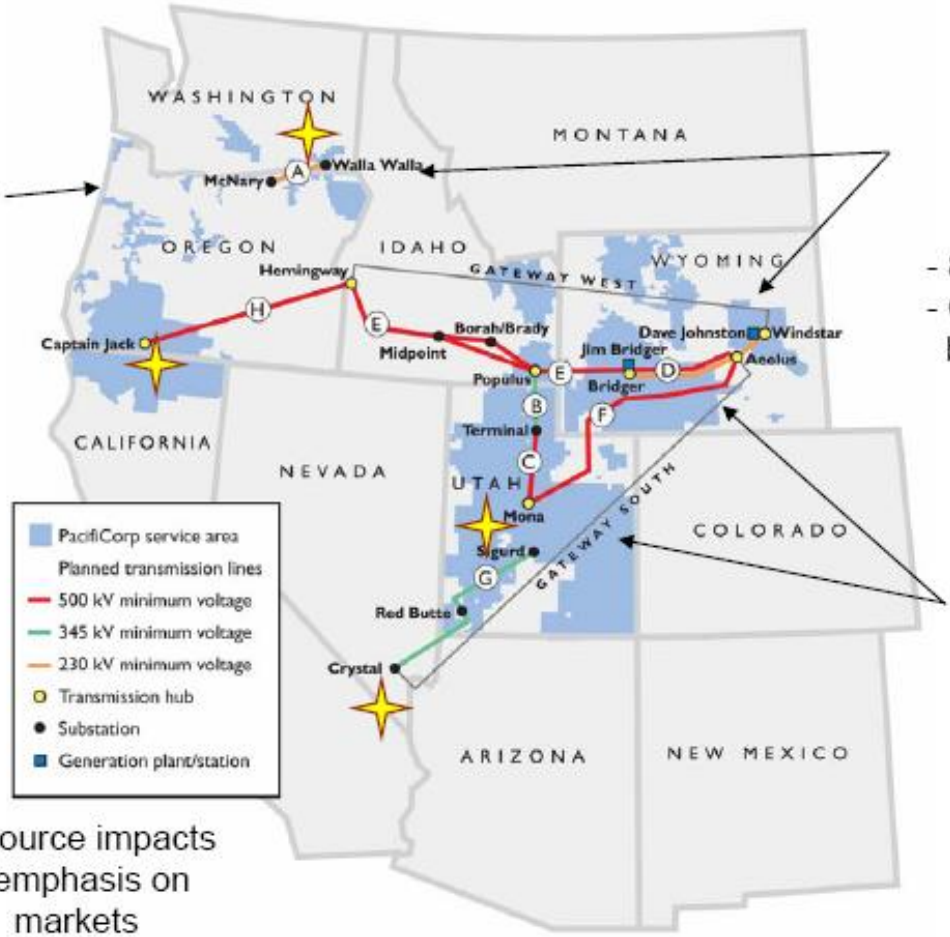
External Factors

- Economic Downturn
- Legislation & National Transmission Policy
- FERC Policy
- CREPC Considerations
- Colorado PUC Transmission Docket
- Stakeholder Studies with HPX Implications
  - PacifiCorp-Gateway
  - WEIL Study by E3
  - NREL Wind/Solar Integration Study
  - WECC/TEPPC Planning
  - WGA Western WREZ

PacifiCorp-Gateway

HPX
High Plains Express

New projects announced since May 2007



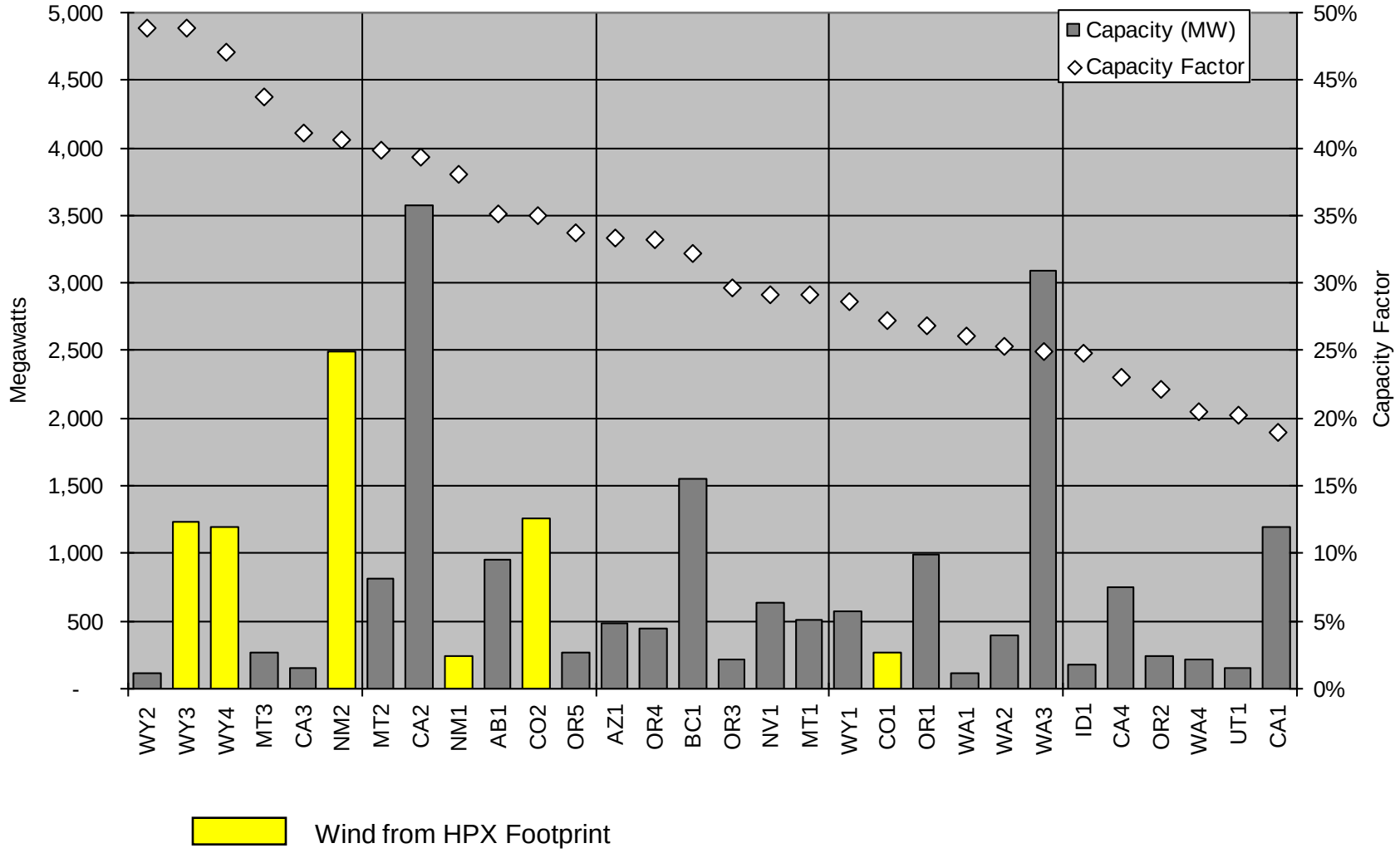
- 8800+ MW of wind
- Other generation being considered

1000 MW of coal transitioned to gas

Resource impacts = emphasis on markets

	BASE CASE	HIGH WIND
THERMAL (MW)	3,775	1,875
WIND (MW)	2,100	4,000
TOTAL (MW)	5,875	5,875
PERCENT WIND	36%	68%

WIRAB WECC/TEPPC High Renewables Case - Wind

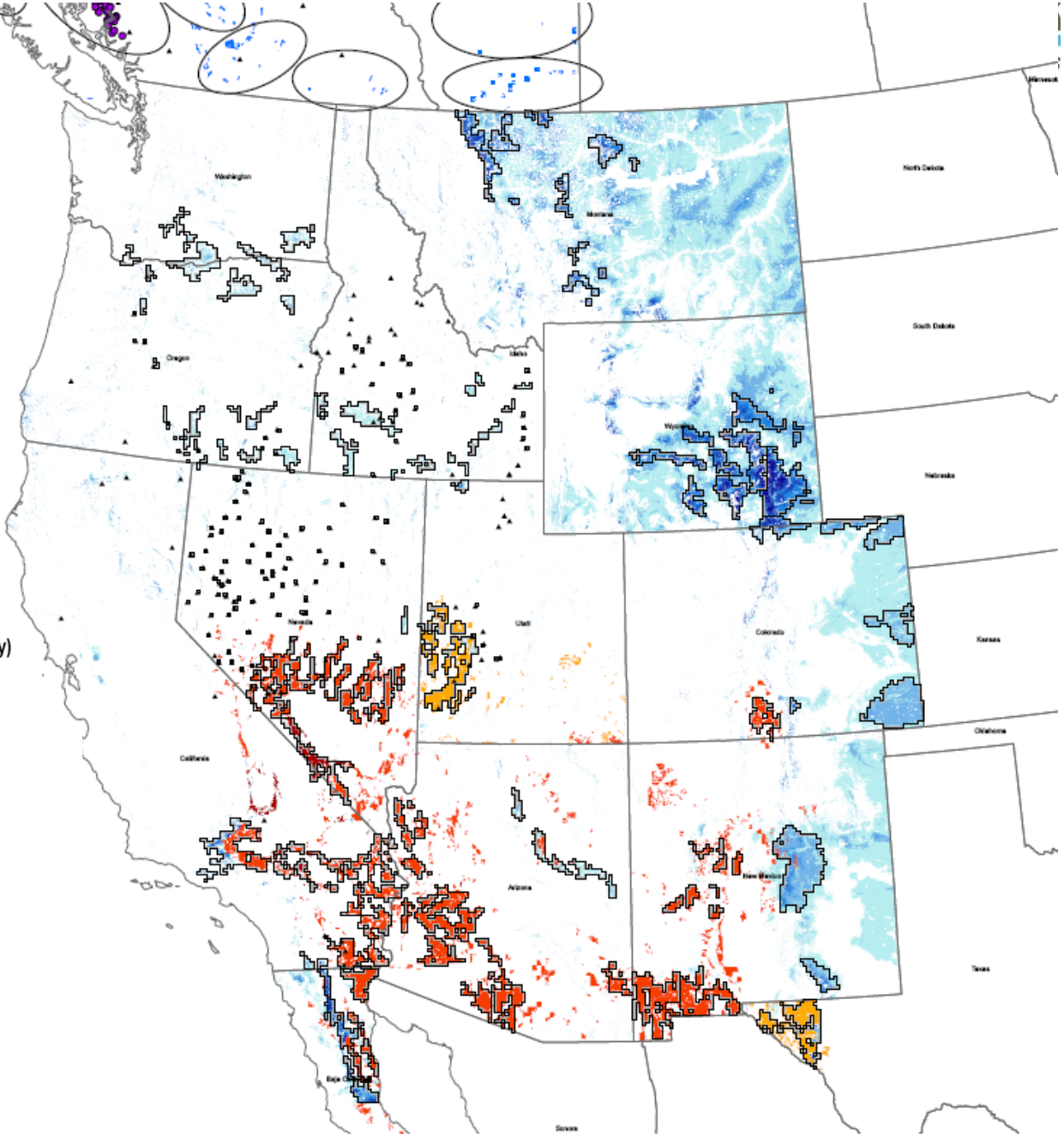


NREL Western Wind & Solar Integration Study (GE) - WestConnect

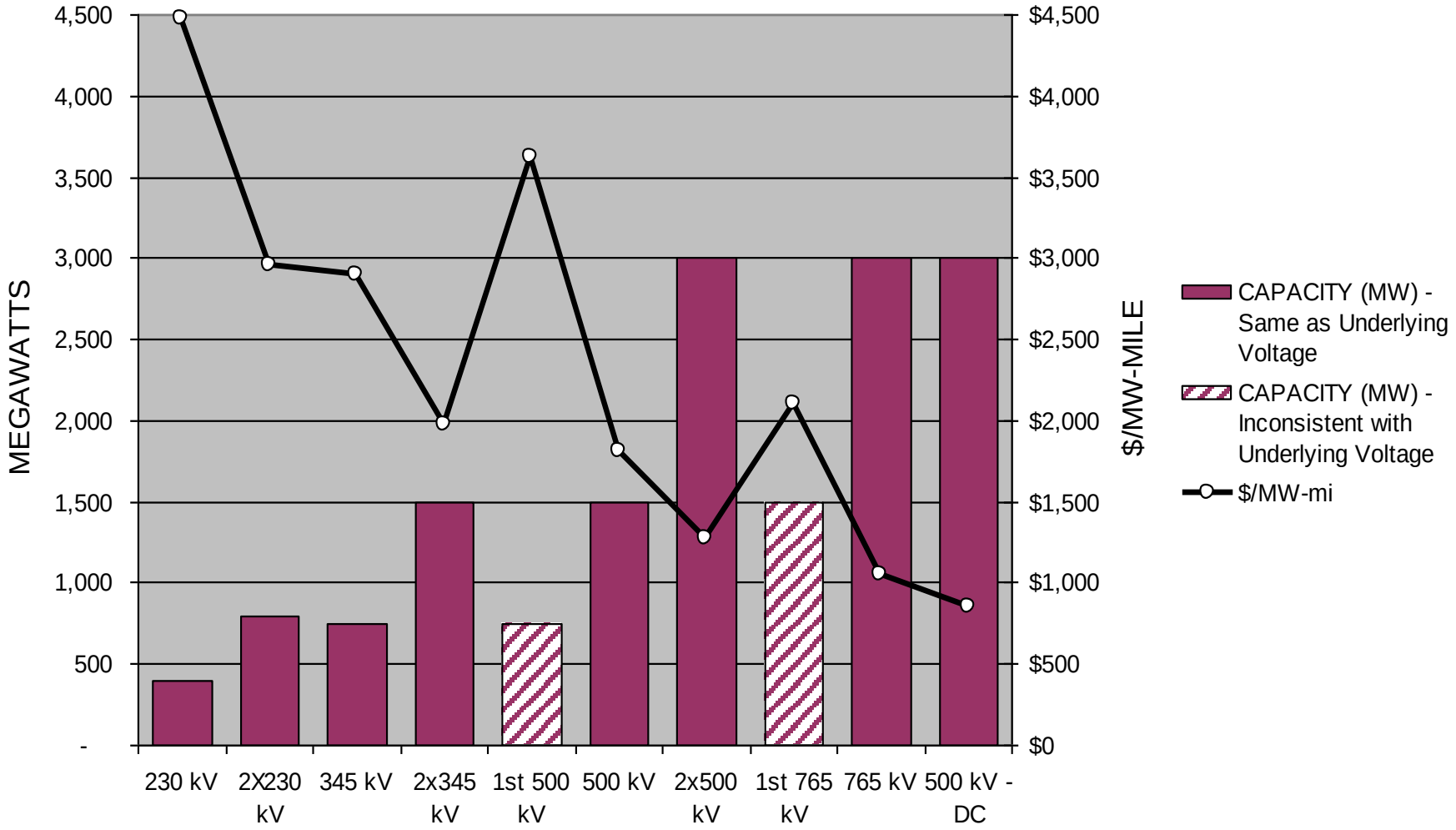
- Wind Capacity
  - Wyoming - 5,400 MW
  - Colorado – 5,040 MW
  - New Mexico – 3,060 MW
- $3.4 billion reduction in capital costs compared with local RPS deliveries
- Development of best quality wind results in fewer installations

Western Governors' Association WREZ Initiative

Preliminary WREZs



WREZ Transmission Cost Comparison (fully utilized)



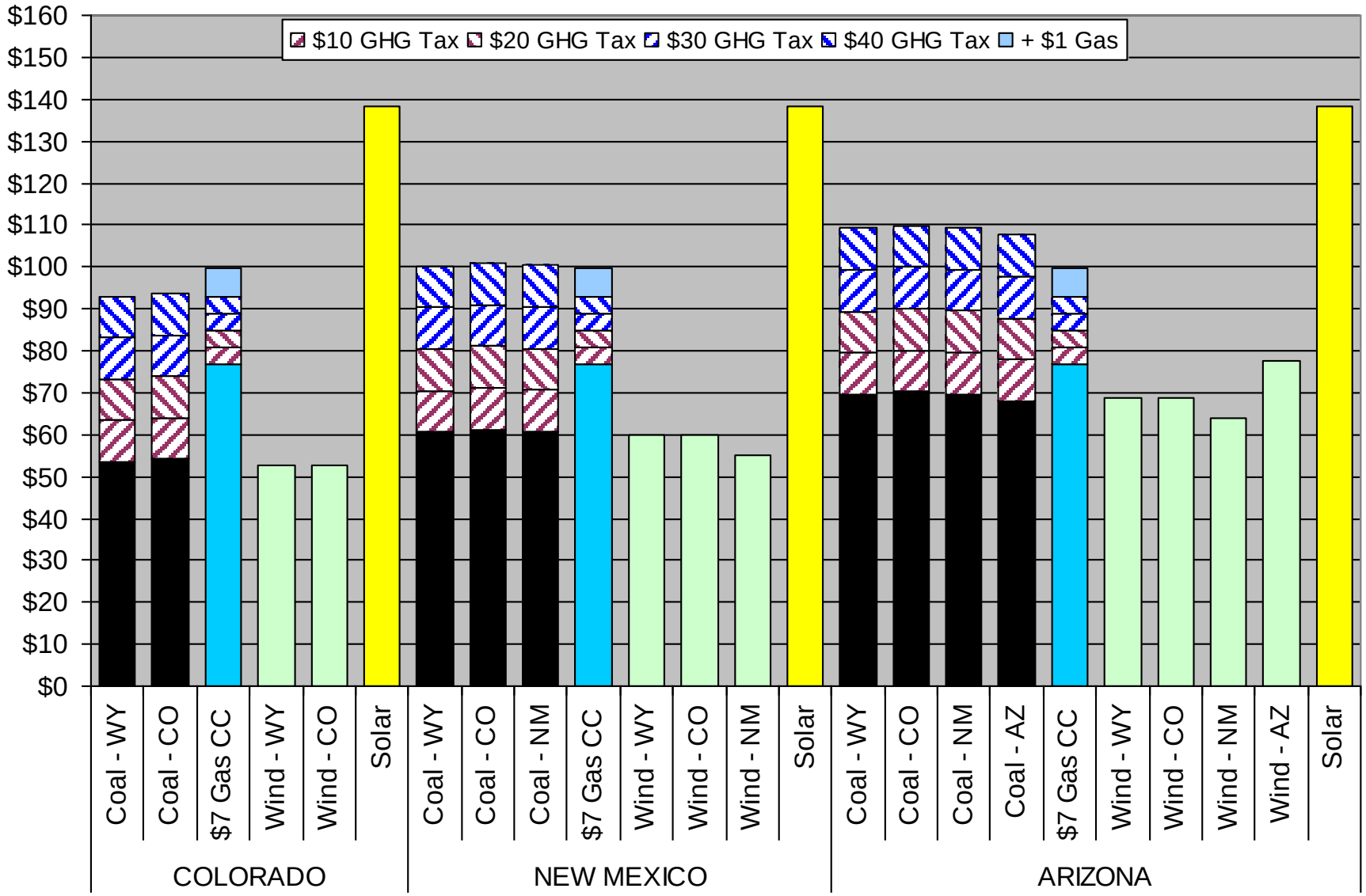
Assumptions: 600 miles and $10,000/acre for ROW

Stage 2 Work Plan & Schedule

- Business/Ownership Structures
  - Segmented vs. HPX Project-based
- Cost Recovery/Allocation
- Tariff Policy/Design
- Financial
- Economic Feasibility
  - Benefit/Cost Analysis for different resource mixes
  - Reliability Assessment
  - Economic Assessments for each HPX State

Resource Delivery Costs

@ 75% HPX Utilization ($/MWh)



HPX
High Plains Express

Questions

High Plains Express Economic Analysis

HPX Stage 2 Stakeholder Kickoff Mtg.

April 17, 2009

Energy and Environmental Economics, Inc.

Arne Olson, Partner
Energy and Environmental Economics, Inc.
101 Montgomery Street, Suite 1600
San Francisco, CA 94104
415-391-5100

About E3

- E3 are experts in energy planning and have conducted numerous planning studies on behalf of utilities throughout North America
  - Groundbreaking work on non-wires alternatives to T&D investment
- Our recent planning work has focused on the regulatory, technical and economic challenges of meeting aggressive renewables and GHG targets:
  - Advising California on reform of Long-Term Procurement Planning
  - Analyzing feasibility and cost of achieving 33% RPS in California
  - Analyzing cost of reducing GHG emissions for California and WCI
  - Advising BPA customers on how to meet Tier 2 energy needs
  - Advising clean energy developers on procurement and policy issues
  - Evaluating long-line transmission investments to harvest remote, high-quality renewables for numerous utilities

E3's Recent Projects Evaluating Long-Line Transmission in the West

HPX High Plains Express

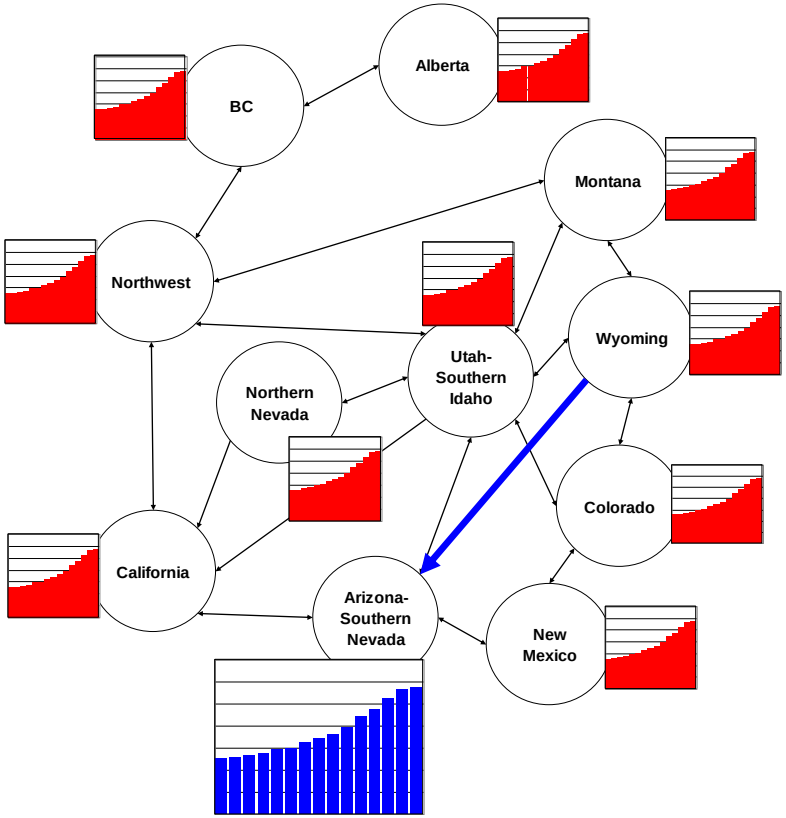
- Pacific Gas and Electric (2006-present)
  - E3 has been advising PG&E since 2006 on the economics of new transmission capacity linking California with BC
- Sunrise Powerlink (2007-2008)
  - Expert witness on economics for CAISO and evaluated reliability, dispatch and renewable procurement benefits
- Western Electric Industry Leaders (WEIL) Group (2007-present)
  - *Towards 2020* study evaluated costs and benefits of new, long-line transmission throughout the West to meet aggressive policy goals
- Bonneville Power Administration (2008)
  - BPA retained E3 to conduct a screening study of new transmission to regions with high-quality renewable resources including BC, AB, MT, WY, NV
- California PUC GHG and 33% Implementation Analysis (2007-present)
  - Developed supply curve of renewable energy zones, including delivery to California loads, for reducing GHG emissions and meeting 33% RPS target

WEIL Group *Towards 2020* Study

- High-level “screening” study highlighting “long line” transmission links between regions that merit further study
- Transparent spreadsheet model using publicly available data (e.g., NREL, EIA)
- Findings:
  - Policies favoring renewable resources can increase the cost effectiveness of many “long line” proposals
  - New multi-state lines can help high-load states meet policy goals more cost-effectively

Towards 2020 Methodology

- Grow loads from 2008 – 2020
- Step 1: Add least-cost ***local*** resources on a MWh-for-MWh basis to meet load growth, RPS and GHG requirements
- Step 2: New transmission line allows energy to flow from producing region to consuming region
- Calculate change in total WECC-wide energy costs

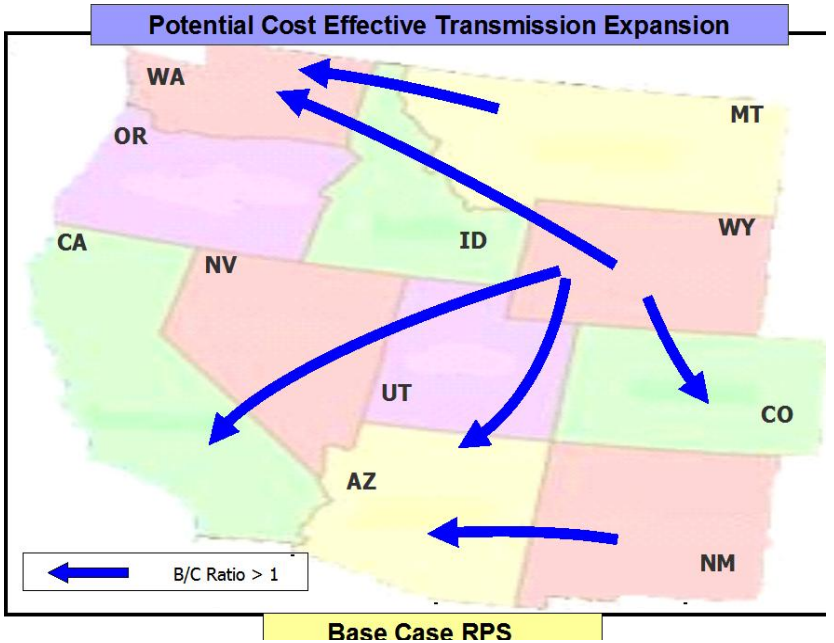


Towards 2020 Study Results, Base Case RPS

Benefit-Cost Ratio for 1500 MW Line, Base Case RPS

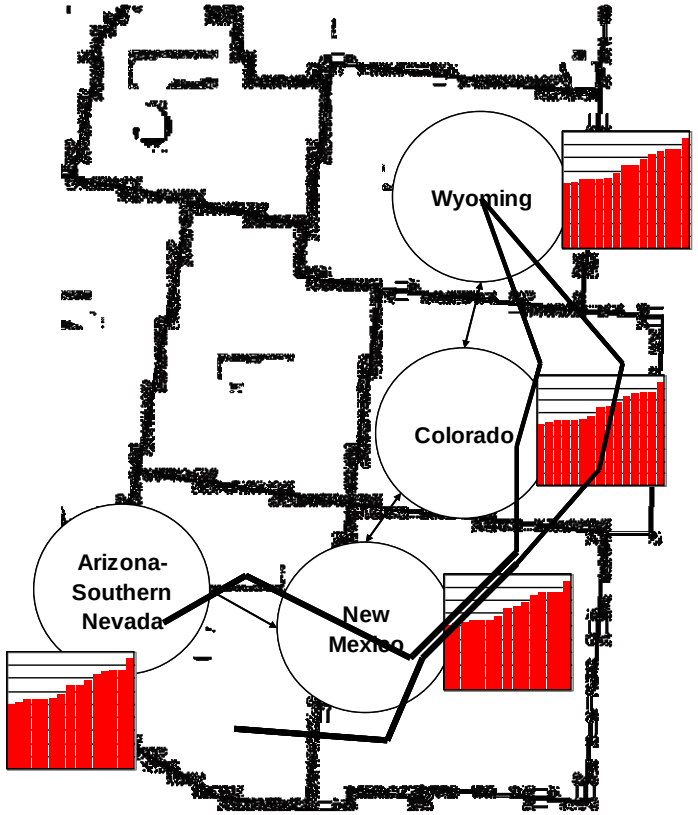
		Consuming Region			
		AZ	CA	CO	NW
Producing Region	MT	0.7	**0.9**	0.7	**1.2**
	NM	**1.1**	**0.9**	**0.7**	0.4
	NV	0.3	0.6	0.2	0.3
	WY	**1.3**	**1.3**	**3.2**	**1.1**

Key:	>1.0	0.7-1.0	<0.7



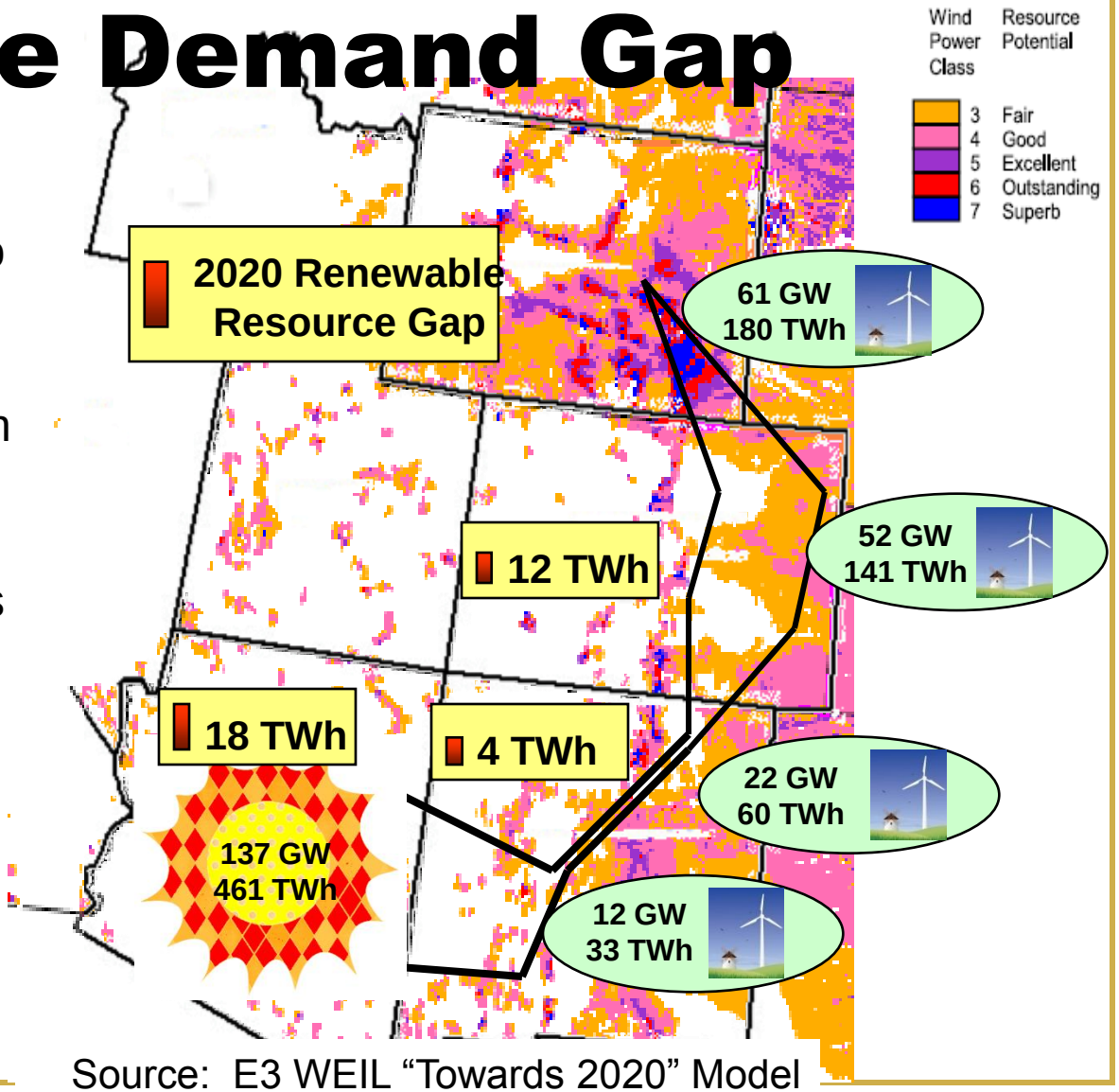
HPX Economic Analysis: Detailed Assessment of Southwest Region

- **Energy Benefits:** Connect low-cost resource areas in the Rockies with loads in the Front Range and Desert Southwest
  - Rockies wind vs. SW solar
- **Reliability Benefits:** Strengthen backbone transmission system, avoid new capacity
- **Macroeconomic Benefits:** Create jobs and increased tax base in states where development is increased



Resource Potential and Renewable Demand Gap

- HPX states need over 30 TWh of energy by 2020 to meet current RPS targets
- HPX would deliver renewables from wind-rich areas in the Rockies
- Key question is cost and viability of solar resources in the Southwest
- Also look at conventional resource flows



Source: E3 WEIL "Towards 2020" Model

Potential New Data Sources

- NREL Wind and Solar Study
  - Goal is to help states in the mountain and southwest regions understand the operating impacts and mitigation options due to the variability and uncertainty of large penetrations of wind and solar power
- Western Renewable Energy Zone project
  - Goal is to identify areas in the West with vast renewable resources to expedite the development and delivery of renewable energy to where it is needed

Policy and Price Sensitivities

- Model each line configuration under at least 5 sensitivity cases
  1. **Base case**: Current RPS targets, modest CO2 tax in WCI states, base case gas prices
  2. **Aggressive policy case**: Higher RPS targets
  3. **High CO2 price case**: Current RPS targets but higher CO2 prices in all states, not just the WCI states
  4. **Sustained high natural gas price case**: Assume very high gas prices, e.g., $12-15/MMBtu
  5. **Low solar cost case**: Market transformation reduces cost of solar in the Southwest
- Spreadsheet-based modeling approach makes it easy to generate and run new cases

Contact Information

Energy and Environmental Economics, Inc. (E3)
101 Montgomery Street, Suite 1600
San Francisco, CA 94104
Phone: 415-391-5100
Fax: 415-391-6500

Arne Olson, Partner (arne@ethree.com)

Communications Committee Stakeholder Update April 17, 2009

Robert Kondziolka, Salt River Project
Committee Chairman

Goal

- Timely delivery of HPX news and information
- Easy access to information
- Responsive to stakeholder needs
- Consistency

Work Plan

- Stakeholder Outreach
- Public Policy
- Industry Forums
- Ground Truthing
- Solicitation of Feedback
- Additional Stakeholder Meetings

Key Interactions

- CCPG and SWAT
- WECC TEPPC and PCC
- NREL
- WGA and CREPC
- DOE
- States

www.HighPlainsExpress.com

www.HighPlainsExpress.com

HPX
High Plains Express

HPX
High Plains Express

Questions Should be Directed to:

Robert Kondziolka
(602) 236-0971
Robert.kondziolka@srpnet.com

Stakeholder Feedback

Closing Comments

- Thank you for your feedback today
- New HPX website:
  - www.highplainsexpress.com
- Future meetings and relevant materials will be posted
- Your ongoing input and participation is always welcome


HPX
High Plains Express