

Combined Transmission Service Rate

Colorado River Storage Project Management Center
and
Desert Southwest Region

November 19, 2020

Webex Housekeeping

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Agenda

1. Website Information/Resources
2. Summary of September Meeting
3. Market Impacts on Combined Rate
4. Transmission Pancakes
5. Transmission Capacity
6. Multi-Year Rate Projections
 - Central Arizona Project (CAP)
 - Parker-Davis Project (P-DP)
 - Electrical District No. 5 – Palo Verde Hub (ED5-PVH)
 - Intertie Project (Intertie)
 - Colorado River Storage Project (CRSP)
 - Summary and Combined Rate Comparison
7. Project Schedule Discussions
8. Conclusion and Next Meeting

Website Information/Resources

Briefings, FAQ, notes, presentations, and other information is available at:

<https://www.wapa.gov/regions/DSW/Rates/Pages/CombinedTransRate.aspx>

Summary of Conceptual Rate Design

- Systems will continue to use their individual rate methodologies to determine costs
- Firm electric service pays proportionate share of combined costs
- Offsetting revenues will be combined/pooled and allocated along with firm revenues
- Revenue allocated based on individual system costs
- Under/Over-collections will be handled according to each system's individual rate methodology

Summary of Rate Design - Flow Chart

Rate Design

Step 1 - Determine Combined System Revenue Requirements

Step 2 - Determine Combined System Reservations

Step 3 - Calculate Combined Rate

Step 4 - Determine amount to be collected via CRSP SLIP/FES Rate

Revenue Allocation

Step 1 - Determine Revenue Allocation Percentages based on Rate Calculation

Step 2 - Determine Actual Combined System Revenue

Step 3 - Allocate Actual Revenue to each system

Step 4 - Check for Cost Recovery

Market Impacts on Combined Rate

November 12th Announcement – WAPA notification of intent to participate in SPP's exploratory effort to expand its RTO

- Extends only to the UGP-West and LAP

WAPA will continue to evaluate options for the Colorado River Storage Project and Desert Southwest Region

- Energy imbalance management solutions for DSW
- Unified rate across the CRSP and DSW transmission systems

Transmission Pancakes

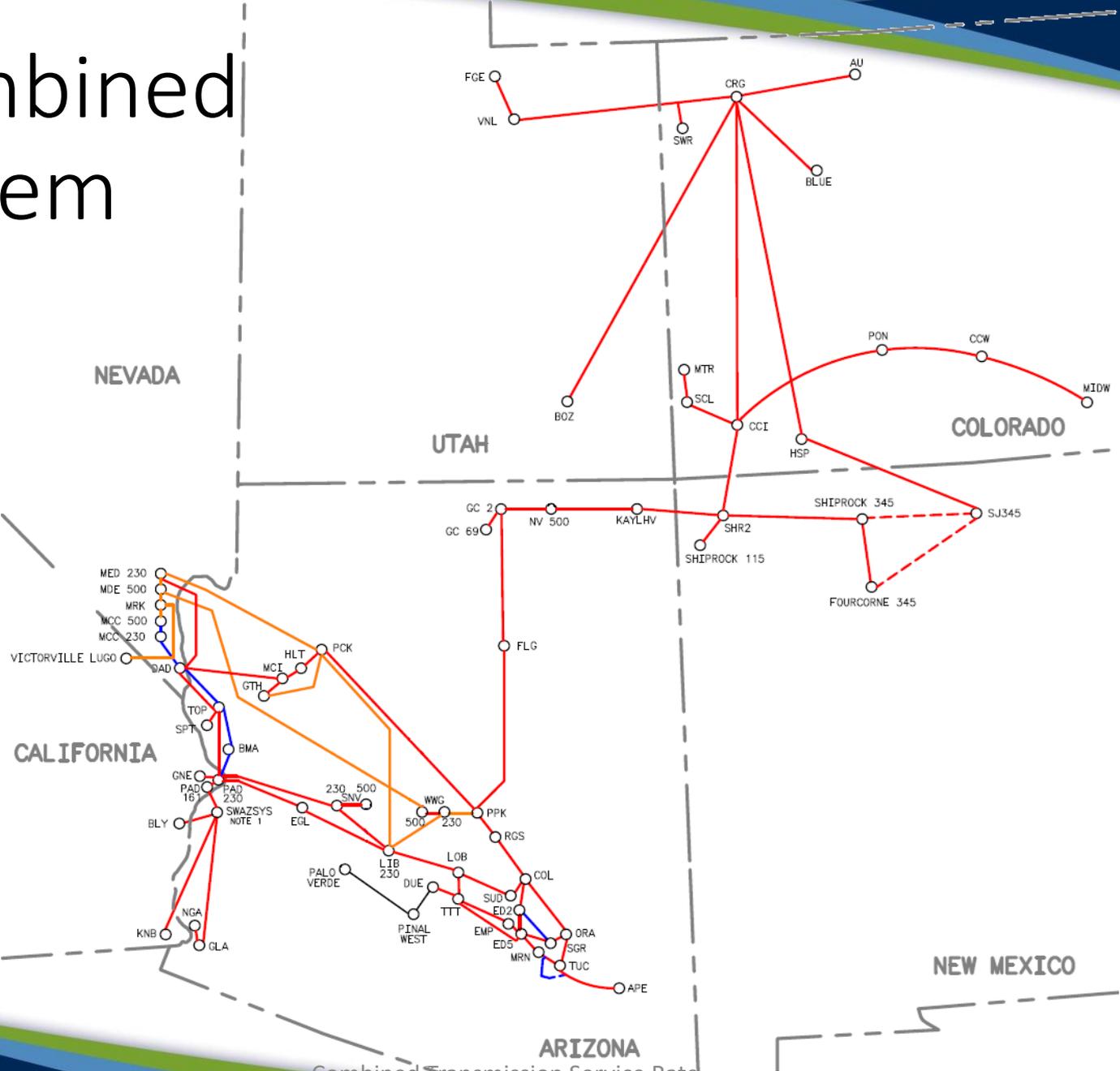
- Eliminating pancakes does not impact a particular transmission system – aggregated for the entire combined system
- To date, identified 17 entities pancaked with 199,536 kW of service
- Need assistance in identifying others:
 - NITS and point-to-point service pancakes
 - Agreements between customers equal to pancakes
 - Other changes in reservations?

Transmission Pancakes

| Entity | Systems | kW |
|------------------------|----------|---------|
| Reclamation | INT-PDP | 5,000 |
| PNM | INT-CRSP | 134,000 |
| Yuma Proving Ground | CRSP-PDP | 344 |
| WMIDD | CRSP-PDP | 268 |
| Town of Thatcher, AZ | CRSP-PDP | 415 |
| SCIP/BIA | CRSP-PDP | 1,555 |
| City of Safford, AZ | CRSP-PDP | 806 |
| Maricopa County WCD | CRSP-PDP | 3,664 |
| Electrical Dist. No. 7 | CRSP-PDP | 2,498 |

| Entity | Systems | kW |
|------------------------|----------|--------|
| Electrical Dist. No. 5 | CRSP-PDP | 2,518 |
| Electrical Dist. No. 4 | CRSP-PDP | 6,386 |
| Electrical Dist. No. 3 | CRSP-PDP | 5,192 |
| CRC of Nevada | CRSP-PDP | 23,409 |
| CRA-BIA | CRSP-PDP | 642 |
| AEPCO | CRSP-PDP | 7,857 |
| Ak-Chin Indian Comm. | CRSP-PDP | 3,259 |
| Town of Fredonia, AZ | PDP-CRSP | 1,723 |
| | | |

Combined System



Combined Transmission Service Rate

Transmission Capacity

- For Available Transfer Capability (ATC) and Total Transfer Capability (TTC) data, an analysis was performed on popular paths from 2020 through 2030
- The sample of ATC was taken on November 1st
- ATC values are very dynamic
- Values displayed are for firm transmission
- There is a significant increase of capacity when looking at non-firm capacity compared to firm

Transmission Capacity

- Palo Verde to the P-DP system is fully subscribed during the period, with 264 MWs of firm transmission to Palo Verde
- At this time and under the current system, there is no firm capacity available to Mead 230 on the P-DP system
- There is capacity available to Pinnacle Peak from Intertie and CRSP, but limitations on the P-DP system
- There is capacity available from Kayenta to P-DP, but not from Shiprock

Transmission Capacity

**ATC/TTC File
Presented Here**

Transmission Capacity

Implementation (most likely):

- After an initial review, no need to change business practices for point-to-point reservations. Network business practices are still under review.
- WAPA will need to work with its vendor to address the combination of the two systems on OASIS. Most likely will result in a single TSP code.
- WAPA will need to work with scheduling agents to address the changes to schedules/tags

Transmission Capacity

Forecast of transmission sales activity:

- There is assumption of an increase in sales if the combined rate goes forward:
 - Estimate an increase of 10% to 15% for long-term firm sales
 - Estimate of an increase of 25% to 30% for short-term sales, such as non-firm sales
- These forecasts are highly dependent upon market conditions

Transmission Capacity

Open issues:

- The combining of transmission service requests queue. How to process fairly and adequately?
- Modification of agreements?
- Processing of queue requests. Should WAPA have a one-time queue window for new requests? Or continue as first come, first serve?
- Permit change of existing requests/contracts to account for this new change?

Multi-Year Rate Projections – CAP

| Central Arizona Project | | | | | | | |
|--------------------------------|---------------------|--------------|----------------------------|----------------------------|-----------------------------|--------------------------|---------------------------|
| Fiscal Year | Reservations | Costs | True-Up / Carryover | Offsetting Revenues | Revenue Requirements | Rate (\$/kW-Year) | Rate (\$/kW-Month) |
| 2021 | 630,000 | 15,535,352 | (309,054) | (2,000,000) | 13,226,298 | 21.00 | 1.75 |
| 2022 | 630,000 | 15,066,729 | | (2,000,000) | 13,066,729 | 20.76 | 1.73 |
| 2023 | 630,000 | 14,585,281 | | (2,000,000) | 12,585,281 | 20.04 | 1.67 |
| 2024 | 630,000 | 14,635,568 | | (2,000,000) | 12,635,568 | 20.16 | 1.68 |
| 2025 | 630,000 | 14,714,696 | | (2,000,000) | 12,714,696 | 20.28 | 1.69 |
| 2026 | 630,000 | 14,796,263 | | (2,000,000) | 12,796,263 | 20.40 | 1.70 |
| 2027 | 630,000 | 14,880,337 | | (2,000,000) | 12,880,337 | 20.52 | 1.71 |
| 2028 | 630,000 | 14,966,983 | | (2,000,000) | 12,966,983 | 20.64 | 1.72 |
| 2029 | 630,000 | 15,056,271 | | (2,000,000) | 13,056,271 | 20.76 | 1.73 |
| 2030 | 630,000 | 15,122,659 | | (2,000,000) | 13,122,659 | 20.88 | 1.74 |
| 2031 | 630,000 | 15,192,687 | | (2,000,000) | 13,192,687 | 21.00 | 1.75 |

Assumptions:

- O&M expenses increase 2% annually for inflation
- Costs in 2021 and beyond come in at estimated amounts and there is no resulting true-up/carryover
- Offsetting revenue remain steady

Multi-Year Rate Projections – P-DP

| Parker-Davis Project | | | | | | | |
|-----------------------------|---------------------|--------------|----------------------------|----------------------------|-----------------------------|--------------------------|---------------------------|
| Fiscal Year | Reservations | Costs | True-Up / Carryover | Offsetting Revenues | Revenue Requirements | Rate (\$/kW-Year) | Rate (\$/kW-Month) |
| 2021 | 2,577,776 | 63,732,425 | (4,013,754) | (6,513,374) | 53,205,297 | 20.64 | 1.72 |
| 2022 | 2,576,015 | 64,967,902 | (2,503,483) | (6,513,374) | 55,951,045 | 21.72 | 1.81 |
| 2023 | 2,584,515 | 65,650,415 | (2,070,950) | (6,513,374) | 57,066,091 | 22.08 | 1.84 |
| 2024 | 2,584,515 | 66,851,279 | 1,070,171 | (6,513,374) | 61,408,076 | 23.76 | 1.98 |
| 2025 | 2,584,515 | 69,452,703 | 2,500,591 | (6,513,374) | 65,439,920 | 25.32 | 2.11 |
| 2026 | 2,584,515 | 71,561,911 | 3,182,659 | (6,513,374) | 68,231,196 | 26.40 | 2.20 |
| 2027 | 2,584,515 | 75,316,740 | 1,598,822 | (6,513,374) | 70,402,188 | 27.24 | 2.27 |
| 2028 | 2,584,515 | 83,020,157 | 408,384 | (6,513,374) | 76,915,167 | 29.76 | 2.48 |
| 2029 | 2,584,515 | 82,085,417 | 3,824,258 | (6,513,374) | 79,396,301 | 30.72 | 2.56 |
| 2030 | 2,584,515 | 84,848,405 | 3,232,263 | (6,513,374) | 81,567,294 | 31.56 | 2.63 |
| 2031 | 2,584,515 | 86,746,610 | 2,574,624 | (6,513,374) | 82,807,860 | 32.04 | 2.67 |

Assumptions:

- O&M expenses increase 2% annually for inflation
- Offsetting revenue remain steady
- Assumed capital projections from 2029 are used thru 2035
- PPW estimates will be increased beginning in 2022
- Periodic adjustments will be made to the rate mitigation techniques.

Multi-Year Rate Projections – ED5-PVH

| ED5-PVH | | | | | | | |
|--------------------|---------------------|--------------|----------------------------|----------------------------|-----------------------------|--------------------------|---------------------------|
| Fiscal Year | Reservations | Costs | True-Up / Carryover | Offsetting Revenues | Revenue Requirements | Rate (\$/kW-Year) | Rate (\$/kW-Month) |
| 2021 | 156,000 | 4,528,102 | (544,437) | (786,870) | 3,196,795 | 20.52 | 1.71 |
| 2022 | 156,000 | 4,223,977 | - | (1,000,000) | 3,223,977 | 20.67 | 1.72 |
| 2023 | 156,000 | 4,232,456 | - | (1,000,000) | 3,232,456 | 20.72 | 1.73 |
| 2024 | 156,000 | 4,241,105 | - | (1,000,000) | 3,241,105 | 20.78 | 1.73 |
| 2025 | 156,000 | 4,249,927 | - | (1,000,000) | 3,249,927 | 20.83 | 1.74 |
| 2026 | 156,000 | 4,258,926 | - | (1,000,000) | 3,258,926 | 20.89 | 1.74 |
| 2027 | 156,000 | 4,268,104 | - | (1,000,000) | 3,268,104 | 20.95 | 1.75 |
| 2028 | 156,000 | 4,277,467 | - | (1,000,000) | 3,277,467 | 21.01 | 1.75 |
| 2029 | 156,000 | 4,287,016 | - | (1,000,000) | 3,287,016 | 21.07 | 1.76 |
| 2030 | 156,000 | 4,296,756 | - | (1,000,000) | 3,296,756 | 21.13 | 1.76 |
| 2031 | 156,000 | 4,306,691 | - | (1,000,000) | 3,306,691 | 21.20 | 1.77 |

Assumptions:

- O&M expenses increase 2% annually for inflation
- Costs in 2021 and beyond come in at estimated amounts and there is no resulting true-up/carryover
- Offsetting revenue remain steady
- Repayment schedule is fixed

Multi-Year Rate Projections – Intertie

| Intertie Project | | | | | | | |
|-------------------------|---------------------|--------------|----------------------------|----------------------------|-----------------------------|--------------------------|---------------------------|
| Fiscal Year | Reservations | Costs | True-Up / Carryover | Offsetting Revenues | Revenue Requirements | Rate (\$/kW-Year) | Rate (\$/kW-Month) |
| 2021 | 1,584,256 | 40,207,826 | - | (9,600,000) | 30,607,826 | 19.32 | 1.61 |
| 2022 | 1,650,085 | 41,908,664 | - | (9,600,000) | 32,308,664 | 19.58 | 1.63 |
| 2023 | 1,553,585 | 40,019,194 | - | (9,600,000) | 30,419,194 | 19.58 | 1.63 |
| 2024 | 1,566,085 | 36,599,305 | - | (9,600,000) | 26,999,305 | 17.24 | 1.44 |
| 2025 | 1,566,085 | 36,536,662 | - | (9,600,000) | 26,936,662 | 17.20 | 1.43 |
| 2026 | 1,566,085 | 36,505,340 | - | (9,600,000) | 26,905,340 | 17.18 | 1.43 |
| 2027 | 1,566,085 | 36,442,697 | - | (9,600,000) | 26,842,697 | 17.14 | 1.43 |
| 2028 | 1,566,085 | 36,380,053 | - | (9,600,000) | 26,780,053 | 17.10 | 1.42 |
| 2029 | 1,566,085 | 36,286,088 | - | (9,600,000) | 26,686,088 | 17.04 | 1.42 |
| 2030 | 1,566,085 | 36,223,445 | - | (9,600,000) | 26,623,445 | 17.00 | 1.42 |
| 2031 | 1,566,085 | 36,160,802 | - | (9,600,000) | 26,560,802 | 16.96 | 1.41 |

Assumptions:

- O&M expenses increase 2% annually for inflation for 10 years
- O&M expenses for 2031 are used for the remaining 50-year repayment period
- Investments costs based on 2021 incremental investment amounts
- Offsetting revenue remain steady

Multi-Year Rate Projections – CRSP

| Colorado River Storage Project | | | | | | | |
|---------------------------------------|---------------------|--------------|----------------------------|----------------------------|-----------------------------|--------------------------|---------------------------|
| Fiscal Year | Reservations | Costs | True-Up / Carryover | Offsetting Revenues | Revenue Requirements | Rate (\$/kW-Year) | Rate (\$/kW-Month) |
| 2021 | 4,333,197 | 86,865,188 | 2,867,206 | (7,131,822) | 82,600,572 | 19.06 | 1.59 |
| 2022 | 4,249,864 | 89,863,516 | | (7,131,822) | 82,731,694 | 19.47 | 1.62 |
| 2023 | 4,249,864 | 93,375,161 | | (7,131,822) | 86,243,339 | 20.29 | 1.69 |
| 2024 | 4,249,864 | 90,505,437 | | (7,131,822) | 83,373,615 | 19.62 | 1.64 |
| 2025 | 4,249,864 | 92,015,150 | | (7,131,822) | 84,883,328 | 19.97 | 1.66 |
| 2026 | 4,249,864 | 87,714,561 | | (7,131,822) | 80,582,739 | 18.96 | 1.58 |
| 2027 | 4,249,864 | 89,018,906 | | (7,131,822) | 81,887,084 | 19.27 | 1.61 |
| 2028 | 4,249,864 | 90,765,406 | | (7,131,822) | 83,633,584 | 19.68 | 1.64 |
| 2029 | 4,249,864 | 92,301,203 | | (7,131,822) | 85,169,381 | 20.04 | 1.67 |
| 2030 | 4,249,864 | 93,426,608 | | (7,131,822) | 86,294,786 | 20.31 | 1.69 |
| 2031 | 4,249,864 | 94,477,468 | | (7,131,822) | 87,345,646 | 20.55 | 1.71 |

Assumptions:

- O&M expenses increase 2% annually for inflation
- Transmission investments based on Nov 2020 10-Year Plan
- Estimated \$14.5M annual repayment on transmission assets
- Estimated \$12.1M annual depreciation
- Offsetting revenue remain steady

Multi-Year Rate Projections – Combined

Combined System Revenue Requirements

(the dollar amount to be collected from firm sales - numerator)

| | Cost | | PY True-Up / Carryover | | Offsetting Revenue | | Unbilled Reservations | | Additional Revenues From Combining | | Revenue Requirements |
|---------|----------------|---|------------------------|---|--------------------|---|-----------------------|---|------------------------------------|---|----------------------|
| FY 2021 | \$ 210,868,893 | - | \$ 2,000,039 | - | \$ 26,032,066 | - | \$ 3,430,390 | - | \$ 1,738,150 | = | \$ 177,668,248 |
| FY 2022 | 216,030,788 | - | 2,503,483 | - | 26,245,196 | - | 3,430,390 | - | 2,942,208 | = | 180,909,511 |
| FY 2023 | 217,862,508 | - | 2,070,950 | - | 26,245,196 | - | 3,430,390 | - | 2,942,208 | = | 183,173,764 |
| FY 2024 | 212,832,694 | - | (1,070,171) | - | 26,245,196 | - | 3,430,390 | - | 2,942,208 | = | 181,285,072 |
| FY 2025 | 216,969,139 | - | (2,500,591) | - | 26,245,196 | - | 3,430,390 | - | 2,942,208 | = | 186,851,936 |
| FY 2026 | 214,837,001 | - | (3,182,659) | - | 26,245,196 | - | 3,430,390 | - | 2,942,208 | = | 185,401,867 |
| FY 2027 | 219,926,784 | - | (1,598,822) | - | 26,245,196 | - | 3,430,390 | - | 2,942,208 | = | 188,907,813 |
| FY 2028 | 229,410,066 | - | (408,384) | - | 26,245,196 | - | 3,430,390 | - | 2,942,208 | = | 197,200,656 |
| FY 2029 | 230,015,995 | - | (3,824,258) | - | 26,245,196 | - | 3,430,390 | - | 2,942,208 | = | 201,222,459 |
| FY 2030 | 233,917,873 | - | (3,232,263) | - | 26,245,196 | - | 3,430,390 | - | 2,942,208 | = | 204,532,342 |
| FY 2031 | \$ 236,884,258 | - | \$ (2,574,624) | - | \$ 26,245,196 | - | \$ 3,430,390 | - | \$ 2,942,208 | = | \$ 206,841,088 |

Assumptions:

- O&M expenses increase 2% annually for inflation
- Increased short-term/non-firm reservations 25% over 2 years

Multi-Year Rate Projections – Combined

Determine Combined System Reservations (the estimated quantity of firm sales - denominator)

| | Reservations | | Adjustment Unbilled Reservations | | Adjustment Pancakes | | Additional Reservations From Combining | | Total Reservations |
|---------|--------------|---|-------------------------------------|---|------------------------|---|---|---|-----------------------|
| FY 2021 | 9,281,229 | - | 174,000 | - | 199,536 | + | 267,231 | = | 9,174,924 |
| FY 2022 | 9,261,964 | - | 174,000 | - | 199,536 | + | 533,306 | = | 9,421,734 |
| FY 2023 | 9,173,964 | - | 174,000 | - | 199,536 | + | 880,043 | = | 9,680,471 |
| FY 2024 | 9,186,464 | - | 174,000 | - | 199,536 | + | 881,293 | = | 9,694,221 |
| FY 2025 | 9,186,464 | - | 174,000 | - | 199,536 | + | 881,293 | = | 9,694,221 |
| FY 2026 | 9,186,464 | - | 174,000 | - | 199,536 | + | 881,293 | = | 9,694,221 |
| FY 2027 | 9,186,464 | - | 174,000 | - | 199,536 | + | 881,293 | = | 9,694,221 |
| FY 2028 | 9,186,464 | - | 174,000 | - | 199,536 | + | 881,293 | = | 9,694,221 |
| FY 2029 | 9,186,464 | - | 174,000 | - | 199,536 | + | 881,293 | = | 9,694,221 |
| FY 2030 | 9,186,464 | - | 174,000 | - | 199,536 | + | 881,293 | = | 9,694,221 |
| FY 2031 | 9,186,464 | - | 174,000 | - | 199,536 | + | 881,293 | = | 9,694,221 |

Assumptions:

- Increased firm reservations 10% over 3 years

Multi-Year Rate Projections – Combined

Calculate Combined Rate

(to be charged for sales)

| | Revenue | | Total | | | | |
|---------|----------------|---|--------------|---|------------|----|-------------|
| | Requirements | / | Reservations | = | \$/kW-Year | or | \$/kW-Month |
| FY 2021 | \$ 177,668,248 | / | 9,174,924 | = | 19.36 | or | 1.61 |
| FY 2022 | 180,909,511 | / | 9,421,734 | = | 19.20 | or | 1.60 |
| FY 2023 | 183,173,764 | / | 9,680,471 | = | 18.92 | or | 1.58 |
| FY 2024 | 181,285,072 | / | 9,694,221 | = | 18.70 | or | 1.56 |
| FY 2025 | 186,851,936 | / | 9,694,221 | = | 19.27 | or | 1.61 |
| FY 2026 | 185,401,867 | / | 9,694,221 | = | 19.12 | or | 1.59 |
| FY 2027 | 188,907,813 | / | 9,694,221 | = | 19.49 | or | 1.62 |
| FY 2028 | 197,200,656 | / | 9,694,221 | = | 20.34 | or | 1.70 |
| FY 2029 | 201,222,459 | / | 9,694,221 | = | 20.76 | or | 1.73 |
| FY 2030 | 204,532,342 | / | 9,694,221 | = | 21.10 | or | 1.76 |
| FY 2031 | \$ 206,841,088 | / | 9,694,221 | = | 21.34 | or | 1.78 |

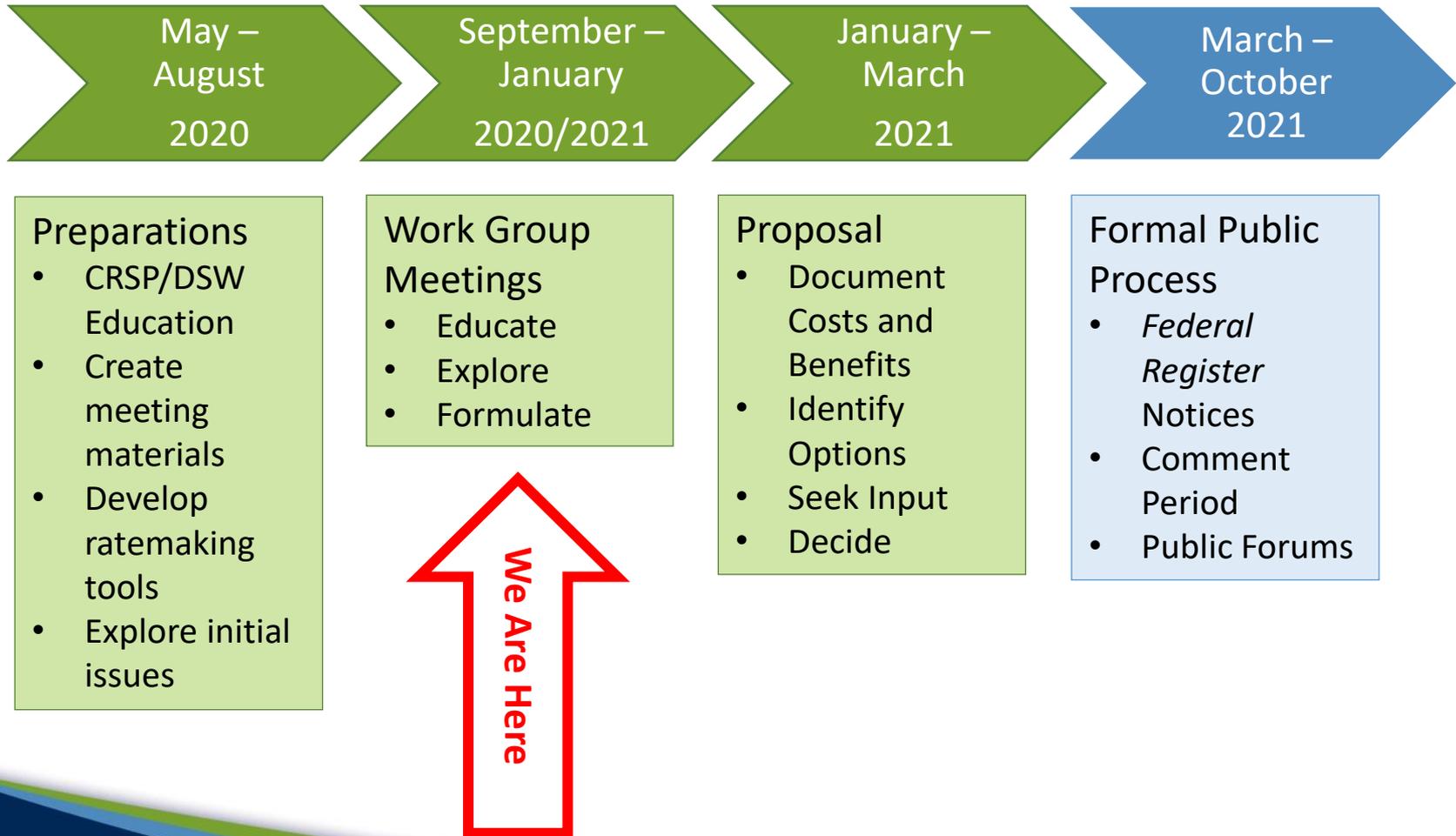
Multi-Year Rate Projections – Combined

Determine Amount to Be Collected via CRSP SLIP Rate

(Not charged a transmission rate - this ensures a proportionate share of the costs)

| | <u>FES/Merchant Reservations</u> | | <u>Rate \$/kW-Year</u> | | <u>CRSP SLIP Amount</u> |
|---------|--------------------------------------|---|----------------------------|---|-----------------------------|
| FY 2021 | 3,512,886 | x | 19.36 | = | \$ 68,025,445 |
| FY 2022 | 3,512,886 | x | 19.20 | = | 67,451,969 |
| FY 2023 | 3,512,886 | x | 18.92 | = | 66,470,791 |
| FY 2024 | 3,512,886 | x | 18.70 | = | 65,692,107 |
| FY 2025 | 3,512,886 | x | 19.27 | = | 67,709,367 |
| FY 2026 | 3,512,886 | x | 19.12 | = | 67,183,906 |
| FY 2027 | 3,512,886 | x | 19.49 | = | 68,454,353 |
| FY 2028 | 3,512,886 | x | 20.34 | = | 71,459,423 |
| FY 2029 | 3,512,886 | x | 20.76 | = | 72,916,800 |
| FY 2030 | 3,512,886 | x | 21.10 | = | 74,116,199 |
| FY 2031 | 3,512,886 | x | 21.34 | = | \$ 74,952,817 |

Project Schedule



Future Discussion Topics

Based on questions and comments to date, we have identified these topics for future discussion(s):

- Ancillary Services
- Losses
- NITS
- Financial
- Contractual

Action Items and Close

- Action items
- Meeting notes and materials will be posted to our website
- Next meeting is December 16th, 10 am (MST)
- Thank you for attending!

<https://www.wapa.gov/regions/DSW/Rates/Pages/CombinedTransRate.aspx>

Contact Information

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wapa.gov



[@westernareapowr](https://twitter.com/westernareapowr)



[WesternAreaPower1](https://www.youtube.com/channel/UC...)

