AGENDA

Date: February 9, 2017
Time: 10 am - 3 pm
Dial-in/VTU Instructions: Join WebEx meeting
Meeting number (access code): 995 550 838
Join by phone - call-in toll number (US/Canada):
1-650-479-3208
Location: WAPA DSW Regional Office Conference Rooms

Hoover 101 Information Session

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<th>No.</th>
<th>Item Description</th>
<th>Lead</th>
<th>Time</th>
<th>Duration</th>
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<tr>
<td>1.</td>
<td>Welcome</td>
<td>Tina Ramsey</td>
<td>10:00 am</td>
<td>10 min</td>
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<td>2.</td>
<td>Contracts</td>
<td>DSW Contracts &amp; Energy Services</td>
<td>10:10 am</td>
<td>10 min</td>
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<td>3.</td>
<td>Introduction to the Master Schedule &amp; Resource Integration Exchange</td>
<td>DSW Resource Planning</td>
<td>10:20 am</td>
<td>30 min</td>
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<td>4.</td>
<td>Use of DSW Transmission Service For Hoover Deliveries</td>
<td>RMR, CRSP, DSW Transmission Business Unit</td>
<td>10:50 am</td>
<td>10 min</td>
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<td>5.</td>
<td>Break</td>
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<td>11:00 am</td>
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<td>7.</td>
<td>Break for lunch</td>
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<td>12:00 pm</td>
<td>60 min</td>
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<td>8.</td>
<td>Real-time Operations</td>
<td>RMR WALC Operations</td>
<td>1:00 pm</td>
<td>30 min</td>
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<td>9.</td>
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<td>DSW Settlements</td>
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<td>Break</td>
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<td>Rate Setting</td>
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<td>12.</td>
<td>Your Invoice &amp; Making Payment</td>
<td>DSW Power Billing &amp; Accounting</td>
<td>2:35 pm</td>
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<td>13.</td>
<td>Wrap Up</td>
<td>Tina Ramsey</td>
<td>2:55 pm</td>
<td>5 min</td>
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 Agenda

- Introduction, Roles, Overview & Purpose
- Contracts & Energy Services
- Resource Planning
- Transmission Service
- Capacity & Energy Prescheduling
- Real-time Operations
- Settlement & Energy Accounting
- Rates
- Power Billing
- Next Steps, Important Dates, Points of Contact
Introduction

• Logistics
• Meeting Management
  • WebEx
  • Microphone
  • Questions
  • Breaks & Lunch
Roles and Responsibilities of WAPA

• Western Area Power Administration (WAPA) shall operate, maintain, replace, and repair the Federal transmission system (electric delivery) to deliver capacity and energy from Hoover Powerplant

• Schedule, deliver, and measure power to the Contractor

• Calculate costs, set rates and charges to recover costs

• Account for power deliveries, render bills, and maintain financial integrity of the project
Product Overview

• Long-term contingent capacity with associated firm energy
• Highly dependent on the elevation of Lake Mead
• If power is insufficient to support contractor capacity entitlements, each contractor capacity entitlement is reduced on a pro-rata basis to align with the available capacity at any given time
Purpose

• Implementation phase
• Preparation for successful October 1, 2017
• Provide contractor support & education
• Introduction to WAPA activities & processes
• Introduction to WAPA staff, points of contact
• Future learning opportunities
Customer Portal

• Planned to be made available for Contractors & Scheduling Entities to log in and view updated Hoover scheduling and accounting information
• Will also be used to accept separate capacity schedules required for static and dynamic sub-hourly energy scheduling
• More to come on portal as information becomes available
• Hope to provide “One Stop Shop” for Contractors & Scheduling Entities
• Feedback and ideas are welcome
Contracts & Energy Services

Patricia Weeks
Contracts & Energy Services
Lead
Contract Update

• Electric Service Contract (ESC)
  • Reallocation of 179 kW
  • Exhibit A and Attachment 1 & 2

• Implementation Agreement
  • Signature pages and Committee Member pages

• Benefit Arrangement Agreements (Native American Tribes only)
  • Benefit Partner (Economic Benefit)
  • Agreements signed NLT June 2017
Contracts Questions

Patricia Weeks
Contracts and Energy Services Lead
weeks@wapa.gov
(602) 605-2473

POST2017BCP@wapa.gov
Resource Planning

Xavier Gonzalez
Resource Planning Engineer
Resource Planning

Overview

• What is the Hoover Master Schedule?
• Customer Portal

• What is the Resource Integration Exchange Program (RIE)?
Hoover Master Schedule

What is a Hoover Master Schedule?

• A 16-month forecast of Hoover Capacity & Energy on a Fiscal Year (FY) Basis
• Fiscal Year (FY) = Water Year (WY) 10/1 – 9/30

Why a Hoover Master Schedule?

Section 6.10 of the Electric Service Contract (ESC) requires WAPA to provide two drafts & a final Master Schedule to the contractors at specified dates:

• Draft 1 due on March 1st prior to the start of the new FY
• Draft 2 due on May 1st prior to the start of the new FY
• Final Master Schedule due on June 1st prior to the start of the new FY
What does a Hoover Master Schedule contain?

- Bureau of Reclamation 17-Month Operating Schedule for Hoover Powerplant
- Hoover Energy Entitlement Master Schedule for Current FY 2017
- Hoover Contract Schedule A & Schedule B Capacity for the Remainder of Current FY 2017
- Hoover Energy Entitlement Master Schedule for New FY 2018
- Hoover Contract Schedule A, Schedule B & Schedule D Capacity for the New FY 2018
### Hoover Master Schedule

**Bureau of Reclamation 17 Month Operating Schedule for Hoover Powerplant:**

#### HOOVER DAM 17-MONTH OPERATING SCHEDULE FINAL

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<th>FISCAL YEAR&lt;sup&gt;1&lt;/sup&gt;</th>
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Hoover Master Schedule (cont.)

Hoover Energy Entitlement Master Schedule for Current FY 2017

Current FY 2017 contractors will receive the usual monthly reports:

- Actual scheduled energy through Jan (draft 1) or Apr (final)
- Forecasted energy for the remainder of the FY
Hoover Master Schedule (cont.)

Hoover Contractor Capacity for Current FY 2017

Current FY 2017 contractors will receive the usual monthly reports:

• Forecast of capacity allocations for the remainder of FY 2017
### Hoover Master Schedule (cont.)

### Hoover Energy Entitlement Master Schedule for New FY 2018

#### Contractor
- [ ] Aqua Caliente
- [ ] Anza Elec. Coop
- [ ] Arizona Power Authority
- [ ] Augustine Band of Cahuilla Indians
- [ ] Bishop Paiute Tribe
- [ ] Cabazon Band Mission Indians
- [ ] CA Dept. of Water Resources
- [ ] Chemehuevi Indian Tribe
- [ ] City of Anaheim
- [ ] City of Azusa
- [ ] City of Banning

#### Scheduling Entity
- [ ] ACES Power
- [ ] Arizona Power Authority
- [ ] Augustine Band of Cahuilla Indians
- [ ] Bishop Paiute Tribe
- [ ] Cabazon Band Mission Indians
- [ ] California Dept. of Water Resources
- [ ] Chemehuevi Indian Tribe
- [ ] City of Anaheim
- [ ] City of Azusa
- [ ] City of Pasadena
- [ ] City of Riverside

#### Balancing Authority
- [ ] CAISO
- [ ] LADWP
- [ ] NVE
- [ ] SRP
- [ ] WALC

### Contractor Available Energy

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### Contractor: Arizona Power Authority

#### Scheduling Entity: SRP

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### Contractor: Arizona Power Authority

#### Scheduling Entity: ACES Power

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<td>November 2017</td>
<td>37,333</td>
</tr>
<tr>
<td>December 2017</td>
<td>35,321</td>
</tr>
<tr>
<td>January 2018</td>
<td>38,329</td>
</tr>
<tr>
<td>February 2018</td>
<td>45,277</td>
</tr>
<tr>
<td>March 2018</td>
<td>55,837</td>
</tr>
<tr>
<td>April 2018</td>
<td>65,050</td>
</tr>
<tr>
<td>May 2018</td>
<td>56,074</td>
</tr>
<tr>
<td>June 2018</td>
<td>49,997</td>
</tr>
<tr>
<td>July 2018</td>
<td>48,340</td>
</tr>
<tr>
<td>August 2018</td>
<td>42,455</td>
</tr>
<tr>
<td>September 2018</td>
<td>41,879</td>
</tr>
<tr>
<td>Total</td>
<td>550,567</td>
</tr>
</tbody>
</table>
### Hoover Master Schedule (cont.)

### Capacity for New FY 2018

#### Contractor Available Capacity

<table>
<thead>
<tr>
<th>Units</th>
<th>10/1/2017 HE 01</th>
<th>10/31/2017 HE 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVR A1</td>
<td></td>
<td>101</td>
</tr>
<tr>
<td>HVR A2</td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>HVR A3</td>
<td></td>
<td>85</td>
</tr>
<tr>
<td>HVR A4</td>
<td></td>
<td>84</td>
</tr>
<tr>
<td>HVR A5</td>
<td></td>
<td>92</td>
</tr>
<tr>
<td>HVR A6</td>
<td></td>
<td>97</td>
</tr>
<tr>
<td>HVR A7</td>
<td></td>
<td>96</td>
</tr>
<tr>
<td>HVR A8</td>
<td></td>
<td>42</td>
</tr>
<tr>
<td>HVR A9</td>
<td></td>
<td>43</td>
</tr>
<tr>
<td>HVR N1</td>
<td></td>
<td>95</td>
</tr>
<tr>
<td>HVR N2</td>
<td></td>
<td>96</td>
</tr>
<tr>
<td>HVR N3</td>
<td></td>
<td>103</td>
</tr>
<tr>
<td>HVR N4</td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>HVR N5</td>
<td></td>
<td>101</td>
</tr>
<tr>
<td>HVR N6</td>
<td></td>
<td>95</td>
</tr>
<tr>
<td>HVR N7</td>
<td></td>
<td>101</td>
</tr>
<tr>
<td>HVR N8</td>
<td></td>
<td>101</td>
</tr>
</tbody>
</table>

#### Total Available

1,536

#### Total Unavailable

0

#### Total Capacity

1,536

---

### Hoover 101 – Resource Planning
Customer Portal (as it pertains to Resource Planning)

- Contractors & Scheduling Entities can view & download Draft & Final Hoover Master Schedules
- View & download updated Hoover Master Schedules
Resource Integration Exchange Program

What is the Resource Integration Exchange (RIE) Program?

- The voluntary process of mutually agreeing to a firm monthly exchange of energy among individual participants of the Boulder Canyon Project, the Parker-Davis Project (P-DP) participants, and between the two projects.

Why an RIE Program?

- Attachment 4.IA of the Restated & Amended BCP Implementation Agreement requires WAPA to provide the multiproject benefits of exchange energy through resource integration of Western Area Lower Colorado (WALC) federal projects, inclusive of internal energy exchanges among the BCP participants, and among the P-DP participants.
Resource Integration Exchange Program (cont.)

How to Participate in the RIE Program

• Each contractor will receive a request form with Draft 1 of the Hoover Master Schedule on or before March 1\textsuperscript{st}

• The Draft 1 Master Schedule allocation will be filled in for each contractor

• If the contractor decides to participate, the Proposed Allocation column is filled in and the form is returned to WAPA by the stated deadline

• The Proposed Allocation annual total can not exceed the Draft 1 Master Schedule allocation annual total

• The Proposed Allocation monthly energy can not exceed 100% load factor
### Boulder Canyon Project

#### Resource Integration Exchange Program Customer Request Form

<table>
<thead>
<tr>
<th>Month</th>
<th>1st Draft Master Schedule Allocation</th>
<th>Proposed Allocation</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>October-17</td>
<td>31,476</td>
<td>41,516</td>
<td>10,040</td>
</tr>
<tr>
<td>November-17</td>
<td>33,320</td>
<td>43,413</td>
<td>10,093</td>
</tr>
<tr>
<td>December-17</td>
<td>29,129</td>
<td>44,689</td>
<td>15,560</td>
</tr>
<tr>
<td>January-18</td>
<td>41,710</td>
<td>35,547</td>
<td>(6,163)</td>
</tr>
<tr>
<td>February-18</td>
<td>47,327</td>
<td>30,033</td>
<td>(17,294)</td>
</tr>
<tr>
<td>March-18</td>
<td>58,833</td>
<td>40,276</td>
<td>(18,557)</td>
</tr>
<tr>
<td>April-18</td>
<td>63,540</td>
<td>34,627</td>
<td>(28,913)</td>
</tr>
<tr>
<td>May-18</td>
<td>54,401</td>
<td>39,865</td>
<td>(14,536)</td>
</tr>
<tr>
<td>June-18</td>
<td>47,553</td>
<td>43,825</td>
<td>(3,728)</td>
</tr>
<tr>
<td>July-18</td>
<td>45,392</td>
<td>64,690</td>
<td>19,298</td>
</tr>
<tr>
<td>August-18</td>
<td>39,656</td>
<td>63,723</td>
<td>24,067</td>
</tr>
<tr>
<td>September-18</td>
<td>38,431</td>
<td>48,564</td>
<td>10,133</td>
</tr>
</tbody>
</table>

**Annual Total**: 530,768

---

**Hoover 101 – Resource Planning**
Resource Integration Exchange Program (cont.)

Stage 1 Exchanges
• A Stage 1 exchange is simply an exchange of energy within the respective projects (BCP with BCP contractors and P-DP with P-DP contractors)
• WAPA will make every effort to accommodate matching Stage 1 requests

Stage 2 Exchanges
• Once WAPA has matched Stage 1 requests to the maximum extent possible, an effort is made to find offsetting requests between BCP and P-DP contractors
• A Stage 2 exchange is an effort to further provide contractors added value
• The final revised allocations are reflected in the contractor’s P-DP Exhibit A and/or the BCP Final Hoover Master Schedule
The RIE program only works if there are offsetting energy requests. For example:

- If a contractor wants to reduce their allocation in February and increase their allocation in June, there must be another contractor or contractors who are willing to do just the opposite in those same months.

- It is rare that offsetting energy allocation requests match perfectly.

- Therefore, partial energy exchanges are granted.

- Some contractors are denied their requests because there are absolutely no offsetting requests and some contractors choose not to participate at all.
## Resource Integration Exchange Program (cont.)

**Sample RIE Results (kWh): Sent out 1\textsuperscript{st} part of April**

<table>
<thead>
<tr>
<th>FY2018 RIE</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Winter Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUSTOMER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Original Allocation</td>
<td>7,817,000</td>
<td>7,566,000</td>
<td>7,817,000</td>
<td>7,817,000</td>
<td>7,058,674</td>
<td>38,075,674</td>
</tr>
<tr>
<td>Exchange Requests</td>
<td>4,482,674</td>
<td>7,200,000</td>
<td>9,107,000</td>
<td>10,322,000</td>
<td>6,964,000</td>
<td>38,075,674</td>
</tr>
<tr>
<td>Exch. Requests Granted</td>
<td>4,482,674</td>
<td>7,200,000</td>
<td>7,895,611</td>
<td>9,208,389</td>
<td>6,964,000</td>
<td>35,750,674</td>
</tr>
<tr>
<td>Diff: Original vs Granted</td>
<td>(3,334,326)</td>
<td>(366,000)</td>
<td>78,611</td>
<td>1,391,389</td>
<td>(94,674)</td>
<td>(2,325,000)</td>
</tr>
<tr>
<td>Diff: Granted vs Requests</td>
<td>-</td>
<td>-</td>
<td>(1,211,389)</td>
<td>(1,113,611)</td>
<td>-</td>
<td>(2,325,000)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Summer Total</th>
<th>Summer &amp; Winter Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>15,709,000</td>
<td>15,166,000</td>
<td>15,709,000</td>
<td>15,166,000</td>
<td>15,709,000</td>
<td>15,709,000</td>
<td>15,165,003</td>
<td>108,333,003</td>
<td>146,408,677</td>
</tr>
<tr>
<td>18,942,000</td>
<td>4,726,003</td>
<td>10,240,000</td>
<td>14,258,000</td>
<td>21,297,000</td>
<td>19,840,000</td>
<td>19,030,000</td>
<td>108,333,003</td>
<td>146,408,677</td>
</tr>
<tr>
<td>18,942,000</td>
<td>15,166,000</td>
<td>15,709,000</td>
<td>15,709,000</td>
<td>15,709,000</td>
<td>15,165,003</td>
<td>110,658,003</td>
<td>146,408,677</td>
<td>146,408,677</td>
</tr>
<tr>
<td>3,233,000</td>
<td>-</td>
<td>-</td>
<td>(908,000)</td>
<td>-</td>
<td>-</td>
<td>2,325,000</td>
<td>-</td>
<td>2,325,000</td>
</tr>
<tr>
<td>-</td>
<td>10,439,997</td>
<td>5,469,000</td>
<td>-</td>
<td>(5,588,000)</td>
<td>(4,131,000)</td>
<td>(3,864,997)</td>
<td>2,325,000</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SRP</th>
<th>Original Allocation</th>
<th>Exchange Requests</th>
<th>Exch. Requests Granted</th>
<th>Diff: Original vs Granted</th>
<th>Diff: Granted vs Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>108,333,003</td>
<td>146,408,677</td>
<td>110,658,003</td>
<td>2,325,000</td>
<td>0</td>
</tr>
</tbody>
</table>

**Hoover 101 – Resource Planning**
Resource Planning Questions

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(602) 605-2678

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Resource Planning & Settlements Manager
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Transmission Service

John Steward
Transmission Business Unit Manager
for DSW, CRSP & RMR
Transmission Service

- WAPA offers three types of long-term firm transmission service
  - Non-OATT Firm Transmission Service (FTS)
  - Open Access Transmission Tariff (OATT), Point to Point Service (PTP)
  - OATT, Network Integrated Transmission Service (NITS)
- WAPA sells long-term firm transmission on a first come, first serve basis to wholesale customers
- Long-term transmission is defined as having transmission rights for a minimum of 12 consecutive months
Transmission Service

- FTS Provisions
  - No cap on the maximum duration of service
  - Minimum of one year of continuous service is required
  - Transmission agreements may terminate if certain circumstances arise and both parties agree
  - Agreements permit transmission to be reserved on a kilowatt basis
  - Transmission capacity is capped at the allocated amount of Hoover generation received
  - Revisions to capacity amount or change of delivery location may be submitted to Power Marketing for consideration
  - Transmission Agreement includes ancillary services
Transmission Service

• FTS Provisions (continued)
  • Transmission service is provided under Attachment K in WAPA’s OATT
  • Modifications of receipt or deliver points is permitted only on a long-term basis (no redirects)
  • Rollover rights identified in the agreement
  • Transmission service billing is based upon reserved capacity amount
Transmission Service

• Point-to-Point Service
  • No cap on the maximum duration of service
  • A minimum of one year of continuous service is required
  • Termination is a set date; therefore, there are no “off-ramp” provisions in the agreement
  • Capacity reservations are in whole megawatts
  • $3,500 non-refundable processing fee
  • Modifications to points of receipt or delivery can be done on either a real-time or long-term basis (This is also known as a redirect)
  • Transmission may be resold to a third party for any duration while the agreement is still active
  • Transmission customer submits request on the Open Access Same-time Information System (OASIS)
Transmission Service

• NITS:
  • No cap on the maximum duration of service
  • A minimum of one year of continuous service is required
  • Network customer must submit their annual load forecasts by March 15
  • Customer may remove network load with advance notice to WAPA
  • Capacity reservations are in whole megawatts
  • $3,500 non-refundable processing fee
  • Billed on net average meter load
# Transmission Service Table

<table>
<thead>
<tr>
<th>Provision</th>
<th>FTS</th>
<th>OATT PTP</th>
<th>OATT NITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is Rollover Available?</td>
<td>Yes. Rollover is available by contacting Power Marketing reps.</td>
<td>Yes, provided the transmission service is a minimum of 5 years duration.</td>
<td>Yes. Customer submits its intent to renew NITS agreement within one of termination.</td>
</tr>
<tr>
<td>Is Redirect Available?</td>
<td>No. Changes can be made to an agreement, but require analysis.</td>
<td>Yes, customer may redirect its transmission anytime within the posted Business Practice time lines. Ideal for pre or real-time transactions.</td>
<td>No, however customer may designate a non-network resource with a very high level priority to serve network load.</td>
</tr>
<tr>
<td>Are there “Off-Ramps”?</td>
<td>Yes. Both parties must agree to it.</td>
<td>No. Once an agreement is signed customer is locked into transmission service for that duration.</td>
<td>Yes. A customer may notify Western that they want their network load to be withdrawn.</td>
</tr>
</tbody>
</table>

**Hoover 101 – Transmission Service**
## Transmission Service Table

<table>
<thead>
<tr>
<th>Provision</th>
<th>FTS</th>
<th>OATT PTP</th>
<th>OATT NITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can I resell Transmission to 3rd party?</td>
<td>No.</td>
<td>Yes.</td>
<td>No. NITS transmission is intended to serve load.</td>
</tr>
<tr>
<td>How am I billed?</td>
<td>Customer will be invoiced based upon capacity granted.</td>
<td>Customer will be invoiced based upon capacity granted.</td>
<td>Customer will be invoiced based upon usage at the time of the system peak.</td>
</tr>
<tr>
<td>Capacity reservation size?</td>
<td>Capacity may be reserved in kilowatts.</td>
<td>Capacity reserved must be in whole megawatts.</td>
<td>Capacity may be reserved in kilowatts.</td>
</tr>
</tbody>
</table>
Transmission Questions

John Steward
Transmission Business Unit Manager
steward@wapa.gov
(602) 605-2774
Capacity & Energy Prescheduling

John Paulsen
Energy Management & Marketing Office (EMMO)
Capacity & Energy Prescheduling

• Available Capacity
• Hoover Energy (Target)
• Firming
• Scheduling
• Customer Portal
Hoover Capacity

• Capacity – The maximum level of electric power that can be supplied at a point in time, measured in Megawatts (MW) or Kilowatts (kW)

• Contingent Capacity
  • The aggregate of Schedule A, B, and D Contingent Capacity as listed in Attachment 1 to the ESC
  • Hoover’s maximum rating is 2,074 MW when Lake Mead is full and all 17 units are operating optimally

• Available Capacity
  • Lower lake levels have reduced Available Capacity to the current rating of 1,610 MW; future lake levels will affect Available Capacity
  • Taking units out of service also reduces Available Capacity
  • Each contractor receives its share of Available Capacity based on their percentage of Contingent Capacity. Available Capacity fluctuates with what is available at any given time
Available Capacity

- Contractors Schedule A, B, & D Contingent Capacity Percentage is assigned to Scheduling Entities to schedule
  - A Scheduling Entity is assigned by each contractor and coordinates directly with WAPA on all scheduling matters
- Scheduling Entities will coordinate with WAPA on where they will schedule the percentages assigned to them based on host Balancing Authority (BA), Transmission Arrangements or other considerations
  - The term for these rolled up percentages will be “Scheduling Definition”
- Scheduling Definitions will be the basis for hourly Available Capacity which can be scheduled

<table>
<thead>
<tr>
<th>Example:</th>
<th>%</th>
<th>BA:</th>
<th>SE:</th>
<th>SD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor A</td>
<td>25%</td>
<td>APS</td>
<td>SE1</td>
<td>50%</td>
</tr>
<tr>
<td>Contractor B</td>
<td>25%</td>
<td>APS</td>
<td>SE1</td>
<td></td>
</tr>
<tr>
<td>Contractor C</td>
<td>25%</td>
<td>SRP</td>
<td>SE2</td>
<td>25%</td>
</tr>
<tr>
<td>Contractor C</td>
<td>25%</td>
<td>WALC</td>
<td>SE3</td>
<td>25%</td>
</tr>
</tbody>
</table>
Available Capacity - Rounding

- Total Hoover Available Capacity is scheduled in whole MWs equal to the plant output
  - Scheduling definitions based on kW shares need to be rounded to the nearest MW
- Currently, rounding is a minimal concern based on limited number of contractors and a minimum capacity share of no less than 2,000 kW
- Rounding was identified early on as a matter that would need to be addressed in the implementation of the new contracts
- Argonne National Labs coordination
  - Integerizer Product - Tracks the remainder from rounding and uses criteria such as amount of remainder and or the relative value of scheduling hours to decide how to correct for rounding differences
  - Used originally in WAPA’s Sierra Nevada Region
  - Argonne is working on adapting for Hoover
Available Capacity - Notifications

- Scheduling Definition Available Capacity will be published as output capability as the plant changes
  - Scheduling Definition Available Capacity for month ahead planning will not be hourly but will show the round up and round down values for the applicable output capability scenarios
  - Scheduling Definition Available Capacity will be published hourly using Integerizer on a Pre-schedule basis
    - Pre-Schedule is the coordination of energy scheduling for the next day(s)
  - Output Capability changes in real time will also need to be published hourly
    - Options for Real Time Scenarios still being worked out
      - Reliability concerns must be balanced with maintaining the rounding correction fairness we are looking for from the Integerizer
Hoover Energy

• Energy – The amount of electricity generated and delivered during a specified period of time, Megawatt hours (MWh) or Kilowatt hours (KWh)

• Firm Energy – Energy sales with assured delivery pending unexpected/uncontrollable events

Firm Energy Examples:
• While Hoover’s firm energy obligation is 4,527,001 MWh annually, actual gross generation has averaged 3,821,442 MWh over the last 5 fiscal years

• Each contractor receives its Contractor Available Energy based on their percentage of Firm Energy as listed in Attachment 2 to the ESC

• Based on contractor request, WAPA will procure “firming energy” to fulfill its firm energy commitments, at the expense of the requesting contractor
**Hoover Energy – Target Calculation**

$$\text{CAE} = (P \times B) - A + M + C + D$$

- **CAE** = Contractor’s Available Energy for the applicable period
- **P** = Contractor’s percentage of total Schedule A, Schedule B, and Schedule D Firm Energy
- **B** = Projected Hoover Firm Energy generation for the applicable period, including transformer and transmission line losses and projected integration with the Parker-Davis Project
- **A** = Adjustments from previous month’s accounting process including schedule deviation and ML and SL assessments
- **M** = ML and SL return energy
- **C** = Excess Energy for the applicable period available to the Contractor in accordance with Schedule C of the Contract
- **D** = Contractor’s requested Firming Energy purchase in accordance with subsection 6.9.4 of the ESC which are scheduled and accounted for separately from energy deemed to be from Hoover Powerplant
Hoover Energy – Target Requirements

• Monthly Energy Excursions
  • Scheduling Entities must take within +/- 2% of monthly Contractor’s Available Energy
  • +/- 5% can be requested and will be granted or denied based on prevailing water conditions

• Sub-Monthly Energy Requirement
  • Bureau of Reclamation will divide months into 3-5 periods (Mon-Sun exclusive of first & last periods)
  • 1st period requirement is within +/- 2%
  • Subsequent periods requirement is +/- 5%

• Energy scheduled in excess of prescribed percentages will be billed at 10 times the forecast Energy & Capacity rate and will include applicable Lower Colorado River Basin Development Fund (LCRBDF) charges

• Energy not scheduled outside of prescribed percentages will be forfeited on a subsequent Target
Hoover Energy – Firming

Definition Section 5.34:

**Firming Energy:** Supplemental energy (with or without capacity) purchased by Western at the request of a Contractor to meet any deficiency in Firm Energy under Section 105 (a) (3) of the Hoover Power Plant Act of 1984, as amended by the Hoover Power Allocation Act of 2011.

Section 6.9.4:

**Firming Purchases:** At the request of the Contractor and at the Contractor’s expense, Western shall purchase Firming Energy to meet that Contractor’s Firm Energy deficiency. Such firming purchases shall be subject to a prior written agreement between the Parties that requires the Contractor to advance fund firming purchases and contains terms acceptable to both Parties. Under such agreements, Western shall make other purchases of capacity and/or energy to increase the Contractor’s energy deliveries up to one-hundred (100) percent capacity factor of the Contractor’s Contingent Capacity (Supplemental Firming Purchases) if requested by the Contractor. The price to the Contractor for Firming Energy and Supplemental Firming Purchases shall not include the LCRBDF Charge.
Scheduling (e-TAGs)

- All energy transactions are communicated in the form of an e-Tag for:
  - Electronic means of communicating transactions
  - Contains description of where energy comes from (generator) and where it is consumed (load)
  - Transmission purchased to get from generator to load is also listed
    - Open Access Same Time Information System (OASIS)
      - Assignment Reference Number (A-Ref)
  - Entities listed as either parties to the transaction or providing reliability along the path
    - Purchasing/Selling Entity (PSE)
    - Balancing Authorities (BA)
      - Western Area Lower Colorado (WALC)
    - Transmission Provider (TP)
  - Scheduling Entities will be handling the details of this process
Scheduling (e-Tag Requirements)

- e-Tag requirements - section 7.9 of Metering & Scheduling Instructions (MSI)
  - DSWM01 (DSW Merchant) will be the PSE assigned to the Generator
    - e-Tag approval rights to monitor Available Capacity Usage
  - Physical segment 1 will be Mead230 to Mead230 with WALC as the TP
    - This transmission allocation will be equal to hourly Available Capacity and will be the basis for approval or denial by DSW Merchant
  - Physical Segment 2 will begin with Mead230 and then list individual transmission arrangements for delivery of Hoover Power
Scheduling Coordination

• Contractor’s Available Energy can be scheduled up to Available Capacity hourly per Scheduling Definition on a Pre-schedule and Real Time/Hourly Basis
  • Static Energy Schedules will submitted via e-Tag in up to 15 minute increments subject to standard e-Tag submittal deadlines
    • Less than full hour scheduling will require a separate capacity schedule
  • Dynamic Energy Schedules will be communicated via data link in the form of an energy request in up to 4 second increments
    • All dynamic schedules will require a separate capacity schedule
    • All dynamic schedules will require a projection of energy usage
    • A Dynamic type e-Tag adjustment will be submitted after the hour is over with the full hour integration of energy requests accepted by WAPA
Customer Portal

• Planned to be made available for Contractors & Scheduling Entities to log in and view updated Hoover scheduling and accounting information
  • Projected Available Capacity & Contractor’s Available Energy out to the most current Master Schedule fiscal year(s)
  • Available Capacity by Scheduling Entity for current and pre-schedule days
  • Contractor’s Available Energy by period for current and next month when published
  • Prior month accounting and billing reports
  • Annual accounting and other relevant data
• Will also be used to accept separate capacity schedules required for static and dynamic sub-hourly energy scheduling
• More to come on portal as information becomes available
• Hope to provide “One Stop Shop” for Contractors & Scheduling Entities
• Feedback and ideas are welcome
Prescheduling Questions

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Real-time Operations

Kim Clark
WALC Reliability & Balancing

Craig Halber
Transmission Scheduling
Overview

• Balancing Authority Role
• Bureau of Reclamation Coordination
• Available Capacity Changes
• Static Scheduling
• Dynamic Scheduling
• Ancillary Services
Balancing Authority Role

- Western Area Lower Colorado (WALC) Balancing Authority (BA)
  - BA areas are defined by metered boundaries
  - WALC’s area includes areas in Arizona, Nevada, California and New Mexico

- Meet NERC/WECC/NAESB/FERC/DOE/SRSG Reliability & Balancing Standards

- Implement Operating Procedures and WAPA Agreements in Real-Time
Balancing Authority Role

Western Interconnection Balancing Authorities (38)
Bureau of Reclamation Coordination

- Planned & Unplanned Outages & Returns
- Rating Changes
- Capacity & Generation Scheduling
- Automatic Generation Control
- Lake levels & water release issues
- Emergency Operations
- NERC Compliance & Reporting
Available Capacity Changes

• Available Capacity is affected by Unit Outage and Rating changes

• Planned outages
  • Transmission or generation related
  • Outage notices comply with the Peak Reliability Outage Coordination Procedure

• Unplanned Outages
  • Real-time notifications
  • Capacity and energy schedule changes

• Rating Changes
Static Scheduling

• Normal type e-Tag per Interchange Standards
• Energy Schedules
• Capacity Schedules
  • Separate capacity schedules required for sub-hourly schedules
  • Must have sufficient firm transmission
• Capacity & Energy Schedules must not exceed Available Capacity
• Sum of tagged energy determine deliveries
• Communication with WALC TSS Dispatch
• Adjustments & Curtailments
Dynamic Scheduling

• Dynamic type e-Tags
• Capacity Schedules
  • Hourly changes per Metering Scheduling Instructions
• Energy Schedules
  • Dynamic energy requests and accepted values
  • Integration of Accepted Energy is e-Tag delivery
  • Must have sufficient firm transmission
• Dealing with failures & interruptions
• Communication with WALC AGC Dispatch
Dynamic Scheduling (cont.)

• Establishing a Dynamic Schedule
  • Dynamic Schedules may be established by first requesting WAPA to perform an evaluation
  • WAPA will evaluate the project after funding is received
  • If the Contractor and WAPA agree, WAPA will implement the project to establish the dynamic
Ancillary Services

• Operating Reserve – Spinning
  • Generation *synchronized* to the system and fully available to respond in accordance with applicable regulatory standards and requirements
  • Provided through hourly scheduled capacity

• Operating Reserve – Supplemental
  • Generation **capable of being synchronized** to the system that is fully available to respond in accordance with applicable regulatory standards and requirements
  • Provided through hourly scheduled capacity subject to Metering Scheduling Instructions
Ancillary Services (cont.)

- Regulation
  - Regulation service, including ramping up or ramping down, is provided dynamically by WAPA in response to a digital control signal
Real-time Operations Questions

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WALC TSS Technical Lead
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(602) 605-2888
Settlement/Energy Accounting

Rose Statler
Public Utilities Specialist
Settlements Technical Lead
Settlement/Energy Accounting

Overview

• Interaction with Settlements
• Customer Portal
• Capacity & Schedule Checkouts
• Unloaded Synchronized Generation ($S_L$) & Motoring ($M_L$)
• Monthly Accounting Report
• Deemed Delivered Report
• Annual Energy Accounting Report
Settlement/Energy Accounting

• The Settlements department is the office which contractors will interact with for all things after-the-fact

• Perform Energy & Capacity Schedule Checkouts

• What is a Schedule and Capacity Checkout?
  • Verification that what you believe you have scheduled in both capacity and energy is what was really tagged/scheduled on an hourly basis
  • Schedule checkouts are done in Mountain Standard Time regardless of contractor’s time zone

• Why?
  • To keep the contractors aware of their scheduling totals throughout the month
  • To give time to address and research any found discrepancies
  • To inform contractors of any period or monthly excursions from the Target
  • To enhance the month end accounting process

• Produce monthly & annual energy accounting data
Customer Portal

• Using the planned customer portal we envision that contractors will be able to:
  • Agree to or dispute energy & capacity schedule values
  • View, download &/or print monthly energy accounting reports
  • View, download &/or print annual energy accounting reports
  • View, download &/or print generation data
  • View, download &/or print other pertinent data
  • More to come on the portal as information becomes available
  • Feedback and ideas are welcome
Timetable of Energy & Capacity Schedule Checkouts

• Daily – Dynamic Energy Schedule
  • Contactor/Scheduling Entity, using the customer portal, agrees to or disputes the dynamic accepted values
  • Ensure e-Tag matches the accepted values and make adjustments to e-Tags if necessary (7 day limit on dynamic e-Tag adjustments)

• Weekly – Energy & Capacity Schedule checkouts
  • Contactor/Scheduling Entity, using the customer portal, agrees to or disputes the month to date Energy & Capacity schedules

• Monthly – Energy & Capacity Schedule checkouts
  • Contactor/Scheduling Entity, using the customer portal, agrees to or disputes monthly Energy & Capacity schedules
Timetable of Energy & Capacity Schedule Checkouts (cont.)

• In the event the customer portal is not available Settlements will continue current practice
  • Check daily and inform contractors/scheduling entities of any mismatches between the tag and accepted energy schedule for dynamic schedules
  • Distribute reports weekly which contain month to date energy and capacity schedule details for each contractor/scheduling entity and request confirmation
  • Distribute reports monthly which contain month-to-date energy and capacity schedule details for each contractor/scheduling entity and request confirmation
Unloaded Synchronized Generation and apportionment ($M_L$ & $S_L$)

- Definitions
  - $S_L$ - Unloaded Synchronized Generation: The difference between scheduled Synchronized Generation and Loaded Synchronized Generation
  - $M_L$ – Motoring: Total of the generating units in a motoring mode

- Apportionment
  - Apportioned to each contractor as required by the ESC, Exhibit D
  - Applies to contractors whose scheduled capacity profile differs from the energy profile
    - Contractors who schedule dynamically
    - Contractors who schedule sub hourly

- General Definition:
  - Monthly Capacity Scheduled – Monthly Energy Scheduled = Reserves
  - Contractor’s Reserves / Total Reserves * Total $M_L$ or Total $S_L$
Monthly Energy Accounting

- Includes:
  - Target Energy
  - Energy Delivered
  - Delta between the Target Energy and Energy Delivered
  - % Over or Under Target
  - Overrun Megawatts subject to the 10 times charges,
    - Over Deliveries of energy outside 2% or up to 5%, if approved, of the Target Schedule
  - $L$ Assessments & Returns
    - Returns are the assessments from 2 months past
  - $S_L$ Assessments & Returns
    - Returns are the assessments from 2 months past
  - Underrun Deviations
    - Energy within the -2% or up to -5% if approved
  - Overrun Reductions
    - Energy over the Target Schedule
  - Total Adjustments for next month’s Target Schedule
    - -(ML assessments + SL assessments) + Underrun Deviation – Overrun Reductions
Deemed Delivered Report

• Includes:
  • Total Schedule A, B and D Energy delivered
  • $M_L$ & $S_L$ assessments from 2 months prior
  • $M_L$ & $S_L$ returns from 2 months prior
  • Net Deemed Delivered
    • Total Schedule A, B and D Energy delivered + $M_L$ & $S_L$ assessments from 2 months prior - $M_L$ & $S_L$ returns from 2 months prior
    • Net Deemed Delivered total is reported to Power Billing and will show up on your monthly invoice
    • More information in the Power Billing section of this presentation
Annual Energy Accounting Report

• Summarizes the Monthly Accounting Report for the entire fiscal year
• Calculates and accumulates the fiscal year deviation
  • For the project and by each contractor
• Includes all items on the Monthly Accounting Report and the following items not on the Monthly Accounting Report
  • Plant generation by month
  • Transformer losses by month
  • Redistribution of underruns by month
  • Contractor’s prior years deviation and current year deviation
  • Hourly generation, $M_L$, $S_L$, energy & capacity schedules per contractor
Annual Energy Accounting Report (cont.)

• Draft Report will be available within 6 weeks after the end of the fiscal year

• Contractor will have up to 4 weeks to review the draft

• Final Fiscal Year End report will be available within 4 weeks after the contractor’s review period or after the last contractor’s comments are received, whichever comes first

• Upon issuance of the final report, deviations will be reported to EMMO for use in future Target distributions
Energy Accounting Questions

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(602) 605-2494

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Resource Planning & Settlements Supervisor
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Rates

Kevin Schaefer
Rates - Public Utilities Specialist
Base Charge & Rates

• Regulations, Orders & Procedures
• Timeline & Customer Participation
• Electric Charges
• Other Charges
• Important Dates
WAPA’s rate development adheres to strict regulations, orders and procedures for the annual rate process:

- 10 CFR 903 - describes public participation in power and transmission rate adjustments and extensions
- DOE Order RA 6120.2 - establishes financial reporting policies, procedures and methodology for all Power Marketing Administrations
- 10 CFR 904 – applies specifically to the BCP charges for the sales of power
- ESC and Amended and Restated Implementation Agreement – details BCP’s contractual obligations and procedures on a variety of issues
Timeline & Customer Participation

A few notes...

A formal 90-day public process is conducted annually with transcribed public information and comment forums; notices are published in the *Federal Register*

- Every 5th year, the rate schedule (which includes the base charge) must be approved by the Secretary of Energy and Federal Energy Regulatory Commission (FERC)

- WAPA updates its base charge annually with Deputy Secretary of Energy approval during interim years and FERC is notified for informational purposes only
Timeline & Customer Participation

Feb – Informal Customer Meeting
Review preliminary base charge calculation in an informal setting; answer any questions and concerns before the public process.

Mar thru May – Public Process (FRN initiates 90-day process)

Public Information Forum: March
Formally discuss preliminary base charge

Public Comment Forum: April
Formal public comments and questions

Aug – Base Charge Complete:
Sec. of Energy or Dep. Sec. approves; FERC approves or is notified; final FRN moves forward to be published

Sep thru Oct – Process Finalized:
Contractors receive final FRN and electric charge information; base charge becomes effective Oct 1st

Hoover 101 – Base Charge and Rates
Electric Charges

A few notes....

• BCP is a generation only power system with no associated transmission service

• Since BCP does not receive Congressional Appropriations, all costs are expensed and recovered annually through the **base charge** (annual revenue requirement)
Electric Charges (cont.)

**Power Repayment Study**: WAPA’s official record used to calculate the annual base charge for purposes of repayment of assets (Required under DOE Order RA6120.2)

- Tracks and/or calculates OM&R Expense, Revenue, Carryover, Principle and Interest, and Capacity and Energy rates
  - Capacity and Energy rates are for comparison purposes only

**Formula**: Expenses – Carryover – Other Revenue = Base Charge
Electric Charges (cont.)

**Charge Spreadsheet:** Breakout of Contractors monthly charge for capacity and energy based on their proportionate share of the base charge

Ex:

```
Base Charge: $80M

50% Capacity: $40M
APA Capacity Percent: 20%
Annual Charge: $8M

50% Energy: $40M
APA Firm Energy Percent: 20%
Annual Charge: $8M
```
Other Charges

LCRBDF Contribution Charge:
- Arizona - 4.5 mills/kWh
- California/Nevada – 2.5 mills/kWh

Transmission:
- Parker-Davis & Intertie rates are developed separately
- Billed in Advance of Service
Important Dates

• Rates 201/Informal Customer Meeting – Feb 15, 2017

• Anticipated FRN Publication Date – Feb 28, 2017

• Tentative Public Information Forum – Mar 28, 2017

• Tentative Public Comment Forum – April 25, 2017
Base Charge & Rates Questions

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(602) 605-2867

Scott R. Lund
Rates Manager
slund@wapa.gov
(602) 605-2442
Power Billing

Beth Kozik
Power Billing & Accounting Supervisor
Power Billing

• Transmission Bill
• Boulder Canyon Energy Services Bill
  • Issue Date
  • Due Date
  • How to make payment
  • Contact Information
  • Charges
Power Billing

• If you have transmission with WAPA, there will be two separate bills:
  • Prepayment bill for transmission service
  • Boulder Canyon Project (BCP) Energy Service (ESC) bill that includes (a) capacity and energy base charges, (b) Lower Colorado River Basin Development Fund (LCRBDF) charge on energy deemed delivered, (c) transmission charges with a credit for the prepayment, and (d) Overrun charges (if applicable)

• Prepayment bills for transmission are issued the 1st of the month prior to the service month, and are due by the 25th of that month.
• Bills for the ESC are issued by the 3rd business day of the month following the service month, and are due 20 days from the date the bill is issued.
• Due dates will change to the next business day if the calculated date is a weekend or Federal holiday
• WAPA prefers to send all bills electronically via email and will be validating customer email addresses later this year
• Remittance instructions are included on both bills
• Contact information is included on both bills
Payer: ABC Company  
1234 West First Street  
Phoenix, AZ 85001  
Customer #1234  
Project N/FGPD PREPAY-ABC

Bill Description:

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<tr>
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<th>DUE DATE</th>
<th>Invoice Number</th>
<th>Agreement Number</th>
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<td>91234</td>
<td>16-DSR-56789</td>
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<th>Line Number</th>
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<tr>
<td>1</td>
<td>Parker Davis Transmission Prepayment for December 2016</td>
<td>$1,430.00</td>
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<tr>
<td></td>
<td>Intertie Transmission prepayment For December 2016</td>
<td>$1,610.00</td>
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Please Reference the Invoice Number

U.S. Department of Energy  
Western Area Power Administration  
FILE #4185, P.O. BOX 301509  
ACH = ABA 051036706 ACCT # 312003 or EFT = ABA 021030004 Acct # 89001602  
Los Angeles, CA 90030-1509

For questions regarding this invoice contact:  
Accounts Receivable (602) 605-2525
Payer: ABC Company  
1234 West First Street  
Phoenix, AZ 85001  
Customer #1234  
Project N/FGPD PREPAY-ABC

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Power Billing – Sample Power Bill

Page 1 provides the invoice total, point of contact and remittance information.

Department of Energy

Desert Southwest Region
615 SOUTH 43RD AVENUE
PHOENIX, AZ 85009

TO: ABC COMPANY
1234 WEST FIRST STREET
PHOENIX, AZ 85001

VENDOR NO.: 1234
BILL NUMBER: GG1234A1216

SERVICE FURNISHED FOR: DECEMBER 2016
ISSUE DATE: January 03, 2017
TOTAL AMOUNT DUE: $3,673.50
DUE DATE: January 23, 2017

AMOUNT PAID:

Remit Electronic Payments To:
NEW YORK FEDERAL RESERVE BANK
WESTERN AREA POWER ADMINISTRATION
ABA 021030004 / ACCT# 89001602

ACH PAYMENTS:
RICHMOND FEDERAL RESERVE BANK
ABA 051036706 / ACCT# 310063

Make Remittance Payable To:
US DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION
FILE #: 4188, P.O. BOX 301509
LOS ANGELES, CA 90030-1509
Tax ID: 84-0743678

For Billing Inquiries and Address Changes Contact:
Charle Schaefer
Phone: 602-445-2358
Email: schaeferwpapgov

In accordance with the Debt Collection Improvement Act of 1996, when payment is not received by the due date, interest, administrative fees, and penalties will be assessed according to the terms set forth in your agreement. If terms are not provided for in the agreement, the interest and penalty rates will be determined by Treasury at the time the debt was established.
Desert Southwest Region
615 SOUTH 63RD AVENUE
PHOENIX, AZ 85069

TO: ABC COMPANY
1234 WEST FIRST STREET
PHOENIX, AZ 85061

VENDOR NO.: 1234
BILL NUMBER: G21234A1216

SERVICE FURNISHED FOR: DECEMBER 2016
BILL ISSUE DATE: January 03, 2017

CHARGES FOR ELECTRIC SERVICE

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<td>TRANSMISSION CHARGES</td>
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<td>BOULDER CANYON PROJECT</td>
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<td>MONTHLY CHARGES</td>
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<td>TOTAL AMOUNT DUE</td>
<td>$3,673.50</td>
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<tr>
<td>Monthly Base Energy Charge</td>
<td>381.00</td>
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<tr>
<td>Lower Colorado River Basin Development Fund Charge for previous month’s energy</td>
<td>127,000</td>
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<tr>
<td></td>
<td>0.0025 California and Nevada</td>
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<tr>
<td></td>
<td>(0.0045 Arizona)</td>
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<tr>
<td>Energy Overrun penalty at 10 times rate</td>
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<tr>
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<td>1,430.00</td>
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<td>Credit for Transmission Prepayment</td>
<td>(1,430.00)</td>
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<td><strong>TO:</strong></td>
<td>ABC COMPANY</td>
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<td>---------</td>
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<tr>
<td></td>
<td>1234 WEST FIRST STREET</td>
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<td>PHOENIX, AZ 85001</td>
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<td>January 03, 2017</td>
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**AMOUNT PAID:**

**Remit Electronic Payments To:**
NEW YORK FEDERAL RESERVE BANK  
WESTERN AREA POWER ADMINISTRATION  
ABA 021030004 / ACCT# 89001602  

**ACH PAYMENTS:**
RICHMOND FEDERAL RESERVE BANK  
ABA 051036706 / ACCT# 312003

**Make Remittance Payable To:**
US DEPARTMENT OF ENERGY  
WESTERN AREA POWER ADMINISTRATION  
FILE # 4185, P.O. BOX 301509  
LOS ANGELES, CA 90030-1509  
Tax ID: 84-0743678

**For Billing Inquiries and Address Changes Contact:**
Charis Schaefer  
Phone: 602-605-2758  
Email: schaefer@wapa.gov

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CUSTOMER COPY
TO: ABC COMPANY  
1234 WEST FIRST STREET  
PHOENIX, AZ 85001  

VENDOR NO.: 1234  
BILL NUMBER: GG1234A1216  

SERVICE FURNISHED FOR: DECEMBER 2016  
BILL ISSUE DATE: January 03, 2017  

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<tr>
<td>TRANSMISSION CREDITS</td>
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<tr>
<td>BOULDER CANYON PROJECT MONTHLY CHARGES</td>
<td>4,446.50</td>
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TOTAL AMOUNT DUE: $4,446.50  
DUE DATE: January 23, 2017
(a) Monthly Base Capacity Charge
2,975.00
(a) Monthly Base Energy Charge
381.00

(b) Lower Colorado River Basin Development Fund Charge
for previous month's energy
127,000
0.0025 California and Nevada
317.50
(0.0045 Arizona
571.50)

(d) Energy Overrun penalty at
10 times rate
8,890
0.00982 x 10
873.00

(c) Parker Davis Firm Transmission
1.43
1,000 KW
1,430.00

(c) Credit for Transmission Prepayment
(1,430.00)

This sample is using Parker Davis transmission at the current rate.
If Intertie transmission is needed the current rate is $1.61.

NOTE: Lower Colorado River Basin Development energy (b) will not appear on the first bill for October Service. This energy value is billed one month in arrears because the checked out energy values are not available by the third of the month.
Power Billing Questions

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kozik@wapa.gov
(602) 605-2835
Questions
Next Steps

• Interest in Further Education
  • Hoover 201, 301 Sessions
  • One-on-ones

• Rates 201 & Processes

• Master Schedule

• Future Meetings/Important Dates
Important Dates

• Feb 15, 2017 - Rates 201/Informal Customer Meeting
• Feb 28, 2017 - Anticipated FRN Publication Date, Rates
• March 1, 2017 – 1st Draft of Master Schedule
• Mar 28, 2017 - Tentative Rate Public Information Forum
• April 25, 2017 - Tentative Rate Public Comment Forum
• May 1, 2017 – 2nd Draft of Master Schedule
• Early May 2017 – Meeting to finalize RIE & Master Schedule
• Jun 1, 2017 – Final Draft of Master Schedule
Important Dates

• July 2017 – MSI Implementation Meeting
• Mid-Sep 2017 – October Transmission Prepayment Invoice issued
• Mid-Sep 2017 – Update to Master Schedule & Contractor Available Capacity
• Sep 29, 2017 – Preschedule for Day 1 of New Contract
• Early Oct 2017 – October Transmission Invoice payment due
• Nov 3, 2017 – October Capacity & Energy Invoice issued
• Nov 23, 2017 – October Capacity & Energy Invoice due
Points of Contact

Contracts & Energy Services: Patricia Weeks, weeks@wapa.gov
DSW Resource Planning: Xavier Gonzalez, xgonzalez@wapa.gov or Tina Ramsey, ramsey@wapa.gov
Transmission Business Unit: John Steward, steward@wapa.gov
DSW EMMO: John Paulsen, paulsen@wapa.gov
WALC Operations: Kim Clark, kclark@wapa.gov, Craig Halber, halber@wapa.gov
DSW Settlements: Rose Statler, rstatler@wapa.gov or Tina Ramsey, ramsey@wapa.gov
DSW Rates: Kevin Schaefer, kschaefer@wapa.gov or Scott Lund, slund@wapa.gov
DSW Power Billing & Accounting: Beth Kozik, kozik@wapa.gov
DSW Vice President of Power Marketing: Jack Murray, jmurray@wapa.gov
General inquiries: POST2017BCP@wapa.gov