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Transmission Operations and Planning, UGP – Rapid City: Flip Charts

Agenda

A. Centralizing Dispatch
    a. Working well
    b. Do not harm
    c. Incremental Opportunities?
B. VER
    a. EIM/RTO?
C. Collaboration
D. Planning
    a. NT (near term)
    b. MT (mid term)
    c. LT (long term)

A. Centralizing Dispatch

i Context – within existing WAPA BA

ii Context pre-read
    1) Operations consolidation of DSW/RMR
    2) More consolidation of BA?

iii Opps for EIM?
    1) Consolidation of one BA at a time
    2) C/B analysis
    3) Water resource implications?

iv Cost implications?
    1) Smaller starts make sense

v Successes
    1) DSW/RMR operations consolidation
    2) Basin/ , WAPA resources for, in Watertown
    3) Joint Transmission system, jointly owned, collaborative worked well – UGP IS.
    4) Upgrades – WAPA reach out (joint projects), beneficiary range maintenance/upkeep
    5) Western, Basin, Missouri River
    6) Tribal Hydro allocation process, 300 tribes, became recognized and need water, power
        (a) Rocky Bay Tribe collaboration
        (b) Mni/Wiconi/Corps

(c) Navajo-Gallup
7) Emergency Response alterations control center funded by customers
8) Forced outage assessment better than industry 706/693/CIP audits
9) MERC ACE has been at top of compliance
10) Can count on Western to be responsive when you have a dispatch issue

vi More BA consolidation?
1) Evolutionary
2) Incremental
3) Analysis needs to include day to day operations
4) Incremental value one RC

vii Western-wide services
1) Removing barriers beneficial to wind development
(a) Consolidated OASIS
(b) De-pancake
2) Cost/benefit analysis
3) De pancaking goes outside of WAPA
4) UGP – already have single system
5) West connect doing – just need to effectively participate as they are doing now
6) Integrating self-gen

B. Integrating VER

i EIM
1) Benefits outside of IVER

ii EIM problems
1) Implies
(a) Move away from cost/benefit
2) Cycling of fossil gen
3) Collaboration with river authorities, etc.

iii Support EIM investigation by Western collaboratively with others and WAPA is investigating now

iv FERC order re: sub-hourly RM10-11

v Argonne & NREL studies re: ERIM indicate further investigation of benefits

vi RTO
1) Is EIM a step toward RTO?
2) Need to evaluate if RTO benefits justify costs
3) Loss of control is an issue
4) Disagreement on costs & benefits of RTOs
5) IS partners are studying whether joining MISO or SPP is beneficial
6) Any decision regarding Western "joining" RTO will have to be a collaborative decision

7) Differences between non-profit & IOU utilities present governance challenges for RTOs
8) IS continues to reevaluate the cost/benefits of RTOs over time

vii VER
1) Other avenues for more RE development
(a) > LT capacity to move power?
2) Western open access tariff
3) Are the economics of higher quality wind > enough to justify the cost?

viii In MISO already expanding that may allow some capacity for export into MISO

ix MISO not paying for IS capacity or don't want to pay

x Use of existing capacity?
1) Dynamic line rating?
2) May be opportunities for capacity increase but they may not be a priority for system owners

C. Collaboration

i Across regions?
1) Western should look at regional projects as a part of the sub-regional plan
2) Western participate in utilities sub-regional plans

ii Is western doing enough in EI PC?
1) Engaged at EIPC and MAPP

iii Is the IS a model for Western system in WECC?
1) Incremental approach

D. Planning

i Western look at in 10 year plan?
1) Yes, within each region

ii Forum for evaluating benefits of IS in EI for similar arrangement in WI?
1) Driven by study requests

iii Conditional firm?
1) Yes, in Western upgrade only occurred if someone to pay (unless reliability upgrade)

iv Near term reliability?

v Longer term scenario analysis?
1) TEPPC 10 & 20 year plans

vi WAPA participation?

vii Colorado coordinated planning?
1) Didn't clean up situation

viii EIPC?
1) WAPA taking lead in Order 1000 for MAPP

ix Communicate with Western customers prior to go to First Meetings in the new planning cycle

x Western Participation in 30 year plan with tribes to look at Tribal wind & coordination with federal hydropower

xi Interest in a study with different Transmission and coal assumptions

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Transmission Operations and Planning, UGP – Rapid City: Notes

- *5-8 minute prepared statements on issues, opportunities, and problems will be provided by some members of the group. After complete, others may provide additional comments.*
- *Items to be discussed based on pre-read materials include Western's existing infrastructure (10 year maintenance plan, NERC compliance, variable resource integration, dispatch), and improving collaboration (strengthening relationships, regional planning, infrastructure).*

Prepared statements:

- 1st statement:
  - This could be an opportunity to educate DOE on PMAs, customers and transmission. The memo reflects little or no homework on these subjects.
  - HCPD has 24% renewable resources; HCPD and Basin Electric both have renewables.
  - Does not see dispatch centralization as a benefit to customers.
- 2nd statement:
  - Basin is member-owned.
  - Basin is in the eastern interconnection too and owns the IS with Western and HCPD which is operated under the OATT.
  - Western has reliable and planned operations, has been a leader with the Mid-Continental Power Pool and complies with NERC. Western also plans IS collaboration, system access, and investment.
  - Basin has integrated over 700 MW of wind and complies with FERC Orders 890 and 1000.
  - This proposal should not upset existing relationships, not impose costs, and additional users should pay.
- 3rd statement:
  - Would like to add additional wind.
  - Western could take a leadership role in BA.
  - Comply with Order 764 and sub-hourly dispatch.
  - UGP could join MISO and integrate more variable resources.
  - Generator integration process could be improved as it currently includes high upfront costs and is time-consuming.
- 4th Statement:

  - Transmission network has been developed for rural areas in Upper Great Plains, avoid duplication.
  - Transmission in rural areas has an average of two customers per mile (10 times investment), so Western has different requirements.
  - Western has developed resilient, capable technological infrastructure, even though DOE does not see this.
  - 96% penetration of smart meters.
  - DSM system for 25 years.
  - $70 million in loans, rebates and grants for energy efficiency.
  - Presumption that Western does not see opportunities and the system comparison from storm-related outages near the Capital shows a disconnection, and this is a barrier to constructive outcomes.
  - During the last 5 years customers have worked with Western with no appropriations and DOE does not understand what it has and needs.
  - Non-profits and renewable integration are at a disadvantage based on tax policy but still have non-hydro renewable in South Dakota including a locally-owned wind farm (10.5 MW) because of Western.
  - Appeal to DOE to improve but do no harm to existing, proven customer base. Don't take top down approach, but rather a bottom up approach.
  - Preference customers that pay should benefit.
- 5th Statement:
  - Tribes have other interests than the co-ops, and have been left out in the past.
  - Individual and tribal members get tax credits which they cannot use so go into the market with someone else or at a higher cost.
  - Tribes have a higher responsibility and deal with more bureaucracy. They gave up land for dams, pay a higher cost, and see less benefit.
  - Co-ops and entities get benefits that are subsidized by the federal government, on the backs of what the tribes have given up.
  - Tribes have a longer perspective of the past that often isn't appreciated. They didn't shape and create hydro but participate now.
  - Wind they developed has to be sold as they would have a demand charge if they used it behind the meter for their casino, and the economics don't work to meet their needs.
  - Tribes work with the co-ops but not on the tribe's terms.
  - There is a business case for wind due to cost, environmental, and long-term perspective, and coal is not competitive.
  - Tribes would like longer studies, using past and perspective, and the best science for energy needs.

  - Carbon sources can't be depended on when hydro isn't available. Natural variations occur in water and temperature, and there is 100-150 year vast, deep, dry period coming.
  - Energy resources available to MISO would get value of higher cost wind in the markets.
  - Old, usual ways of doing business may not work in the future.
- Additional comments:
  - Statements made that imply Western should take the lead role with BAs and other agencies, and comply with NERC, FERC, and WECC.
  - This is already being done, what are other participation opportunities?
  - Participation in an EI market could lead to RTO which could lead to other problems for public utilities.
  - Western's leadership role was referenced in pre-read materials, but customers see this more as collaboration, without need for leadership. Western has an obligation to participate in responsibilities and comply with existing orders, as do other customers.
  - Western is collaborative with Western States, as a joint effort. There is a state of the art system, and benefits are provided to customers.
  - There is a misconception by upper DOE of Western's size. Western is not the only large utility in the region like Bonneville Power Administration may be in BPA's service area.
  - Western doesn't need to lead, just continue to collaborate operationally and financially, as they have done in the past without additional direction. There needs to be a basic understanding of others.
  - Not comfortable with EIM. Look at other options and understand ramifications before acting, and don't break existing collaboration.
  - Many projects were brought to Western States for funding, but they separated costs and viability. They didn't fund many and were careful.
  - California has many transmission planning projects underway, and Western taking a leadership role wouldn't help. Renewables are needed in state, so out of state transmission line projects are not in line with goals. In CA, power for Western (CVP) is the last priority. It is a by-product so operating capability is limited.
  - Will rates increase because of this process? Will credit decrease? Will tribal allocations be affected? Will delivery of power through co-ops be affected?
  - There is a great concern about rate increase due to carbon. Customer options may include hedging to lock in long-term rates. What about clean contracts like TVA has?

1st Agenda Item - Centralizing Dispatch:

- Western, in existing BA, currently does centralized dispatch for the IS.
- Western is in 4 BAs and 1 sub-BA in present form.
- Efficiencies resulted from operations consolidation in DSW/RMR. Are there other opportunities for Western (consolidate BAs, regions?).
  - Don't jump into centralized energy imbalance market as a big piece, this would require a progression which could only be considered after cost/benefit analysis, review of current obligations, and understanding of associated cost shift. This would require studies. Western and DOE would not be the decision-makers, the utilities would. The utilities would need to determine if this would benefit their customers. Would also want to determine if this would firm wind for the tribes.
  - Maybe consolidate BAs, but would need assessment. Larger BA increases risk and there would be fewer experts over a larger area. Also, does this duplicate RCs?
  - Exporting wind to a broader market would require a cost/benefit analysis.
  - Western-wide product to reduce rate pancaking?
    - There are other owners and rates in the transmission system, so not necessarily an issue that would be reduced by changes Western made.
    - UGP has a single-system rate that includes Basin and HCPD, this has been a success that other areas are already looking at (like WestConnect). Let this collaboration continue and see what the outcome is, rather than jumping in.
- Western is already participating as a responsible partner in these activities. They recognize the need to evaluate opportunities and participate when it's beneficial and responsible to do so. Why is there a perceived need for this initiative?

Achievements:

- RMR/DSW operations consolidation.
- Joint marketing plan (JMP) with HCPD and Basin, this has been a very successful operation where Western manages the resources.
- IS and associated collaboration.
- Joint projects/upgrades including investments, maintenance and upgrades where Western has asked for participation and the beneficiaries have paid.
- Western reaches out to customers.
- Basin and Western are involved in NWE interconnect project.
- Tribal allocation began with Western and then DOE extended benefits to other regions. This was a collaboration between Western, existing customers and tribes.

- Additional tribal projects have included Rocky Boy water and power collaboration, Mni Wiconi/Corps, and Gallup/Navajo water supply development which involves Bureau and Western.
- Disaster emergency control through an alternate control center funded by customers.
- 693 and CIP audits have shown reliability above industry standards.
- Western is at the top of standards for NERC, ACE, CPS 1 and 2 standards.
- If customers have system issues or lose resources, they can count on Western to help.

2nd Agenda Item - Integrating Variable Resources:

- Energy imbalance market brought resources to markets based on wind-generator view.
- There is an enormous amount of VER already integrated.
- Integrating energy imbalance market with VER is not cost-based.
    - If don't join RTO or energy imbalance market, how can additional resources be integrated?
- Base load units are not designed for this integration, it causes operational issues.
    - Energy imbalance market by Western would require Bureau and Corps coordination, because the rivers are not operated for it currently, and it could affect water in the lower Missouri states. There are many questions that would need to be answered first.
- Energy imbalance markets are regulated by FERC.
- RTOs are interstate so regulated by FERC, and local input may not always be considered.
- Western is already looking at these options, through long-term collaborative review.
    - Would legal authority allow it? Water purposes?
- Recent FERC Order 864 from RM10-11 on sub-hourly scheduling indicated there is no need for energy imbalance market in the western area.
- Argonne and NREL study conclusions are still being evaluated.
    - Need to wait and determine if this would be beneficial, as further work is ongoing and we will better understand the benefits after the studies have been evaluated.
- Is energy imbalance market involvement a step towards RTO?
    - This type of market favors bigger IOUs and small, local communities may not benefit.
    - There are areas that do benefit from it, but need to be cautious and analyze before deciding.
    - Coops and municipals lose control if join and there are costs, less benefits, and decisions are made at a larger level which could cause local loss.
- Cal-ISO and APPA eastern analysis have both concluded there are higher costs and less benefits.
    - The northwest has an aversion to RTOs.
- IS partners are studying future relationships with MISO and SPP, and at this time not sure what they will decide.

  - They have had ongoing studies and are reviewing and analyzing options as changes occur.
  - These decisions are not just up to Western, due to the IS.
- Business model of nonprofits may not fit in a for-profit market.
  - There are legal issues, fundamental purposes and authority issues that set PMAs and non-profit organizations apart.
- OATT is in place, but transmission costs are high.
  - Studies could determine balance between decreased capacity and lower transmission costs, there was a study completed last year in South Dakota.
- Complex issues surround creating wind power only if beneficial. For example, CA variable integration is required by 2020.
  - There are high costs and there won't be a need for more imports of VER.
- MISO has a significant transmission project in progress that will relieve some congestion.
  - MISO is currently using transmission at no cost, which has been an ongoing issue.
- TIP identifies transmission infrastructure opportunities. Operational changes in the IS are also in progress that may help.
- Increasing efficiencies of existing transmission capacity could be explored.
  - Western reviews this option and completes studies to uncover issues.
  - 10 year regional planning studies review reliability and increased capacity based on return. Studies completed as a result of OATT transmission requests also uncover needs.
  - Changes to interconnections, load and maintenance are implemented in conjunction with customer needs and capital investment decisions.
  - Opportunities may be identified but not completed unless they are funded or determined to be a reliability or compliance issue.
- Should 10 year studies be completed cross-regionally?
  - This would be similar to the IS, which is planned as a whole.
  - There are already rules and regulations that determine planning. Studies may already be expanded as a result of WestConnect and FERC Order 1000.

3rd Agenda Item - Collaboration:

- Collaboration in planning and operations is already occurring.
- Are there additional opportunities?
  - As a partner, not leader.
  - Already being done effectively.
  - Examples include Western involvement in Black Hills 10 year plans and WestConnect.
  - Western should keep doing what they currently are doing.

- IS is a positive initiative between Western and other owners.
- Are there additional opportunities?
    - Maybe in other regions.
    - Would need to complete due diligence, hold harmless.
    - Maybe discuss the IS at other forums, because it is viewed positively here.
    - Western is involved in planning and sharing activities relating to EIPC.

4th Agenda Item - Planning:

- Is Western doing enough with NERC and FERC compliance?
    - Look at long-term scenarios.
        - This is being done in other areas around the country, could it be done here?
    - TEPPC does scenario analysis. Western is involved but it is primarily driven by stakeholders.
        - Should Western be more involved?
            - There are funds available that haven't been used.
            - Western is involved enough but other stakeholders may not be. Is there a possibility of Western encouraging others?
    - Western is involved in FERC Order 1000 MAPP implementation.
        - In Colorado, there is expanded FERC Order 890 participation required by jurisdictional utilities that involves stakeholders, but they haven't necessarily seen benefits from this additional involvement.
- Western is participating and collaborating.
- Western could possibly encourage additional participation.
    - Western could help stakeholders see long-term planning benefits.
    - Increase communication regarding planning opportunities.
    - Get additional stakeholder input on scenarios from the beginning of planning activities.
- Western funded and provided a study to identify wind opportunities for tribes.
    - $3.25 billion in borrowing authority for upgrades available.
    - Study may have flaws.

Wrap up session:

- Stakeholders make decisions based on ratepayers at the end of the line.
    - Hold harmless.
    - Be aware of cost shifts.
- The IS required investments and has worked well.
    - Analyze and decide future changes.

- There are no gaps in existing procedures relating to Western's activities and leadership according to some; others argue EIM and Variable Energy Integration are gaps.
- Interconnection requests could be improved.
- Carbon policy, as it relates to supplemental purchases, is not agreed to by the tribes.

Plenary Session – Transmission Operations Planning:

- 1st Viewpoint Reported out to Plenary
  - Centralized Dispatch:
    - Can occur within and across regions.
    - Could be a cost shift with centralized dispatch so requires a business case, justification, and would need to be a value to customers.
  - EIM:
    - Implies market, which results in market-based rates.
    - Base-load resources.
    - Non-profit businesses.
    - Currently complying with NERC and FERC.
  - Leadership:
    - Customers see Western as a collaborator and active participant, not as a leader.
    - Beneficiaries pay.
- 2nd Viewpoint Reported out to Plenary
  - See Western as a treaty partner.
  - Tribes have prior claims to resources.
  - See Western as maintaining status quo.
  - Weather and climate changes occurring, wind may be the new lowest cost power.
  - Carbon is altering water resources. Long-term planning requires more variable resources.
  - Tribes have wind but no way to get it on the system. Would like Western to assist tribes in economic development and take leadership role to bring their wind into the system.
  - The wind study was collaboration but they would like to move further, but this will bring them against the co-ops.
- 3rd Viewpoint Reported out to Plenary:
  - Western has been involved in VER.
  - Continue and expand for long-term integration.
  - Need reforms to the interconnection process (reduce cost and time).
  - Continue facilitation of EIM, RTO and cost/benefit analysis.

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Design of Transmission Services, UGP - Rapid City: Flip Charts

Summary of Issues from the Pre-read

File 1

- Eliminate pancaking means shifting costs; DOE should pick up these costs
- A lot going on in the DR/EE by WAPA customers preference power customers report this to Western
  i RTO/ISO function not a Western function

Underlying question – is DOE thinking Western should be part of an organized market?

- WAPA customers have kept up w/ smart grid and will continue to do so
- EV not an issue for this region, it's an urban one
- EV a retail issue and nothing to do for WAPA
- Want DOE to be more aggressive in budget appropriations
- Looking for answers to what is outcome of this process
- DOE should respect beneficiary – pays prime pk

Morning Panel Discussion

File 2

From Morning Panel

- Trying to fix something that's not broken and ignoring what's broken (Congress/admin need to provide appropriate direction)
- Need to increase RE in SD
- WAPA/DOE goal of mtg not definitive
- Concern that Chu memo moves WAPA out of its role, providing new authority?
- This is a time of considerable uncertainty so not best time to discuss new costs
- EE/DR are retail rate/distribution issues

File 3

- WAPA doing good job, value that partnership, want it to continue
- Recognize what customers are already doing
- WAPA regions are very different

- Want renew energy (wind) but market is not there so not cost competitive
- Addressing variability requires looking at worst case
- FERC 764 addresses scheduling interval (15 min) but cost interval remains 1 hour
- Western is not fed government, can't use its rate payers to fund federal policies
- Western is already collaborating w/others, should not lead the charge and should continue
- Want national energy policy but with regional variations, should address transmission siting
- Big discussion regarding 2014 ban of manufacture of storage water heater, contradictory to memo
- Beneficiaries should be the ones who pay
- Concern about WAPA stepping out into uncharted, potentially not cost-based activity, beyond what they were formed to do

File 4

- What is the first thing that should be done?
  - i National energy policy (needs to come from congress) but different for different regions
    1) Federal issue but one-size fits all
    2) Customer have paid for everything they needed
  - ii DOE should address transmission siting authority FERC incentives for private development
  - iii Would a PURPA-type program be worthwhile?
    1) Timeline ancillary service rate?
       (a) Would impact others
       (b) Non-profit caveat, violates preference clause?
  - iv Could WAPA issue revenue bonds?
    1) TIP program similarity – no market

Variable Energy Resources Discussion

File 5 (Flip Chart number 1)

Variable Resources

- Not recognizing what's already being done (solar pumps, wind)
- System being used for renewable energy
- Build by non-coop entities
- Costs need to remain cost-competitive, pay fair share
- Other ways to integrate; hydro operated
- Past 2014, DOE saying no solar water heaters; now used for storage
- Now to work with WESTERN balancing its system

File 18 (Flip chart number 2)

- T-line system not designed for export
- Ren. Generation going to load if goes outside region, WAPA customer should not subsidize
- FERC 888 rules id cost payment
- Had to dump water
- Not enough transmission to accommodate renewable energy
- Western w/ fixed amount of power, customer feel impacts of DOE policies
- What is capacity? Hard to define, geographic specific

File 6

- Difficulties in siting transmission
- Does this region want to export?
  - i Costs vs. benefits
- No market in So. Dakota/Neb/Colorado; Wyoming has its own wind
- Basin Electric 700 MW of wind – competitively priced
- Need to have customers for wind who pay for it
- T-line = road analogy
- WAPA needs to decide if market is there
- Clean Line Energy new line to Chicago, sending South Dakota energy a DC line

File 17 (4)

- Rate of pancaking affects cost of delivering, if can find a customer
- PTC not a big enough subsidy
- Developers can't find customers
- Why is this region different? Why it may work for other systems?
- CA/OR/WA a forced market
- Have to prove rate-recovery. Can't do it here
- Wind costs have dropped and can be competitive with coal; NG
- Want to integrate if can, if costs addressed
- Concern if WAPA speculates

File 7 (5)

- Western is not the federal government, spreading costs
- Bring load to power? 700,000 in SD (need to also look at transportation)
  - i Google moved server to wind

  - ii Sioux Falls has server ent. Because of reliability, no jobs
- Build wind generation closer to load more cost-effective
- Issue of no RES reqt; MISO example
- Wind is a VARIABLE resource need to offset var.
- Purchase of regulating power
- Hold water when wind is blowing; other interests preclude this (multiple purposes of hydro)

Bf worked with Western to integrate wind, Western did excellent job

File 8 (7)

- Scheduling interval timeline changes but not cost time period
- 700 MW not enough for some. Group not saying no more wind but who pays; not WAPA; wait for market to make it economical
- Not WAPA purpose, as org defined
- DOE role; PMAs not the fed gov.
  - i Siting easier, working with other feds to encourage transmission
- Wind has other issues like aesthetics that DOE could address
- WAPA already does good job, doesn't need DOE direction
- WAPA subregions are very different
- 3M has to deal w/multiple Western utilities, non reimbursable funding

Possible New Transmission Services

File 9 (6)

- Joining RTO – impact of rates
- Variability, need to look at worst-case sign. Regulatory issue
- FERC 764 15-min scheduling (affects Q8) to manage variability
- Western looking at developing ancillary services
  - i BPA runs out of regulation
  - ii Western at table at all these discussions
- What is DOE's expectation of Western beyond this?
  - i NWPP, WHA looking at EIM (unused transmission at no charge)
  - ii No cost shift vs unsustainable cost shift (Q7)

File 15 (9)

- Have IS that does this, pooled transmission within region; prob is sending it outside
- No postage stamp rate (vs. license plate rate)
- Challenge is can't get there
  - i ISO wants one rate
- Geography affects economic model
  - i Big spaces
- Pancaking does affect new wind
- *DOE needs to put money to cover cost shift of joining an ISO, similar to interstate highway*
  - i Whose policy is it, who pays
  - ii Cost should be nationalized
- Focus discussion of pancaking w/in WAPA regions
  - i Western doing studies on this; should sign cost shifts
- More of an issue in West, goes beyond Western regions

File 16

- Other people benefit, how to capture that; has to have overwhelming benefit
- Western = reliability
- Treasury issue
- Can wield power
  - i DOE cut checks
- DOE wants to develop new natural system without going through congress; equalize rates
- Need a national energy policy
  - i Fed transmission is 13%, most in West

Pancaking

Q1 yes

- eliminating pancaking means someone pays less
- limited to how much energy can be moved
- pop p

could contractual agreements help?

File 10 (10)
West Connect
Regional Pricing Initiative
Highest rate pro-rated

} Western Participating

- FERC rule
- WestConnect not paying full rate
  - i Hourly non-firm only product; can't build wind with this
- Western actively involved now, within mission not committing major blocks at discounted rates
- Both for variable/pancaking, western very active, issue of cost allocation
- Q5 SNR/BPA very connected, don't know about other regions
  - i CA RPS requires mostly in-state so interconnection for renewables less of an issue (econ issue)
  - ii All boils down to guy at end of line accountable to consumers
-

Energy Efficiency and Demand Response Discussion

File 11 (11)

Energy Efficiency/Demand Response

- Been doing it for 30+ years
  - i Energy-resource conservation loans
  - ii Co-ops are member/cost-driven
  - iii Incentive to drop costs down, always been there, can't do moer
- Fixed amount of purchase from WAPA
  - i issue to supplemental supplier, not Western
- cash rebate – 40 M, low-income loans – 30M for last 25 years
- incentivize Energy-Star
- Role of WAPA is to deliver power, no tie to consumer, only through co-op etc.
- 96% 100% AMI installed
- "transition" to smart grid, already there
- NO role for Western, would be duplicative
- West w/ demand control, sub BA may have to pay more if not regulated well
  - i Doesn't see what WAPA can do

File 14 (12)

- Grid already modern and being updated
- Need to look into future, do this w/WAPA, what does DOE have to do
- Controlling load could balance other things
- Water heating acts as storage, concern over loss post 2014

- **Q4** not relevant, won't change behavior
  - ***Most sophisticated systems in most rural regions outage mgmt. system***

Electric Vehicle Discussion

File 12

Electric Vehicles

- Not an issue for this region
- Could act as storage in other regions
- 1. For non-reimbursable incentive, ok; not ok if have to pay
- Would this take away money from other programs?
- Is there really money available?
- SMUD: issue is penetration levels; adoption specific to neighborhoods, dist. Line effects does see to linkage to rates
- Doe already provided grants for charging along I-5, Mex to Canada
  - Rates for into don't make a diff
- WAPA does not have retail authority in SD
- Would charging _____ be?
- Western has fixed allocation; zero sum game
- 220 kv vs 120 volt ext. cord
  - Misunderstanding for transmission vs dist
- WAPA nothing to do w/ Q 1-6

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Design of Transmission Services, UGP – Rapid City: Notes

Stakeholder panel:

1st Speaker: Interest to hear what's happening and to see more wind on Western's system. Has an interest in tariff and rate design. There are lessons that can be learned from others.

2nd Speaker: DOE is trying to fix something that is not broken; on the other hand ignoring what is broken – DOE should put out $ to build the way it should be built. Rushmore is already marketing to incentivize and has been for years. SD is saturated with wind – has lots of wind and few people – additional wind would need to be exported. Electric vehicles shouldn't be on the table for this region.

3rd Speaker: Goal to grow SD renewable energy and long term to export to big markets. Goal: energy efficiency programs in SD and with WAPA, including demand resource.

4th Speaker: Concerns: Secretary's memo is short on significant policies; could move WAPA outside legal authority at significant costs and creating uncertainties. In conflict with "lowest possible cost" memo implies incentives which definition implies greater than cost base. Confusing retail (us) v. wholesale (WAPA). Favors elimination of rate pancaking, but memo is short on details—devil's in the details.

5th Speaker: System is not broken; Concern if increase in cost to where; where's the problem?

Integrating VER Comments

- DOE needs to recognize what we're doing.
- 129 MW wind farm; 785 MW renewable without incentives from WAPA—excludes hydro (which is also renewable).
- Beneficiary pays principal.
- Conflict within DOE: Re 2014 DOE ban on manufacture of greater than 50 gallon water storage heaters which are used to balance and compliments renewable energy.
- Transmission system was designed to move generation to load. Not built to export. How do you design to export?
- If DOE wants to incentivize and move out of system to consumers in other regions – system is not being used to serve load…then who pays? Who will regulate?
- Not enough transmission to deal with all renewable energy (wind/hydro)
- ---distribution coops can add more water heaters.
- Western has a fixed amount of power and should not shift cost to regulate for VER.
- Question to WAPA: What is the transmission capacity available? Need to perform studies.
- Difficulty in siting.

- What if SD becomes an exporter: What if it's not wind...consider if it were a car. Are there other values (more resilient system, cash flow, employment). But who will pay for it. There's no market. If you can't sell the wind/car, will you build it?
- Need a willing buyer to promote; Western's customers shouldn't have to pay for it.
- Disheartened to hear "who pays" can't we solve?...
- Production tax credit good, but not large enough to subsidize.
- When delivering to CA, cost becomes equal to cost of power (from SD – CA) – there is a lot of wind between SD and CA to compete with.
- Additional constraint – CA requires renewals be produced in CA under initiative.
- Need to have rate recovery; VER not competitive, even with tax credit.
- Others argue it's cheaper over the long term, now competing with old, depreciated coal assets.
- Can export if you eliminate rate pancaking.
- Price of wind in decreasing b/c of better technology; coal's capital cost is repaid.

How do we integrate: Is there an opportunity to develop if everyone pays, including WAPA; should not be built at the cost to Western's customers.

Can you bring load to generation? Overwhelmingly, "we'd love that," have tried to promote business and increase in population, but have struggled with significant progress for years.

We talk about VER as a resource, but VER still needs generation backup. But it's not a 1 for 1.

If WAPA is required to join an ISO, we will run into congestion.

Could system accommodate VER if cost effective? BPA ran out of regulating capacity. If we could hold back water when wind is blowing, that would be ideal. But we can't because constrained by other obligations. Projects were built for Flood Control and Water Supply and have environmental regulations.

Western has done an excellent job in keeping the lights on. We can't deal with change from a marketing perspective. When you bring in renewable you still need to plan for the most severe contingency.

FERC 764 changes scheduling to 15 minute intervals; which is regulatory attempt to manage variability of renewable resources. Consider how to develop an A/S market to help integrate VER – EIM. Problem BPA is the largest hydro generator in the country and it runs out of regulation all the time.

What's DOE's expectation that Western do that it's not already doing. Western sits at the table with others on issues like FERC 764, developing EIM, etc?

EIM using unused transmission; it's not being used at no cost.

Dispatch at 5 minute intervals rather than 15 minute intervals.

FERC order is a major change and should help with moving forward. Might mitigate need for A/S b/c reducing uncertainty. Yes, but some acknowledge it improves schedule but contractual/financial obligations are still hourly.

784 MW of wind is not enough. No one saying we don't want wind, the question is who should pay for it. WAPA is the wrong group. Also, when it's economical, it will be done.

Action at Federal level might help. PMAs are not The Federal Government.

DOE can make siting easier.

Need a National Energy Policy. DOE is trying to get a nat'l system built without creating a new agency; rather it's trying to socialize through WAPA.

Non-reimbursable! Private money. Solves a lot of problems.

DOE needs to study the differences between the regions. Any National Policy should also include regional differences.

RATE PANCAKING

Is it hindering? Yes, but a TP cannot forego recovery obligation. Cost shifting means someone gets a free ride.

Could establish through contractual arrangements – shipper pays postage stamp rate. Cheapest has to pay more.

Rate Pancaking between whom? Other regions. If BAs consolidate, creates cost shifts.

DOE needs to put money in to avoid cost shift to join a RTO/ISO (similar to highway funds) to offset additional cost.

More applicable to Western Interconnection than the Eastern Interconnection – IS (Integrated System) transmission has one rate.

Western is actively involved in investigating the elimination of rate pancaking.

Westconnect study referenced…charged highest rate, shared proceeds…for short term/non firm energy only. Can't support VER.

THEME: VER and PANCAKING. Western is always at the table in discussions, collaborating as an active participant. It's a cost allocation issue.

Does lack of interconnection of SNR effect ability of Western to eliminate pancaking? Yes.

SNR is connected to BPA. CA is aggressively pursuing RES; an interconnection won't necessarily help under the current law b/c renewable to be creditable must come from with CA.

It all boils down to the guy at the end of the line – consumers – so unless non-reimbursable, consumers pay.

All in favor of integrating VER if:

- Define who's paying
- Western is at the table
- National Energy Policy put forth, regional exceptions.

If you were in charge what would you do?

- Develop a National Energy Policy: Integrated tx system, if needed, should be resolved at federal level, but one size does not fit all. Everything that needs to be done locally is already being done. Don't make preference customers pay for something from which preference customers don't benefit.
- Can DOE eliminate barriers to siting?
- Could Western issue energy bonds paid back from added capacity of the system?
- National RES.

Energy Efficiency and Demand Response

- Retail/Distribution Issue. Western's role is to deliver at the wholesale level, not tied to end users.
- Co-ops in the region have been doing for 30+ years.
- 90-100% AMIs installed and operating; most sophisticated tech in the country.
- Grid is already modern, SCADA.
- Today ok, but what about the future; how will it be different?
    - We're planning today for the future, so is Western
- DOE wants to remove > 50 gallon storage, which is in contradiction to promoting energy efficiency and demand response.
- What about peak/off-peak rates for Western? No, that's a retail issue.

Electric Vehicles

- Non-reimbursable, don't shift costs from Seattle to South Dakota
- Where's the budget
- This is an urban issue
- SMUD's penetration shows how to adopt to distribution system; not linked to wholesale power.
- DOE has grant to provide charging stations from Mexico to ____
- Western cannot sell at retail except to irrigation projects.

SUMMARY

- DOE should operate within beneficiary pays principal
- Issue of cost allocation
- Trying to fix what's not broken
- Concern that Western will be going beyond their statutory authority
- We have 21st century Grid, so what is being asked?
- Western is doing a good job; we value that relationship
- Recognize what the customer's are doing
- Want VER but no market
- Need a National Energy Policy, with regional variations
- Western is not the Federal government, and shouldn't use Western rate payer for policy
- Western collaborates, customers question if they should lead
- All good concepts, just not wholly assessed to preference customers

Establish a National Policy with regional variations

Address tx line siting

DOE's restricting size of water storage heaters >50 gallon and RICE (reciprocal internal combustion energy) is in conflict with demand response.

VER – Beneficiary pays

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New Transmission Authorities, UGP – Rapid City: Flip Charts

S1222 Evaluation Criteria

- Within Western UGP region the S1222 authority is not a useful tool/program
- Duplicates functions/capabilities of Western States Power Corp
- Why should Western serve as a consultant rather than a private consulting firm?
- Benefit to the PMA and/or its customers
  - i Economic, system

Discussion of specific criteria

#1. In the public interest
  - i Approvals from regulatory bodies
  - ii Potential impact on electricity prices
- Suggest removing #2 relative to renewables
  - i "whether the project will facilitate the reliable delivery of power"

#3. Pre-identification of potential environmental conflicts

#1. or #3. ROW acquisition plan
  - i Interest in use of federal eminent domain?

#5 Identify owner & operator of the line

#3 Opportunities for external (third party) interconnection into the line if they have the financial capabilities to do so

#5 Or standalone
  - i Ability to mitigate potential and future adverse political events
  - ii Evaluate for potential change in law or regulation

#3 Identify and address the legal requirements that need to be met in each state and on Tribal lands

Look at eligibility criteria

#1 No current demand
  - i Impacts volume of projects applying (or not) under S1222

#1 Why is there congestion? And why has nothing been done to address it?

Can the DOE accept funds post 2015? Or is the cap lifted after 2015? Or does the program expire in 2015?

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New Transmission Authorities, UGP - Rapid City: Notes

Intro of §1222 and TIP Program

- Looking for implementation and evaluation requirements of projects

Speaker 1:

- Do we need additional borrowing authority?
  - No.
- Reasons
  - Duplicative, UGPR has an existing transmission planning process, Attachment P of the OATT, and the approvals for these processes are conflicting.
  - §1222 contradicts FERC 888 and 889. Transmission is built for all not just for renewable generation. Focus should be on reliability.
  - There is already a process in place where there is 10 year planning – talk w/ customers and they ask for appropriations from Congress or the Ft. Peck Revolving Fund then Western States Power Corp (which is customer funded).
  - Can TIP be used instead of §1222?
  - The existing process works

Speaker 2:

- Goal is to keep the lights on and look forward
- Likes renewables – solar, wind
- Incentives for new technologies
- Need Western to keep up with technology; other nations are upgrading technology
- Looking for education

Speaker 3:

- No need for new transmission authorities for WAPA
- Concern that transmission shouldn't just focus on wind integration there is already 785MW of wind that is consumer owned in Western's UGP region.
- Problem finding a buyer of renewable, because demand is down, and risk of losing Production Tax Credits.
- TIP program and 1222 program not needed
- Need to focus on all areas of transmission for delivery to loads not just looking at renewables.
- The transmission system is robust now.

Explanation: TIP has a renewable component and that §1222 is not necessarily for renewables.

General Discussion

- UGPR has an existing process and §1222 may be used in another area but there is no need for this in UGPR.
- What is the number one top priority for criteria of these projects?
    - Customer concerned with the cost and reliability.
    - Customer needs lowest Rate possible
- Customer– During a Heat Storm there is no wind going - the wind is not reliable – the grid is overloaded and 6 sprinklers and several wells turned off which negatively affected him.
- Explanation: There are 5 criteria in the TIP program of which cost and reliability are included – In addition to repayment of funds, public interest, and being located within Western's service territory.
    - §1222 allows for 3rd Party funding – the 3rd party takes on the cost responsibility and does not impact the customer.
- MATL – Why is it important to develop a renewable transmission integration to get power to Canada?
- There are existing wind projects in the UGPR area such as Crow Lake wind project and upgrades were made to WAPA's system for that.
- There is an Integrated System (IS) owned by WAPA/Basin Electric/& Heartland Consumers Power District that does a great job planning, integrating & implementing transmission.
- 1 Billion Dollars of transmission upgrades and updates since 2007.
- WAPA is already facilitating integration of wind… but there needs to be a market for wind first – that just isn't there yet.
- A Tribal wind study was done.
- Why isn't DOE supportive of ED5-PVH Project (Electrical District No. 5 to Palo Verde Hub)?
- Customers want to carve out impacts to customers – such as risk of changes in the California market
- IS RUS working?
    - Yes RUS is a USDA funding program for Rural Utilities. The customers confirmed that they use this program and many rely heavily on RUS for funding – the focus of it is on the distribution level.
- It is important to the customer to have diversity and to be flexible to changes.
- Regional vs. Multi-Regional projects – they are different. Customer didn't see Western as a player on a large intra-regional project – but more on a smaller regional basis.
- FY13 – the Construction Budget from Congress was $15 Million which is seriously low and inconsistent with DOE pushing infrastructure development.

- Customers reiterate that what UGPR has works. The BOR, the CORPS and WAPA work well together and do evaluations that are factual.
- Note that SD, ND, and WY have transmission authorities in place that financed transmission lines at low interest loans.
- Question: can we look at the implementation of these new transmission authorities –
    - The Group states that it isn't necessary as they don't see the need for them…One customer stated… Show me a project that isn't being funded (already, through existing processes).
    - Customer stated again that there was no need for it in UGPR.
- Explanation: TIP has 2 parts: 1. Project Development and 2. Finance.
    - Why is there a very rich project in the TIP program, when it could have funded itself?
    - Customer concerned that something will be created that will never go away. Afraid to support projects that may not be needed or may be "Turkey" projects.
    - Customers have looked at developing renewables… but many times there is NO demand.
    - One transmission dependent entity thinks that what they have is working very well.
    - §1222 – What about the process…and should there be decisions points made with how a project is determined.
        - No input on process – move to criteria
- §1222 – Only 2 projects total. It may be that customers don't want to approach DOE for project help.
- §1222 – Concern that some would want to use Western for its eminent domain authority for the benefit of a private developer. Group doesn't think this is healthy.
- Back to the 5 statutory requirements under §1222 – the National Interest Electric Transmission Corridor – there is only one NIETC identified in Western's Area – California, the other is in New York – not in the PMAs area.
- §1222 – Question asked, Why is there congestion? And why has nothing been done to address it?
- ISSUE – Customer see this as a "solution looking for a problem"
- It was asked, how many people have come to talk to DOE and walked away?
    - Answer - It was unknown.
- It was asked, what is the purpose of §1222?
    - Answer - Under the EPACT 2005 it was designed to allow 3rd parties to pay for financing or upgrading of a transmission system. Allow Western to accept 3rd party funding.
    - It was mentioned that §1222 has a sunset clause in 2015 and therefore why are we talking about it?

    - Question was asked, Can DOE accept funds post 2015 for 1222? Or is the cap of $100 Million lifted after 2015?
        - Answer – not sure (NOTE- discussed after workshop, DOE counsel and Western counsel suggest that the cap is lifted after 2015, program indefinite).
- TIP vs. §1222
    - One has a funding component - The 3rd party pays for 100% of the costs for the project. That is how it was implemented.
- A project should not be built for the sole purpose of them making a profit.
- How does the investor recover costs on a DC line? It is like building a hotel but they can't charge a room rate. Discussed that they would need a tariff to recover costs.
- There is no demand for this program – we are in a recession.
- Look at the eligibility criteria again –
    - No current demand.
    - Customers are concerned that this program is stressing WAPA staff.
    - Projects should be tied to Western and its mission.
    - Longer transmission lines may need more evaluation.
    - Look at page 18 of the pre-read document, the 5 criteria are listed.
    - Maybe add a number 6 – taking into account and mitigate future political changes. – ex. California…need to make it clear in the contract.
    - Evaluate potential change in laws or regulation.
    - Seek to protect existing rate payers – not the developer. (CA changes – how are we protected?)
    - Developer must be responsible for crossing multiple states CPCN. Rights of way – Keystone is an example of where more coordination with all of the states would have been beneficial.
    - Legal requirements need to be met within each State
    - Need a Right-of-way acquisition plan.
    - Who will own and operate it, and can they show long-term responsibility to maintain the system?
    - Does it interconnect to Western?
    - Tribal Consultation
- Question: How should Public Interest be defined?
    - Group didn't have an answer – hard to define. They suggested taking this out.
- Move to Evaluation Criteria –
    - It should be a benefit to the PMA and or its customers.
    - On number two – take out the reference to renewables. What do you build transmission for? Load and reliability – so take out the reference to renewables.
    - Should there be a limit on the size of the project?

- Within Western's UGPR the §1222 authority is not a useful tool/program.
- 1222 duplicates functions/ capabilities of Western States Power Corp.
- Group asked why should Western serve as a consultant rather than the private consulting firm handling it?