Markets in the West Workshop
Pictures of Report-out Notes

April 9-10, 2019  |  Phoenix, AZ
Markets in the West Workshop

Today’s Market Perspectives and Challenges
Opportunities and Risks of Markets
Key Roles and Missing Links
Key Roles & Missing Links

WAPA Facilitator

COMM - Cultural changes w/ organizations
EDUCATION (regulators, use customers, employees)
Handle how portrayed in media - get in front of media
Continue to reassess

Discussion around viable alternatives - as info changes reassess

Benefit studies - right info; RPS changes how to incorporate; often use behind regulation
KEY RULES & MISSING LINKS

WAPA Ops: Transparency, Comm. Coordination
Transmission - Some think WAPA should provide
Small Entities - Don't have same resources
Education
Transparency
Integration of Renewables
WAPA Role: Integrate all WAPA Systems (Challenge)
Start small, learn from past
WAPA owns wires but no load or gen
Diverse opinions on level of input - Some custom want to just join WAPA, figure out rest
Company Roles: Evaluate Risk to Customers
Evaluate Market Ops - Pros & Cons
Lessons learned: What it means to join etc.
Actively engage & advocate on behalf
Give voice to small fish
Engage owners of DC ties
WAPA Role: White paper, how WAPA helpful
How does WAPA's resources help you meet
State Goals?
Key Roles & Missing Links

Market participants: active, engaged, ISO/IRA
Take input from participants
PMA: role to coordinate with customers, get folks to table, include all.
Need for education, WAPA, facilitator, need to include PMA, state stakeholders (not just regulators)
Customer, suppliers: opportunity
generating agencies included
Transparency: need to have responsibility for all, avoid NDA if possible
ISO/IRA: seek input, listen, propose next steps; propose steps to match where people are
All: seek to collaborate to solve problems
From customer up, not WAPA down
Incremental approach to markets
Identify goals, roles in market
Recognize federal role in market
Small entities: different role for WAPA than large entities
Policy power, issues; CAISO, SNAP power, focus on what can do
KEY ROLES--MISSING LINK

1. Look at contracts - can they be updated
2. LGPU lessons learned to join markets

NUIG & WAPA updated website w/ info - good job keeping people informed

Regulators missing role in shutting down

NUIG o need to be educated

State legislators education needed

Small/mid small need a seat at table - everyone involved

SDP: Facilitate expansion existing potential new members; provide related services

WAPA role: Facilitate flow of info; elevate concerns to right customers, contact nuances; involved w/ leadership but not sole; maintain grandfathered obligations, engage DOE, customer forums

Companies support customers

WAPA: Seek widespread buy-in; facilitate education & input

Missing: PUC, state

Inclusive - involve people at right time - involve when need but not all the time
Key Roles and Missing Links

Priority: Use power customers - first one for transm.
APCO: Key role
SRP: Low cost customers - bin but open
CAP: Congestion - pumping load
Ensure boards comfortable
XCEL: Open to markets
NWP: Tribe - renewable develop
Protect cust. interest
Studies consider req.
Protect value of hydro
Look new ways to compromise
Keep customers informed
Missing - no mandate; tribal part,
Markets in the West Workshop

Bright Ideas for the Future
IDEAS FOR FUTURE

ENERGY IMBALANCE MARKET
COMMON TRANSMISSION SYSTEM IS STILL NEEDED
INCREMENrAL STEP TO GET HERE
4 COORD TX PLANNING / REGIONAL EXPANSION

SHOULD BE COST SAVINGS
REAL TIME & DAY AHEAD CONFERENCES
TRANSAPRERT
BROADER DAY AHEAD MARKET
INTEGRATION BETWEEN WHOLESALE & BEHIND METER
INTEGRATE STORAGE - BATTERY & PUMPED HYDRO
NON-WIRE ALTERNATIVES

WCF

WEST - LOTS OF BILATERAL ENSUING TAKING AWAY COMMON THRESHELD DISCO SAVINGS LAY FOUNDATION NOW!
WHAT WILL ENERGY / ENVIRO POLICIES BE TECHNOLOGIES

IDEAS FOR FUTURE
TECHNOLOGIES

IDEAS FOR FUTURE

SUCCESS = EVERYONE INVOLVED
2. GLOBALIZED MARKET
3. LEAF OF INDUSTRY CHANGES STILL COMING
4. TRANSLATIONAL ISSUES - END BI-LATERAL PROBLEMS
5. OLD CONTRACTS / NEW SKILLS
6. NON MARKET - NPP / ACE SCHEDULING / JOINT
7. DISPATCH / AG
8. AGREEMENTS NEED FLEXIBILITY FOR MARKETS
10. OUTSIDE EVENTS / TECH CHANGE TRAJECTORY

INCLUDE EFFICIENCIES + WORK TOGETHER

BA CONSOLIDATION
2. GENERATION DIVERSITY
3. FLOW VS. CONTRACT PATH
4. DUC / CURVE CHANGES
5. CHALLENGES: AGING INFRASTRUCTURE
6. RENEWABLE EFFICIENCIES
7. LOAD VARIATIONS
8. RELIABILITY
IDEAS FOR FUTURE

IN 10 YRS CONSISTENCY IN THE MARKETS ACROSS COAST
SAME RULES ON SEAMS
BALANCE STANDARDIZATION / INNOVATION
SUBSTANTIAL RTO ENGAGEMENT
MARKET WORKING - END TO TRANSITION
INTEGRATE CHANGING MIX - HOW COAL OFFLINE WHAT'S BEHIND IT?
CAN MARKET EVOLVE TO STANDARDIZE - PHONE BILL
EXAMPLE - NEED OR TAX DRIVEN?
WHO IS FILLING ANCILLARY SLOTS BEHIND COAL
IN 10 YRS IN MARKET NOT TALKING
APPROACH TO GET THERE' STRAIGHT TO RTO HARD
BABY STEPS/TRANSITIONAL/MITIGATE RISKS
THROUGH GOVERNANCE STRUCTURE
NON MARKET OPTIONS: CONSOLIDATION OF BIAS?
UNCERTAINTY - AGREE IN 10 YRS OPTIMIZE MARKETS OR
HERE IN NOT DO WE JOIN
MARKET OPTIONS MEAN DIFF. THINGS TO DIFF. PEOPLE
WANTS/BASELINE COULD BE HIGH PRICE PROVIDER LIF
RENEWABLES/MARKETS MORE IMPORTANT
IDEAS FOR FUTURE

TRANSMISSION: EQUAL ACCESS MAINTAINED
TRANS: BUILT FOR CUSTOMERS NOT PROVIDERS

GOAL OF MARKET: DISPATCH ON CARBON IMPACT NOT PRICE IN FUTURE?

CONTINUED GROWTH: STORAGE - FUNDING?
PUMP VS. BATTERY (BATT WARRANTRY (LIFEAGE))

MICROGRIDS - HOW DO WE LEVERAGE ROLES?

CYBER - AS WE LEVERAGE TECHNOLOGY - HOW DO YOU PROTECT? Gray area in market systems

IN 2025: MARKETS MORE DIVERSIFIED TODAY & OFFER BROADER ARRAY OF PRODUCTS

Trend towards self-sufficiency of retail customers

TRANSPARENT/H/E/R, DRIVEN/UNITED BARRIERS TO EXCELLENT, PREDICTABLE, UNDERSTANDABLE (MARKET OF FUTURE)

DO MARKETS NEED TO BE CENTRALIZED? RETAIL MICROGRID

A SINGLE MARKET OR MULTIPLE DECENTRALIZED MARKETS?
IDEAS FOR FUTURE

MARKETS INTERIM UNTIL SOMETHING ELSE

ELEMENTS OF MARKET OF FUTURE
- DEFINITION OF UTILITY
- MARKET STRUCTURE
- TECHNOLOGY
AH HAH MOMENTS

DON'T LET PERFECTION GET IN WAY OF GOOD

INCREMENTAL PHASED APPROACH

LONG ON EVERY SHORT ON CAPACITY- HOW FIX

AT THIS 20-25 YEARS- NEED TO GET IT DONE

MARKET JUST A GROUP OF PEOPLE COLLABORATING

TO BRING VALUE- HOWDO WE START

IS WAPA FACILITATIVE ORG - NA
NEXT STEPS?

CUSTOMERS INVOLVED - COMMITTEE - BROAD INVOLVEMENT ACROSS FOOTPRINT

IS WAPA LOOKING FOR A SINGLE SOLUTION OR?
- WAPA WANTS TO DO WHAT'S BEST TO FACILITATE INTERESTS OF CUSTOMERS - WHAT BRINGS VALUE TO YOU?
- PERFECT BIG WAPA FOOTPRINT, GOOD MULTIPLE OPTIONS
- SHRUNKEN GROUP - JUST DSW - TO DISCUSS

MANY COMPONENTS WE'VE DISCUSSED - ESTABLISH IN REGIONS WORKING GROUPS TO DISCUSS I.E. DSW CONTRACT PATH DISCUSSION DOESN'T HAVE MORE MARKET SPECIFIC
NEXT STEPS

WAPA VIDEOS - COMPLEMENT GREAT RESOURCE
CONTINUED EDUCATION TO CUSTOMERS
- RISKS TO CUSTOMER ON COST
- BENEFITS RECEIVED OR FORCED
- WAPA NEEDS EDUCATED CUSTOMERS

PERPECTIVE FROM SPP/CAISO: HOW DID THIS HAPPEN ELSEWHERE?
CAISO - WE DONT "PUSH" CLOSER TOGETHER
PROVIDE A PROPOSAL IN RESPONSE TO PUC
- AUTONOMY/LOCAL CONTROL TЕНANT
- WAPA RULE - 5 SEPARATE REGIONS - DIVERSE PERSPECTIVES - LOOK PAST TO HOW WAPA SOLVES

SPP ISSUES & CONFIDENTIALITY: COMMERCIAL - CRITICAL INFRASTRUCTURE INFO - NEED NDA
CO-VALUES FACILITATE MEMBERS SPP
MISSION: HELPING WORK TOGETHER, KEEP LIGHTS ON, TODAY & FUTURE
TRANSPARENCY NEXT STEPS

SPP: Independence - MBR Driven
BOARD: Safety Value to ensure independence
vote: TRANS owners + users vote separately, average 36%
BIGGEST HURDLE NOW: Education: What do they mean to organizations
IN SPP how is more important than what
WIN: WIN: COLLABORATE
**Next Steps**

**WAPA Wide or Regions? = Yes**

**How will water decisions impact going forward?**

- **WAPA has a role - Large entity / many connections**
  - Leadership role - how do we have FWD?
  - Who will take leadership and continue to spin wheels?
  - Problem only worse if don’t move FWD
  - WAPA give leadership; customers?

**All politics local - need to start @ region**

- Look inside current construct - can WAPA help us address renewable portfolio standards - not binary market or no move scheduling closer to operational hour.
TRANSPARENCY: WHAT DOES IT LOOK LIKE?

DON'T SIGN NDAs that prevent sharing commercial info w/ customers
- supports suspicion

START AT REGION LEVEL - can't get arms around anything larger.

FIGURE OUT AGENDA FOR NEXT STEP - invite those in room to participate
- don't tell-involve (she's needed to be in room)

GRASS ROOTS EFFORT

NEGOTIATIONS in this G were confidential - ie WAPA didn't sign wouldn't have been at table. Need to get better and still place to protect

DIRECT IMPACT at other nonparticipants - how do we then involve those impacted