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BEFORE THE ARIZONA CORPORATION COMMISSION

Arizona Corporation Commission

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COMMISSIONERS

SUSAN BITTER SMITH, Chairman  
BOB STUMP  
BOB BURNS  
DOUG LITTLE  
TOM FORESE

DOCKETED BY *KE*

IN THE MATTER OF THE APPLICATION  
OF ARIZONA PUBLIC SERVICE  
COMPANY FOR REVISIONS TO TARIFFS  
AND SERVICE SCHEDULES  
NECESSITATED BY NEW CUSTOMER  
INFORMATION AND BILLING SYSTEM.

DOCKET NO. E-01345A-15-0386

**REQUEST TO REVISE SERVICE  
SCHEDULE 8 (BILL  
ESTIMATION)**

19 Arizona Public Service Company (APS or the Company) requests approval from  
20 the Arizona Corporation Commission (Commission) of revisions to its Service Schedule  
21 8 – Bill Estimation (Schedule 8). The proposed revisions are necessary to conform  
22 APS’s existing bill estimation methodology to the standard methodology used in the  
23 new customer information and billing system software (New CIS) that APS is working  
24 to deploy in early 2017. The revisions to the methodology will also result in better  
25 estimates and more consistency in billings for customers. The revisions also simplify  
26 Schedule 8 to make it easier for customers to read and understand. The proposed new  
27 Schedule 8 is attached as Exhibit A, a copy containing cross references to the current  
28 schedule is attached as Exhibit B, and finally a redline comparing the current and

1 proposed new schedule is attached as Exhibit C. APS requests that the Commission  
2 approve these revisions to Schedule 8 as soon as possible.

### 3 **I. INTRODUCTION**

4 Schedule 8 contains methods for estimating customer usage (kWh) and demand  
5 (kW) for billing purposes under a variety of circumstances when meter reads are not  
6 available. The Company's current Schedule 8 was initially approved by the  
7 Commission in Decision No. 69569 (May 21, 2007). Since that time, Schedule 8 has  
8 been revised several times, most recently in 2012,<sup>1</sup> to reflect estimation procedures for  
9 new rate schedules and/or new rate structures. However, the basic process for  
10 estimating consumption has not changed since the schedule was initially approved.  
11 With this filing, APS requests revisions to Schedule 8 to accommodate changes to its  
12 estimating process caused by deployment of a New CIS. Approval of these changes is  
13 critical to the successful and timely deployment of the New CIS. APS has also revised  
14 Schedule 8 to make it more readable.

### 15 **II. APS PLANS TO IMPLEMENT A NEW CUSTOMER INFORMATION** 16 **SYSTEM**

17 APS's current mainframe-based customer information and billing system (CIS)  
18 was implemented in the mid-1990s. It was built during a time when less complicated  
19 rate structures and billing options were in place. Customizing the current CIS to handle  
20 the Company's rate structures and other requirements is often cumbersome and costly,  
21 and will become even more so as technology advances and new energy and technology  
22 options are adopted by customers. In comparison with today's browser-based computer  
23 technology, APS's mainframe CIS is relatively antiquated and obsolete.

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24  
25 <sup>1</sup> See Decision No. 72490 (June 25, 2011) (addressing revisions related to AMI and new time of use  
26 rates); Decision No. 73223 (June 5, 2012) (addressing revisions related to electric vehicle time of use  
27 rate and pre-pay billing pilot program). Minor revisions also occurred in APS's rate case Docket No. E-  
28 01345A-08-0172 and via compliance filings made pursuant to Decision No. 69569. APS is providing  
notice of this proceeding to all parties who have intervened in the above-mentioned proceedings as well  
as parties to Docket Nos. E-01345A-04-0657 (*Read v. APS*) and E-01345A-03-0775 (*In re Application  
of APS for a Declaratory Order Regarding Bill Estimation Procedures*).

1 APS is in the process of planning the deployment of a new system to replace its  
2 old mainframe CIS. The Company intends to implement Oracle's Customer Care &  
3 Billing software package—a state-of-the-art, industry-leading browser-based customer  
4 system—its New CIS—that will provide APS with the flexibility and scalability to meet  
5 customer and technology demands well into the future. APS plans to begin using its  
6 New CIS in March of 2017.<sup>2</sup>

7 One of the many advantages to the New CIS is that the software package includes  
8 many built-in features. Implementing these built-in features where appropriate allows  
9 APS to minimize customizations, which in turn allows APS to more readily take  
10 advantage of future upgrades and software improvements issued by Oracle.

11 In order to minimize potential challenges caused by unnecessary customizations,  
12 APS proposes to implement the standard, built-in, bill estimation solution that is  
13 included in the New CIS from Oracle. This built-in process, while slightly different than  
14 APS's current process, provides a fair, reasonable and easily understood process for  
15 estimating customer usage and demand when a current meter read is unavailable.

16 **III. PROPOSED ESTIMATION PROCESS IS SIMPLER AND USES MORE**  
17 **ACCURATE AMI DATA**

18 APS's current Schedule 8 contains a hierarchy of eight methods that can be used  
19 to estimate a customer's usage when an actual meter read is not available. The first step  
20 in the hierarchy under both the current process and New CIS process is to use available  
21 customer specific automated metering infrastructure (AMI) data to perform an estimate.  
22 If sufficient current AMI data is not available (typically less than 11 days) the next step  
23 in the current process is to use customer specific data from the prior month to perform  
24 the estimate. Under the New CIS methodology, APS would first attempt to use  
25 customer specific data from the same month in the prior year. If same month prior year  
26 data is unavailable, the new methodology uses customer specific data from the prior

27  
28 <sup>2</sup> APS intends to include its New CIS in its post-test year plant adjustment in its upcoming rate case.

1 month. Thus, the new methodology reverses the order of current methods two and three,  
 2 resulting in using customer specific data from the same month in the prior year first, and  
 3 then alternatively, using the same customer's prior month data to estimate. The New  
 4 CIS methodology does not include as standard steps methods four through seven, which  
 5 involve use of customer specific seasonal average information and premises based data  
 6 that is not specific to the current customer. These methods are seldom used. In the  
 7 event that there is no customer specific data available for estimating, the final step under  
 8 both the current schedule and proposed new schedule is to use class average data. Table  
 9 1 below compares the hierarchy of estimating methods in current Schedule 8 to the New  
 10 CIS methods.

11  
 12 **Table 1**

<b>Current Schedule 8 Estimation Methods</b>	<b>New CIS Methods</b>	<b>Change Requested</b>
1. Use available AMI data (typically at least 11 days of data)	1. Use available AMI data (typically at least 11 days of data)	None
2. Use same customer's <u>prior month</u>	2. Use same month from <u>prior year</u> for same customer	Uses Method 2 prior to Method 1
3. Use same month from <u>prior year</u> for same customer	3. Use same customer's <u>prior month</u>	
4. Use average seasonal for same customer		
5. Use previous month for same premise		Methods 4-7 are removed from the standard methodology
6. Use same month for previous year for same premises		
7. Use average seasonal for same premises		
8. Use class averages	4. Use class averages	None.

26  
 27 Today, nearly all of the Company's customers are served using AMI. The  
 28 changes to the hierarchy of estimating methods recognizes that estimating usage and

1 demand using customer specific data is now the norm because it is more accurate and  
2 more available due to the deployment of AMI. The adoption of AMI technology,  
3 through which meters are read remotely, automatically impacts estimation in two ways.  
4 First, AMI reduces the need for traditional estimation due to missed reads caused by  
5 factors such as lack of meter access or inclement weather. Second, AMI may provide  
6 for more accurate estimates because AMI meters collect and send daily interval usage  
7 and demand data to the Company, thus increasing the likelihood that when needed, APS  
8 will have sufficient daily customer specific information from which to estimate.

9 The revisions outlined to the above hierarchy of estimating methods will have  
10 minimal, if any, impact on customers. In 2014, approximately 92% of estimated bills  
11 were estimated using AMI data (using step one of the estimating methodology), which  
12 will not change under the new methodology. Approximately 8% of estimated bills  
13 utilized method numbers two or three, which remain the same under the New CIS  
14 methodology, but are simply in reverse order. Methods four through seven, which  
15 would no longer be used under the new system were used only to perform 239 estimates  
16 in 2014, which is less than 0.4% of all estimates performed. Method eight, the class  
17 average method, will remain as the final step in the methodology when no other valid  
18 data is available. In 2014, it was used to estimate only 14 bills, which was a mere 0.06%  
19 of estimates performed.

#### 20 **IV. CONCLUSION**

21 For the reasons listed above, APS respectfully requests that the Commission  
22 approve, as soon as possible, the proposed revisions to the Company's Schedule 8 to be  
23 effective immediately when the New CIS begins commercial operation, which is  
24 presently anticipated to be March of 2017. This request does not constitute a request for  
25 a rate increase as contemplated by A.R.S. § 40-250 and APS agrees to waive any  
26 application of the thirty-day period referenced in A.R.S. §§ 40-250(B) and 40-367 to the  
27 extent applicable.

1 RESPECTFULLY SUBMITTED this 3rd day of December 2015.

2  
3 By: Melissa M. Krueger  
4 Thomas L. Mumaw  
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6 Attorneys for Arizona Public Service Company

7 ORIGINAL and thirteen (13) copies  
8 of the foregoing filed this 3rd day of  
9 December 2015, with:

10 Docket Control  
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14 Copies of the foregoing delivered/mailed this  
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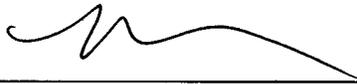
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**EXHIBIT A**

**Proposed Service Schedule 8**

**Bill Estimation**



## SERVICE SCHEDULE 8 BILL ESTIMATION

Arizona Public Service Company (APS or Company) regularly encounters situations where a complete and valid meter read cannot be obtained. In such cases the customer's usage information must be estimated in order to render a bill. This schedule describes the circumstances, methods and procedures for estimating a customer's bill and is considered a part of all rate schedules.

### 1. GENERAL PROVISIONS

1.1 Causes that may result in an estimated bill include but are not limited to:

- (A) Weather conditions that hinder meter access or compromise employee safety;
- (B) Lack of access to the meter or the site;
- (C) Malfunction of the meter, related equipment, or the Automated Meter Infrastructure (AMI) system;
- (D) Labor limitations due to unforeseen illness, natural disasters, or other extreme events;
- (E) Meter tampering or energy diversion;
- (F) Inability to transfer meter data for billing.

1.2 The following are conditions under which a bill is not considered to be an estimate:

- (A) Rate changes in the middle of the billing cycle when a valid read is available;
- (B) Meter information obtained from a visual meter read rather than an electronic meter reading device;
- (C) Direct access service using load profiles rather than meter data;
- (D) A misread meter or estimated bill that is subsequently corrected with actual data. The rebill is considered a corrected bill.

### 2. ESTIMATION METHODS

APS will estimate the customer's billing information, such as monthly kWh consumption, monthly kW demand, on-peak kWh, and other information using the following methods:

2.1 The estimation procedure will start with the first method and proceed to a subsequent method if necessary – for example, if the required information is not available, is unreasonable, or was also estimated.

2.2 Under each method, available kWh data is used to determine a per-day usage value by dividing the total kWh by the number of days in the billing period. The per-day usage is then multiplied by the number of days in the current billing period to determine estimates for total and on-peak kWh usage. For rates with a kW demand component the demand will be the actual demand read from the available data.

2.3 In certain cases the specific estimation methods and procedures in this schedule may not be appropriate or adequate. In such cases APS will use reasonable judgment in estimating the bill.

2.4 APS is not required to ask the customer to provide a meter read before estimating the bill.

#### Method 1 - AMI Data

With AMI data, a monthly meter read may be missing but information for part of the month may be available through daily meter reads. If sufficient AMI data is available, typically at least 11 days of usage data, the bill will be estimated using the available AMI data.



## SERVICE SCHEDULE 8 BILL ESTIMATION

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### Method 2 – Previous Year Data

The bill will be estimated using available data for the same month last year, for the same customer at the same premises.

### Method 3 – Previous Month Data

The bill will be estimated using available data for the previous month, for the same customer at the same premises.

### Method 4 – Class Average Data

The bill will be estimated using average data for a designated class of customers.

## 3. DAILY BILL ESTIMATION

3.1 For bills that are based on daily meter information, missing data will be estimated using the 4 methods detailed in Section 2.

3.2 Additional conditions for Prepay Energy Services:

- (A) Company will indicate on its web portal, within 24 hours, if the daily bill has been estimated.
- (B) After no more than three consecutive days of estimation Company will take appropriate action to obtain the actual meter information and attempt to remedy any meter, communication, or other factors causing the need for estimation.
- (C) If estimation is still necessary after three consecutive days, the Company will make reasonable efforts to avoid estimating energy usage for more than seven consecutive days. In the unlikely event a meter read cannot be obtained within seven consecutive days, the individual customer will be handled on a case by case basis and best efforts used to reach the mutual satisfaction of Customer and Company.
- (D) Company will not disconnect the customer due to a negative account balance caused by an estimated read which has not been trued up with an actual read.

## 4. HOURLY DATA ESTIMATION

4.1 Where billing information is derived from interval data, such as 15 minute or hourly intervals, the estimates will be derived from a standard validating, editing and estimating (VEE) process as follows:

- (A) Determine the kWh to be estimated: Compute the total kWh for the relevant time period by subtracting the start read from the stop read for that period, using the most recent reads. Sum the interval data for the same period to determine the kWh for the intervals having valid data. Compute the kWh for the interval data needing estimation (X): where (X) equals the total kWh for the period minus the kWh for the intervals with valid data.
- (B) Determine the reference day(s): Select a reference day (or days) to provide an estimate of the load shape for the missing interval data. The reference day shall have a load shape that resembles the time period needing estimation. Weekday load shapes will be estimated with weekday reference days, weekends with weekend reference days. Holidays will be estimated with a weekend reference day.
- (C) Replace the missing interval data with the reference day interval data for the same hour or sub-hour intervals of the day.
- (D) Scale the reference day interval data: Sum the kWh for the reference day interval data that replaced the missing interval data (Y). Create a scale factor by dividing the kWh for



## SERVICE SCHEDULE 8 BILL ESTIMATION

the section needing estimation (X) by (Y). Multiply each estimated interval data point in the period by the (X/Y) scale factor.

### 5. SPECIAL CIRCUMSTANCES

#### 5.1 Distributed Generation

The billing information for distributed generation, such as total generator output and excess power, will be estimated with the 4 methods described in this schedule, except that an engineering estimate may also be used if the other methods are not available.

#### 5.2 Dead or Failing Meter

If the meter is dead or failing, APS will not adjust the bill until sufficient information is available from a new meter, typically 11 days or more of data. At that time any billing adjustments will be based on either the new billing information, adjusted for the days in the billing period, or Method 2 – Previous Year Data described in Section 2, whichever is lower. If APS believes that this estimate does not reasonably reflect the customer's actual usage, the estimate may be adjusted downward. Such billing adjustments are limited to three months for residential accounts and six months for non-residential accounts (See Schedule 1, Section 4.3).

#### 5.3 Energy Diversion or Meter Tampering

If energy diversion or meter tampering has occurred the bill will be estimated using metered data from an auxiliary meter installed during the diversion investigation, meter information obtained after the diversion or tampering, consumption history before the diversion or tampering, or other reasonable sources of billing information as determined by Company.

#### 5.4 Customer Supplied Meter Read

Some customers are approved to provide their own meter reads, consistent with ACC regulations. APS may estimate the bill if the customer fails to provide the read.

#### 5.5 Meter Read Estimates Exceeding One Month

Estimates due to a malfunction of equipment that is owned or maintained by APS may exceed one month if the malfunction could not be reasonably discovered and corrected before the need for additional estimates. Estimates may also exceed one month if the equipment is owned or maintained by the customer.

### 6. TRUE-UPS OF PREVIOUS ESTIMATES

6.1 If a read from a previous month or day is estimated and a subsequent actual read is obtained, the following true-up will be performed.

#### 6.2 Monthly kWh True-Up

If the current monthly kWh read is either lower than or substantially higher than the prior estimate, the kWh will be adjusted using the average kWh per day between the current read and the last valid read. The prior bill will be revised with the adjusted kWh applied to number of days in the billing period.



## SERVICE SCHEDULE 8 BILL ESTIMATION

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### 6.3 Daily kWh True-Up

If the current actual daily kWh read is either lower than or substantially higher than the prior estimate, the daily kWh will be adjusted using the average kWh per day between the current read and the last valid read. All prior affected daily bills will be revised with the adjusted kWh.

### 6.4 kW Demand True-Up

If kW demand was not reset and the current actual demand read is lower than the prior estimate, the previous billed demand will be adjusted downward to the new actual amount. The prior bill will be revised with the adjusted kW demand.

**EXHIBIT B**

**Service Schedule 8**

**Bill Estimation**

**Cross-Reference of Changes**

Service Schedule 8 – Bill Estimation  
Cross-Reference of Changes

Arizona Public Service Company (APS or Company) regularly encounters situations where a complete and valid meter read cannot be obtained. In such cases the customer's usage information must be estimated in order to render a bill. This schedule describes the circumstances, methods and procedures for estimating a customer's bill and is considered a part of all rate schedules. 1.1, 1.2

1. GENERAL PROVISIONS (2) [1.4 and 1.5 moved to Section 5, 2.2.1 moved to Section 6. Deleted 1.3, 1.6, 2.1.7, 2.2.3 and 2.2.5]

1.1 Causes that may result in an estimated bill include but are not limited to: 2.1

- (A) Weather conditions that hinder meter access or compromise employee safety; 2.1.1
- (B) Lack of access to the meter or the site; 2.1.2
- (C) Malfunction of the meter, related equipment, or the Automated Meter Infrastructure (AMI) system; 2.1.3
- (D) Labor limitations due to unforeseen illness, natural disasters, or other extreme events; 2.1.4
- (E) Meter tampering or energy diversion; 2.1.5
- (F) Inability to transfer meter data for billing. 2.1.6

1.2 The following are conditions under which a bill is not considered to be an estimate: 2.2

- (A) Rate changes in the middle of a billing cycle when a valid read is available; 2.2.2
- (B) Meter information obtained from a visual meter read rather than an electronic meter reading device; 2.2.4
- (C) Direct access service using load profiles rather than meter data; 2.2.6
- (D) A misread meter or estimated bill that is subsequently corrected with actual data. The rebill is considered a corrected bill. 2.2.7 & 2.2.8

2. ESTIMATION METHODS (3)

APS will estimate the customer's billing information, such as monthly kWh consumption, monthly kW demand, on-peak kWh, and other information using the following methods: 3.1.1

2.1 The estimation procedure will start with the first method and proceed to a subsequent method if necessary – for example, if the required information is not available, is unreasonable, or was also estimated. 3.1

2.2 Under each method, available kWh data is used to determine a per-day usage value by dividing the total kWh by the number of days in the billing period. The per-day usage is then multiplied by the number of days in the current billing period to determine estimates for total and on-peak kWh usage. For rates with a kW demand component, when actual demand data is available, the demand will be based on the actual demand read. 3.1, 3.2, and 3.1.1

2.3 In certain cases the specific estimation methods and procedures in this schedule may not be appropriate or adequate. In such cases APS will use reasonable judgment in estimating the bill. (New)

2.4 APS is not required to ask the customer to provide a meter read before estimating the bill. 1.4

Service Schedule 8 – Bill Estimation  
Cross-Reference of Changes

Method 1 - AMI Data 3.1, 3.4

With AMI data, a monthly meter read may be missing but information for part of the month may be available through daily meter reads. If sufficient AMI data is available, typically at least 11 days of usage data, the bill will be estimated using the available AMI data.

Method 2 – Previous Year Data 3.1

The bill will be estimated using available data for the same month last year, for the same customer at the same premises.

Method 3 – Previous Month Data 3.1

The bill will be estimated using available data for the previous month, for the same customer at the same premises.

Method 4 – Class Average Data 3.1

The bill will be estimated using average data for a designated class of customers.

3. DAILY BILL ESTIMATION 3.1.5

3.1 For bills that are based on daily meter information, missing data will be estimated using the 4 methods detailed in Section 2.

3.2 Additional conditions for Prepay Energy Services: 3.1.5.3

- (A) Company will indicate on its web portal, within 24 hours, if the daily bill has been estimated. 3.1.5.3 (a)
- (B) After no more than three consecutive days of estimation Company will take appropriate action to obtain the actual meter information and attempt to remedy any meter, communication, or other factors causing the need for estimation. 3.1.5.3 (b)
- (C) If estimation is still necessary after three consecutive days, the Company will make reasonable effort to avoid estimating energy usage for more than seven consecutive days. In the unlikely event a meter read cannot be obtained within seven consecutive days, the individual customer will be handled on a case by case basis and best efforts used to reach the mutual satisfaction of Customer and Company. 3.1.5.3 (c)
- (D) Company will not disconnect the customer due to a negative account balance caused by an estimated read which has not been tried up with an actual read. 3.1.5.3 (d)

4. HOURLY DATA ESTIMATION 3.1.4 [Deleted 3.1.4.1.1]

4.1 Where billing information is derived from interval data, such as 15 minute or hourly intervals, the estimates will be derived from a standard validating, editing and estimating (VEE) process as follows: 3.1.4

- (A) Determine the kWh to be estimated: Compute the total kWh for the relevant time period by subtracting the start read from the stop read for that period, using the most recent reads. Sum the interval data for the same period to determine the kWh for the intervals having valid data. Compute the kWh for the interval data needing estimation (X): where (X) equals the total kWh for the period minus the kWh for the intervals with valid data. 3.1.4.1

## Service Schedule 8 – Bill Estimation

### Cross-Reference of Changes

- (B) Determine the reference day(s): Select a reference day (or days) to provide an estimate of the load shape for the missing interval data. The reference day will have a load shape that resembles the time period needing estimation. Weekday load shapes will be estimated with weekday reference days, weekends with weekend reference days. Holidays will be estimated with a weekend reference day. **3.1.4.1**
- (C) Replace the missing interval data with the reference day interval data for the same hour or sub-hour intervals of the day. **3.1.4.1**
- (D) Scale the reference day interval data: Sum the kWh for the reference day interval data that replaced the missing interval data (Y). Create a scale factor by dividing the kWh for the section needing estimation (X) by (Y). Multiply each estimated interval data point in the period by the (X/Y) scale factor. **3.1.4.1**

## 5. SPECIAL CIRCUMSTANCES

### 5.1 Distributed Generation **3.1.2 & 3.1.3**

The billing information for distributed generation, such as total generator output and excess power, will be estimated with the 4 methods described in this schedule, except that an engineering estimate may also be used if the other methods are not available.

### 5.2 Dead or Failing Meter **3.5**

If the meter is dead or failing, APS will not adjust the bill until sufficient information is available from a new meter, typically 11 or more days of data. At that time any billing adjustments will be based on either the new billing information, adjusted for the days in the billing period, or Method 2 - Previous Year Data described in Section 2, whichever is lower. If APS believes that this estimate does not reasonably reflect the customer's actual usage, the estimate may be adjusted downward. Such billing adjustments are limited to three months for residential accounts and six months for non-residential accounts (See Schedule 1, Section 4.3).

### 5.3 Energy Diversion or Meter Tampering **3.6**

If energy diversion or meter tampering has occurred the bill will be estimated using metered data from an auxiliary meter installed during the diversion investigation, meter information obtained after the diversion or tampering, consumption history before the diversion or tampering, or other reasonable sources of billing information as determined by Company.

### 5.4 Customer Supplied Meter Read **1.4**

Some customers are approved by APS to provide their own meter reads, consistent with ACC regulations. APS may estimate the bill if the customer fails to provide the read.

### 5.5 Meter Read Estimates Exceeding One Month **1.5**

Estimates due to a malfunction of equipment that is owned or maintained by APS may exceed one month if the malfunction could not be reasonably discovered and corrected before the need for additional estimates. Estimates may also exceed one month if the equipment is owned or maintained by the customer.

## 6. TRUE-UPS OF PREVIOUS ESTIMATES **3.8**

## Service Schedule 8 – Bill Estimation

### Cross-Reference of Changes

- 6.1 If a read from a previous month or day is estimated and a subsequent actual read is obtained, the following true-ups will be performed. **2.2.1, 3.8**
- 6.2 Monthly kWh True-up **3.8.1**  
If the current monthly kWh read is either lower than or substantially higher than the prior estimate, the kWh will be adjusted using the average kWh per day between the current read and the last valid read. The prior bill will be revised with the adjusted kWh applied to number of days in the billing period.
- 6.3 Daily kWh True-up **3.8.1.1**  
If the current actual daily kWh read is either lower than or substantially higher than the prior estimate, the daily kWh will be adjusted using the average kWh per day between the current daily read and the last valid read. All prior affected daily bills will be revised with the adjusted kWh.
- 6.4 kW Demand True-up **3.8.2**  
If kW demand was not reset and the current actual demand read is lower than the prior estimate, the previous billed demand will be adjusted downward to the new actual amount. The prior bill will be revised with the adjusted kW demand.

**EXHIBIT C**

**Redlined Service Schedule 8**

**Bill Estimation**



## SERVICE SCHEDULE 8 BILL ESTIMATION

Arizona Public Service Company (APS or Company) regularly encounters situations in which APS cannot obtain a where a complete and valid meter read cannot be obtained. Situations that result in an estimated meter read include inclement weather, lack of access to a customer's meter, energy diversion, labor unavailability and equipment malfunction. In such cases Without a valid meter read, the customer's energy usage and/or demand information must be estimated in order to render a bill for the missing read period. A bill based on estimated usage is often referred to as an "estimated bill."

APS uses situation specific methods to estimate electrical usage to ensure that the most accurate usage estimate is obtained. This Schedule describes the circumstances, estimation methods and procedures for estimating a customer's bill and is considered a part of all rate schedules used when an actual meter read cannot be obtained or when energy diversion and/or meter tampering has occurred. The estimating process is applicable to customers receiving Standard Offer service and to direct access customers receiving unbundled delivery service from the Company.

### 1. GENERAL PROVISIONS

- 1.1 — Estimating a read for energy (kWh) and/or demand (kW) is performed in accordance with the provisions of this Schedule or such supplemental or amendatory guidelines or regulations as may hereafter be established and as provided by law.
- 1.2 — This Schedule shall be considered a part of all rate schedules.
- 1.3 — Upon discovery of the need to estimate kWh or kW, Company will make reasonable attempt(s) to secure an accurate meter reading and to resolve no access issues.
- 1.4 — Company is not obligated to obtain, or attempt to obtain, a customer supplied meter read prior to sending an estimated bill. In circumstances where APS has agreed in writing to permit customer supplied meter reads in accordance with Arizona Corporation Commission (ACC or Commission) regulations and that customer fails to provide Company with the meter read, estimation is also allowed.
- 1.5 — Estimates due to equipment malfunctions may exceed one month if the malfunction of Company owned or maintained equipment could not be reasonably discovered and/or corrected before the need for additional estimates, or if the equipment malfunction is with regard to customer owned or maintained equipment.
- 1.6 — This schedule is not intended to supersede the Commission's rules and regulations in effect at the time the Commission approved this Schedule 8 without a specific decision of the Commission.

### 2. BILL ESTIMATION

- 2.1. — The Causes that may result in an estimated bill include but are not limited to:
- (A)
- 2.1.1 — Inclement weather Weather where conditions that hinder prevent meter access or compromise APS employee safety; as determined by Company.

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~~2.1.2(B) Lack of access to the meter either due to conditions on the customer's premises or to road closures that prevent access to the customer's premises or the site;~~

~~2.1.3(C) Equipment or meter failure or malfunction of the meter, related equipment, or the with no reliable information retained by the meter, or inability to obtain billing information from an AMI meter due to equipment failure in the Automated Meter Infrastructure (AMI) system;~~

~~2.1.4 (D) Labor unavailability limitations due to circumstances such as unforeseen illness, natural disasters, or other extreme events;~~

~~2.1.5 (E) Meter tampering or energy diversion resulting in a lack of accurate metered consumption information;~~

~~(F) Inability to transfer meter data for billing. 2.1.6 An electronic meter reading is obtained, but the data cannot be transferred to a billing computer.~~

~~2.1.7 Only a partial read for a meter (for example, the total kWh read is obtained from a time of use meter, but on peak kWh and/or kW reads are unavailable). Company will use the read available, and estimate the missing read(s).~~

~~12.2 The following defines certain conditions under which a bill is not considered to be an estimated:~~

~~2.2.1 A bill based on an actual kWh read, following an estimated bill. This is considered a "true up" bill and has an explanation of "true up" on the bill.~~

~~2.2.2(A) Rate changes in the middle of the billing cycle when a valid read is available;~~

~~2.2.3(B) A meter failure or malfunction which does not prevent the meter from accurately recording customer usage or from being read.~~

~~2.2.4 The meter information read is not available using electronic meter reading devices, but data is obtained from a visual meter read rather than an electronic meter reading device;~~

~~2.2.5 Meter reading information is not available because the service is provided on an un-metered basis.~~

~~2.2.6(C) Unbundled service for direct access customers service is provided on the basis of using load profiles in accordance with ACC regulations rather than using interval meter data metering;~~

~~2.2.7 When Company determines a meter is (D) A misread meter or estimated bill that is subsequently corrected with, but the actual data read on the meter at the time it was read can be determined, Company makes a manual correction to the incorrect read. This includes, but is not limited to, the following examples:~~



# SERVICE SCHEDULE 8 BILL ESTIMATION

- 2.2.7.1 — A shut off read is obtained, and on the same day the monthly meter read is taken and is higher by 1 kWh. The monthly meter read is changed to the same read as the shut off read.
- 2.2.7.2 — The serviceman enters a shut off or turn on read and then calls into the office to say he entered the read for the wrong address. The correct reads are entered for the appropriate addresses.
- 2.2.7.3 — Accurate consumption information can be obtained from load research meters.
- 2.2.8 — A bill is estimated, and then rebilled when an actual read is obtained for the same billing period. The first bill is considered an estimated bill and is coded as such. The subsequent bill/rebill is considered a corrected bill, and is not coded as an estimate, but does contain "corrected bill" language.

## 23. ~~BILL ESTIMATION METHODS~~

APS will estimate the customer's billing information, such as monthly kWh consumption, monthly kW demand, on-peak kWh, and other information using the following methods: The following section describes the estimation methods used to estimate energy consumption and demand for most instances. Estimation techniques required where special circumstances exist, such as initial bills, are also described. In general, the estimation methodologies utilize historical data.

### 3.1 ENERGY ESTIMATION (kWh)

For energy estimation, the following hierarchy is used: 1) The estimate will be based on the customer specific prior month's energy consumption unless that month was an initial bill. 2) If the prior month's customer specific energy consumption is not available or was an initial bill, the estimate will be based on the customer specific energy consumption for the same month in the prior year. 3) If the customer specific prior month or same month last year energy consumption is unavailable but adequate seasonal customer history exists, energy consumption will be estimated based on daily usage during six months of the same season. 4) If customer specific energy consumption is not available, the estimate will be based on the prior month's energy consumption at that premises unless that month was an initial bill. 5) If prior month's premises energy consumption is not available or was an initial bill, the premises energy consumption for the same month in the prior year will be used to estimate consumption. 6) If premises specific prior month or same month last year is unavailable but adequate seasonal premises history exists, energy consumption will be estimated based on daily usage during six months of the same season. 7) When adequate customer or premises history is not available, the estimate is based on the customer class average usage found in Section 3.3.1.

For customers served under time of use schedules, the hierarchy listed above will be utilized to develop the estimated on peak and off peak energy consumption.

For customers served under rate schedules SC S, EPR 2, EPR 5, and EPR 6 the hierarchy listed above will be used to estimate the energy consumed by the Customer. Section 3.1.3 below shall be used to estimate any excess energy purchased by the Utility.

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## SERVICE SCHEDULE 8 BILL ESTIMATION

For customers served under rate schedules E-56, CPP-RES and CPP-GS, the energy estimation will be addressed on a case-by-case basis.

For bill estimation purposes, the Summer Season is defined as May through October and the Winter Season is defined as November through April.

The energy estimation methods are described in detail below.

### Previous Month Method

Estimated energy usage is calculated as follows:

1. Determine the number of days for the previous month's billing period.
2. Determine the kWh for the previous month's billing period.
3. Divide the previous month kWh by the previous month number of days to determine previous month per day usage.
4. Multiply the previous month per day usage by the number of days in the missing read billing period to yield the kWh for the missing read billing period.

### Same Month Prior Year Method

Estimated energy is calculated as follows:

1. Determine the number of days for the same month of the previous year's billing period.
2. Determine the kWh for the same month of the previous year's billing period.
3. Divide the same month prior year's kWh by the same month prior year's number of days to get same month prior year per day usage.
4. Multiply the same month prior year per day usage by the number of days in the missing read billing period to yield the kWh for the missing read billing period.

### Seasonal Average Method

Estimated energy is calculated as follows:

Where there is sufficient seasonal history (the number of days billed in the season is between 165 and 195 days), energy is estimated by calculating the average use per day for the same season as the billing period with the missing read. The resulting per day usage is multiplied by the number of days in the missing read billing period to yield the usage estimate for the billing period. Seasonal average is calculated as follows:



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1. Determine the total number of days from each of the previous six same-season months to yield seasonal total days.
2. Add the kWh from each of the previous six same-season months to yield seasonal total kWh.
3. Divide seasonal total kWh by seasonal total days to yield the seasonal per day usage.
4. Multiply the seasonal per day usage by the number of days in the missing read-billing period to yield the kWh for the missing read-billing period.

Class Average Method

Estimated energy usage is calculated as follows:

Where neither customer nor premises history is available, energy is estimated by calculating the average use per day for customer served under the same rate schedule. The resulting per day usage is multiplied by the number of days in the missing read-billing period to yield the usage estimate for the billing period.

3.1.1 TIME OF USE AND SEASONAL ESTIMATION (kWh):

If the rate for the estimated billing period is a time-of-use rate and sufficient time-of-use history does not exist for a customer or premises, on-peak and super-off-peak energy usage is allocated as follows:

	<u>Super Summer (Jun, Jul, Aug) ET-SP Only</u>	<u>Summer (May through October)</u>	<u>Winter (November through April)</u>
<b>Residential</b>			
—ET-1	-	37%	29%
—ET-2	-	25%	18%
—ET-SP			
—Super Peak	12%	-	-
—On Peak (12-3, 6-7)	13%	-	-
—On Peak (12-7)	-	25%	19%
—ECT-1R	-	36%	29%
—ECT-2	-	23%	17%
<b>ET-EV</b>			
—On Peak		25%	18%
—Super Off-peak		14%	15%
<b>Non-Residential</b>			
—All	-	33%	32%

1.1



## SERVICE SCHEDULE 8 BILL ESTIMATION

NOTE: The percentages specified above will also apply for seasonal estimation of Customer owned on-site distributed generators to include both the energy consumed by the Customer and any excess energy purchased by the utility.

Seasonal on-peak energy percentages listed above will be modified through general rate case or tariff filings or within three months whenever annual Load Research studies indicate that changes in these data are greater than 5 percentage points.

2.1 The estimation procedure will start with the first method and proceed to a subsequent method if necessary – for example, if the required information is not available, is unreasonable, or was also estimated.

2.2 Under each method, available kWh data is used to determine a per-day usage value by dividing the total kWh by the number of days in the billing period. The per-day usage is then multiplied by the number of days in the current billing period to determine estimates for total and on-peak kWh usage. For rates with a kW demand component the demand will be the actual demand read from the available data.

2.3 In certain cases the specific estimation methods and procedures in this schedule may not be appropriate or adequate. In such cases APS will use reasonable judgment in estimating the bill.

2.4 APS is not required to ask the customer to provide a meter read before estimating the bill.

### Method 1 - AMI Data

With AMI data, a monthly meter read may be missing but information for part of the month may be available through daily meter reads. If sufficient AMI data is available, typically at least 11 days of usage data, the bill will be estimated using the available AMI data.

### Method 2 – Previous Year Data

The bill will be estimated using available data for the same month last year, for the same customer at the same premises.

### Method 3 – Previous Month Data

The bill will be estimated using available data for the previous month, for the same customer at the same premises.

### Method 4 – Class Average Data

The bill will be estimated using average data for a designated class of customers.

**NOTE: SECTIONS 3 AND 4 WERE EDITED OUT OF ORDER SO REDLINES CAN BE SEEN**

### 3.1.2 ENERGY ESTIMATION FOR CUSTOMER OWNED ON-SITE DISTRIBUTED GENERATORS

For energy estimation for Customer owned on-site distributed generators, the following hierarchy is used: 1) The estimate will be based on each generators previous month's energy output unless that month was an initial bill. 2) If the prior month's generator specific energy output is not available or was an initial

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bill, the estimate will be based on the generator specific energy output for the same month in the prior year. 3) If the generator specific prior month or same month last year energy output is unavailable but adequate seasonal history exists for a similar type of generator, energy output will be estimated based on the similar generator's output during six months of the same season. 4) If similar generator output is not available, the estimate will be based on the prior month's generation output at that premises unless that month was an initial bill. 5) If prior month's premises generator output is not available or was an initial bill, the premises generator output for the same month in the prior year will be used to estimate generator output. 6) If premises specific prior month or same month last year generator output is unavailable but adequate seasonal premises generation output history exists, energy output will be estimated based on daily generation output during six months of the same season. 7) When adequate Customer or similar generator output history is not available, the generator estimate is based on a 50% availability factor for the month (20% for PV systems).

For customers served under time of use schedules, the hierarchy listed above will be utilized to develop the estimated on peak and off peak energy consumption.

### 3.1.3 EXCESS POWER (ENERGY) ESTIMATION FOR CUSTOMERS WITH CUSTOMER OWNED ON SITE DISTRIBUTED GENERATORS

This section estimates the amount of Customer owned on site distributed generation energy provided to the APS distribution system ("Excess Power"). For Excess Power estimation for Customer owned on site distributed generators, the following hierarchy is used: 1) The estimate will be based on the previous month's Excess Power kWh level unless that month was an initial bill. 2) If the prior month's Excess Power kWh level is not available or was an initial bill, the estimate will be based on the Excess Power kWh level for the same month in the prior year. 3) If the Excess Power kWh level for the prior month or same month last year is unavailable but adequate seasonal Excess Power history exists, the Excess Power kWh level will be estimated based on the daily Excess Power kWh level during six months of the same season. 4) If the seasonal daily Excess Power kWh level is not available, the Customer's estimate will be based on the prior month's Excess Power kWh level at that premises unless that month was an initial bill. 5) If prior month's premises Excess Power kWh level is not available or was an initial bill, the premises Excess Power kWh level for the same month in the prior year will be used to estimate the Excess Power kWh level. 6) If premises specific prior month or same month last year Excess Power kWh level data is unavailable but adequate seasonal premises Excess Power kWh level history exists, the Excess Power kWh level will be estimated based on the daily Excess Power kWh level during six months of the same season. 7) When adequate Customer or similar Excess Power kWh level history is not available, the Excess Power kWh level estimate is based on the following formula:

- a. Residential PV Systems:  $(1,630.8 \times \text{the nameplate continuous output power rating of the generating facility}) / 12 \times .10$



## SERVICE SCHEDULE 8 BILL ESTIMATION

b. ~~All other generating systems will be addressed on a case by case basis~~

~~For customers served under time of use schedules, the hierarchy listed above will be utilized to develop the estimated on peak and off peak Excess Power kWh levels.~~

### 3.1.44. HOURLY DATA ESTIMATION ENERGY ESTIMATION FOR MISSING INTERVAL DATA

4.1 Where ~~For rate schedules where kWh-billing information determinants are is~~ derived from interval data, such as 15 minute or hourly intervals, ~~the estimates will be derived and which are not specifically addressed elsewhere herein, the billing determinants shall be estimated through the from a~~ standard validating, editing and estimating (VEE) process as follows: described below.

~~3.1.4.1 If any of the relevant interval billing data is missing in a billing period, the kWh billing determinants will be estimated as stated below, with the exception of section 3.1.4.1.1.~~

- (A) Determine the kWh to be estimated: Compute the total kWh for the relevant time period by subtracting the start read from the stop read for that period, using the most recent reads. Sum the interval data for the same period to determine the kWh for the intervals having valid data. Compute the kWh for the interval data needing estimation (X): where (X) equals the total kWh for the period minus the kWh for the intervals with valid data.
- (B) Determine the reference day(s): Select a reference day (or days) to provide an estimate of the load shape for the missing interval data. The reference day shall have a load shape that resembles the time period needing estimation. Weekday load shapes will be estimated with weekday reference days, weekends with weekend reference days. Holidays will be estimated with a weekend reference day.
- (C) Replace the missing interval data with the reference day interval data for the same hour or sub-hour intervals of the day.
- (D) Scale the reference day interval data: Sum the kWh for the reference day interval data that replaced the missing interval data (Y). Create a scale factor by dividing the kWh for the section needing estimation (X) by (Y). Multiply each estimated interval data point in the period by the (X/Y) scale factor.

~~3. 3.1.4.1.1 For rate schedules GS Schools M and GS Schools L, the on peak and shoulder peak monthly billing kWh are derived from hourly interval data, while the off peak monthly kWh is derived as the residual of the total kWh register read less the on peak and shoulder peak kWh. If 3% or less of the relevant combined on peak and shoulder peak interval data is missing in a billing period, the missing kWh will be included in the residual off peak billing kWh. Otherwise the missing interval data will be estimated according to 3.1.4.1.~~



## SERVICE SCHEDULE 8 BILL ESTIMATION

### 3.1.5 ENERGY ESTIMATION FOR MISSING DAILY METER INFORMATION BILL ESTIMATION

3.1 For bills that rate schedules where kWh billing determinants are derived from are based on daily meter information, missing data will be estimated using the 4 methods detailed in Section 2. Sections 1.5, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.3 and 3.4 shall not apply except as noted below. Estimation shall be performed as follows:

3.1.5.1 ~~Missing data shall be estimated using the most recent day for which adequate information is available for the premises. Missing weekday information will be estimated with the most recent available weekday information. Missing weekend and Holiday information will be estimated with the most recent available weekend day information.~~

3.1.5.2 ~~If historic daily meter information is not available for the premises, the billing determinants shall be estimated using the class average data provided in Section 3.3.1 and the on-peak factors in Section 3.1.1, if applicable.~~

3.1.5.3 ~~3.2~~ Additional conditions for Prepay Energy Services include:

(A) ~~(a)~~ Company shall will indicate on its web portal, within 24 hours, when if the customer's daily bill has been estimated;

(b) ~~(B)~~ After no more than three consecutive days of estimation Company shall will take appropriate action to obtain the actual meter information and attempt to remedy any the meter, communication, or other factors causing the need for estimation, and  
2) have a Company representative contact the customer via telephone informing them of the need to estimate;

(c) ~~(C)~~ If estimation is still necessary after three consecutive days, the Company will make reasonable efforts to avoid estimating energy usage for more than seven consecutive days. In the unlikely event that a meter read cannot be obtained within seven consecutive days, the individual estimated customer account will be handled on an individual and case by case basis and best efforts used to reach the mutual satisfaction of the customer and Company, and

(d) ~~(D)~~ Company shall will not disconnect the customer due to a negative account balance caused by an estimated read, which has not been trued up with an actual read.

### 3.2 DEMAND ESTIMATION

~~For those accounts where the missing read period is billed on a demand rate and the missing read billing period is not for an initial bill, demand is estimated using the following hierarchy:~~

~~3.2.1 If it is the same customer, use the prior month's demand unless that demand was estimated or is for an initial bill.~~

~~3.2.2 If it is the same customer, but the prior month's customer specific demand is not available or was estimated or was an initial bill, use the customer specific demand read from the same billing month a year ago, unless that demand was estimated or is for an initial bill.~~



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- 3.2.3 — If the bill for the same month of the prior year was not for the same customer, or was estimated or for an initial bill, use the premises demand read for the prior month, unless that demand was estimated or is for an initial bill.
- 3.2.4 — If the prior month's premises demand was estimated or was an initial bill, use the premises demand read from the same billing month of the prior year, unless that demand was estimated or was for an initial bill.
- 3.2.5 — For purposes of this Section 3.2., a demand read is considered "estimated" if the demand was not reset the prior month (or any time thereafter) and the demand read is not greater than the prior month's demand read which was not reset.
- 3.2.6 — If none of the above is applicable, apply the rate schedule load factor percentage to the appropriate kWh. The rate schedule load factor percentages are:

<u>Residential:</u>	<u>Load Factor %</u>
-	-
ET SP Super Peak	43%
ET SP On Peak	38%
ECT 1R	39%
ECT 2	39%
<u>Non residential:</u>	
All	50%

— Load factors listed above will be modified through general rate case or tariff filings or within three months whenever annual Load Research studies indicate that changes in these data are greater than 5 percentage points.

- 3.2.7 — From time to time, meter reader may be unable to reset demand readings. When this occurs the readings are noted as "Demand Not Reset."
- 3.2.7.1 — In the month when the "Demand Not Reset" is noted, the kWh and kW are not estimates and are used for billing purposes.
- 3.2.7.2 — In the following month, if the meter reader is able to reset the demand, the "Demand Not Reset" notation is removed.
- 1) — If the kW reading is less than the reading for the previous month, the demand is used for billing purposes and is not an estimated demand.
  - 2) — If the demand reading is greater than the previous month when the "Demand Not Reset" was noted, the read demand is used.
  - 3) — If the demand reading is equal to the demand reading when the "Demand Not Reset" was noted, demand will be estimated using the procedures described in previous sections of this schedule.



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~~3.2.8 DEMAND ESTIMATION FOR CUSTOMER OWNED DISTRIBUTED GENERATORS~~

~~For those accounts where the missing read period is billed on a demand rate and the missing read billing period is not for an initial bill, demand is estimated using the following hierarchy:~~

- ~~3.2.8.1 If it is the same customer, use the prior month's demand from the Customer owned generator unless that demand was estimated or is for an initial bill.~~
- ~~3.2.8.2 If it is the same customer, but the prior month's customer specific demand from the generator is not available or was estimated or was an initial bill, use the customer specific demand on the generator from the same billing month a year ago, unless that demand was estimated or is for an initial bill.~~
- ~~3.2.8.3 If the demand on the generator for the same month of the prior year was not for the same customer, or was estimated or for an initial bill, use the premises generator demand read for the prior month, unless that demand was estimated or is for an initial bill.~~
- ~~3.2.8.4 If the prior month's premises demand from the generator was estimated or was an initial bill, use the premises demand from the generator from the same billing month of the prior year.~~
- ~~3.2.8.5 For purposes of this Section 3.2., a demand read on the generator is considered "estimated" if the demand was not reset the prior month (or any time thereafter) and the demand read on the generator is not greater than the prior month's demand read which was not reset.~~
- ~~3.2.8.6 If none of the above is applicable, apply the rate schedule load factor percentage to the appropriate kWh. The rate schedule load factor percentages are:~~

<u>Residential:</u>	<u>Load Factor %</u>
ET-SP Super Peak	43%
ET-SP On Peak	38%
ECT-1R	39%
ECT-2	39%
 <u>Non-residential:</u>	
All	50%

~~Load factors listed above will be modified through general rate case or tariff filings or within three months whenever annual Load Research studies indicate that changes in these data are greater than 5 percentage points.~~



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3.2.8.7 From time to time, meter reader may be unable to reset demand readings. When this occurs the readings are noted as "Demand Not Reset."

3.2.8.7.1 In the month when the "Demand Not Reset" is noted, the kWh and kW are not estimates and are used for billing purposes.

3.2.8.7.2 In the following month, if the meter reader is able to reset the demand on the generator, the "Demand Not Reset" notation is removed.

1) If the kW reading is less than the reading for the previous month, the demand on the generator is used for billing purposes and is not an estimated demand.

2) If the demand reading on the generator is greater than the previous month when the "Demand Not Reset" was noted, the read demand is used.

3) If the demand reading is equal to the demand reading when the "Demand Not Reset" was noted, demand will be estimated using the procedures described in previous sections of this schedule.

### 3.3 INITIAL BILL

An initial bill is the first bill a customer receives for a premises. Examples of an initial bill include a new meter set where no service has previously been provided, or a previously occupied premises that is now in the new connecting customer's name.

If the billing period for an initial bill is fewer than 11 days and no read was obtained, the customer is billed only a daily basic service charge, and any energy used during this period is included in the following month's billing period usage. If the billing period is 11 or more days, the bill is estimated as follows:

#### 3.3.1 ENERGY USAGE (kWh):

If there is no usage history for the premises, a "minimum usage" estimate is multiplied by the number of days in the missing read billing period. The difference in energy used during this period and the "minimum usage" estimate is included in the following month's billing period usage. The "minimum usage" estimates for total kWh are:

<u>Residential:</u>	
E-12	24 kWh per day
ET-1 and ET-2	46 kWh per day
ET-SP, ET-EV	47 kWh per day

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ECT 1R and ECT 2 74 kWh per day

Non residential:

Under 20 kW 42 kWh per day

Over 20 kW 1,087 kWh per day

SPECIAL CIRCUMSTANCES

NOTE: The minimum usage estimates specified above also apply to energy consumed by the Customer under rate schedules EPR 2 and EPR 5. Excess energy purchased by the utility will be estimated at zero for the initial bill.

Initial bill minimum energy usage estimates for total kWh listed above will be modified through general rate case or tariff filings or within three months whenever annual Load Research studies indicate that changes in these data are greater than 5%.

If there is usage history for the premises, energy will be estimated using the applicable method in Section 3.1. If there is no on-peak usage history for the premises, the allocations found in Section 3.1.1 will be utilized.

3.3.2 DEMAND (kW):

For those accounts where the missing read period is billed on a demand rate, demand is estimated as follows:

For initial bills fewer than 11 days, no demand charge is billed.

5.

For initial bills 11 or more days, the kW is estimated using the same hierarchy as indicated in Section 3.2.

3.4 ADVANCED METER INFRASTRUCTURE (AMI) METERS

When a missing read occurs on an account with an AMI meter, an initial attempt to estimate will be performed using partial month data as available. AMI meter data is normally collected on a daily basis, and therefore would be used to compute an estimate for the billing month, even if some of these daily reads are missing.

3.4.1 For initial and normal bills:

If the latest AMI meter data is available with a meter reading of 11 or more days since the last read date for the previous billing month:

- 1) Review the daily AMI incremental reads to determine the total energy consumption, on-peak percentage and demand for the billing month. Use reads from the latest AMI data to determine a per-day usage value and multiply by the number of days in the current billing period to yield the estimates for total and on-peak usage.
- 2) If the AMI meter data is unavailable use the estimation methods for non-AMI meters.



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~~3.4.2~~ For initial and normal bills of 10 or less days, use the estimation methods described in Section 3.3.

### 5.1 Distributed Generation

The billing information for distributed generation, such as total generator output and excess power, will be estimated with the 4 methods described in this schedule, except that an engineering estimate may also be used if the other methods are not available.~~3-5~~

### 5.2 ~~DEAD OR FAILING METER~~ Dead or Failing Meter

~~If the meter is dead or failing, no APS will not adjustment to the bill will be made until sufficient information is available from a the new meter, typically is in place at least 11 days or more of data. At that time any billing adjustments will be based on either the new billing information, adjusted for the days in the billing period, or Method 2 – Previous Year Data described in Section 2, whichever is lower. Then the usage for the previous month(s) is to be determined by taking the lower of the per day usage calculated from the new meter, less 3% (plus 3% for estimating customer owned on site generation bought by Utility), or the Same Month Prior Year Method described in Section 3.1. Charges for underbillings of dead or failing meters will be limited to three months for residential accounts and six months for non-residential accounts, in accordance with Schedule 1 Section 4.3. In instances where Company If APS believes that this estimate does not e reasonably reflect the customer's actual usage, the estimate may be adjusted patterns were different during the dead or failing meter period than those being used to estimate, Company may adjust its estimate downward. Such billing adjustments are limited to three months for residential accounts and six months for from either method non-residential accounts (See Schedule 1, Section 4.3).~~

### 3.65.3 ~~ENERGY DIVERSION OR METER TAMPERING~~ Energy Diversion or Meter Tampering

~~If n instances where energy diversion or meter tampering has occurred, metethe bill will r reads from the meter will not accurately reflect all of the energy usage. Energy consumption for the period during which the diversion or meter tampering occurred shall be estimated using by calculating a per day usage based on the best available information. This may include 1) metered data obtained from an auxiliary meter installed during the diversion investigation, ; 2) meter information obtained from the customer's meter after the diversion or meter tampering, was discovered by Company and stopped; and 3) consumption history for the customer or site prior to before the when the diversion or meter tampering, or other reasonable began sources of billing information as determined by Company.~~

### 5.4 Customer Supplied Meter Read

Some customers are approved to provide their own meter reads, consistent with ACC regulations. APS may estimate the bill if the customer fails to provide the read.

### 5.5 Meter Read Estimates Exceeding One Month

Estimates due to a malfunction of equipment that is owned or maintained by APS may exceed one month if the malfunction could not be reasonably discovered and corrected before the need for additional estimates. Estimates may also exceed one month if the equipment is owned or maintained by the customer.



## SERVICE SCHEDULE 8 BILL ESTIMATION

In some instances, the estimated consumption based on per day usage may be less than what the meter actually registered during the time period. In those cases, the actual usage will be used in the calculation of the total energy diversion or meter tampering back bill.

### 3.7 NON CUSTOMER INFORMATION SYSTEM ESTIMATES

In some instances, an account is coded to not be automatically estimated by Company's Customer Information System (CIS). This occurs when, due to special circumstances of the account (such as: served at substation voltage, receives a power allowance from a federal agency, partial requirements/self-generation, etc.), manual intervention in the billing process is required. For those accounts which are coded to not be automatically estimated by the CIS, additional attempts may be made to obtain meter readings which will be used for billing. If reads are not obtained, then energy and demand will be estimated, using the applicable methods described in this Schedule.

### 3.86. REBILLS TRUE-UPS OF PREVIOUS ESTIMATES

6.1 In instances where the reads are estimated and a subsequent actual read is obtained, the following "true-up" will be performed:

#### 3.8.1 ENERGY USAGE

##### 6.2 Monthly kWh True-Up

If the current monthly kWh actual read following an estimated read is either lower than the estimated read, or, in Company's opinion, considerably substantially higher than the prior previously estimated read(s), the per day usage is calculated using the difference in kWh will be adjusted using the average kWh per day between the last actual read and the current month actual read and the last valid read. The prior bill will be revised with the adjusted kWh applied to per day usage is multiplied by the number of days in each estimated month and each affected month is rebilled using the new per day usage kWh the billing period.

##### 6.3 Daily kWh True-Up

3.8.1.1 For service subject to daily billing determinants under section 3.1.5, if the actual daily read following an estimated read is either lower than or substantially the estimated daily read or, in Company's opinion, considerably higher than the prior previously estimated, the daily kWh read(s) will be adjusted, then per day usage is calculated using the average difference in kWh per day between the last actual daily read and the current actual daily read and the last valid read. All prior affected daily bills will be revised with the adjusted kWh. The per day usage is multiplied by the number of estimated days and each affected day is rebilled using the new per day usage kWh.

##### 6.4 kW Demand True-Up

#### 3.8.2 DEMAND

If kW the actual demand was not reset and the current actual demand read read obtained after an estimate is lower than the prior estimated demand read, the previous billed month(s) estimated demand will be adjusted downward to the new actual amount. The prior bill will be revised with the adjusted read(s) are lowered to the subsequent actual kW demand read.

The estimates used in this Section 3.8 take precedence over the estimating methods described elsewhere in this Service Schedule.

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**SERVICE SCHEDULE 8  
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