



Western
Area Power
Administration

Parker-Davis Project

Transmission System Cost Allocation

June 27, 2019

Phoenix, AZ

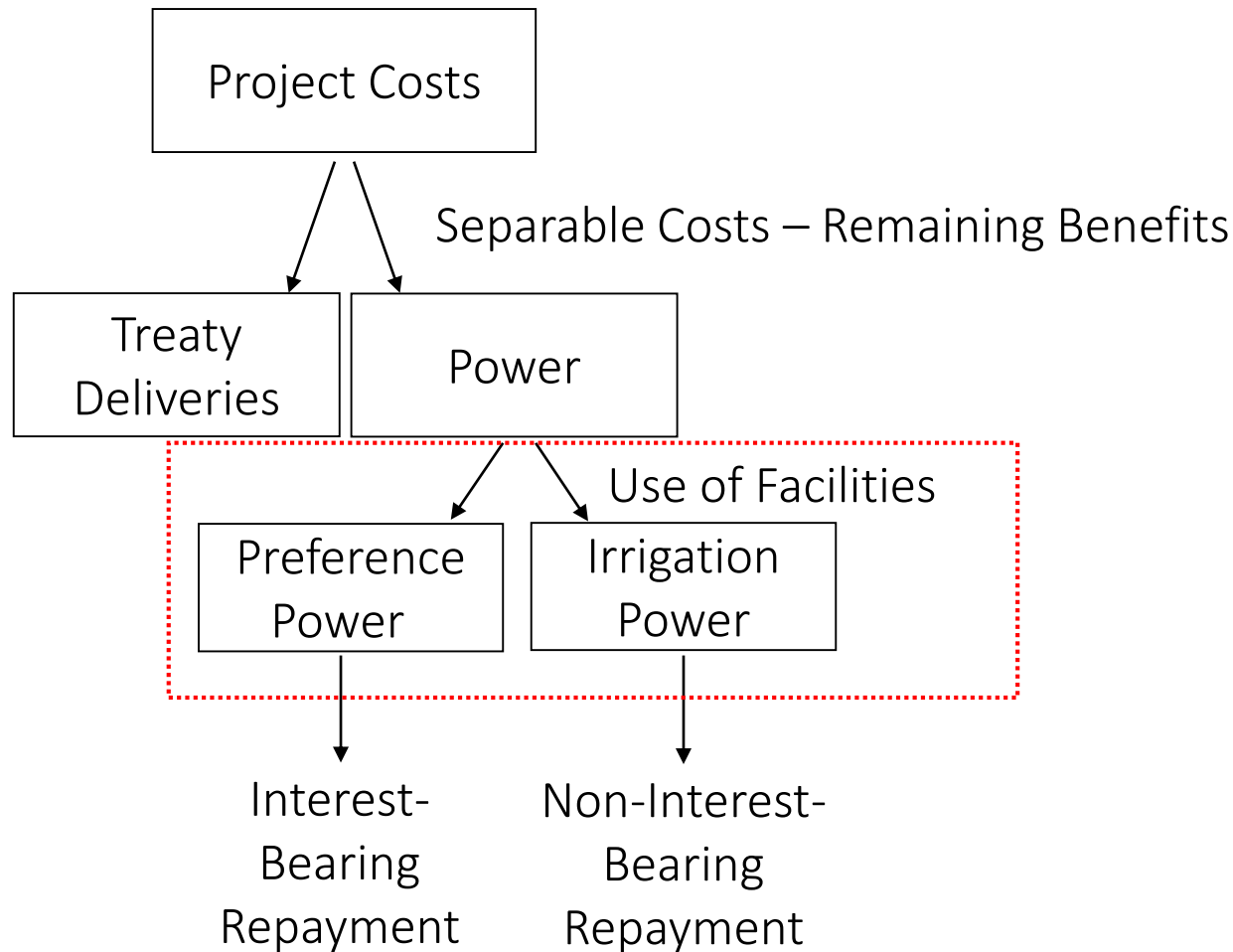
Cost Allocation & Sub-Allocation

- Cost allocation is the process of assigning the repayment of capital costs to each function in a multiple-purpose project
- Project purposes are derived from Reclamation Law and project-specific authorizing legislation
- Sub-allocations further delineate project costs between sub-purposes, for example between irrigation and municipal water users sharing a common facility

The 1962 P-DP Cost Allocation

- Approved by Commissioner of Reclamation
- Allocated costs to the Mexican Water Treaty and to power using the Separable Costs-Remaining Benefits (SCRB) method
- Sub-allocated capital costs to irrigation pumping and to commercial power using the Use-of-Facilities method
 - Formulas based on project pumping needs relative to total transmission line capacity
 - To be repaid without interest from power and transmission revenues
 - Individual segments of line bear different ratios
 - Costs of Parker-Gila 161-kV lines are currently allocated 23.1% to irrigation pumping

Visual Structure of Cost Allocation



Use of Facilities: Capacity Use Formula

- For each line segment:

$$\frac{\text{Priority Use Power Summer ACROD}}{\text{Total Transfer Capability}} = \text{Capacity Use by Irrigation}$$

- Capacity Use by Irrigation (%) is multiplied by the cost of a feature, and that product is the cost allocated to irrigation
- Update is a collaborative effort by WAPA and Reclamation

Cost Allocation Updates

- The 1962 capacity use formulas have become outdated because:
 - Transmission system capacity reserved for irrigation use was increased and quantified in 1996 by contracts among Reclamation, WAPA, and project use power beneficiaries
 - Transmission system capacity is continually changing as WAPA upgrades or replaces transmission features
- Updates to sub-allocation formulas are effective in 2019 and as future capital becomes repayable – not retroactively
- Sub-allocation formulas will be reviewed annually or as transmission features are upgraded/replaced

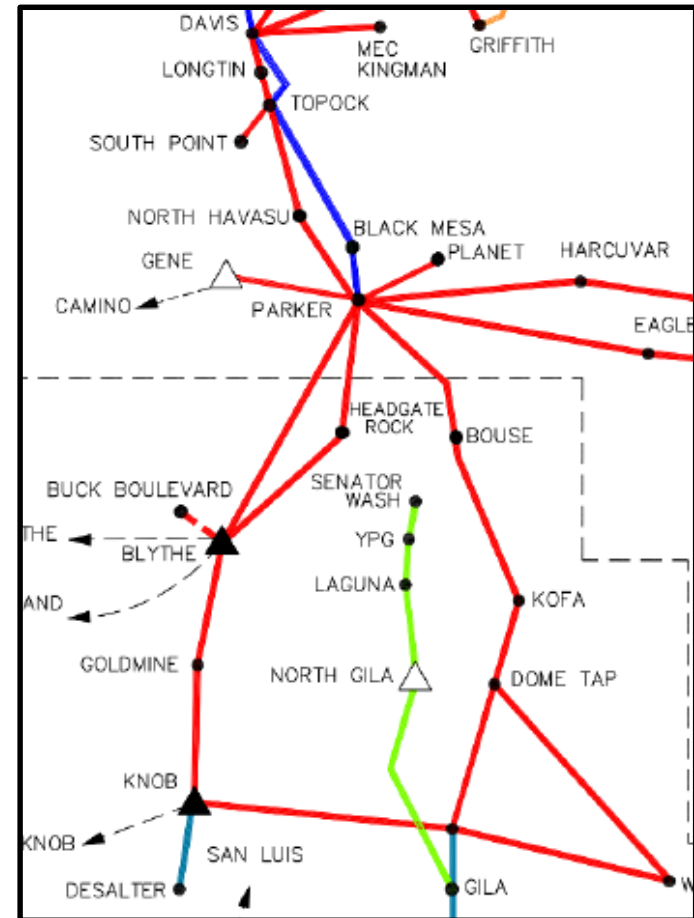
Sub-Allocated Facilities

- Facilities:
 - Davis Dam powerplant and switchyard
 - Transmission lines from Davis Substation to Parker Substation
 - Transmission lines south of Parker Substation to Gila Substation and beyond
- Same facilities as 1962; however, formulas are now in greater detail. For example:
 - Previously, transmission line from Davis Substation to Parker Substation was one formula
 - Now, Davis Substation to Topock Substation and Topock Substation to Parker Substation are separate formulas

Upcoming Facilities Replacements

Planned Transmission Line Replacements - October 2018 10-Year Plan:

- Gila-Dome Tap
- Kofa-Dome Tap
- Parker-Blythe
- Bouse Upgrade Project



Example: Gila-Dome Tap Replacement

- Estimated cost is \$7,600,000
- Construction in 2019-2020, financial close-out 2020
- Lines serve Priority Use Power (irrigation) and Firm Electric Service/Transmission (commercial) customers
 - Costs must be allocated between the respective purposes
 - If we make no change, 23.1% of costs will be non-interest-bearing in accordance with 1962 allocation for Parker-Gila
 - Updated non-interest-bearing allocation for Gila-Dome Tap segment is estimated at 24.3%

Firm Electric/Transmission Rate Impact

- Changes in sub-allocations vary based on facility – both increases and decreases
- These changes will result in more or less capital costs becoming interest-bearing
- To be conservative, rate calculations have assumed all future capital costs are interest-bearing
- As such, while changes in the sub-allocation may make more capital costs interest-bearing, it will be less than what is included in rate calculations

Priority Use Power Rate Impact

- Rather than only affecting the amount of capital repaid with interest, the changes will affect the amount of capital included in the Priority Use Power (PUP) rate
- The Aggregate Power Managers pay the Firm Electric Service Rate for PUP
- The PUP rate is used by the Aggregate Power Managers in their arrangements with other PUP customers
- Outdated sub-allocations will affect the Aggregate Power Managers and PUP customers

Draft Cost Allocation Documents

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

RECLAMATION *Managing Water in the West*

(Draft)

Updated Parker-Davis Project Transmission System Cost Allocation Report for Replacements and Additions

Parker-Davis Project
Lower Colorado Region



U.S. Department of the Interior
Bureau of Reclamation

April 20, 2018

Appendix A - Allocation Formulas by Feature

May 22, 2017

(1a) Davis Dam Power Allocation

$$\frac{40,500 \text{ kW}^1}{255,000 \text{ kW}^2} = 15.9\% \text{ of costs will be allocated to irrigation}$$

(1b) Davis Dam Switchyard and related equipment

$$\frac{40,500 \text{ kW}}{415,000 \text{ kW}^3} = 9.8\% \text{ of costs will be allocated to irrigation}$$

(2a) Davis-Topock Line

$$\frac{40,500 \text{ kW}}{415,000 \text{ kW}^3} = 9.8\% \text{ of costs will be allocated to irrigation}$$

(2b) Topock-Parker Line

$$\frac{40,500 \text{ kW}}{615,000 \text{ kW}^4} = 6.6\% \text{ of costs will be allocated to irrigation}$$

(2c) Parker 230-kv Switchyard and related equipment

$$\frac{40,500 \text{ kW}}{615,000 \text{ kW}^4} = 6.6\% \text{ of costs will be allocated to irrigation}$$

¹ 40,500 kW in the numerator always refers to the sum of the summer season Aggregate Contract Rates of Delivery (ACROD) in Exhibits A-1 and A-2 of Amendment No. 1 to the Operating Contract for Parker-Davis Project Priority Use Power, May 27, 2005; 96-DSR-10715/6-CU-30-91138

² Form PO&M-59, Monthly Report of Power Operations- Powerplants (Davis); Installed Capacity Review of Western-DSW TTC and Transfer Capability Values, dated November 25, 2014 (TTC Report), as DAVIS230-TOPOCK230, the line leaving the switchyard

³ TTC Report, as DAVIS230-TOPOCK230

⁴ TTC Report, as TOPOCK230-PARKER230

⁵ TTC Report, as TOPOCK230-PARKER230, the line entering the switchyard

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Summary

- The 1962 sub-allocation formulas for irrigation and commercial power/transmission are being updated and will be effective in 2019
- The existing formulas are outdated due to changes in irrigation usage and system capacity
- FES/Transmission Rate:
 - Change the amount of capital costs that are interest-bearing
 - Rates have assumed all future capital costs are interest-bearing
- PUP Rate: Change the amount of capital costs included in the rate – not just the amount that is interest-bearing

Questions or Suggestions

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