Appendix B

Synopsis of the September 10, 2019 Public Stakeholder Meeting

INFORMATION/BRIEFING MEMORANDUM

DATE: September 17, 2019
FROM: Jeff Nettleton, Area Manager, Klamath Basin Area Office
SUBJECT: Affordable Power in the Klamath Basin

This briefing provides an update on the status of affordable power efforts in the Klamath Basin with respect to the requirements of the America's Water Infrastructure Act of 2018 (Pub. L. 117-270) (AWIA).

KEY TAKEAWAYS

- Affordable power for irrigation and drainage pumping is an objective of the Klamath Basin irrigation community.
- Section 4308 of the AWIA requires the Department to conduct affordable power studies.
- Reclamation has contracted with The Kleinschmidt Group to conduct the studies in collaboration with stakeholders.
- Reclamation determined that the studies could not be completed within the 180 days required by the legislation (April 21, 2019). However, with the consent of legislators and stakeholders, they will be completed in November 2019 and forwarded to Congress by the end of the year.

BACKGROUND

Klamath Basin irrigators (including those within the Klamath Project as well as upper basin irrigators) have been impacted by power rate increases of up to 2,000% following the 2006 expiration of a low-cost power contract with Pacific Power. As a result, power rate relief has been a central objective of the irrigator community in over a decade of negotiations to resolve Klamath Basin water and fisheries issues.

The Klamath Basin Restoration Agreement (KBRA) was one such effort. In anticipation of KBRA implementation, Reclamation concluded a study in 2016 (the Comprehensive Agricultural Power Plan [CAPP]) to identify a path to affordable power. However, the KBRA expired at the end of 2015 for lack of Congressional action and no further affordable power efforts were initiated.

More recently, irrigation interests were successful in getting language added to the AWIA that directs the Department to conduct a study to identify a "power cost benchmark" that represents a power rate needed for Klamath Basin agriculture to remain competitive with similar irrigation projects in the Pacific Northwest, and to identify affordable power measures to achieve that benchmark.

In February 2019, Reclamation's Klamath Basin Area Office contracted with Kleinschmidt Group to conduct the studies in collaboration with Klamath Basin stakeholders.

DISCUSSION

For the Power Cost Benchmark Study, Kleinschmidt and the Klamath Water Users Association (KWUA) are in the process of researching power use and rate data from districts and contractors

within four "similarly situated" Reclamation projects in the Pacific Northwest.

For the Affordable Power Measures Study, Kleinschmidt is developing appraisal-level concepts for projects to reduce power costs, such as community solar, battery storage, small hydro, and floating solar.

Because the legislation also emphasizes stakeholder engagement, Kleinschmidt and the KWUA held a public workshop on September 10, 2019 to brief interested irrigators and community members on the work they have been doing. Vendors such as Pacific Power, Farmers Conservation Alliance, and Sustainable Northwest were present to provide information on energy conservation and other affordable power programs. Approximately 30 local irrigators attended the meeting.

According to the AWIA, the studies were to have been completed in April 2019. However, Reclamation determined while initiating the studies that additional time was needed, and with the consent of the Congressional delegation and stakeholders, established a new deadline for Congressional submittal of December 2019. Draft reports are expected by late September.

Subsequent actions are not defined but could include stakeholder requests for support of feasibility-level studies of affordable power measures, possibly followed by a request for federal funding for implementation. Any or all of these actions have the potential to become components of a basin-wide water settlement being developed by Alan Mikkelsen.

POSITION OF INTERESTED PARTIES

Irrigation interests in the Klamath Basin, both within and outside the Klamath Project, are keenly interested in reducing their power costs.

America's Water Infrastructure Act

Irrigation Power Costs/Cost Control Planning Event

September 10, 2019

AGENDA

9:00 - 9:05 AM	Introduction *(Jeff Nettleton, Area Manager, Klamath Basin Area Office, Bureau of Reclamation)*
9:05 - 9:20 AM	Background. How did we get here? Where have we been? *(Paul Simmons, Executive Director, KWUA)*
9:20 - 9:30 AM	What has been done in the recent past? What we are doing now? Affordable Power Measure History & Context, CAPP Review https://www.usbr.gov/mp/kbao/programs/affordable-power.html *(Mike Neuman, Bureau of Reclamation)*
9:30 - 10:00 AM	Power Cost Benchmark (PCB) – Preliminary Findings Overview *(Lloyd Reed, Lloyd Reed Consulting (Kleinschmidt Team))*
10:00 - 10:15 AM	BREAK
10:15 - 11:15 AM	Affordable Power Measure (APM) Studies – Preliminary Findings Overview *(Lloyd Reed, Lloyd Reed Consulting (Kleinschmidt Team))*
11:15 - 11:45 PM	Q&A; Next Steps
11:45 - 12:30 PM	Informal Discussion/Presentations by Partners
12:30 PM	END

America's Water Infrastructure Act (AWIA)

Power Cost Benchmark & Affordable Power Measure Studies

Preliminary Findings

KWUA
Klamath Water Users
ASSOCIATION

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

Kleinschmidt

Agenda

9:00 AM	Project Intro / Background / Overview
9:30 AM	Power Cost Benchmark (PCB) Preliminary Findings
	PCB Q&A
10:00 AM	BREAK
10:15 AM	Affordable Power Measure (APM) Studies Preliminary Findings
	APM Q&A
11:45 PM	Presentations by Partners
12:30 PM	END

History of Power Costs for Upper Klamath Basin Irrigation

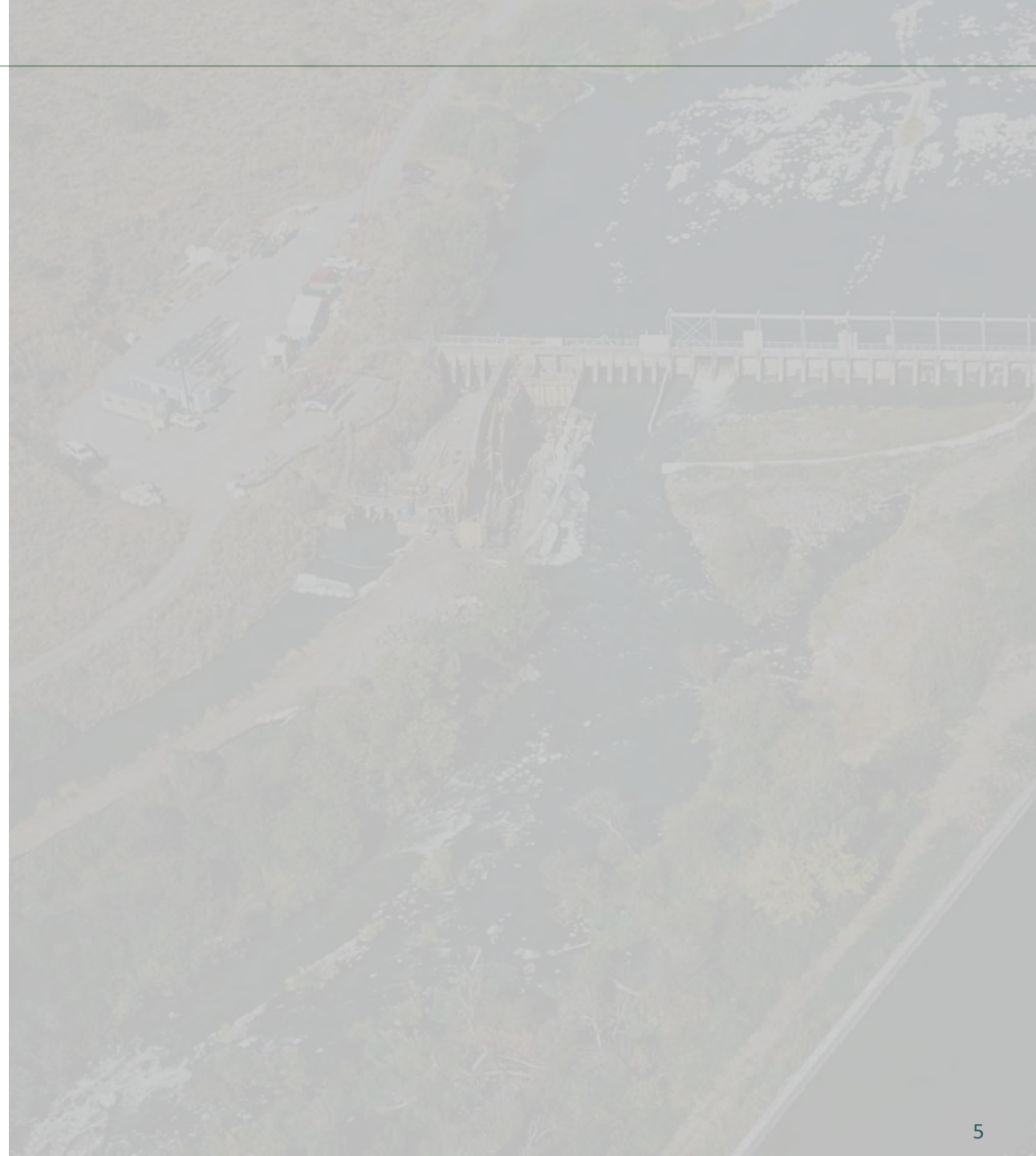
Paul Simmons
KWUA Executive Director

Approximate Klamath Project Areas

Initial Conditions

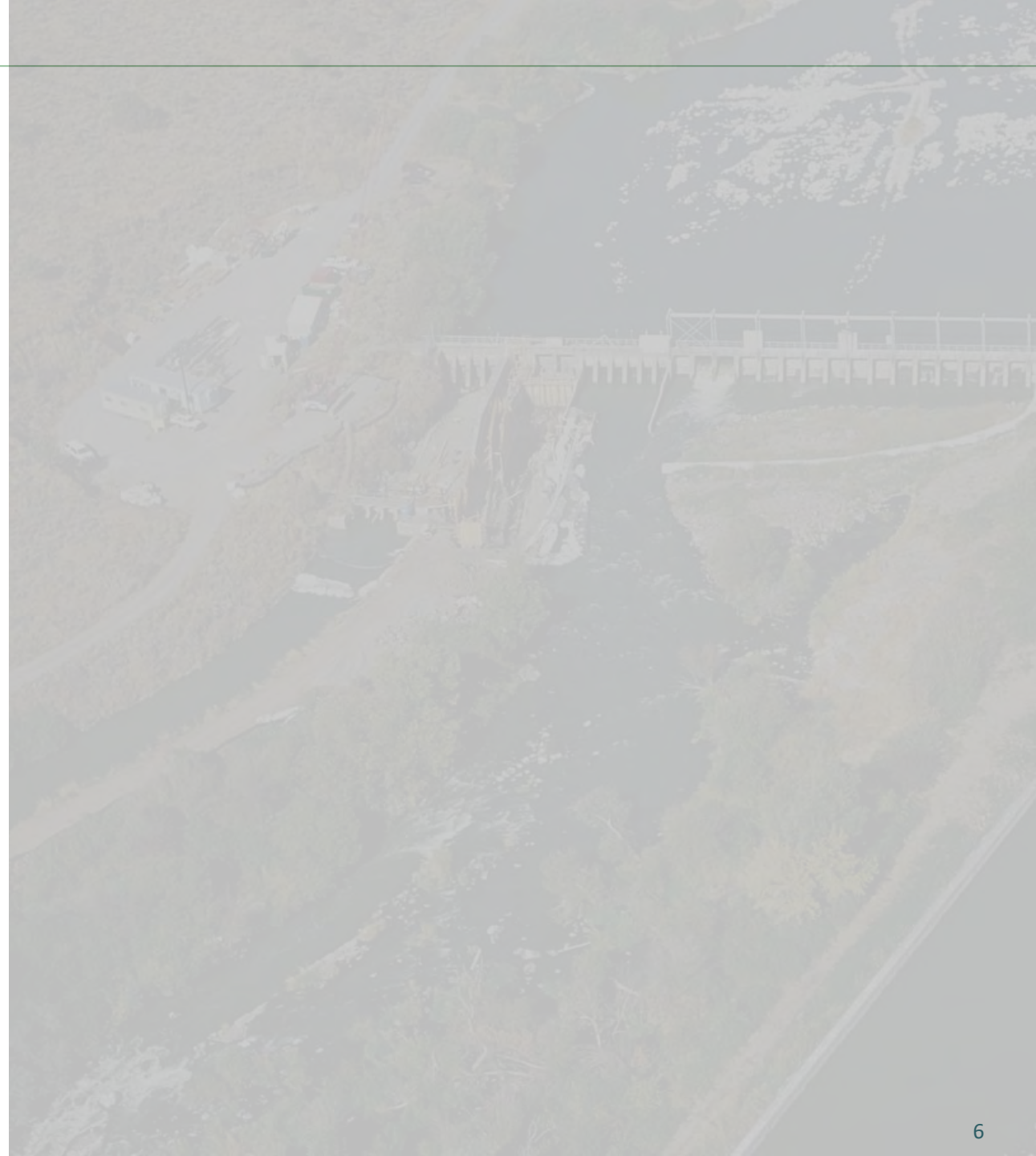
- 1903-1905: Engineering investigations initiated for the Klamath Project

- May 1905: Klamath Project authorized under Reclamation Act
  - 1904-1905 Water right filings included power
  - Power facilities and pumping contemplated
  - Link River Dam a major planned facility



Early History

- Approx. 1912-1917: COPCO (PacifiCorp Predecessor) constructed "Copco 1" on Klamath River in California
  - COPCO was also considering "Copco 2" and possibly other developments
- 1917: COPCO Proposal to Reclamation - COPCO will build and operate Link River Dam and develop more power, in lieu of federal development
  - Convey title to Link River Dam to Reclamation
  - COPCO's downstream use of water subordinate to Klamath Project irrigation needs
  - COPCO will sell power at low cost (7.5 mils / Kwh) to Reclamation and Project water users for 50 years
- Fifty-year contract entered consistent with the above (some amendments after 1917)

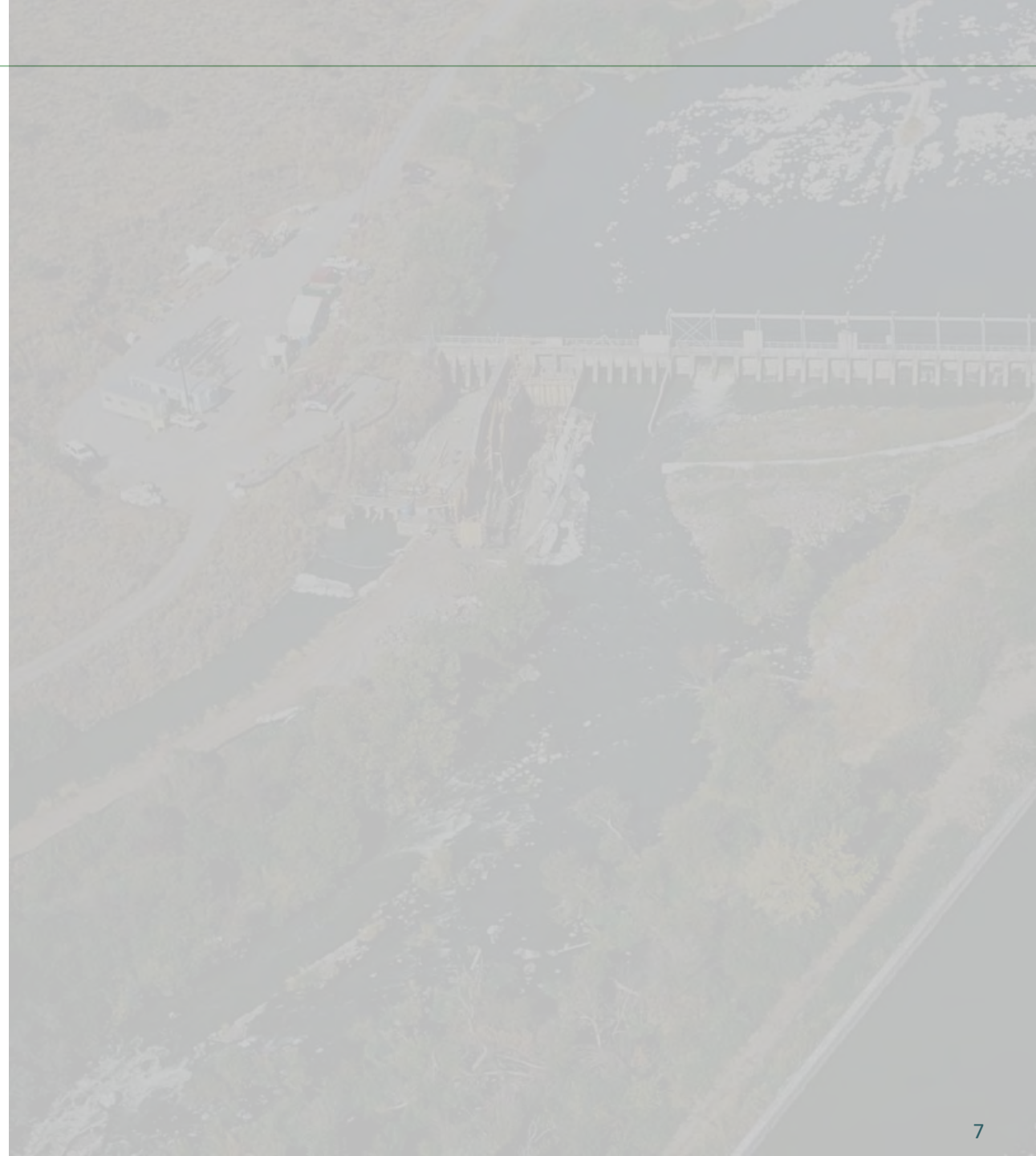


1951

COPCO applied for

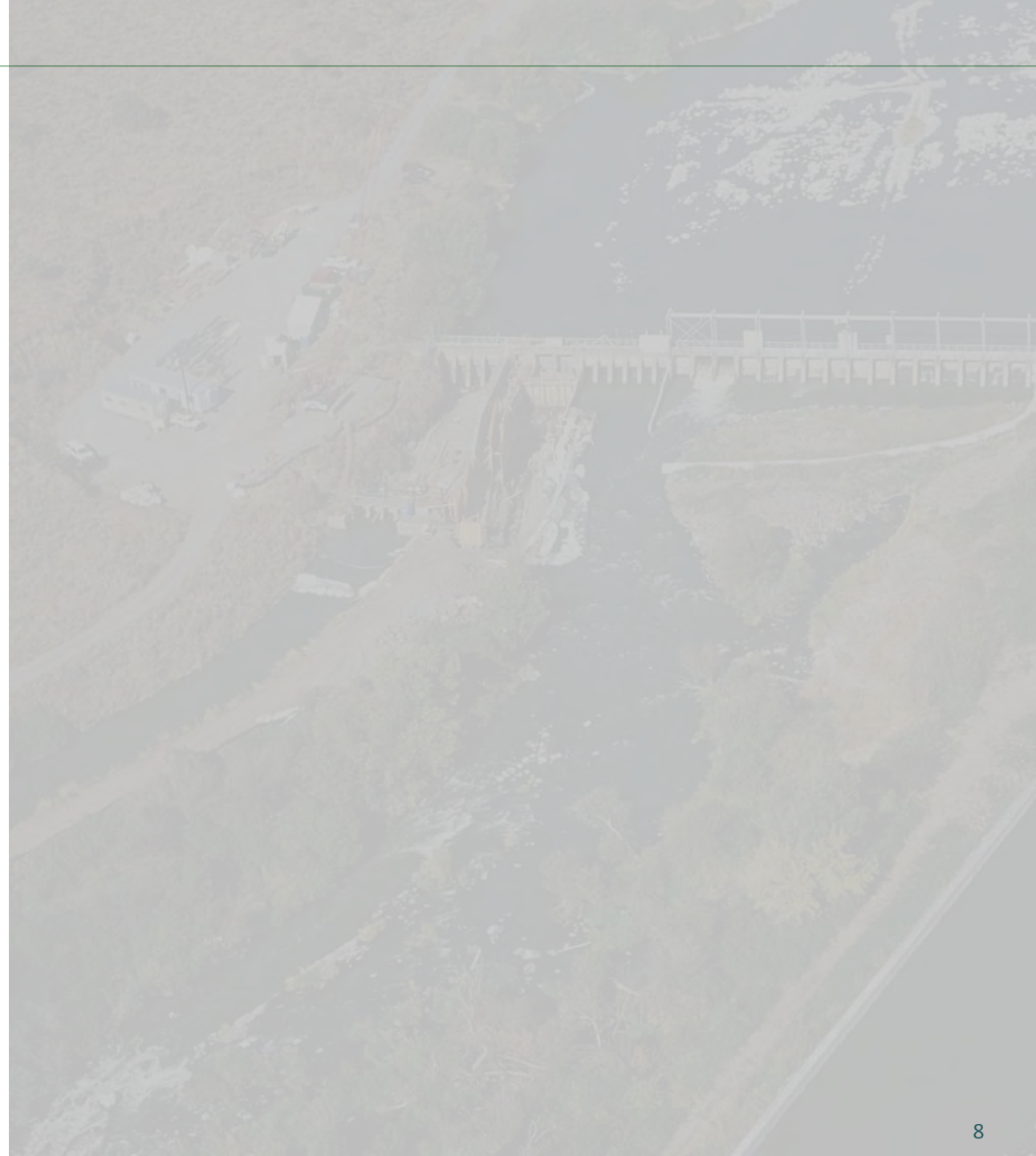
- State Water rights for proposed J.C. Boyle facility in Oregon

- Federal Power Commission (FERC) license for proposed J.C. Boyle and existing COPCO I and COPCO II



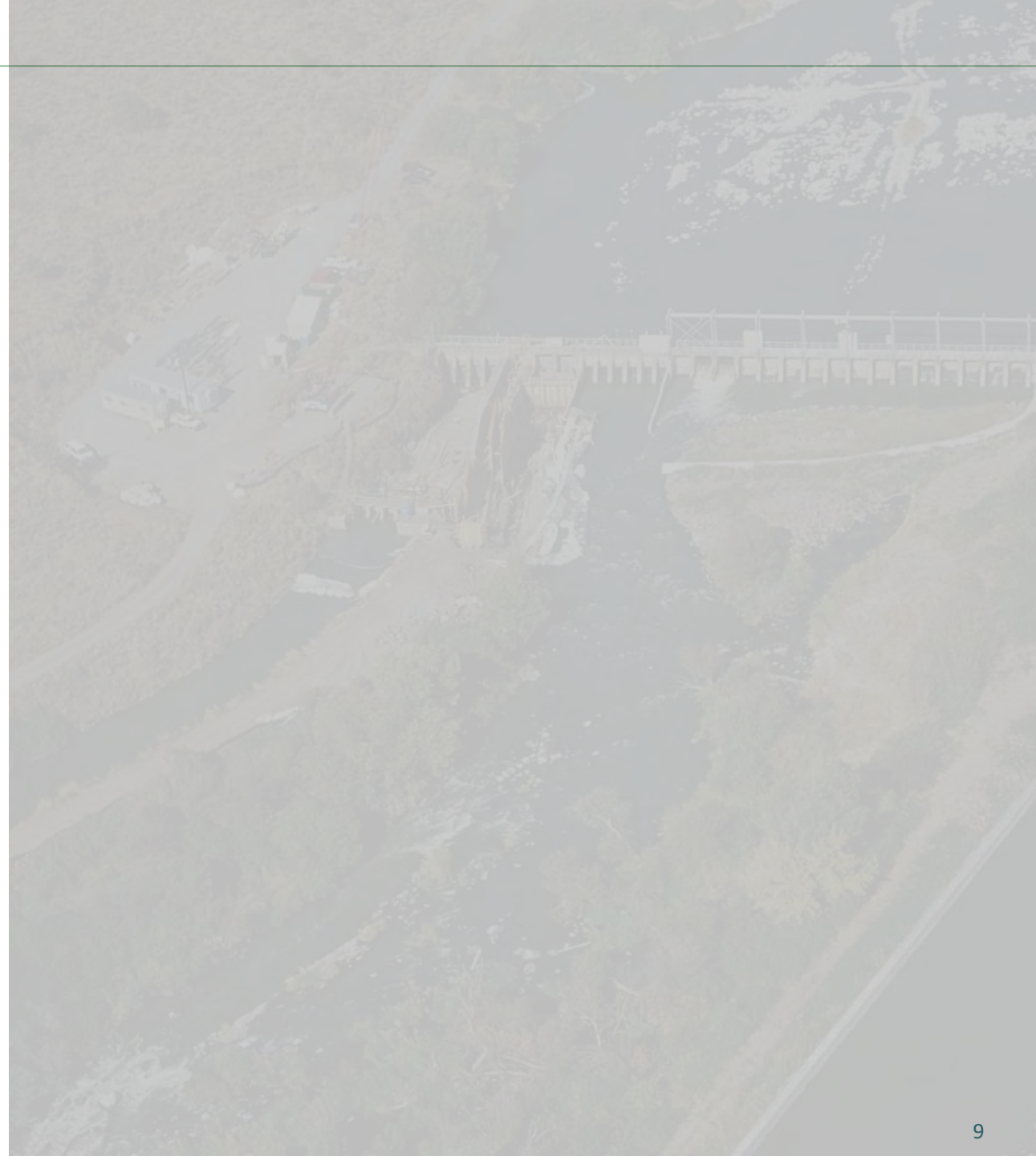
1951-1953

- Strong opposition to COPCO's application from Department of the Interior, local irrigation interests
  - Further power development should a be Federal undertaking, to supply low-cost Power for irrigation and revenue to offset irrigators' costs (as elsewhere)
  - Concerns about protecting future irrigation development
- KWUA formed in 1953
- Negotiations COPCO, KWUA, Reclamation



1954 -1956

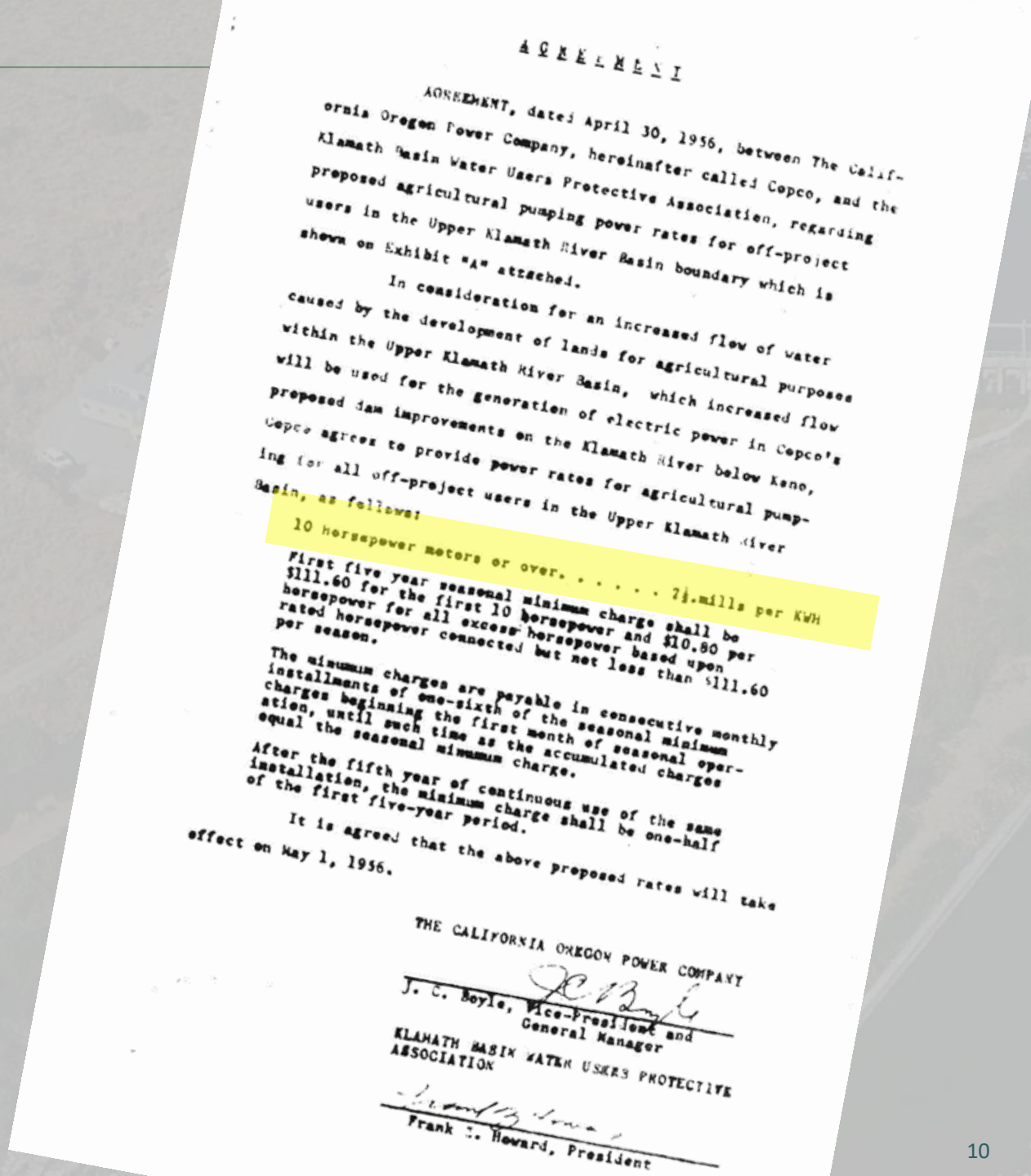
- 1954: FERC license issued for project 2082 (J.C. Boyle and COPCO I & II)
  - 50-year term license
  - Condition: license only effective if COPCO enters renewed power contract with Reclamation for period equivalent to license
- 1954-1956: Negotiations
- 1956: New 50 year contract between Reclamation and COPCO
  - Link River Dam management
  - Low cost power to project (4 mils, 6 mils)



1956

Off Project Contract

- KWUA – COPCO agreed to 7.5 mil rate for “off-project”



AGREEMENT

AGREEMENT, dated April 30, 1956, between The California Oregon Power Company, hereinafter called Copco, and the Klamath Basin Water Users Protective Association, regarding proposed agricultural pumping power rates for off-project users in the Upper Klamath River Basin boundary which is shown on Exhibit "A" attached.

In consideration for an increased flow of water caused by the development of lands for agricultural purposes within the Upper Klamath River Basin, which increased flow will be used for the generation of electric power in Copco's proposed dam improvements on the Klamath River below Keno, Copco agrees to provide power rates for agricultural pumping for all off-project users in the Upper Klamath River Basin, as follows:

10 horsepower meters or over. . . . . 7½ mills per KWH

First five year seasonal minimum charge shall be $111.60 for the first 10 horsepower and $10.80 per horsepower for all excess horsepower based upon rated horsepower connected but not less than $111.60 per season.

The minimum charges are payable in consecutive monthly installments of one-sixth of the seasonal minimum charges beginning the first month of seasonal operation, until such time as the accumulated charges equal the seasonal minimum charge.

After the fifth year of continuous use of the same installation, the minimum charge shall be one-half of the first five-year period.

It is agreed that the above proposed rates will take effect on May 1, 1956.

THE CALIFORNIA OREGON POWER COMPANY

J. C. Boyle, Vice-President and General Manager

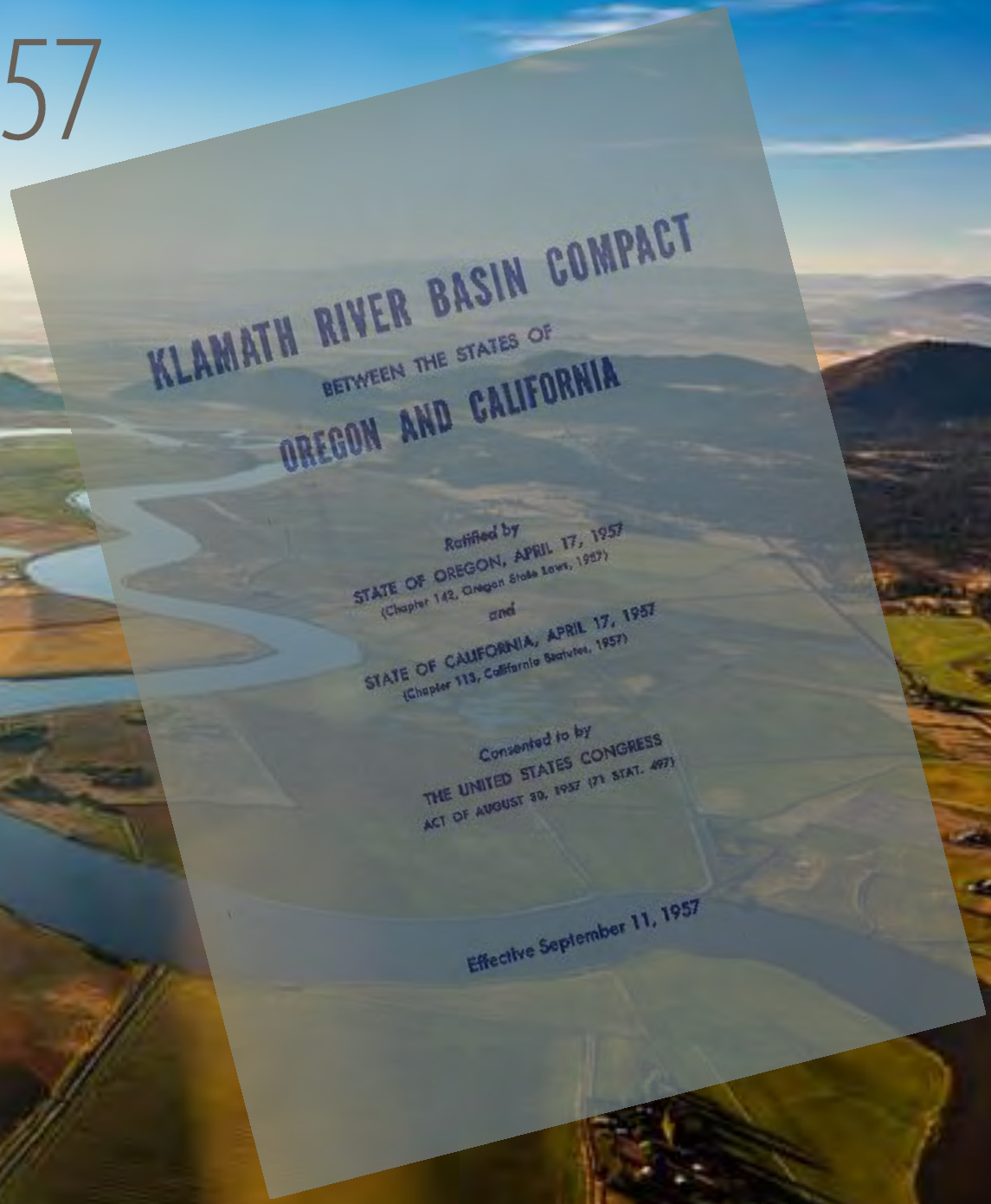
KLAMATH BASIN WATER USERS PROTECTIVE ASSOCIATION

Frank E. Howard, President

1957

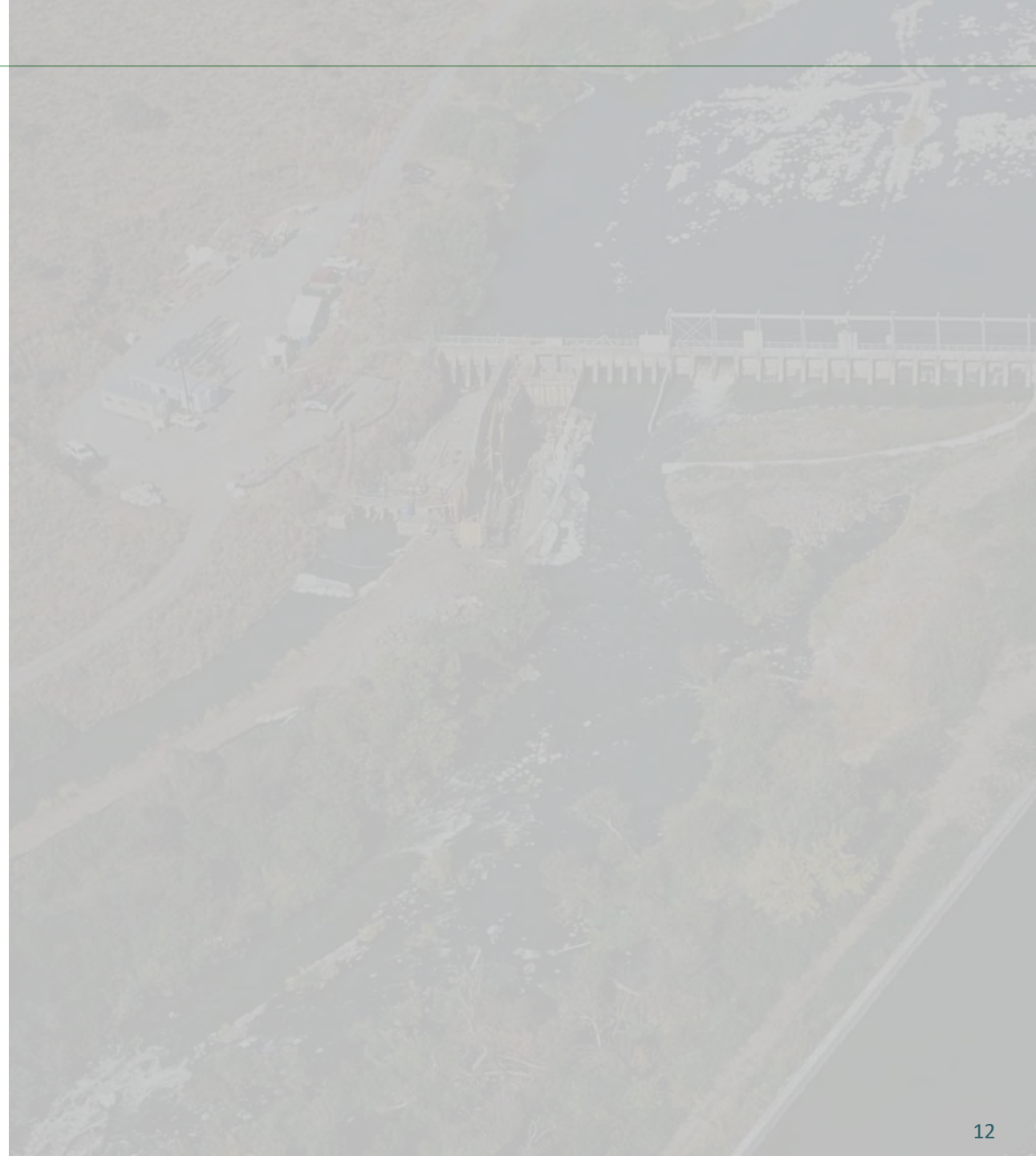
Compact Article IV addressed power development:

> "It shall be the objective of each state . . . to provide for the most efficient use of available power head . . . in order to secure the most economical distribution and use of water and lowest power rates which may be reasonable for irrigation and drainage pumping, including pumping from wells."



2004

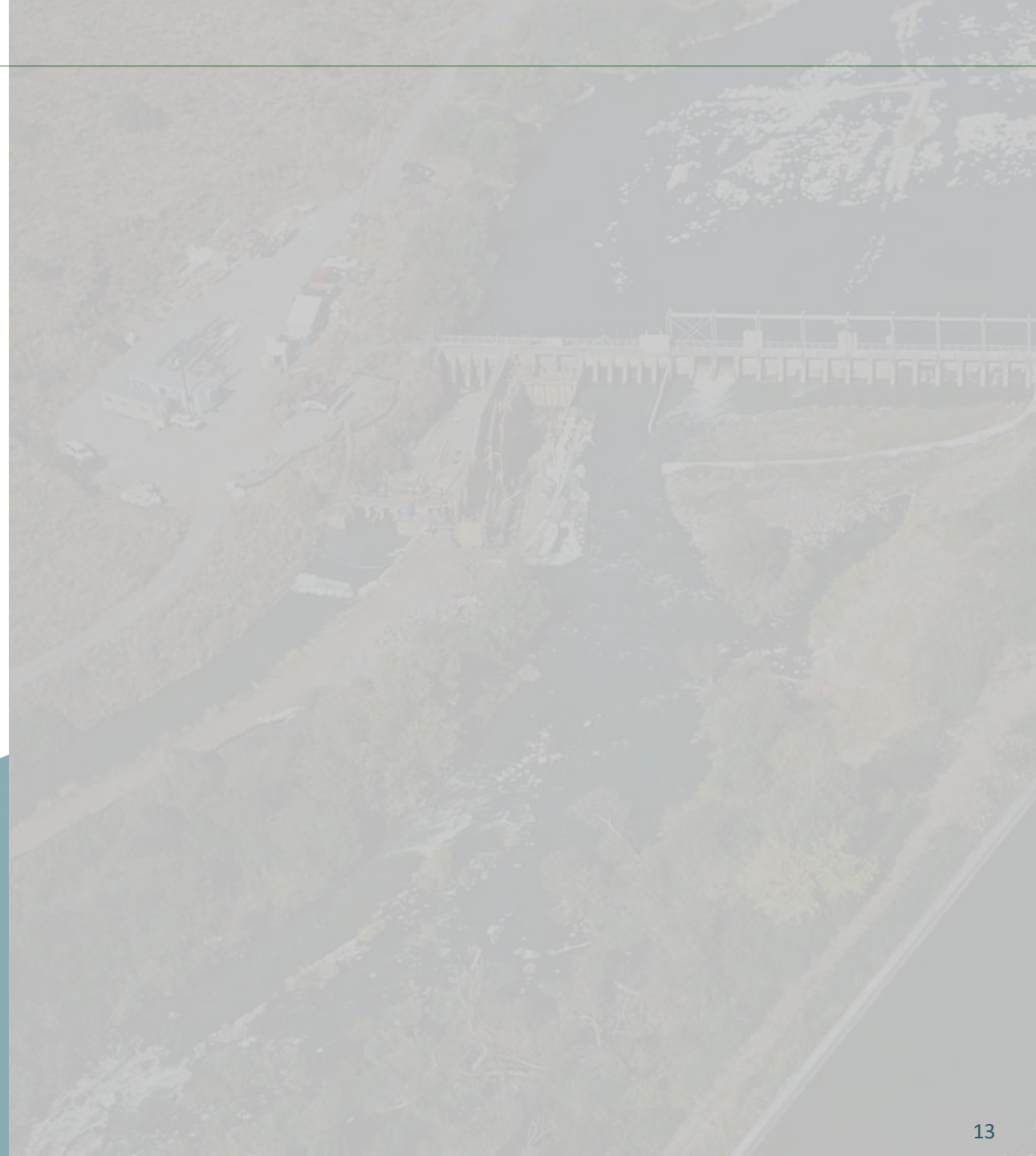
- 2004 PacifiCorp files application to renew license
- No proposal to extend power contract
- Administrative and court proceedings regarding duty to continue low-cost power arrangements: largely resolved against reclamation and irrigators



2006

- Special power contracts expire / terminate

- Stair-step rate increases to tariff
  - Oregon per statute and OPUC
  - California per CPUC



Reclamation's Affordable Power Efforts for KBRA

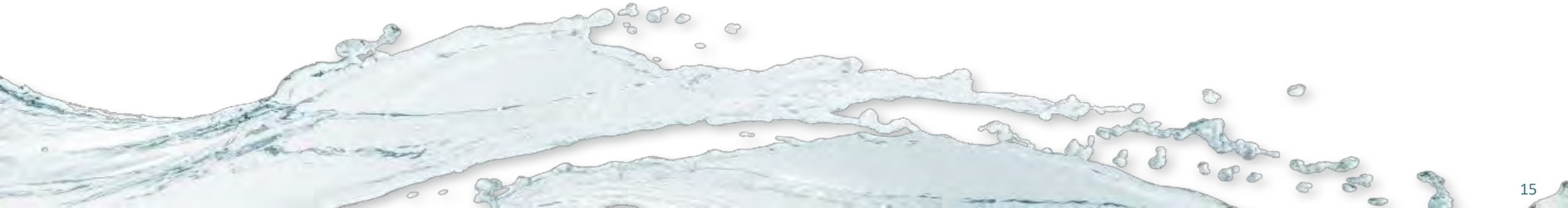
Power for Water Management Program

- Power Cost Target Study
- Federal Power Program
- Renewable Power Program

Affordable Power Measures Study builds on CAPP

Comprehensive Agricultural Power Plan (CAPP)

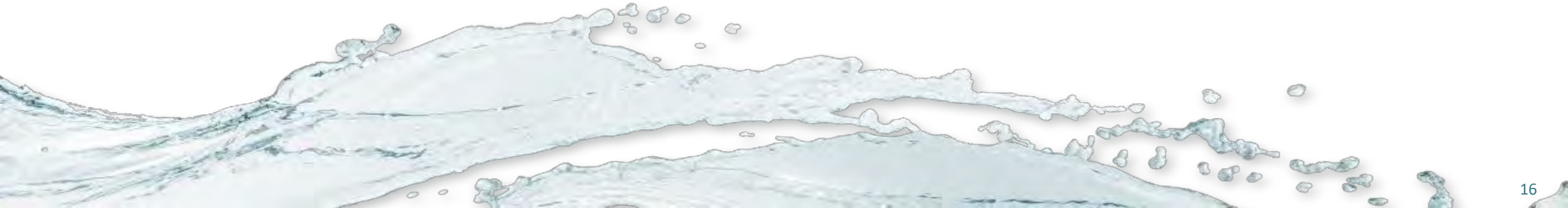
- Evaluated 13 Alternatives
- Screening Criteria
- Results arranged in Tiers
  - 1st Tier – Solar, Out-of-Basin Investment, Net Metering
  - 2nd Tier – Solar, Revenue Stream, Efficiency, Demand Management, Keno Dam Hydro-Power, Biomass
  - 3rd Tier – Other Hydro-Power, Natural Gas, Geothermal



America's Water Infrastructure Act of 2018 (Sec. 4308)

180 days* to submit to Congress a report that

- Identifies *Power Cost Benchmark*;
- Recommends actions (other than direct payments) to ensure that the net delivered power cost for *covered power use* is equal to, or less than the PCB in the near- and long-term.
  - Emphasis on water and power conservation and efficiency, renewable energy development, and regional economic development;
- Describes public input regarding the proposed actions and the degree to which water users concur with the recommendations



Power Cost Benchmark (PCB) Overview

- The PCB is defined in Section 4(a)(3) of the AWIA:

  "The term 'power cost benchmark' means the average net delivered cost of power for irrigation and drainage at Reclamation projects in the area surrounding the Klamath Project that are similarly situated to the Klamath Project, including Reclamation projects that: (A) are located in the Pacific Northwest, and (B) receive project-use power."

- The PCB is a measure of the average per-unit cost of electricity (measured in cents/Kilowatt-hour) used for irrigation and/or drainage purposes in similarly situated areas (i.e. "Similar Projects").

- The PCB is intended to be an objective measure of how per-unit irrigation/drainage electricity costs in the Klamath Basin compare against per-unit electricity costs in the Similar Projects.

Identification of the Similar Projects

- A total of 15 Reclamation Projects located in the Pacific Northwest region were originally evaluated as potential Similar Projects.

- Five Reclamation Projects were ultimately selected to be the Similar Projects used in the computation of the PCB. These are:
    1. Boise Project – Located in south-central Idaho.
    2. Columbia Basin Project – Located in central Washington.
    3. Minidoka Project – Located in south-eastern Idaho.
    4. Owyhee Project – Located in south-west Idaho and eastern Oregon.
    5. Yakima Project – Located in south-central Washington.

Irrigation Power Costs in the Similar Projects

- A total of 12 different electric utilities serve the majority of the irrigation customers located in the five Similar Projects.
  - Three of these utilities – Avista Utilities, Idaho Power, and PacifiCorp – have separate rates for irrigation customers located in different states.
- In 2018, the average rates charged to irrigation customers in the Similar Projects by the 12 utilities ranged from a low of 4.30 cents/Kwh to a high of 10.34 cents/Kwh.
- The power rates cited above do not include Public Use Power that Reclamation and some irrigation districts purchase from the Bonneville Power Administration.
  - In general, power rates for Public Use Power in each of the Similar Projects are lower than the rates available from the local electric utilities.
- In comparison, PacifiCorp's 2018 average irrigation rate in Oregon was approximately 10.36 cents/Kwh and in California the average rate was approximately 13.41 cents/Kwh (preliminary figures).

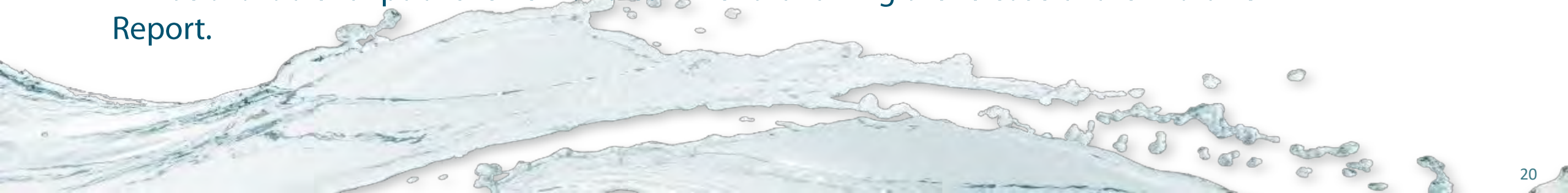
Current Status of the PCB Calculations

- 2017 and 2018 power cost and usage data for the 12 electric utilities that serve the majority of the irrigation and drainage loads located in the five Similar Projects has been assembled and is being reviewed.

- Some additional actual 2017 and 2018 power cost and usage data for Reclamation's own power usage in some of the five Similar Projects is still being acquired.

- Power usage weighting factors for irrigation and drainage loads located in the different electric utility service areas of the five Similar Projects are being finalized.

- The derivation of the PCB - including the supporting datasets and associated calculations - will be available for public review and comment following the release of the Draft PCB Report.



Power Cost Benchmark Q&A

Questions?

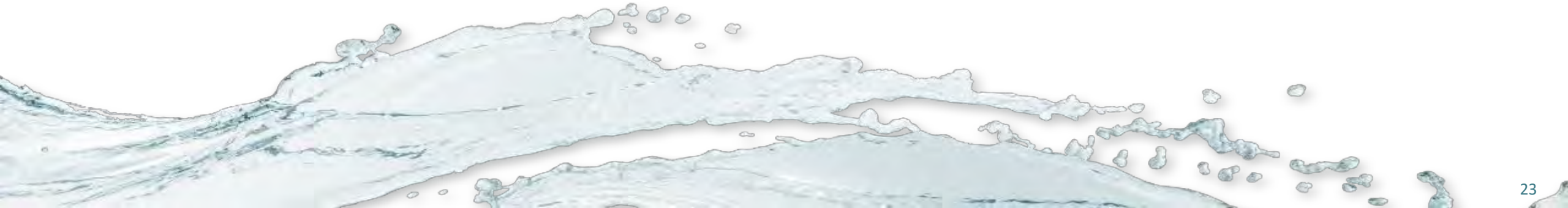
AWIA requirements for APM Study

Emphasis on:

- Water & power conservation & efficiency
- Renewable energy development
- Regional economic development

Affordable Power Measures (APM) Overview

- Developing the list of Draft APMs:
  - The APMs previously identified in the CAPP Report were re-assessed based upon updated information and currently forecasted conditions.
  - Several potential new APMs were identified that were not previously considered in the CAPP Report.
  - From a total of 18 candidates, ten Draft APMs were selected for further evaluation.



Draft APM No. 1 - Solar Photovoltaic Generation

Alternative 1 – Individual Customer Facilities

Description

Develop new sources of solar Photovoltaic generation in the Upper Klamath Basin (potentially coupled with battery storage) that are designed to provide all, or a portion of, individual customer's irrigation loads. Solar PV facilities would generally be in the range of approximately 5 KV to 20 KV (with potentially bigger facilities for some larger pumping loads).

Potential Benefits

- Very flexible installation potential – minimal land/space requirements.
- Solar PV facilities can be installed "behind-the-meter".
- Solar PV generation acts to directly reduce each individual customer's power purchase costs from PacifiCorp.
- Existing programs to assist customers in acquiring solar PV equipment.

Potential Challenges

- Relatively high up front costs for individual customers as compared to other Draft APMs.
- Individual customers would be responsible for performing (or contracting out for) operations, maintenance and administrative functions.

Draft APM No. 1 - Solar Photovoltaic Generation

Alternative 2 – Shared/Community Facilities

Description

Develop new sources of solar Photovoltaic generation in the Upper Klamath Basin (potentially coupled with battery storage) that are designed to provide power to multiple customer's irrigation loads. Solar PV facilities would generally be in the range of up to approximately 1,000 KW for facilities located in California and up to 2,000 KW for facilities located in Oregon.

Potential Benefits

- Provides some moderate economies of scale (i.e. lower $/KW installation costs than for individual customer sized facilities).
- Solar PV generation acts to directly reduce each participating customer's power purchase costs from PacifiCorp.
- Operations, maintenance and administrative functions provided by a central entity.

Potential Challenges

- Availability of space in the Klamath Basin for one or more moderate-scale solar PV facilities.
- Potential costs of interconnecting moderate-sized solar PV facilities to the local bulk power grid.
- Potential power cost savings are subject to the net metering programs in effect in Oregon and California (including maximum solar PV facility size restrictions).

Draft APM No. 1 - Solar Photovoltaic Generation

Alternative 3 – Utility-Scale Facilities

Description

Develop new sources of solar Photovoltaic generation in the Upper Klamath Basin (potentially couple with battery storage) that are designed to provide bulk power supplies to one or more of the region's electric utilities (which could include PacifiCorp). Solar PV facilities would generally be in the range of approximately 50,000 KW to 200,000 KW.

Potential Benefits

- Provides significant economies of scale (i.e. lower $/KW installation costs than for shared/community sized facilities).
- Could provide a long-term revenue stream to help off-set PacifiCorp power purchase costs for all covered water users.
- Provides an opportunity to work jointly with PacifiCorp to develop new large sources of renewable generation.

Potential Challenges

- Availability of space in the Klamath Basin for one or more large-scale solar PV facilities.
- Potential costs of interconnecting large-size solar PV facilities to the local bulk power grid.
- Added transmission costs of selling power to regional utilities other than PacifiCorp.

Draft APM No. 2 – PacifiCorp Net Metering Programs

Description

Utilize existing or future PacifiCorp net metering programs in Oregon and/or California to foster the development of individual and multiple shared/community generating facilities (e.g. solar PV, battery storage) to be located in the Upper Klamath Basin.

Potential Benefits

- Provides an opportunity for individual customers or groups of customers to reduce their overall power costs by self-generating a portion, or all of, their own power needs (by displacing power formally purchased from PacifiCorp).
- Self-generation in excess of a customer's own power usage can be effectively "sold back" to PacifiCorp.

Potential Challenges

- Currently-in-effect net metering programs in Oregon and/or California could change in the future (subject to the appropriate regulatory approvals).
- Issues regarding the price of power sold to PacifiCorp that is in excess of the customer's overall usage.
- Current maximum size limits for shared/community generating facilities in Oregon and California limits economy of scale benefits.

Draft APM No. 3 – Out-of-Basin Renewable Energy Investment

Description

Form one or more entities to invest in new renewable generating facilities to be located outside of the Upper Klamath Basin.

Potential Benefits

- Significantly expands the universe of potential renewable investment opportunities by considering locations outside of the Upper Klamath Basin.
- Does not require the delivery of out-of-basin renewable generation directly to covered water-users.
- The revenue stream(s) from the renewable investments can be distributed among all covered water-users.

Potential Challenges

- Potential negative reaction from the local public-at-large regarding investments to be made outside of the Upper Klamath Basin.
- Potentially high up-front investment costs.

Draft APM No. 4 – Equipment/Efficiency Upgrades

Description

Upgrade/replace existing water delivery system components to utilize more energy efficient equipment and thereby reduce overall electricity consumption in the Upper Klamath Basin.

Potential Benefits

- Individual customers can reduce their power costs by reducing their overall electricity usage.
- Minimum expected power cost savings over time can generally be determined at the time of the upgrade investment.
- Programs exist to assist individual customers and groups in implementing efficiency upgrades.

Potential Challenges

- Relatively high up front costs for individual customers as compared to other Draft APMs.
- Cost-effective efficiency upgrades may not be available to all covered water-users.

Draft APM No. 5 – PacifiCorp Time-of-Use Power Rates

Description

Utilize existing or future PacifiCorp Time-of-Use retail rate programs for irrigation/drainage customers located in Oregon and/or California.

Potential Benefits

- Reduce overall net power costs by shifting electricity usage as much as possible off of the hours designated by PacifiCorp as "on-peak" hours.
- "On-peak" hours are defined in advance – allows for long-term pumping/power usage planning.
- Participation in the Program is voluntary.
- Customers can opt out of the program (subject to notice requirements).

Potential Challenges

- Individual customer's overall power costs could be higher than under PacifiCorp's standard irrigation rates.
- Large dollar penalty for power usage during the designated "on-peak" hours.
- Customers located in the lower parts of the Klamath Project could be negatively impacted by the shifting of pumping operations occurring in the upper parts of the Project.
- Potential up-front new electric meter costs.

Draft APM No. 6 - PacifiCorp Irrigation Load Control Programs

Description

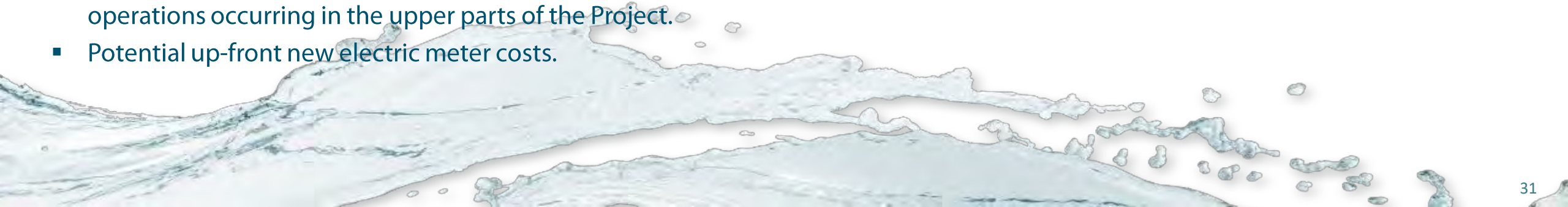
Utilize existing or future PacifiCorp load control programs for irrigation/drainage customers located in Oregon and/or California.

Potential Benefits

- Individual customers' overall net power costs can moderately by reduced by allowing PacifiCorp to curtail electricity usage on short notice in exchange for receiving dollar payments from PacifiCorp.
- Participation in the Program is voluntary.
- Customers can opt out of the program (subject to notice requirements).

Potential Challenges

- Requires that customers have significant flexibility regarding their water delivery/pumping operations.
- Uncertain timing regarding power curtailment events.
- Customers located in the lower parts of the Klamath Project could be negatively impacted by the shifting of pumping operations occurring in the upper parts of the Project.
- Potential up-front new electric meter costs.



Draft APM No. 7 - Small Hydroelectric Generation Development

Description

Develop one or more small hydroelectric generating plants on existing water diversion/delivery facilities of the Klamath Project.

Potential Benefits

- Can take advantage of small-size "modular" hydro units to reduce overall installation costs.
- Power produced at the plant(s) can either be used to meet a portion of the Project's power needs or sold to PacifiCorp or other regional utilities at prevailing market rates.
- Could provide a long-term revenue stream to help off-set PacifiCorp power purchase costs for all covered water-users.

Potential Challenges

- Relatively high up-front installation costs.
- Limited number of potential sites.
- Potential environmental and/or permitting issues.

Draft APM No. 8 - Purchases of Public Use Power

Description

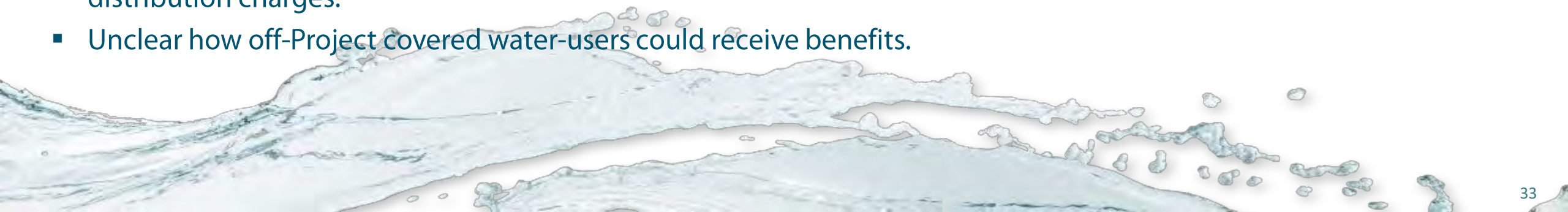
Reclamation could purchase power from BPA under Public Use Power rates to meet all, or a portion of, Reclamation's own Project-related power needs.

Potential Benefits

- Potential lower cost power to operate Reclamation's Klamath Project pumps.
- Relatively low up-front costs (i.e. no new generating facilities would need to be developed).

Potential Challenges

- Would only apply to Reclamation's own pumping loads.
- Public Use Power deliveries to Reclamation facilities would be subject to PacifiCorp transmission and/or distribution charges.
- Unclear how off-Project covered water-users could receive benefits.



Draft APM No. 9 -Open-Access Power Purchases

Description

Utilize PacifiCorp's existing Open-Access rate schedule in Oregon (Schedule 741) and a potential new PacifiCorp rate schedule in California so that irrigation/drainage customers would purchase their power supplies from third parties other than PacifiCorp.

Potential Benefits

- May be possible to moderately reduce individual irrigation customers' overall power costs.
- Utilizing a retail aggregator may provide individual customers with increased "buying power" and help reduce administrative overhead.

Potential Challenges

- Power cost savings are not guaranteed.
- Currently there are no open-access programs available to PacifiCorp's irrigation customers located in California.
- Maximum potential power cost savings are significantly limited – power supply purchases from third parties are still subject to PacifiCorp's transmission, distribution, and other charges.
- Prevailing market prices for wholesale power can vary significantly across time due to conditions beyond the customer's control.
- Potentially high administrative overhead.

Draft APM No. 10 - PacifiCorp Retail Rates Cost-of-Service Review

Description

As part of PacifiCorp's next general rate cases in Oregon and California, evaluate PacifiCorp's cost-of-service analyses with regard to its retail irrigation rates and make appropriate recommendations to the Oregon Public Utility Commission and/or the California Public Utility Commission to reduce power rates to Klamath Basin water-users.

Potential Benefits

- May result in lower overall power costs for PacifiCorp's irrigation customers.

Potential Challenges

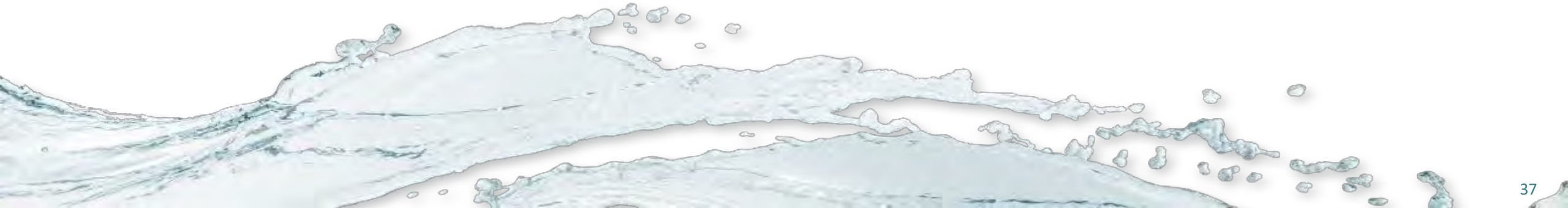
- Requires an investment of time and effort on the part of irrigation customers and/or customer groups.
- Uncertain timing with regard to future PacifiCorp retail rate cases in Oregon and California.

APMs – Ongoing Activities

- New generating/energy storage facility installation cost information is being assembled and finalized (associated with Draft APMs Nos. 1, 2, 3, 6, and 7).
- Short-term and long-term wholesale power price forecasts are being finalized (associated with Draft APMs Nos. 3 and 9).
- Potential ranges of power cost reduction benefits are being finalized (associated with all Draft APMs).
- List of programs and/or organizations that can assist irrigation customers in implementing certain APMs is being finalized (associated primarily with Draft APMs Nos. 1, 2, 4, and 9).

APMs – Next Steps

- Review comments received from covered water users and/or other stakeholders regarding the list of Draft APMs.
- Modify the list of Draft APMs as appropriate based upon the comments received from covered water-users and/or other stakeholders.
- Finalize the cost/benefit analyses for the Draft APMs.
- Complete and release the Draft APM Report for public review and comment.



Future Pathways to Success

Federal

Cost Shared

Private

Funding Source

Possible Leads/ Partners

Projects

U.S. Department of the Interior Bureau of Reclamation

USDA United States Department of Agriculture Rural Development

EnergyTrust of Oregon, Inc.

Farmers Conservation Alliance fca

Individuals

PacifiCorp

Affordable Power Measures Q&A

Questions?

Thank you

Questions/Comments:

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September 10, 2019

Public Meeting Questions and Answers

Q1. For the Power Cost Benchmark study and investigation of power charges normally aggregated on an electric bill, were all charges appropriately accounted in comparing PacifiCorp power costs to those of other utilities?

A1. Yes, the various costs including reactive charges, demand pricing, and custom charges approved by Public Utility Commissions (PUCs) were taken into consideration, with the goal of providing an "apples to apples" comparison.

Q2. In comparing costs with Idaho Power to PacifiCorp, what is the acreage served in the Idaho Power basin compared to the Klamath basin?

A2. The acreage cannot be compared directly as there are complex service territories with other power providers that are not clearly delineated, making it difficult to assess directly. The Kleinschmidt team continues to research information from across the compared basins with direct calls being made to Minedoka project irrigators who did not answer survey requests earlier to gain higher resolution of the data.

Q3. On PacifiCorp bills, do the various "candies" found on the bill appear in other service territories?

A3. Yes, each "adder" to a bill must be closely examined to assess its relevance in the power cost benchmark calculations.

Q4. Does the state line separating California and Oregon matter in calculating power costs?

A4. Yes, each state is governed by a different PUC that assesses rate cases and approves each on a case by case basis.

Q5. How many acres does it take to provide a 2,000 Kw solar plant?

A5. It takes approximately 2.8 acres/1 GWh

Q6. The Kleinschmidt team presented 3 categories of solar powered solutions for generating electricity. Are there other options or categories besides those presented?

A6. The categories presented are driven by PUC approved project sizes. In Oregon, the limit for a new project is 1 MW; for California, the limit increases to 2 MW.

Q7. Can two projects be collocated to get around the power project size limitations?

A7. ?

Q8. What are the timelines for full project buildout for the solar alternatives?

A8. There are examples of smaller scale projects like option 2 that take from 1-2 years including permitting through construction and time scales differ depending on regulatory approvals including zoning exemptions. For alternative 3 (solar plant scale projects), typical project timelines exceed 2 years.

Q9. What are the costs for solar power per kw?

A9. Solar power costs vary depending on the complexity of permitting costs, and other variables. Rooftop solar has been delivered close to $1/kW in select locations, however, some of those locations are subsidized with state grants to reduce customer costs.

Q10. For Alternative Power Measure 5 (Time of Use charges), how is the meter paid for in PacifiCorp territory?

A10. PacifiCorp provides the meter free of charge to the customer.

Q11. Is the time of use charge program limited only to the irrigation season?

A11. Yes, and the season extends from June through the end of August.

https://www.heraldandnews.com/news/local_news/plans-target-irrigation-power-cost-reduction-kwua-hearing-details-water/article_10c01c5b-8c4a-50bc-9615-5dc366fc781a.html

FEATURED TOP STORY

Plans target irrigation power cost reduction: KWUA hearing details water study progress

By KURT LIEDTKE For the Herald and News Sep 11, 2019

1 of 4

Glen DeWillie, vice president of the Kleinschmidt Group engineering team, details progress in an ongoing study costs to irrigators in the Klamath Basin during a public meeting at Klamath Community College on Tuesday.
Photo by Kurt Liedtke

A final draft is still several months away, but on Tuesday Klamath Project irrigators had the opportunity to hear firsthand from agencies involved in drafting potential solutions to reduce growing power costs in the Klamath Basin.

Under the America's Water Infrastructure Act, passed last year thanks to a bipartisan collaborative effort by California and Oregon members of Congress, a collective of representatives from multiple partners involved in an ongoing study about rising power costs presented information and answered questions during a presentation at Klamath Community College. The goal was to present information related to the ongoing Affordable Power Measures Study, which builds on the Comprehensive Agricultural Power Plan (CAPP).

Expired contract

A need for cost reduction has emerged over the past decade following the expiration of a 50-year contract in 2006 that had guaranteed favorable power rates via Pacific Power for on-project irrigators. That long-established power purchase agreement prevented the Klamath Project from accessing Project Use Power – power generated at federally owned facilities such as Bonneville Dam – which has been a contributing factor to rising costs following the agreement's expiration. Following several failed efforts to extend that deal, some irrigators have seen power costs increase as much as 2,000%, according to the Klamath Water Users Association (KWUA).

Individuals present represented groups such as the Bureau of Reclamation (BOR), U.S. Department of the Interior, the Farmers Conservation Alliance, Sustainable Northwest, Pacific Power, Energy Trust of Oregon, and Oregon Tech. The event was presented by KWUA.

Basin study

Per last year's legislation, the study seeks to identify a Power Cost Benchmark (PCB), a "net delivered cost to power after calculating expense," including credits and other factors related to placing water on crops within the Klamath Project. This includes recommended actions, alternative energy options, and public input to reach a point where net delivered power use is equal to or less than the PCB for both near and long-term expectations.

"People know that power rates are a challenge here, but I really think we are going to do something about it," said Paul Simmons, executive director of KWUA. "We find ourselves on an island not having the same opportunities as other areas since the contract expired."

Simmons detailed what has led to this point, from original planning of the Klamath Project over a century ago to dam construction to the contracts and licenses under review. Mike Neumann of the BOR followed, highlighting why competitive pricing is difficult to calculate due to a wide variety of factors, further complicated by what Neumann described as, "a patchwork of overlays of providers in the power cost landscape" that can result in varying expense among neighbors regionally.

Federal power

According to Neumann, tapping into federal reserve power is theoretically feasible, but not practical in execution with minimal savings and no provisions for how to handle the costs in part due to use fees on Pacific Power-owned transmission lines.

To calculate the PCB, five similar reclamation projects in the Pacific Northwest were targeted for cost comparisons. These were the Boise Project, Columbia Basin Project, Minidoka Project, Owyhee Project, and Yakima Project. Based on information compiled from these projects, 10 alternatives were recognized from the CAPP report as potential tools to reduce power costs.

"Our goal is to find achievable measures to reduce your power bill," added Neumann.

Presenting potential cost-reduction measures under consideration in the yet-to-be-completed draft was Lloyd Reed of Lloyd Reed Consulting, part of the Kleinschmidt Group engineering team tasked by BOR for study completion. Reed highlighted possible efforts

including utilization of Pacific Power's net metering programs for shared power generating facilities, Pacific Power's Time-of-Use retail rate programs by limiting power use during designated peak hours of energy consumption, equipment and efficiency upgrades, and investment in renewable energy generation facilities outside of the Upper Klamath Basin.

Potential options

Other potential alternatives include utilizing existing and future Pacific Power load control programs, development of small hydroelectric generation plants, purchasing federal power, open-access power purchases, and proactive participation in Pacific Power's retail rates cost-of-service review.

Additionally, several solar photovoltaic options were discussed, from small structures built on individual farms to shared community facilities and large utility-scale solar plants. There was even discussion about floating solar plants as a potential solution, something which Oregon Tech students recently developed for Upper Klamath Lake.

According to Lloyd, solar photovoltaic user costs for implementation range from $3,000 per kilowatt-hour to as low as $800 per kilowatt-hour, dependent on scale, number of participants, and other varying factors.

Each group present was also granted the opportunity to speak, highlighting various cost-cutting programs and incentives to irrigators related to equipment modernization and water use reduction such as low-flow nozzle and sprinkler systems. Oregon Tech noted the interest of students in seeking partnerships with regional water users for potential projects, from floating solar plants to automated pumping systems.

Sustainable Northwest, an active partner in forging long-term strategies for energy consumption in the Klamath Basin, announced an upcoming energy symposium to be held in Klamath Falls Oct. 17-18 at Oregon Tech to tour facilities and discuss cost-saving measures.

"We thought contract extension was deserved, but it didn't happen, so we got help from Congress to get this launched," added Simmons. "BOR has done a great job managing this project, the team is solid. We are off to a good start, and we are going to keep working."

The draft report is expected to be submitted by late November.

Energy symposium set for October

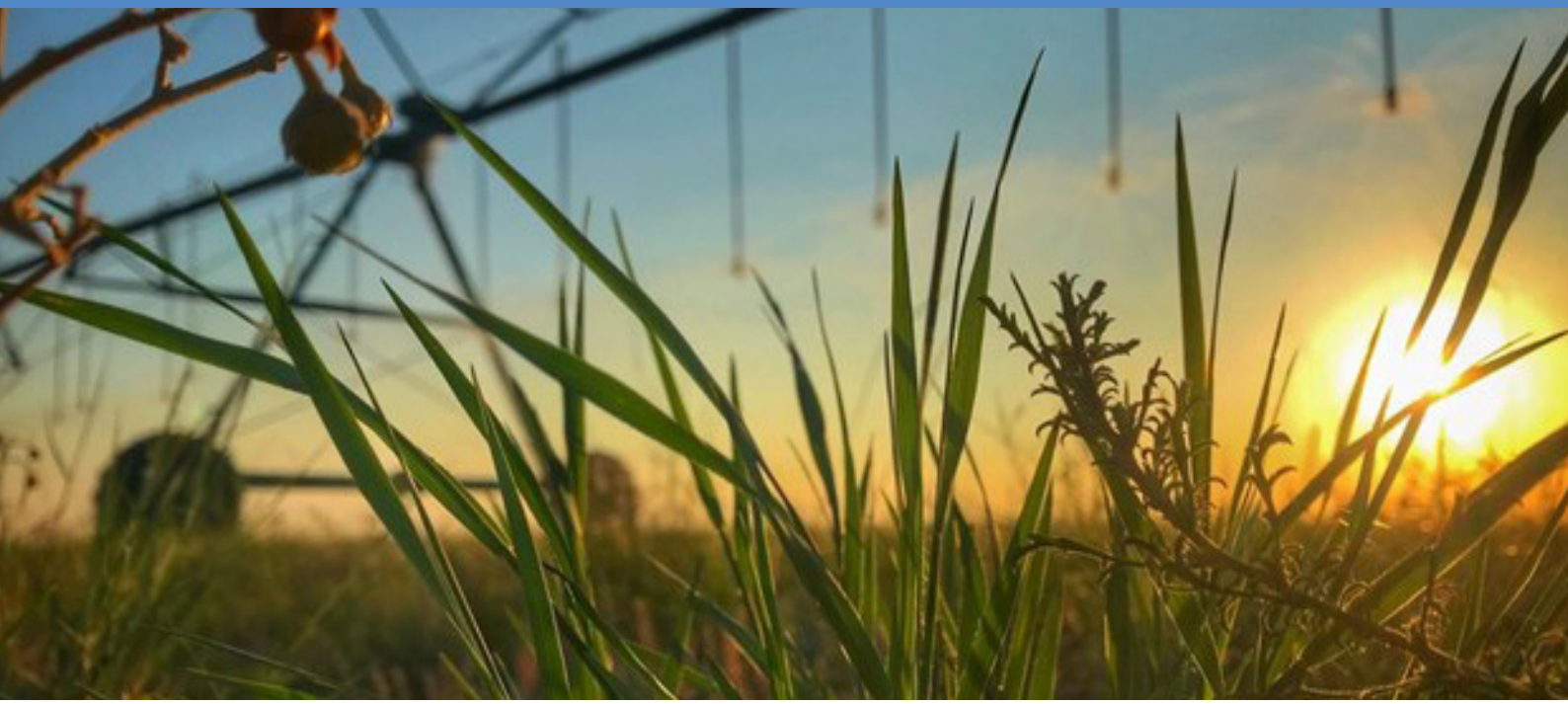
Sustainable Northwest, one of several organizations presenting at Tuesday's hearing, will host a two-day energy symposium in Klamath Falls Oct. 17-18. The Making Energy Work for Rural Oregon 2019 Fall Symposium will include a Modoc Point Irrigation District field tour and social reception on Thursday, Oct. 17. On Friday, Oct. 18 at Oregon Tech, a series of presentations will cover relevant topics such as disaster mitigation and energy storage, the future of farming through mitigation, climate resiliency fostered through the agricultural community, and solar power development. For registration and more information about the fall symposium visit www.sustainablenorthwest.org.

PLANNING FOR REDUCED POWER COSTS FOR IRRIGATION

KWUA Klamath Water Users ASSOCIATION

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION

YOU'RE INVITED TO A PUBLIC MEETING FOR INFORMATION AND INPUT ON IRRIGATION POWER COSTS AND PLANNING FOR COST CONTROL



What: An Informative Update on a Report that Identifies Appropriate Irrigation Power Costs and a Plan to Achieve Them

When: Tuesday, September 10th
9:00am - 12:30pm

Where: Klamath Community College
Conference Center, Building 7
7390 S 6th St, Klamath Falls, OR

AGENDA

9-11:30am Presentation of Preliminary Study Status and Preliminary Findings on Irrigation Power Costs and Cost Reduction
(includes Q&A, and break)

11:30-12:30 Informal Discussion/Booth Event
Various solution providers will be on site to discuss various energy efficiency programs, distributed generation solutions, and other potential energy related solutions to address reducing power costs and power consumption in the Basin

Chelsea Shearer | chelsea@kwua.org | 541.883.6100 | kwua.org

EVENT SPECIFICS

Irrigation power costs in the Klamath Project and Upper Klamath Basin are high. In 2018, the United States Congress addressed this issue in America's Water Infrastructure Act. That law requires the Bureau of Reclamation to prepare a report to Congress that:

1) identifies a "Power Cost Benchmark" based on costs for power paid in similarly situated projects in the Pacific Northwest; and
2) provides a plan for achieving the Power Cost Benchmark.

The components of this report are being referred to as the Power Cost Benchmark (PCB) & Alternative Power Measure (APM) Studies. Reclamation has engaged an expert team of consultants to prepare the report, and KWUA has been meeting regularly with these parties since March.

At the September 10 public meeting, KWUA and Reclamation will present preliminary findings from the PCB and APM Studies and welcome comments and input. There will subsequently be drafts of the report for public review and comment. The September 10 meeting will also present an opportunity to meet with known or potential APM entities such as Farmers Conservation Alliance, Sustainable Northwest, Energy Trust of Oregon, as well as Pacific Power, in regard to energy efficiency programs, distributed generation (solar, hydro, batteries, etc.), and incentive/efficiency programs.

Hosted by:

Klamath Water Users Association (KWUA) is a non-profit, voluntary membership corporation formed in 1953. Its members are Klamath Project contractors who receive water from Upper Klamath Lake and the Klamath River. Membership serves approximately 175,000 irrigated acres.

The United States Bureau of Reclamation (Reclamation) is a federal agency under the U.S. Department of the Interior, which oversees water resource management, specifically as it applies to the oversight and operation of the diversion, delivery, and storage projects that it has built throughout the western United States for irrigation, water supply, and attendant hydroelectric power generation.

Kleinschmidt Associates is an engineering, regulatory and environmental consulting firm that serves North American energy companies and governmental agencies who strive to protect and enhance the natural environment without compromising performance. Kleinschmidt works at the intersection of regulatory requirements, environmental science, and engineering solutions to achieve our client's objectives.

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