

FOR BOARD ACTION

Agenda Item # 6

Meeting Date:

11/29/11

SUBJECT:

High Efficiency HVAC Rate Requirements

PREPARED BY:

Mike Heppelmann, Senior Financial Analyst

ITEM DESCRIPTION:

The Residential, General Service, and Medium General Service High Efficiency HVAC Rates are for customers that use either an air source or ground source heat pump system as their only source of heating and cooling. Minimum efficiency requirements to qualify for these rates have historically been listed in the RPU Rate Tariff. Additionally RPU offers a rebate program for the purchase of air source and ground source heat pumps, which also requires that the equipment meet minimum efficiency requirements.

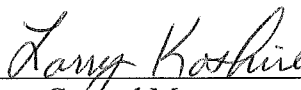
Staff recommends that the minimum efficiency requirements in the RPU Rate Tariff be specified by reference to RPU's Residential Electric Efficiency Rebate Application and Commercial Heat Pumps Rebate Application instead of listing them in the RPU Rate Tariff. There is no change to the rates themselves.

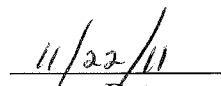
FOR CAPITAL PURCHASES/BIDS/MAJOR PROJECTS:

Not Applicable

UTILITY BOARD ACTION REQUESTED:

Management requests that the Utility Board approve the addition of language in the RPU Rate Tariff for the Residential, General Service, and Medium General Service High Efficiency HVAC Rates to reference RPU's Residential Electric Efficiency Rebate Application and Commercial Heat Pumps Rebate Application.


General Manager


Date

**ROCHESTER PUBLIC UTILITIES
(RPU)**

**RATESCHEDULE RESELGEO
SHEET 1 OF 2**

RESIDENTIAL SERVICE – HIGH EFFICIENCY HVAC

AVAILABILITY:

To RPU residential customers that:

1. Use either an air source or ground source heat pump system as the only source of heating and cooling in their home.
2. Use an electric water heater (usually connected to a desuperheater on the heat pump) as their only source of domestic water heating.
3. Receive prior approval of the equipment from RPU. Note that equipment must be rated by the Air-Conditioning, Heating, and Refrigeration Institute (AHRI)*, and at the time of installation, meet the minimum efficiency requirements found on the Residential Electric Efficiency Rebate Application in effect at the time. The current application is available at www.rpu.org.

*For air source heat pumps and water-to-air ground source heat pumps: the efficiency ratings are determined using the Air-Conditioning, Heating, and Refrigeration Institute's (AHRI) directory, which may be found at www.ahridirectory.org. For water-to-water ground source heat pumps: the efficiency ratings are verified using manufacturer specifications, which clearly demonstrate the entering water temperature (EWT), gallons per minute (GPM) water flow, and associated EER rating.

APPLICATION: Electric service required for residential purposes in individual private dwellings where service is supplied at one point of delivery and measured through one meter.

CHARACTER OF SERVICE:

Single phase, 60 hertz, 120/240 volts alternating current.

RATE:	<u>Non-Summer</u>	<u>Summer</u>
Customer Charge	\$14.50	\$14.50
Energy Charge	9.201¢ first 600/kwh 5.699¢ over 600/kwh	11.134¢ per kwh
Definition of Season:	Summer months are June through September. Non-summer months are January through May and October through December.	

**ROCHESTER PUBLIC UTILITIES
(RPU)**

**RATE SCHEDULE RESELGEO
SHEET 2 OF 2**

RESIDENTIAL SERVICE – HIGH EFFICIENCY HVAC (Cont.)

POWER SUPPLY ADJUSTMENT:

Bills computed under this rate schedule are subject to adjustment in accordance with the Power Supply Adjustment (PSA).

MINIMUM BILL: \$14.50 per month

PAYMENT: Payments are due on or before the due date.

CONDITIONS OF DELIVERY:

1. Service under this rate is only for air-source or ground-source heat pump systems that meet the stated efficiency requirements as explained in the Availability subhead of this rate schedule.
2. Service provided under this rate is subject to applicable provisions of RPU's published Electric Service Rules and Regulations.
3. Energy provided under this rate shall not be resold.
4. RPU shall not be liable for any damage or loss sustained by the customer resulting from interruptions, deficiencies, or imperfections of service provided under this rate.

Approved by Rochester Public Utility Board:
Effective Date:

November 29, 2011
January 1, 2012

**ROCHESTER PUBLIC UTILITIES
(RPU)**

**RATE SCHEDULE GS-HEF
SHEET 1 OF 2**

GENERAL SERVICE - HIGH EFFICIENCY HVAC

AVAILABILITY:

At all locations for loads of less than 75 kW where facilities of adequate capacity and suitable voltage are adjacent to the premises to be served and to customers who:

1. Use either an air source or ground source heat pump system as the only source of heating and cooling in their facility.
2. Use an electric water heater (usually connected to a desuperheater on the heat pump) as the only source of water heating.
3. Receive prior approval of the equipment from RPU. Note that equipment must be rated by the Air-Conditioning, Heating, and Refrigeration Institute (AHRI)* and at the time of installation, meet the minimum efficiency requirements found on the Commercial Heat Pumps Rebate Application in effect at the time. The current application is available at www.rpu.org.
4. Service under this rate must be separately metered from other facility loads.

*For air source heat pumps and water-to-air source heat pumps: the efficiency ratings are determined using the Air-Conditioning, Heating and Refrigeration Institute's (AHRI) Directory, which may be found at www.ahridirectory.org For water-to-water ground source heat pumps: the efficiency ratings are verified using manufacturer specifications, which clearly demonstrate the entering water temperature (EWT), gallons per minute (GPM) water flow, and associated EER rating.

Note: Other all-electric HVAC systems may be considered for this rate if they meet the stated efficiency standards. To have a system considered, customers must submit an engineering analysis documenting the efficiency of the system.

APPLICATION:

To commercial, industrial, governmental, and other types of General Service customers reconfiguring their current electric service, or adding a new service, to separately meter their high efficiency HVAC equipment. Not applicable to standby service.

CHARACTER OF SERVICE:

Single or three phase, 60 Hertz, alternating current at any one of the standard secondary service voltages as described in RPU's published Electric Service Rules and Regulations.

**ROCHESTER PUBLIC UTILITIES
(RPU)**

**RATE SCHEDULE GS-HEF
SHEET 2 OF 2**

GENERAL SERVICE - HIGH EFFICIENCY HVAC (Cont.)

RATE:	<u>Non-Summer</u>	<u>Summer</u>
Customer Charge:	\$29.00	\$29.00
Energy Charge:	7.427¢ per kWh	11.271¢ per kWh

Definition of Season: Summer months are June through September. Non-summer months are January through May and October through December.

POWER SUPPLY ADJUSTMENT:

Bills computed under this rate schedule are subject to adjustment in accordance with the Power Supply Adjustment (PSA).

MINIMUM BILL:

\$29.00 per month.

PAYMENT:

Payments are due on or before the due date.

CONDITIONS OF DELIVERY

1. Service under this rate is only for air-source or ground-source heat pumps and any other all-electric systems that meet the stated efficiency requirements as explained in the Availability subhead of this rate schedule.
2. Service under this rate must be separately metered from other facility loads.
3. Since the HVAC system must be separately metered for this rate, the customer is responsible for any rewiring and its associated costs.
4. Service provided under this rate is subject to applicable provisions of RPU's published Electric Service Rules and Regulations.
5. Energy provided under this rate shall not be resold.
6. RPU shall not be liable for any damage or loss sustained by the customer resulting from interruptions, deficiencies, or imperfections of service provided under this rate.
7. Unless authorized by separate written agreement, standby electric generating equipment installed by the customer shall not be interconnected, or operated in parallel, with the RPU system. Customer shall own, install, operate, and maintain electrical interlocking equipment, which will prevent parallel operation, and such equipment shall be approved by RPU prior to installation.

Approved by Rochester Public Utility Board:
Effective Date:

November 29, 2011
January 1, 2012

**ROCHESTER PUBLIC UTILITIES
(RPU)**

**RATE SCHEDULE MGS-HEF
SHEET 1 OF 3**

MEDIUM GENERAL SERVICE - HIGH EFFICIENCY HVAC

AVAILABILITY:

At all locations for loads where the demand is at least 75 kW or more for three or more billing periods in a given calendar year, but less than 1,000 kW, and where facilities of adequate capacity and suitable voltage are adjacent to the premises to be served, and to customers who:

1. Use either an air source or ground source heat pump as the only source of heating and cooling in their facility.
2. Use an electric water heater (usually connected to a desuperheater on the heat pump) as the only source of water heating.
3. Receive prior approval of the equipment from RPU. Note that equipment must be rated by the Air-Conditioning, Heating, and Refrigeration Institute (AHRI)* and at the time of installation, meet the minimum efficiency requirements found on the Commercial Heat Pumps Rebate Application in effect at the time. The current application is available at www.rpu.org.
4. Service under this rate must be separately metered from other facility loads.

*For air source heat pumps and water-to-air ground source heat pumps: the efficiency ratings are determined using the Air-Conditioning, Heating and Refrigeration Institute's (AHRI) directory, which may be found at www.ahridirectory.org. For water-to-water ground source heat pumps: the efficiency ratings are verified using manufacturer specification, which clearly demonstrate the entering water temperature (EWT), gallons per minute (GPM) water flow, and associated EER rating.

Note: Other all-electric HVAC systems may be considered for this rate if they meet the stated efficiency standards. To have a system considered, customers must submit an engineering analysis documenting the efficiency of the system.

APPLICATION:

To commercial, industrial, governmental, and other types of Medium General Service customers reconfiguring their current electric service, or adding a new service, to separately meter their high efficiency HVAC equipment. Not applicable to standby service.

CHARACTER OF SERVICE:

Single or three phase 60 Hertz, alternating current at any one of the standard secondary service voltages as described in RPU's published Electric Service Rules and Regulations.

**ROCHESTER PUBLIC UTILITIES
(RPU)**

**RATE SCHEDULE MGS-HEF
SHEET 2 OF 3**

MEDIUM GENERAL SERVICE - HIGH EFFICIENCY HVAC (Cont.)

RATE:	<u>Non-Summer</u>	<u>Summer</u>
Demand Charge:	\$11.882 per kW	\$18.793 per kW
Energy Charge:	4.423¢ per kWh	5.267¢ per kWh

Definition of Season: Summer months are June through September. Non-summer months are January through May and October through December.

POWER SUPPLY ADJUSTMENT:

Bills computed under this rate schedule are subject to adjustment in accordance with the Power Supply Adjustment (PSA).

POWER FACTOR ADJUSTMENT:

The customer agrees to maintain an average power factor of 0.95 or greater for the billing period and to prevent a leading power factor. If the customer's average power factor is less than 0.95 for the billing period, the billing demand will be determined by multiplying the measured demand by 0.95 and dividing the results by the customer's average power factor. The average power factor is defined to be the quotient obtained by dividing the kWh used during the month by the square root of the sum of the squares of the kWh used and the lagging reactive kilovoltampere-hours supplied during the same period. The customer's average power factor will be determined by means of permanently installed meters.

PRIMARY METER DISCOUNT:

Customers approved for metering at 13.8 kV will receive a discount of 1.25% on base rate charges for measured demand and energy.

TRANSFORMER OWNERSHIP CREDIT:

Customers owning transformers will receive a credit of \$.20 per kW on each month's measured demand.

DETERMINATION OF DEMAND:

Measured demand is defined as the maximum rate at which energy is used for any period of fifteen consecutive minutes during the billing period. The billing demand shall be the greater of the measured demand for the billing period adjusted for power factor, or 75% of the maximum measured demand for the most current June - September billing periods adjusted for power factor (referred to as ratchet). Billing periods may not coincide with calendar months.

For an existing facility reconfiguring its current electric service to come under this rate by separately metering its high efficiency HVAC equipment, the ratchet will be removed from the current electric service. The ratchet will be effective beginning in October following the first separately metered high efficiency HVAC service during one of the summer billing periods, June-September.

**ROCHESTER PUBLIC UTILITIES
(RPU)**

**RATE SCHEDULE MGS-HEF
SHEET 3 OF 3**

MEDIUM GENERAL SERVICE - HIGH EFFICIENCY HVAC (Cont.)

At that time the ratchet will be reapplied to the current electric service and will be applied for the first time to the high-efficiency HVAC service.

MINIMUM BILL:

The minimum bill shall not be less than the billing demand, as provided above, whether or not energy is used.

PAYMENT:

Payments are due on or before the due date.

CONDITIONS OF DELIVERY:

1. Service under this rate is only for air-source or ground-source heat pumps and any other all-electric HVAC systems that meet the stated efficiency requirements as explained in the Availability subhead of this rate schedule.
2. Service under this rate must be separately metered from other facility loads.
3. Since the HVAC system must be separately metered for this rate, the customer is responsible for any rewiring and its associated costs.
4. Service provided under this rate is subject to applicable provisions of RPU's published Electric Service Rules and Regulations.
5. Energy provided under this rate shall not be resold.
6. RPU shall not be liable for any damage or loss sustained by the customer resulting from interruptions, deficiencies, or imperfections of service provided under this rate.
7. Unless authorized by separate written agreement, standby electric generating equipment installed by the customer shall not be interconnected, or operated in parallel, with the RPU system. Customer shall own, install, operate, and maintain electrical interlocking equipment, which will prevent parallel operation, and such equipment shall be approved by RPU prior to installation

Approved by Rochester Public Utility Board:
Effective Date:

November 29, 2011
January 1, 2012



RESOLUTION

BE IT RESOLVED by the Public Utility Board of the City of Rochester, Minnesota, to approve the addition of language in the RPU Rate Tariff for the Residential, General Service, and Medium General Service High Efficiency HVAC Rates to reference RPU's Residential Electric Efficiency Rebate Application and Commercial Heat Pumps Rebate Application.

Passed by the Public Utility Board of the City of Rochester, Minnesota, this 29th day of November, 2011.

President

Secretary