Western Area Power Administration
RMR & LAP Updates

2019 CAMU Annual Conference
July 11, 2019 | Delta, CO

Bob Langenberger
Power Marketing Advisor
Agenda

• WAPA Wide Updates
• NWPP Reserve Sharing Group
• SPP Reliability Coordinator Transition
• Fiber Optic Partnerships Assessment
• Energy Imbalance Markets in the West
• LAP & PS-ED Hydrology
• LAP Power Marketing & Rates Updates
WAPA Wide Updates
Here we go again:

2020 Budget Proposal Headlines

• “President Trump renews effort to sell grid assets of PMAs, TVA” – APPA (3/11/19)
• “Budget Proposal Sends Mixed Signals on Development in Rural Communities” – America’s Electric Cooperatives (3/12/19)
• “Trump’s Budget Would Hurt Co-ops by Selling Off Federal Dams, Transmission Lines” – America’s Electric Cooperatives (3/18/19)
• “Lawmakers urged to drop plan to sell PMA, TVA grid assets” – APPA (5/13/19)
• 63 Members of Congress sign letter opposing the budget request to sell transmission assets of PMAs and TVA. (5/9/19)
• “Senators oppose auctioning off BPA transmission assets” – KTVZ News Channel 21 (5/20/19)
• “Western Caucus Fights To Prevent Sale of PMA and TVA Assets” – Congressional Western Caucus (5/9/19)
Divestiture of the Power Marketing Administration’s Transmission Assets – A Refresher

• 2020 Budget Proposal
  – Budget proposes to sell the PMA’s transmission assets for *third year in a row*
• 4th Administration to propose selling Federal power assets
  • 1986 – President Reagan
    – Proposed selling the PMAs to the highest bidder
  • 1995 – President Clinton
    – Proposal to privatize the PMAs
  • 2013 – President Obama
    – Proposal to reduce or eliminate the Federal government’s role in programs such as TVA, which have achieved their original objectives and no longer require Federal participation

• Requires authorization from Congress
  – Senators and House Members have already begun opposing the proposal
New RMR & CRSP Leadership Team Members

• Senior Vice President & Rocky Mountain Regional Manager
  – Dawn Roth Lindell
• Vice President of Transmission Service for CRSP, DSW, & RMR
  – Pete Heiman
• Vice President of Operations for CRSP, DSW, & RMR
  – Jonathon Aust
• Vice President of Power Marketing for CRSP
  – Tim Vigil
• RMR Contracts & Energy Services Manager
  – Parker Wicks
NWPP Reserve Sharing Group
Reserve Sharing Group Change

• Why are we in a reserve sharing group?
  – Being in a reserve sharing group allows for a group of utilities to share the overall reserve requirement, thus decreasing the amount of reserves an individual utility has to carry

• BAL-002-WECC-2a Focuses on Contingency Reserves
  – Each BA or RSG shall carry reserves to meet 3% of load plus 3% of generation
Where are we now?

- WACM Balancing Authority (BA) currently resides in the Rocky Mountain Reserve Group (RMRG)

- RMRG is based on your pro-rata share of the groups’ MSSC (Most Severe Single Contingency)
  - Equals roughly 5% for WAPA’s hydro name plate capacity
  - Based on peaks and is updated each quarter

- RMRG MSSC to increase significantly in 2019/2020
  - Currently 805 MW (Comanche 3)
  - Increase to ~1200-1400 MW when new Rush Creek Wind Farm comes on-line
Where are we going?

• NWPP will start performing reserve sharing group functions for WACM September 3rd of 2019

• NWPP is using the 3 and 3 calculation
  – 3% of Load and 3% of Generation

• NWPP also uses real-time calculations instead of peaks

• Members also obligated to respond to a larger footprint of events, but only up to BA’s reserve obligation
Why are we moving Reserve Sharing Groups?

• A vote was held by RMRG members in October of 2018 to terminate the RMRG group
• Public Service of Colorado and WAPA submitted applications to join NWPP in Feb of 2019
• PSCO and WAPA signed agreements to join NWPP in April of 2019
• WAPA expects the change to result in up to a 30% hour-by-hour reduction in capacity held on the federal hydro plants for reserves
NWPP Implementation

• WAPA-NWPP Membership Agreement Signed April 29, 2019
• WAPA executing agreements with entities in WACM BA that would like to participate in NWPP reserve sharing as a BA sub-entity
• BA entities with less than ½ MW of reserve obligation to BA are considered di Minimis
• Federal hydropower allocations delivered over PSCo/WAPA NITS agreement will begin paying for reserves as ancillary service
Transition to SPP RC
Reliability Coordinator Service

- Feb. 26, 2018 – WAPA submitted notices of withdrawal to depart Peak Reliability Coordinator

- Jun. 5, 2018 – SPP announced it has sufficient interest to provide RC services in the Western Interconnection
  - Plans to offer services by the end of 2019
  - Contingent on SPP becoming certified to be an RC in Western Interconnection and on meeting other conditions

- Jun. 11, 2018 – WAPA submitted a formal request to SPP for RC services for the WACM and WAUW Balancing Authority Areas (BAA)

- Sept. 7, 2018 – WAPA & SPP executed agreement for SPP to provided RC Services for WACM BAA
  - WAPA WALC & WAUW BAAs also executed agreements with SPP to provide RC Services

- Dec. 3, 2019 – SPP to begin providing RC Services to WAPA
Reliability Coordinators (Post Peak RC)
SPP RC Services in the West

- Arizona Electric Power Cooperative, Inc.
- Black Hills Energy’s
  - Black Hills Power, Inc.
  - Cheyenne Light, Fuel and Power Company
  - Black Hills Colorado Electric, Inc.
- City of Farmington, NM
- Colorado Springs Utilities
- El Paso Electric Company
- Intermountain Rural Electric Association
- Platte River Power Authority
- Public Service Company of Colorado (Xcel Energy)
- Tri-State Generation and Transmission Association
- Tucson Electric Power
- Western Area Power Administration (WAPA)
  - WAPA Desert Southwest Region
  - WAPA Rocky Mountain Region
  - WAPA Upper Great Plains – West
Fiber Optic Partnerships
American Broadband Initiative Report by Dept of Commerce, National Telecommunications Information Administration

**Assess Viability of Leasing DOE Dark Fiber** - By April 2019, the Western Area Power Administration (WAPA) and Southwestern Area Power Administration (SWPA) in consultation with the Department of Energy Office of Electricity, will complete a feasibility assessment plan to determine if WAPA and SWPA excess fiber can be leased to their customers and broadband service providers. By December 2019, WAPA and SWPA will complete the feasibility assessment.

Fiber Optic Partnerships
Feasibility Assessment

Ensure WAPA fiber continues to meet power delivery system needs
Support American Broadband Initiative & seek Customer input

Ensure fiber optic partnership requests are addressed consistently
Maintain the prioritization of “the beneficiary pays” principle

WAPA Feasibility Assessment Principles
Feasibility Assessment Elements

- Grid Resilience
- Legal Authorities
- Fiber Asset Inventory
- Lands and Rights of Way Issues
- Fiber Optic Partnerships Feasibility Assessment
- Reliability Compliance
- Current Agreements
- Cost Accounting and Allocation
- Outage Issues
Fiber Optic Partnerships Timeline

- **Fiber Working Group**
  - May 2019

- **Compile Outreach Data**
  - October/November 2019

- **Assessment Plan**
  - April 2019

- **WAPA-wide & Regional Customer Meetings**
  - June/September 2019

- **Final Assessment Report**
  - December 2019
Fiber Optic Partnership
Customer Information

- For Fiber Optic Partnership reference materials and information
  https://www.wapa.gov/About/keytopics/Pages/fiber-feasibility-assessment.aspx

- Fiber Feasibility Assessment Senior Sponsor: Kevin Howard

- Fiber Feasibility Assessment Project Manager: Kirsten McClure

FiberOpticPartnerships@WAPA.GOV
Fiber Optic Partnerships
Upcoming Customer Meetings

• July 31 – WAPA DSW Office, Phoenix, AZ
• August 1 – WAPA RMR Office, Loveland, CO

• CRSP Contact:
  – Brent Osiek, Osiek@wapa.gov

• RMR Contact
  – Bob Langenberger, Langenberger@wapa.gov
Energy Imbalance Markets in the West
Markets are here
WAPA YouTube Video Series
Markets Background Materials

• Link through WAPA:
  – https://www.wapa.gov/About/the-source/Pages/markets-west-workshop.aspx

• Or direct through YouTube:
  – https://www.youtube.com/playlist?list=PLrO2CsTQFBKz_zWPkGL3WjJ3lZd0ntkAD

• Nine Modules
  – U.S. Bulk Electric System
  – Regulation of the Grid
  – Overview of WAPA
  – How the Western Interconnection Operates Today
  – Energy Market Primary
  – What is a Bi-lateral Market?
  – What is an Energy Imbalance Market?
  – What is a Fully Integrated Market?
  – Summary: Different Types of Market Constructs
Energy Imbalance & Energy Imbalance Markets

Today: WAPA handles imbalance for its balancing authorities
- We use either hydro or bilateral agreements to handle EI
- EI calculated and priced hourly
- Region settles and bills each customer

Possible EIS Market Future: Market Operator handles imbalance
- Market Operator optimizes market resources to supply EI
- EI calculated and Locational Marginal priced every 5 minutes
- Market Operator does some or all settlement and billing
Why is WAPA Interested in EIM?

Ensure reliable delivery of our hydropower while adjusting to a changing energy mix

• Respond to customer feedback requesting WAPA to lead organized market discussions
• Mitigate energy imbalance resource constraints
• Facilitate integration of variable resources
• Enable participants who want to optimize their resources
SPP Reliability Coordinators in the West

- PEAK RC terminating RC services
- Parallel RC operations October and November
- SPP RC takes over Dec. 3, 2019
- Enables SPP to readily add EI Services to SPP RC members
California ISO EIM (Western EIM)

- BANC became active participant this year
- WAPA Sierra Nevada sub-BA within BANC is evaluating options
Energy Imbalance Service Options

• WAPA reviewed CAISO’s EIM in 2013
• WAPA and others received WEIS proposal from SPP in June 2019

• Need to ensure reliable delivery of our hydropower in a changing energy landscape
  – We are looking at participation in an energy imbalance service and NOT looking at joining a full market
  – Focus on longer-term solutions to meet our needs in a rapidly changing environment
  – We will engage with stakeholders and document our decisions
  – Cost of doing nothing; the status quo cannot continue for the foreseeable future with on-going additions of variable resources

• WAPA is considering CAISO’s EIM as well
  – Especially for Sierra Nevada
SPP Western Energy Imbalance Service (WEIS)

June 17, 2019

SPP proposes Western Energy Imbalance Service Market to bring cost savings and grid modernization to the west

Southwest Power Pool (SPP) has announced to western utilities its proposal for the Western Energy Imbalance Service market (WEIS) it intends to launch in December 2020. The wholesale electricity market will balance generation and load regionally and in real time. SPP’s previous energy imbalance market went live in 2007 and provided participants with $103 million in benefits in its first year of operation.

READ MORE https://spp.org/weis
SPP WEIS Proposal

- SPP hosted two meetings in spring 2019 on high-level design of Western Energy Imbalance Service (WEIS)
- Webinar held June 25 on detailed proposal
- SPP proposed market “go-live” Dec. 1, 2020
  - One year after RC “go-live”
- Additional market participants may be added at approximate 6-month intervals after go-live

Critical mass commitment
July 26, 2019

Imbalance Market go-live
December 1, 2020

RC go-live
December 1, 2019
EI Service Current Status

- WAPA continuing to review EI options for LAP and CRSP as well as WACM BA
- WAPA will spend ~60 days in outreach and direct communications with its LAP and CRSP customers regarding EI service
  - CRSP Customer Meeting – June 20
  - LAP Customer Webinar – June 26
  - WAPA anticipates decision by September 1
  - WAPA has requested extension to July 26th deadline on SPP WEIS proposal

- WAPA working with several DSW customers and will participate in an energy imbalance study for that region
- Similarly, SNR is working with its customers

- This is NOT a decision regarding joining a full market which may or may not occur sometime in the future
LAP & PSMB-ED Hydrology
U.S. Drought Monitor

June 26, 2018
(Released Thursday, Jun. 28, 2018)
Valid 8 a.m. EDT

Drought Impact Types:
- Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Richard Heim
NCEI/NOAA

http://droughtmonitor.unl.edu/
What a difference a year makes!

U.S. Drought Monitor

July 2, 2019
(Released Wednesday, Jul. 3, 2019)
Valid 8 a.m. EDT

Drought Impact Types:
- Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:
- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

droughtmonitor.unl.edu
Upper Colorado Snowpack
Above Kremmling (CBT)
(July 8, 2019)
Upper North Platte Basin Snowpack
(July 8, 2019)

Archive Data From 1-OCT Through 30-SEP
Plotted 07/08/2019 06:00 (Provisional Data Subject to Revision)

Units: INCHES

SEMR
Seminoe Reservoir, WY
SE_AVC
Snow Water Equivalent Average (inches) 2019
SE
Snow Water Equivalent (inches) 2018 2019
Big Horn River Basin Snowpack (July 8, 2019)
Snowpack Conditions Map
Upper Colorado Region
June 26, 2019
## 2019 LAP Precipitation Summary

<table>
<thead>
<tr>
<th>SNOTEL Update Reports</th>
<th>Precipitation % of YTD Average (July 8th)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big Horn River Basin</td>
<td>104%</td>
</tr>
<tr>
<td>North Platte River Basin</td>
<td>118%</td>
</tr>
<tr>
<td>Upper Colorado River Headwaters</td>
<td>122%</td>
</tr>
</tbody>
</table>
# LAP Storage & Inflows
(end of May 2019)

<table>
<thead>
<tr>
<th></th>
<th>Reservoir Storage (End of May)</th>
<th>YTD Inflow (Oct. – May)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current Year % of Avg.</td>
<td>Last Year % of Avg.</td>
</tr>
<tr>
<td><strong>Big Horn River Basin (Wyoming)</strong></td>
<td>103%</td>
<td>106%</td>
</tr>
<tr>
<td><strong>North Platte River Basin (Wyoming)</strong></td>
<td>120%</td>
<td>124%</td>
</tr>
<tr>
<td><strong>Colorado Big Thompson (Colorado)</strong></td>
<td>104%</td>
<td>121%</td>
</tr>
</tbody>
</table>
LAP Hydrology Summary -

- Reservoir Storage
  - CBT & Big Horn slightly above average
  - North Platte above average
- YTD Inflows
  - Above average for Big Horn Basin & North Platte
  - Below Average for CBT
- Snow Pack
  - CBT & North Platte above average throughout season
  - Big Horn Basin slightly below average through the winter, but above average entering the summer
- YTD Precipitation
  - North Platte & CBT above average
  - Big Horn Basin slightly above average
PS-MB Eastern Division Hydrology

Record river flows in March in Nebraska & Iowa
Nebraska Flooding

Columbus

North Bend

Columbus, NE – Loup River Flooding
14 Mar 2019

North Bend, NE – Platte River Flooding (16 Mar 2019)
More March Flooding

Fremont, NE – Platte River Flooding (16 Mar 2019)

Waterloo, NE – Elkhorn and Platte River Flooding (16 Mar 2019)
Levee Breaches
Missouri Mainstem System Storage
(July 5, 2019)

*In January 2011, the Base of Flood Control was 56.8 MAF, and the Top of Exclusive Flood Control was 73.1 MAF.

We are here.
The peak occurred on April 18 at 17.2” which is 105% of the normal April 15 peak.

As of July 4, the mountain snowpack has melted.

The peak occurred on April 17 at 14.9” which is 104% of the normal April 15 peak.

<1% of this year’s peak remains as of July 4.
# Missouri River Basin

## 2019 Runoff Forecast above Sioux City*

<table>
<thead>
<tr>
<th>Month</th>
<th>Runoff (MAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>0.9</td>
</tr>
<tr>
<td>Feb</td>
<td>1.2</td>
</tr>
<tr>
<td>Mar</td>
<td>11.0</td>
</tr>
<tr>
<td>Apr</td>
<td>7.8</td>
</tr>
<tr>
<td>May</td>
<td>8.9</td>
</tr>
<tr>
<td>Jun</td>
<td>8.7</td>
</tr>
<tr>
<td>Jul</td>
<td>3.4</td>
</tr>
<tr>
<td>Aug</td>
<td>1.6</td>
</tr>
<tr>
<td>Sep</td>
<td>1.3</td>
</tr>
<tr>
<td>Oct</td>
<td>1.0</td>
</tr>
<tr>
<td>Nov</td>
<td>1.2</td>
</tr>
<tr>
<td>Dec</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**July 1 Forecast of Annual Runoff**
- Runoff = 49.9 MAF
- Historic Annual Runoff Average = 25.3 MAF

* Forecast as of July 1, 2019

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
Annual Runoff Above Sioux City, IA
June 2019 Forecast

49.9 MAF would be the 2nd highest runoff year in 121 years of record keeping.
### PS-MB Eastern Division Hydrology Summary

(End of June 2019)

<table>
<thead>
<tr>
<th></th>
<th>Current Year % of Avg.</th>
<th>Last Year % of Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Stem Reservoir Storage (End of June)</td>
<td>115%</td>
<td>115%</td>
</tr>
<tr>
<td>Annual Inflow Above Sioux City</td>
<td>197% (Forecast)</td>
<td>163%</td>
</tr>
</tbody>
</table>
Mainstem System Generation

Million Megawatt Hours
July 1, 2019 Forecast

Projected power production of 13.3 BKWhrs (average is 9.4 BKWhrs)
LAP Power Marketing & Rates Updates
LAP GROSS GENERATION AT PLANT
(less CBT pumping)
with projected Oct 19 through Sept 20

Gigawatt-hours

FISCAL YEAR


Marketed Post 2014

CBT Project  North Platte River  Bighorn Basin  Fry-Ark Project

Western Area Power Administration

2019 CAMU Annual Conference | 58
2018 LAP REC Program

- 1,897,119 RECs Requested from LAP REC Program Participants
  - Based on LAP FES Energy Allocations

- 2,056,653 Renewable Energy Certificates Issued for LAP Generation
  - 9.86% Colorado Small Hydro Projects (<30MW)
  - 32.08% Wyoming Small Hydro Projects (<30MW)
  - 58.06% Large Hydro Projects

- RECs distributed in April 2019
  - Excess RECs carried forward for allocation in years when RECs generated are less than requested
### LAP Revenue Requirement Components

<table>
<thead>
<tr>
<th>Component</th>
<th>2019 (Current)</th>
<th>2020 (Proposed)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Base</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-S WD</td>
<td>$50.8 M</td>
<td>$50.8 M</td>
</tr>
<tr>
<td>Fry-Ark</td>
<td>$13.3 M</td>
<td>$13.3 M</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$64.1 M</td>
<td>$64.1 M</td>
</tr>
<tr>
<td><strong>Drought Adder</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-S WD</td>
<td>$0 M</td>
<td>$0 M</td>
</tr>
<tr>
<td>Fry-Ark</td>
<td>$0 M</td>
<td>$0 M</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$0 M</td>
<td>$0 M</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- P-S WD Rate Component: Looks relatively stable for the next 3-5 years
- Fry-Ark Rate Component: Upward pressure over next 3-5 years due to increased replacements and maintenance
Drought Adder Schedule for 2019

• Finalized annual Power Repayment Studies (Feb-March)
  • Determine if Base rate and/or Drought Adder needs adjustment via formal rate adjustment

• USACE and BOR snowpack is final—new generation projections April 15th

• Perform preliminary review of Drought Adder early summer – notify customers of any estimated change to the rate

We are here

• Perform second review of Drought Adder in September

• Notify customers in October of any Drought Adder change to be implemented January 2020
LAP Composite Rate

![Graph showing the LAP Composite Rate from 2015 to 2019 with values: 41.42, 36.56, 31.44, 31.44, 31.44, 31.44 for each year.]
LAP FES Rate Summary

• New LAP Firm Electric Service Rate Schedule L-F11 became effective January 1, 2018
  – Effective through December 31, 2022 unless superseded by another rate schedule, whichever comes earlier
  – Drought Adder reduced to zero
  – Reduced LAP Composite Rate by 14% to 31.44 mills/kWh

• 2020 Rates
  – Currently not contemplating changes to the LAP Base Rate
  – Letter sent June 20, 2019 – no estimated changes to the Drought Adder component of the LAP Rate
    • WAPA will continue to monitor and send out final notice in the fall
LAP FES Composite Rate 2005 - 2020

• Current rates lower than 2008 rates
• Last rate increase was Jan. 1, 2010
Questions?
Colorado River Storage Project (CRSP) Management Center Updates

July 12th, 2019

2019 CAMU Annual Conference
Delta, CO

Tim Kutz
CRSP Public Utilities Specialist
CRSP Management Center Update

• SLCA/IP Contracts Update
• Olmsted Power Plant Update
• SLCA/IP Rates Update
Salt Lake City Area Integrated Projects (SLCA/IP) Update
SLCA/IP Contracts Update

• All contracts have been sent out
• Have received 70 signed contracts back
• 66 contracts still outstanding
• Approximately 75% of resource under contract
• If you have not received your contract, or need us to send it again, please contact me
• New contracts take effect Oct. 1, 2024
• Effective through September 30, 2057
SLCA/IP Contracts Update

• We are working on new Benefit Crediting agreements with our tribal customers
• These agreements allow tribes to benefit financially despite not having utilities of their own
• Several tribal customers are exploring creating their own utility; one coming online in January 2020
Olmsted Project
Olmsted Project Update

- Olmsted Power Plant construction completed in the Summer of 2018
- Dedicated on September 19, 2018
- Final allocations published in Federal Register
Olmsted Project Update

- Olmsted Final Allocations:

<table>
<thead>
<tr>
<th>Applicant</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Utah Water Conservancy District</td>
<td>30</td>
</tr>
<tr>
<td>Utah Municipal Power Agency</td>
<td>30</td>
</tr>
<tr>
<td>Lehi City, Utah</td>
<td>10</td>
</tr>
<tr>
<td>Kaysville City, Utah</td>
<td>10</td>
</tr>
<tr>
<td>Weber Basin Water Conservancy District</td>
<td>10</td>
</tr>
<tr>
<td>Springville City, Utah</td>
<td>10</td>
</tr>
</tbody>
</table>
Olmsted Project Update
Olmsted Project Update
Olmsted Project Update
SLCA/IP Rate Update
Rate Update

• Transmission Rate
• Status of Repayment
• Current SLCA/IP Firm Power Rate (SLIP-F10)
• SLCA/IP Annual Revenue Requirement & Firm Power Rates Comparison
• Rate Action
## Transmission Rates, Historical

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>kW-month</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$1.11</td>
</tr>
<tr>
<td>2016</td>
<td>$1.28</td>
</tr>
<tr>
<td>2017</td>
<td>$1.48</td>
</tr>
<tr>
<td>2018</td>
<td>$1.45</td>
</tr>
<tr>
<td>2019</td>
<td>$1.63</td>
</tr>
<tr>
<td>2020</td>
<td>$1.58</td>
</tr>
</tbody>
</table>

Projected, pending final
### SLCA/IP Status of Repayment

**As of September 30, 2018**

<table>
<thead>
<tr>
<th>Project</th>
<th>Investment ($million)</th>
<th>Amount ($million)</th>
<th>FY2018 Percent</th>
<th>FY2017 Percent</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRSP (Power Only)</td>
<td>1,374.515</td>
<td>1,205.178</td>
<td>87.68%</td>
<td>87.98%</td>
<td>-0.30%</td>
</tr>
<tr>
<td>CRSP Irrigation/Aid</td>
<td>1,174.515</td>
<td>208.792</td>
<td>17.78%</td>
<td>17.20%</td>
<td>0.58%</td>
</tr>
<tr>
<td>Collbran</td>
<td>27.023</td>
<td>23.191</td>
<td>85.82%</td>
<td>85.62%</td>
<td>0.20%</td>
</tr>
<tr>
<td>Dolores</td>
<td>38.986</td>
<td>38.167</td>
<td>97.90%</td>
<td>34.43%</td>
<td>63.47%</td>
</tr>
<tr>
<td>Rio Grande</td>
<td>29.651</td>
<td>24.758</td>
<td>83.50%</td>
<td>97.07%</td>
<td>-13.57%</td>
</tr>
<tr>
<td>Seedskadee</td>
<td>12.527</td>
<td>9.699</td>
<td>77.42%</td>
<td>93.00%</td>
<td>-15.58%</td>
</tr>
</tbody>
</table>
SLCA/IP Firm Power Rate

• Current Firm Power Rate
  • Effective Oct. 1, 2015
  • Energy: 12.19 mills/kWh
  • Capacity: $5.18 kW/month
  • Composite Rate: 29.42 mills/kWh

• Expires September 30, 2020

• Cost Recovery Charge
  • 0.00 mills/kWh
## History of SLIP Rates

<table>
<thead>
<tr>
<th>Date (CY)</th>
<th>Effective Capacity $/kW</th>
<th>Energy mills/kWh</th>
<th>Composite mills/kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>3.54</td>
<td>8.40</td>
<td>18.70</td>
</tr>
<tr>
<td>1995</td>
<td>3.83</td>
<td>8.90</td>
<td>20.17</td>
</tr>
<tr>
<td>1998</td>
<td>3.44</td>
<td>8.10</td>
<td>17.57</td>
</tr>
<tr>
<td>2002</td>
<td>4.04</td>
<td>9.50</td>
<td>20.72</td>
</tr>
<tr>
<td>2005</td>
<td>4.43</td>
<td>10.43</td>
<td>25.28</td>
</tr>
<tr>
<td>2008</td>
<td>4.70</td>
<td>11.06</td>
<td>26.80</td>
</tr>
<tr>
<td>2009 (FY10)</td>
<td>5.18</td>
<td>12.19</td>
<td>29.62</td>
</tr>
<tr>
<td>2015</td>
<td>5.18</td>
<td>12.19</td>
<td>29.42</td>
</tr>
</tbody>
</table>
## SLCA/IP Energy Generated

<table>
<thead>
<tr>
<th>Project</th>
<th>Generated - GWh</th>
<th>% of Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRSP</td>
<td>5,547,972</td>
<td>97.49%</td>
</tr>
<tr>
<td>Glen Canyon</td>
<td>4,050,661</td>
<td>71.18%</td>
</tr>
<tr>
<td>Flaming Gorge</td>
<td>628,820</td>
<td>11.05%</td>
</tr>
<tr>
<td>Aspinall</td>
<td>868,491</td>
<td>15.26%</td>
</tr>
</tbody>
</table>

### Participating / Integrated Projects:

<table>
<thead>
<tr>
<th>Project</th>
<th>Generated - GWh</th>
<th>% of Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dolores</td>
<td>13,875</td>
<td>0.24%</td>
</tr>
<tr>
<td>Seedskadee</td>
<td>66,662</td>
<td>1.17%</td>
</tr>
<tr>
<td>Collbran</td>
<td>22,796</td>
<td>0.40%</td>
</tr>
<tr>
<td>Rio Grande</td>
<td>39,524</td>
<td>0.69%</td>
</tr>
</tbody>
</table>

**Total Generation:** 5,690,829.56 100.00%
### SLCA/IP Energy Generated

<table>
<thead>
<tr>
<th>Generated - GWh</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>5-yr Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRSP</td>
<td>4,059,817</td>
<td>5,089,414</td>
<td>5,266,922</td>
<td>5,459,474</td>
<td>5,547,972</td>
<td>5,084,720</td>
</tr>
<tr>
<td>Glen Canyon</td>
<td>3,109,906</td>
<td>3,863,803</td>
<td>4,016,226</td>
<td>3,969,625</td>
<td>4,050,661</td>
<td>3,802,044</td>
</tr>
<tr>
<td>Flaming Gorge</td>
<td>361,789</td>
<td>504,135</td>
<td>495,226</td>
<td>781,596</td>
<td>628,820</td>
<td>554,313</td>
</tr>
<tr>
<td>Aspinall</td>
<td>588,123</td>
<td>721,475</td>
<td>755,470</td>
<td>708,253</td>
<td>868,491</td>
<td>728,362</td>
</tr>
</tbody>
</table>

### Participating / Integrated Projects

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>5-yr Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dolores</td>
<td>21,364.85</td>
<td>21,118.76</td>
<td>22,923.04</td>
<td>23,200.48</td>
<td>13,875.26</td>
<td>20,496.48</td>
</tr>
<tr>
<td>Seedskadee</td>
<td>58,587.86</td>
<td>75,558.54</td>
<td>51,886.36</td>
<td>31,917.51</td>
<td>66,662.49</td>
<td>56,922.55</td>
</tr>
<tr>
<td>Collbran</td>
<td>43,754.13</td>
<td>39,247.68</td>
<td>41,069.46</td>
<td>37,760.25</td>
<td>22,795.62</td>
<td>36,925.43</td>
</tr>
<tr>
<td>Rio Grande</td>
<td>12,767.88</td>
<td>37,642.42</td>
<td>43,432.61</td>
<td>45,218.30</td>
<td>39,524.26</td>
<td>35,717.10</td>
</tr>
</tbody>
</table>

Total Generation: 4,196,292 5,262,981 5,426,234 5,597,570 5,690,830 5,234,781
Next Steps

• Announced Rate Action – June 20, 2019
• Start routing - September 10, 2019
• DOE Review - October 21, 2019 (30 Days)
• Administrator Signs - January 6 - 8, 2020
• Publish Proposal FRN - January 14, 2020
• Start 90-day Customer Comment Period - January 14, 2020
• Public Information & Customer Comment Forums March 12, 2020
• End Customer Comment Period April 13, 2020
QUESTIONS?

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2019 CAMU Annual Conference