NewSun Energy

NewSun Energy Presentation

BPA TC-26 Customer-Led Workshop GI Withdrawal Penalties, CTA/SFA Compatibility, and Misc Proposals July 11th, 2024 V240711-FINAL

Agenda/Outline – I) Withdrawals NewSun

- About NewSun / Experience / Philosophy
- Background & Context
 - Why BPA (+ PNW) is Different
 - Core Principles & Observations & Goals
 - BPA OATT Features & Functions
- A) GI Withdrawal Penalties Opposition & Why
 - Why Current Reform Structure
 - Lack of History for BPA of Re-Study Problems
 - New Post-TC-25 GI Study Architecture: Works Different than FERC/PAC/MISO/etc
 - <u>Need Time</u>: To Let It Work + Collect Data

Q&A (& along-the-way)

Agenda – Part II) Add'l Proposal NewSun

• B) Data Exhibits & TSEP Study Approach

C) Other Tariff Changes Proposed

- 1. CTA/SFA compatibility for LGIAs/SGIAs
- 2. GI sub-division vs LGIA timing, fix
- 3. [Provisional GIA timing]

Section 1: NewSun / ExperienceNewSun

• Experience:

- Careers, interconnections, markets, projects, reforms, regulatory:
- \$Bs of projects, decades of experience
- World-leading Projects & Front Wave of Market Transitions

• **BPA + PNW Focused experience**

- Extensive BPA IX/TX Studies Experience
 - Completed 3-4 dozen BPA IX and TX studies
 - 100+ BPA scoping & reports results meetings
 - Read over 150-200+ BPA Interconnection Studies
 - - Covering 15 years
 - All TSEPs since TSEP began
 - 20-30 GW of career interconnection studies/processes

• GI Reform Experience

- CAISO cluster conversion + PAC, FERC, and other IX reforms
- BPA TC-25 Reform Leadership informed by BPA IX experience, recognizing BPA strengths

NewSun Experience / Philosophy NewSun

- Values + Realism Driven
- Project Development + Transactional Realities Must Inform Practices & Policies
- Extensive BPA IX + TX study process experience
- Round-Peg Approach to BPA realities + Mkt Needs
- Pro- Good-Precedent & Fairness
- Pro- Market, Pro- Investability Stability
- Pragmatists focused on Climate Outcomes & Market Success
- Low Hanging Fruit + Creative Practical Solutions
- Ideas informed from practical experience, conversations, observations with BPA process and team
- Also informed by issues in other GI 'reforms' not-as-advertised, etc
- PNW is different
- Don't fix what ain't broken

Section 2: Background & Contextev Sun

- A. Why BPA +PNW Uniqueness
- B. Core Principles, Observations, Goals
- C. BPA OATT vs Other GI "Reforms"
 - A. Issues Seen With Recent GI / Queue "Reform"
 - B. BPA: What Actually Happened
- **D. Reality Check: Timeline Math**
 - BPA Study Timelines vs.
 - Development+Investment Timelines

Recap) Why BPA (+PNW) is Differences Sun

- BPA as the Backbone + Super Highway of the PNW Market
- Radically Diverse Stakeholders, Market Participants -- See Next Slide!
 - Across many, many factors and cross-sections
 - All Doing business, simultaneously in every which direction and way
 - All/Mixes of: Contractual Obligations + Tariff Reliances + BPA service reliances (and limits)
- Long-Term Firm Transmission Agreements And Lots Of Them. Liabilities.
- TSEP: Expansion Funding TC-Driven
- **TO with No Rate-Basing Bias.** Not trying to beat its TCs/ICs in Market
- But Still Have IOU LSE Abuse Biases: Can rate-base all costs.
- Public Power. Preferences, Obligations, History, Assets, Finances, ...
- Various Federal Entity Constraints
- Its Own History + Tariffs
- FERC Regulation... Well, No, Not Really. Independent, but...

BPA Stakeholder Mega-Diversity NewSun

So Many Types, So Many Ways to Slice Us...

- Publics + IOU + ESS
- Power Trading + (L/T) Power Supply
- Gen-Owning + Non-Gen-Owning
- Slices + Dispatchable Assets + Block + Load-Following + Hybrids
- Developers + Operators; Sellers + Buyers + Both
- Regulated + Non-Regulated
- Big Folks + Small Folks
- Supply, Trading & PPAs: Real Time + Long-Term + 5-year
- TOs + non-TOs
- LSE Load Growth + Non-Load Growth + Wide Range
- 100% Self-Procuring + 100% 3rd Party Dependent + Mixed Sources (BPA + non-BPA);
 - Self: In-House + Out of House

Meanwhile...

Supply Pressures, including Regulatory + Market Demand Overlays++:

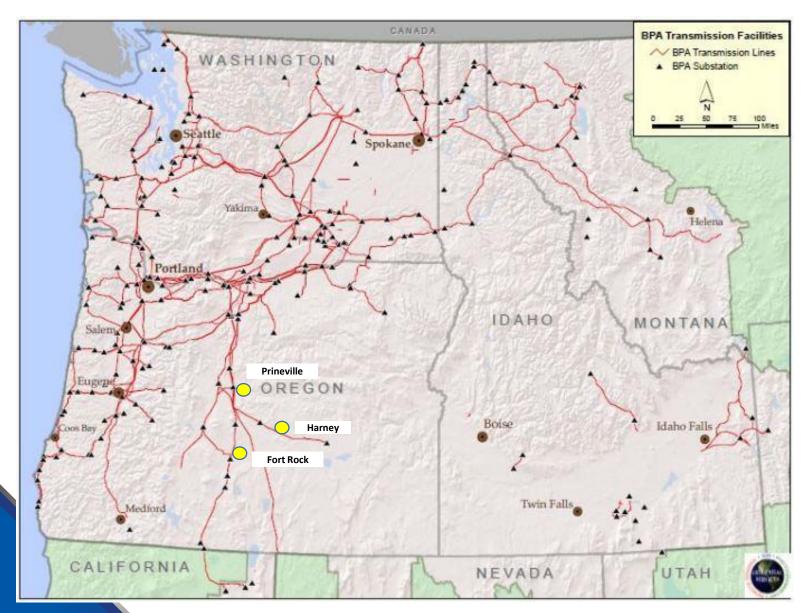
- WUTC + CETA
- OPUC + HB 2021 + RPS
- New Load Growth
 - Smaller Publics
 - Mega-Industrials
- Cities, LSEs, TCs, IOUs, NT, ...
- EIM
- Interties + CA demand
- Gen Retirements
- PSPS
- ...

More on BPA ~Uniqueness



- Not an RTO
- No guaranteed generator access to prices at Gen's POIs
- New Projects (and many others) have to "get their power somewhere" to sell it – i.e. to get revenue
- Bilateral Market (overwhelmingly)
 - Bilateral Power Contracts: L/T + S/T
 - Bilateral Transmission Contracts
- Customers live & receive in lots of different places (diverse PORs)
- Financing Projects means Getting Power to Customers/Prices/Revenue in reliable ways

BPA – Backbone / Superhighway of the PNW





- BPA serves 142 different LSEs, incl.
 - 6 IOUs
 - 54 Co-ops
 - 42 municipalities
 - 28 PUDs
 - +Power to CA / NWACI / PDCI / SMUD...
- 6 IOUs

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- Pacific Power
- Portland General Electric
- Puget Sound Electric
- Avista
- Idaho Power
- NorthWestern Energy

• Power Marketers & ESS

- Morgan Stanley
- Shell Energy
- PowerEx
- TEA
- Avangrid
- New & Corporate/Data Center Loads
 - Meta/Facebook
 - Apple
 - Alphabet/Google
 - Amazon
 - Intel

Market: Gen Dev, GIs, TSAs, DealewSun

• BPA Real World:

- Queue Interconnection & Project Development
- Transmission Contracts Signed: TSAs = Liabilities
- Finite BPA Project Manager Resources
- Interconnection Study *Outcomes* are Biggest Project Survival Driver

Some Market & GI Dev Cases – To Mix & Match

- IPP in negotiation with IOU-1
- Public Power LSE negotiating PPA with IPP
- IOU-X trying to expand rate base
- PPA security (\$MMs) posted / not posted
- Public Lands sited Projects
- LGIR IC cases:
 - Mix of Study Status, Deals & Bids, Security Postings, Transparency, and Counterparties
 - Mix of Transmission Backdrops (TSAs, L/T, S/T, 3rd Party, Buyer Provided, etc)

COMPLEXITY OF CIRCUMSTANCES AND SITUATIONS

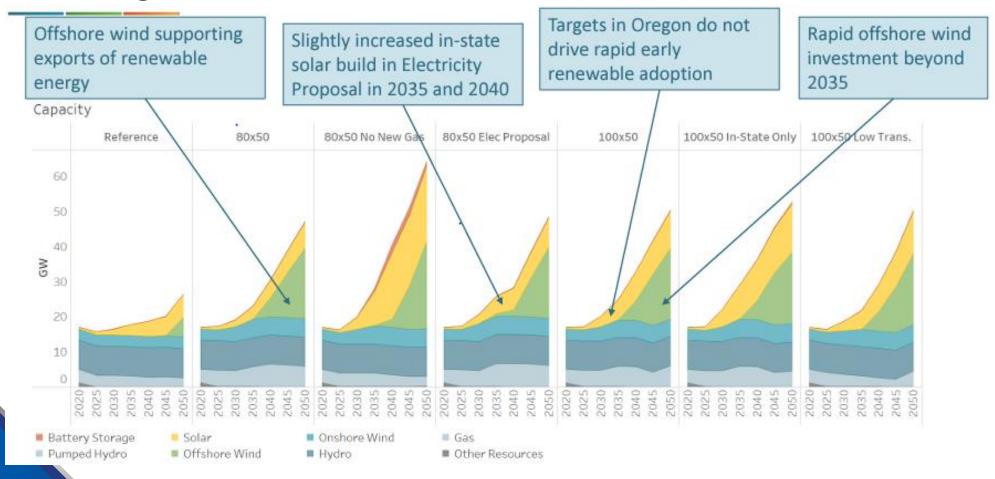
AMPLIFIES THE COMPLEXITY AND RISKS FOR CHANGES –

AND FOR UNINTENDED CONSEQUENCES AND HARMS

NEED is HUGE:

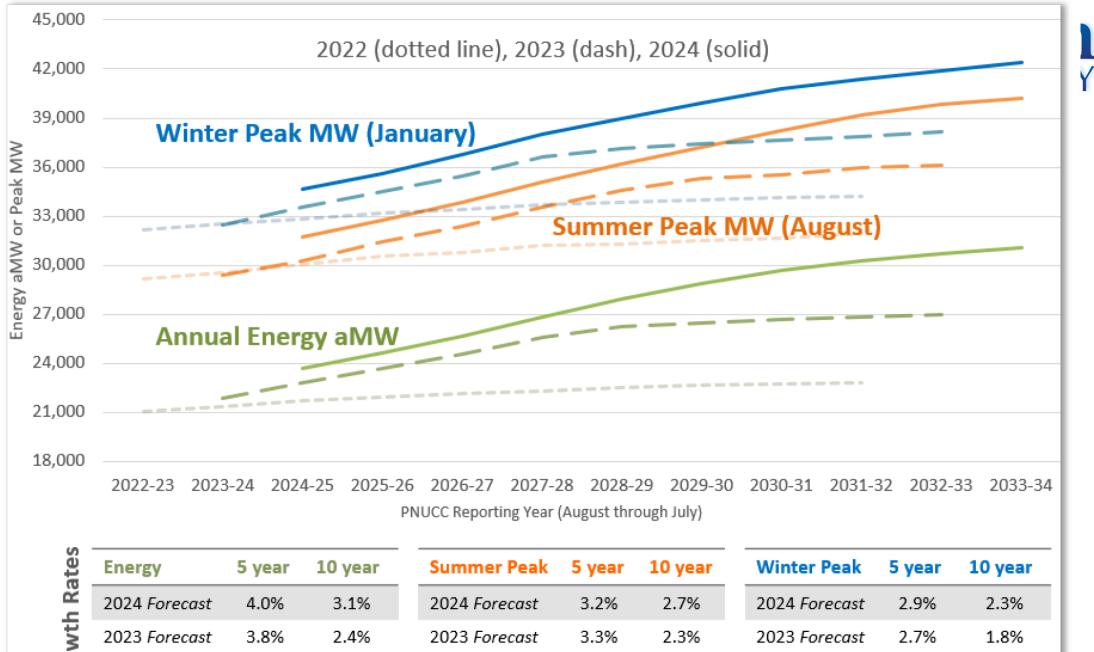


• Just Oregon: 25-60+ GW of Gen Needed. Plus WA, UT, CA, ...



The Problem is Not That The Queue is Inappropriately Big. Or "Speculative". It Reflects Market Demand.

Figure 1: 2024 Load Forecast Compared to 2023 and 2022



BPA's IX Reform



- What Actually Happened
- BPA TC-25 Reform = Fundamentally Different Than FERC/PAC

General Observations ((2024 Slide)) ewSun

- There are a lot of things in current BPA Interconnection OATT + Biz Practices that work very well.
- Must separate "flood volume" (high demand/need) from "dysfunction" and "blame" to properly discuss solutions.
- In Climate Action World, volume is unavoidable. Need is Great, Long.
- "Speculative" is really IOU-driven disparagement language directed at IPPs, competition. The only non-speculative project...
- Market Demand is Gargantuan
- Low %Capacity Factors of New NamePlate LGIRs mostly ~25-35%
- Projects / Bidders compete based upon their IX + TX
- Queue Clearing Harm Unfixable and will only make matters worse

What Actually Happened: BackdroplewSun

BPA statements:

- "not picking winners and losers" & "not clearing the queue"
- Not imposing withdrawal penalties; discuss it later, depending on outcomes
- Initial views about queue size vs. demand size evolved during workshops / 2023
 Region:
- Recognition of Major BPA IX Study Differences vs. PAC/Others: BPA better. Period.
- Broad recognition of Value of Supply Options Existing To Transact, To Mature
- Recognized that Queue backlog was HR/bandwidth challenge not bad dev
- Rejected "no PPA so you're out" approach: Shouldn't kill things if IOU doesn't pick
- Rejection of Punitive Framework: Costs to Customers; Incents bad decisions
 Facilitation of a rational, workable, functional structure: Info + Time, but faster

Different BPA Initial Conditions NewSun

- Lack of Re-Study Issues
 - Examples: Fort Rock area
- History of Excellent IX Study Practices =
 - Detailed Study Reports
 - Quality Scoping + Results Meetings
 - Information Sharing to Inform Better Decisions
 - Practical Downsizing + Decision Timelines
- Met Study Timelines in 2015, 2016, 2017, 2018... <u>then</u> delays mount w/ volume increases without staffing available
- Slow backlog, but still okay until 2020-22
- Long-standing Projects that Work Through Issues to Viability &/or Transactions
- Meanwhile:
 - PAC queue reform = disparagement of developers to clear queue
 - Misassignment of blame
 - Latecomers to BPA/PNW assigning blame/issues of other places to BPA (not accurate)

What Actually Happened: Reform New Sun

BPA Structure substantially & philosophically different than the FERC/PAC-based model

- Kept BPA's strengths in IX studies, while...
- Addressed HR vs. volume by conversion to batch/clustered format
- "Keep Supply in the Market" Philosophy (not 'drive it away')
- Addressed 'realness' via Site Control + Extensive C.R. showing requirements
- Non-Punitive Approach; Reasonableness of Deposits, Response Times, etc
- Space for Rational Decisions + Better Information + Clarity of Seniority
- Ensure ability to get studies, good studies
- Information- + Function-Centric Approach:
 - Facilitate Good Decisions
 - The <u>opposite</u> of: blame-them & beat-them-harder

BPA GI Reform = More Functional



The Current BPA OATT & Biz Practices contain numerous very valuable features, aspects, tools that deserve protection, help market and ICs get to better quality results, as well improve projects, solve problems, and reach more functional outcomes. ~Ditto(ish) in FERC pro forma (and orig CAISO cluster reform). These should be protected, preserved!

- Scoping Meetings: Good info makes better projects
- 3-Phase Study Format: Feasibility, SIS, Facilities
- Alt-POIs at Feasibility: Evaluate Better Options
- **Downsize Rights**: Multiple Options; Meaningful, Useful. At each phase.
- Study Reports with "Break Points" information (Fort Rock example)
- Special Study options
- **Queue Seniority** Benefits include clarity on:
 - Who gets existing capacity
 - Responsibility for Upgrade Cost Allocations

N/U Cost Allocations Methodology: Fair, Transparent, Clear

Not contingent on "what your neighbor might do"
Some move to / live in TSEP

These features enable the market--the ICs, developers--to make better choices, solve problems themselves.

The Goal is Getting Quality Study Results, Facilitating Project Viability, Useful Paths to Success (where possible)

BPA Approach: Different, Better NewSun

BPA: "Cluster Studies around the country... Plagued by Re-Studies" So BPA/PNW did something different.

BONNEVILLE POWER ADMINISTRATION

Scalable Plan Blocks head off these issues

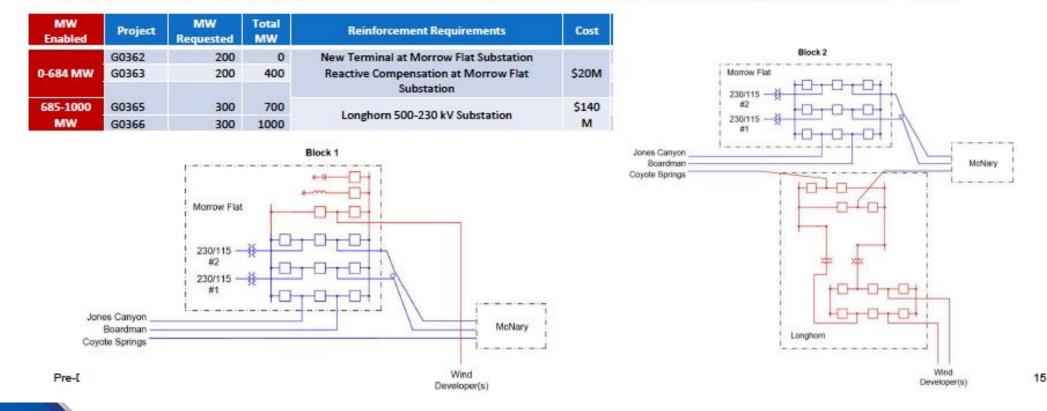
- Cluster Study will address all requests:
 - Consistent with the nature of Cluster studies
 - Phase 1 study work combined with system knowledge, can result in Scalable Plan Blocks that enable a tranche of interconnection requests
- Restudy:

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- Likelihood of needing a restudy is greatly reduced
- If requestors drop out, a 'restack' of those remaining can occur, reallocating interconnection capability based on the Scalable Plan Blocks.

Scalable Plan Blocks – Example 1

- Previous interconnection studies found that the Morrow Flat Plan of Service could enable a total of 684 MW
- Subsequent requestors needed to fund Longhorn 500/230kV Substation, which enabled the remainder
- Carrying the example to the proposed process, Scalable Plan Block 1 = MORF, Scalable Plan Block 2 = LONG



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Scalable Plan Blocks – Example 2

MW Enabled		Project	MW Requested	Total MW		Reinforcement requirements beyond project POI to reach La Pine 115 kV	Estimated Cost
		G0377	5	5			N/A
		G0385	15	20		Describes Malteres	
		G0387	10	30		Reactive Voltage	
0-87 MW		G0409	5	35		Control with +/95	
		G0410	5	40		power factor	
	Т	G0416	20	60		capability	
		G0431	20	80			
		G0521	20	100		Reactive Voltage	
		G0526	20	120		Control	
87-140 MW	Ī					Add second 115 kV 19.6 MVAR capacitor at La Pine	\$1M
140-200 MW		G0527	105	225		Reactive Voltage Control Add third 115 kV 19.6	\$1.1M
						MVAR capacitor at La Pine	
		G0570	20	245		Second La Pine-Fort	\$3M
>200 MW	G05	G0571	20	265		Rock 115kV	
>200 WIW		G0572	20	285		transmission line (Developer)	

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- Reduced Restudy Requirement, example:
 - If greyed out requests dropped out...
 - No restudy would be needed. Instead, lower queued requests could be 'restacked' to allocate the enabled capacity.

Real Example! Fort Rock, OR Did not result in ANY Re-Study. Just updated next reports

Scalable Plan Blocks – Example 2 continued

MW Enabled	Project	MW Requested	Total MW	Reinforcement requirements beyond project POI to reach La Pine 115 kV	Estimated Cost
	G0416	20	20	Reactive Voltage	N/A
	G0431	20	40	Control with +/-	
0-87 MW	G0521	20	60	.95 power factor	
	G0526	20	80	capability	
87-140 MW	G0527	105	185	Reactive Voltage Control Add second 115 kV 19.6 MVAR capacitor at La Pine Reactive Voltage Control	\$1M
140-200 MW	G0570	20	205	Add third 115 kV 19.6 MVAR capacitor at La Pine	\$1.1M
>200 MW				Second La Pine-	
	G0571	20	225	Fort Rock 115kV	\$3M
	G0572	20	245	transmission line (Developer)	

 Restack would result in new scalable plan block allocation

Pre-Decisional. For Discussion Purposes Only.



3. Example 1 (assumption that all are for same Cluster Area, with no Scalable Plan Blocks, connecting to the same substation):

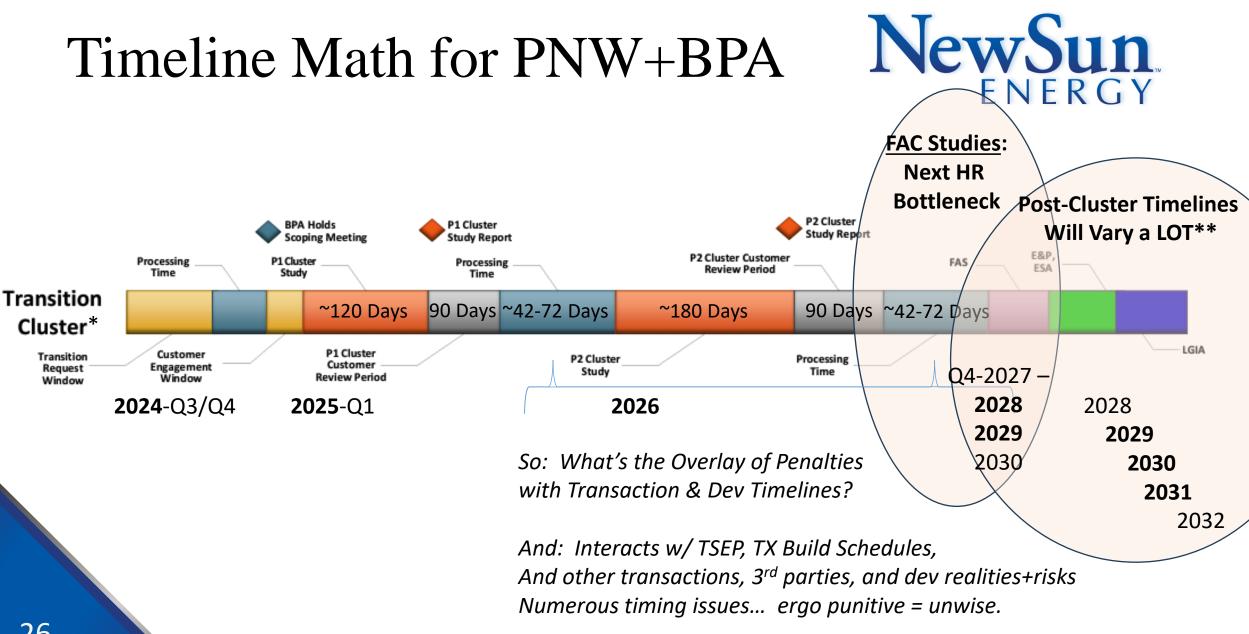
	Network Upgrade Costs									
Queue #	Requested MW	Station Equipment	Station Equipment Allocation Ratio (Per Capita)	Non- Station Equipment (1)	Non- Station Equipment (1) Allocation Ratio (Per MW)	Non- Station Equipment (2)	Non- Station Equipment (2) Allocation Ratio (Per MW)	Cost Assignm ent	Equation	
G001	500MW @230kV	500kV Substation	1/3	500kV	1/3 kV	500/230kV	500/1000	\$46m	(1/3)*\$100,000,000+(500MW/1500MW)*\$20,000,000+(500 MW/1000MW)*\$12,000,000	
G002	500MW @230kV	Bay, 2x 230kV – Substation Bay:	Substation	1/3	loop-in \$20m	1/3	Transform er	500/1000	\$46m	(1/3)*\$100,000,000+(500MW/1500MW)*\$20,000,000+(500 MW/1000MW)*\$12,000,000
G003	500MW @500kV	\$100m	1/3		1/3	\$12m	0	\$40m	(1/3)*\$100,000,000+(500MW/1500MW)*\$20,000,000	
TOTAL		\$100m		\$20m		\$12m		\$132m		

Clear Cost Allocations = NewSun Knowledge + Rational Decisions

4. Example 2 (assumption that all are for same Cluster Area, with Scalable Plan Blocks identified, connecting to the same substation):

	Network Upgrade Costs										
Queue #	Requested MW	MW Split	Plan of Service	MW Enabl ed	Station Equipment	Station Equipment Allocation Ratio (Per Capita)	Non- Station Equipment	Non- Station Equipment Allocation Ratio (Per MW)	Cost Assignm ent	Equation	
G001	40	40	Scalable			1/3		40/200	\$2.32m	(1/3)*\$2,400,000+(40MW/200MW)*\$7,600,000	
G002	80	80	Plan Block 1	200	\$2.4m	1/3	\$7.6m	80/200	\$3.84m	(1/3)*\$2,400,000+(80MW/200MW)*\$7,600,000	
G003	160	80				1/3		80/200	\$31.84m	(1/3)*\$2,400,000+(80MW/200MW)*\$7,600,000+	
		80	Scalable			1/3	\$75m	80/300	\$00	(1/3)*\$24,000,000+(80MW/300MW)*\$75,000,000	
G004	100	100	Plan	300	\$24m	1/3		100/300	\$33m	(1/3)*\$24,000,000+(100MW/300MW)*\$75,000,000	
		120	Block 2			1/3		120/300		(1/3)*\$24,000,000+(120MW/300MW)*\$75,000,000+	
G005	220	100	Scalable Plan Block 3	150	\$250m	1	\$750m	150/150	\$1.038b	(1/1)*\$250,000,000+(150MW/150MW)*\$750,000,000	
TOTAL	600	600		650	\$276.4m		\$832.6m		\$1.109b		

This is the opposite of how the PAC methodology works, where no one has seniority or cost clarity.



*Source BPA's TC/BP-26 April 24, 2024 Slide Deck. Timeline does not include restudies. **Plus NS Notes

Dev + Buyer/Seller + Mkt Realities New Sun

• Transactions Take Time

- Iterative
- Multiple Counterparties
- Things Evolve: Needs, Timing, Volumes, TX environment changes
- Development Take Time
 - Issues and challenges evolve so do the solutions
- Market Served by Supply Option Stability
 - Time to Invest + Time to Transact
 - 2nd + 3rd Chances Are Good (not bad) with same and alternature counter-parties
 - Time to Mature
- NEEDS EVOLVE
- Power Contracting Examples
 - PPA negotiations for IOU and Publics for IPPs
 - RFP Cycles: Inherently
 - PPA security; mix of statuses

PPA / Market parties (buyers & sellers) shouldn't risk being gutted from behind, re: chutes-and-ladders risks – as signing deals, posting security, negotiating bids into RFPs or bilateral deals – nor incentives to propel them from queue – destroy supply options. (Examples)

Markets <u>Don't</u> Want 1:1 Supply:Demand Ratios <u>Do Want</u>

Options, Competition, Iterations, Cycles, Maturation

When Do Deals Occur?



- Bilateral
- At RFPs
 - Minimum Bid Criteria
 - These Vary from Buyer to Buyer
 - Varying in scope and nature
 - Evolving
- Compared to studies? FAS, SIS, FAC, E&P, ...
- Compared to market needs?

Development: Hard, Complex, Takes Time, Diverse & Unknowable Challengescy

Remember: Supply Existing to Transact, Contribute, has inherent value

Development Issues Diverse:

- People Die
- Cultural/Arch Discoveries
- BPA might (hypothetically) be late
- Title Issues: Mineral Rights
- Permitting Delays: Oregon EFSC
- NEPA
- Affected Systems
- Deals fall through (counterparty changes, eg PAC credit)
- Wildfires

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- Policy Changes
- Tax Credit Environment (remember wind PTC??)
- Financing + Markets
- Gov't Bureaucracy Delays

Time-Expensive Challenges; Take Time to Solve

Investment Stability Provides the Time to Solve Them

Ejection from the Queue (especially for projects with decent results/prospects) Actually Amplifies Chaos, Causes Re-Studies, Reduces Developer Comfort in Investing in Solving Problems

When do you take your lumps? Should good projects quit? b/c of fines?

Other Complicating + Timing Factors Sun

Immensity of Timeline Diverse Complexity:

- Affected System Studies = 3rd parties
- Big swings in outcomes between study phases
- TSEP cycles + results
- LLIR outcomes
- Transmission Service Availability +
- Timing of Avail + Timing of Knowledge

Harms Investability + Transactability = Sun

- Penalties impede rational decisions
- Numerous timing issues vs. dev + transactional realities
- Impedes abilities to transact to solve issues
- Developers are creative; deals solve probems

Rebuttal on Savion / Penalty Approaches Sun

- Other queue reforms not all as-advertised, problems not solved
- BPA study mechanics different before and after fundamentally unlike the MISO/PJM/PAC/FERC approaches
- Issues seen in PAC/FERC Model Reforms Persist
 - Big Problems Not "Fixed"
 - Volume Still There
 - New Problems Created
 - Functionality Lost Undermining Outcomes
 - PAC gutted supply options & dev assets before demand boom
 - Not-Proven &/or Proven-Wrong
 - Savion Solution: Beat the Child Harder
 - TOs collecting dollars not outcomes

Penalties Distort Decisions



- Withdrawal Penalties = Incentive to Stick Around
 - But BPA IX Reform adopted
- Propelling Some Good (+ Time) Options out of Queue
 - impedes
 - May *cause* re-studies (and unnecessarily)
- Increases Developer
- Development already hard, diversity of risks
- Can't predict all the issues today

Also: Study Timelines Realities should be overlayed: Years to LGIAs

Major Mismatches with Reality



- When will Studies be Delivered?
- How does *Study Delivery Timing* Relate to... :
 - Transaction / Off-Take timing
 - Other major expenses
 - Financing Timing
 - Development issues... and when known or solvable
 - TSEP / Transmission Builds
 - 3rd party affected systems timing
 - TSEP funding obligations
- Interacts with Study Results: Costs + Timing(s) + Unknowns
 - **Off-Take Obligations & Their Timing**

Big Deposits + Punitive Didn't Fix This ERGY

MISO:

- "... even though MISO uses a cluster study process, and requires a tiered study deposit and a readiness deposit at the time of application submission, MISO still received a record- number of applications in its 2022 application period. There were 171 GW of new requests, a 120% increase from its 2021 cluster² and 90% of the capacity of its existing fleet.³"
 - ² MISO. MISO's Generator Interconnection Queue cycle set new record. September 27, 2022. https://www.misoenergy.org/about/media-center/misos-generator-interconnection-queue-cycle-set-new-record/
 - ³ MISO. Fact Sheet: March 2023. https://www.misoenergy.org/about/media-center/corporate-fact-sheet/

Queue Clearing + Punitive Didn't EleverSun

- PAC 1/31/20 FERC filing:
 - "As of October 2019, over 234 Interconnection Requests sit in PacifiCorp's queue, representing over 40,135 MW"
- PAC Cluster 2:
 - ~40+ GW GIRs filed (plus Transition Cluster + Cluster 1)
 - Including 9.4 GW of PacifiCorp Owned LGIRs
 - Including 1000s of MW of "Speculative" LGIRs,
 - by same standards PAC applied to claims of (in its view) problematic IPP filings
- Re-Studies Continue
- Flood Volume Continues
- New Problems and Incentives to Not Withdraw
- Converting to Cluster Did Not Require <u>Clearing</u> the Queue
- Versus Need? PAC IRP: 9,114 MW of new wind and 7,855 MW of new solar + 2-3GW nukes and peaking resources. Plus the rest of the market's needs.
 - Clearing = HARM OCCURRED TO MARKET.

Savion Proposals – Way Out of Scope Sun

- Various Gating Mechanisms proposals = Out of Scope
 - All fundamentally and materially different that what BPA announce
 - Inconsistent with BPA announcements in TC-25 and BP/TC-26
 - Based on ideas from other places
 - Complex and numerous issues, not suita
 - Fundamentally unfair to long-time investors in PNW/BPA queue... who have been waiting for years for their studies.
 - Completely detached from
 - Development realities
 - Development/Project merits and viability (limit good developers to favor others?)
 - Amplify costs to be born by market = public power

Value of Queue/Dev Persistence NewSun



- Who is going to fund TSEP + PEAs?
- Without a queue position?
- Penalties could drive TSEP projects out of market?
- Time to solve critical development challenges

PROPOSAL: Let It Work + Data NewSun

- Let BPA approach work the way intended
- Without incentives that corrupt the core function
- Collect Data after the first full Transition Cluster
- Then consider IF penalties appropriate
- People, Companies, Developers Have MADE these Investment Decisions in BPA + PNW:
 - Let them Fly. Let them Succeed.
 - Don't destabilize the ground under their feet, distort/pervert decisions on investment and development.
 - Market needs more, sooner. Not less.

ADDITIONAL PROPOSALS:



- 1. Co-Tenancy / SFA compatible LGIAs
- 2. Queue Sub-Division before LGIAs Issued
- 3. Provisional GIA Timing: Earlier Options
- 4. Early Long-Lead Funding + Early BPA Key Equipment Orders
- 5. Larger Sub-Station Footprints
 - **Special Study Options**