

MPW is investigating an expansion of our renewable energy portfolio to meet the sustainability needs of our community.

# How fast we grow depends on you!

Industrial and Commercial II customers have expressed interest in additional local renewable energy options to satisfy their corporate sustainability goals. Several are already purchasing Renewable Energy Certificates (REC) generated by our South Fork Wind Farm.

As part of our **Powering the Future** strategic initiative, MPW is investigating an initial local 30 MW solar installation (*Estimated Output: 60 million kWh annually*), referred to as "MPW Solar — Phase 1".



This project and future long-term, large projects will provide stable REC pricing and direct participation in renewable energy options. To complete our calculations and proceed, we need realistic numbers from potential users.

Our **Choose Green Business** program allows you to directly purchase renewable energy and receive Renewable Energy Credits generated from the MPW renewable portfolio with no up-front investment, just a small "add-on" estimated between 0.5¢ and 1.0¢ per kWh. The add-on is intended to cover the forecasted cost premium associated with these projects. Negotiated project costs will determine final adder rate.

Whether it's your full plant or a targeted product line, only you can determine how much of your annual power consumption you'd like to dedicate to local renewable energy. Availability is limited.

## MPW Solar — Phase 1

*We'd like to get a feel for your level of interest at these potential "adder" rate price points above your current energy rate.*

\_\_\_\_\_ kWh @ **0.5¢** per kWh  
\_\_\_\_\_ kWh @ **0.7¢** per kWh  
\_\_\_\_\_ kWh @ **1.0¢** per kWh

*(non-binding estimate)*

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# Muscatine Power and Water (MPW) Local Renewable Energy Program

The program is designed to help MPW Commercial II and Industrial customers fulfill sustainability goals by meeting a significant portion of their electricity needs from local renewable generation. Direct participation in these long-term, large projects will provide stable renewable energy options to participating MPW Commercial II and Industrial customers and promote the expansion of local renewable energy.

## Background

In 2016, MPW added wind generation as a renewable resource with a purchased power agreement (PPA) for the output from the South Fork Wind Farm (SFW) in southern Minnesota. As a renewable resource, SFW produces one renewable energy certificate (REC) for each MWh produced. RECs represent the rights to the environmental, social and other non-energy attributes of renewable electricity generation. MPW's Choose Green Muscatine—Business Program (**Choose Green Business**) is one way MPW customers support renewable energy by buying RECs from South Fork Wind. However, the SFW PPA is not from a local generation source.

MPW's customers have expressed interest in local renewable energy options to satisfy their corporate sustainability goals and support MPW's generation diversification. MPW established **Choose Green Business** to allow customers to directly purchase renewable energy from the MPW portfolio. Program rates are designed to pass project costs on to program participants and thus minimizing subsidization from other MPW customers.

## Availability

Renewable energy projects will be evaluated based on their impact to MPW's system stability, reliability and costs, coupled with customer interest in program participation. Given the potential variability in technology costs and project timing, each individual project will be offered through **Choose Green Business** with unique pricing, volume and availability. If multiple participation requests exceed the project capacity, the available capacity will be proportionally allocated based on the participant's prior three-year native load ratios. An example of this proportional allocation is provided at right.

Customers participate in each project in 100 kW blocks, with the total project capacity based on the net kW<sub>AC</sub> output rating. Renewable generation participation shall

not exceed a customer's previous three-years' average annual energy volume, rounded up to the next 100 kW. For the sake of these limits, an estimated project capacity factor will be used to determine the volume of renewable energy that will be produced per 100 kW block.

There is no guarantee of energy volume delivered from the local renewable energy facilities. Actual energy produced will be allocated based on the percentage of the facility's capacity subscribed to each participant.

MPW reserves the right to limit program participation to its available local renewable energy facilities.

MPW reserves the right to retain a portion of the project outputs and any unsubscribed renewable project attributes, which will be made available to other MPW customers.

## Eligibility

- *Participating customers must sign a **Choose Green Business** project commitment*
- *Customers must receive electric supply and delivery service from MPW*
- *Limited to customers in Commercial II and Industrial customer classes*
- *Account history must be in good standing*
- *Minimum 20-year contract (contingent on project term)*

|                                  | 3 Year Avg. Load (MWh) | Load Ratio | 100kW Blocks | Est. Annual Renewable Energy Volume (MWh) |
|----------------------------------|------------------------|------------|--------------|---|
| Renewable Project Peak AC output |                        |            | 300          | 60,000                                    |
| Customer 1                       | 100,000                | 45%        | 135          | 27,000                                    |
| Customer 2                       | 70,000                 | 32%        | 96           | 19,200                                    |
| Customer 3                       | 50,000                 | 23%        | 69           | 13,800                                    |

*Estimated output of 200MWh per 100kW block per year, equivalent to a 22.8% capacity factor)*

Participating customers must continue to meet the eligibility requirements of the program throughout the term of their participation. Any subscribed renewable energy project blocks released due to ineligibility may be made available to other eligible MPW customers.

## Subscription Pricing

MPW currently anticipates renewable energy costs will exceed MPW's net energy costs. 100 kWh blocks will be

priced such that the additional costs will substantially be covered by program participants. Program pricing includes the energy and RECs, that is, participating customers would receive one REC for every 1,000 kWh they purchase through the program. The **Choose Green Business** price will be fixed for the term based on forecasted costs and market pricing for each project. The cost and revenue factors and calculation methodology included in the forecast are listed below.

### Program Pricing Calculation Factors

| Description   |
|---|
| Renewable Energy PPA Contract Costs (Adjusted for System Losses) *      |
| - Less Renewable Energy Capacity Benefits **                            |
| + Plus Cost to Interconnect Renewable Energy Project to MPW System ***  |
| Net Cost of Solar   |
| - Less Net Energy Costs from MPW's Existing Power Supply Portfolio **** |
| <b>= Renewable Energy Retail Adder ("Adder")</b>                        |

\* Solar developer retains Federal, State, and local tax incentives.

\*\* Forecasted based on MISO accreditation and value.

\*\*\* Interconnection and administrative costs will include any up-front costs associated with interconnecting the renewable energy project to the transmission and/or distribution system. These costs may include, but not be limited to, electrical and control equipment required for interconnection, any MISO interconnection costs, etc.

\*\*\*\* Forecasted.

### Billing

Customers shall be billed a renewable energy charge, appearing as a separate line item on the bill, calculated as the power generated by participating customers' proportional share of the kWh produced by the renewable energy project, multiplied by the Adder. Participating customers shall be billed all other charges and credits based on the then-current rate for their class of service.

Customers' energy production will be determined monthly based on their prorated share of the renewable energy project's previous month's actual production. There are no production guarantees.

MPW will retire any RECs associated with participating customers' energy production by the renewable

facility. This action involves retiring the RECs in the Midwest Renewable Energy Tracking System on behalf of the customers. RECs are included as part of the Renewable Net Energy Costs calculated above and costs are not adjusted separately based on the market value of the REC's. Any unsubscribed kWh from renewable energy projects may be made available to other MPW customers. Any unsubscribed RECs produced from program project(s) may be sold for the benefit of all MPW customers.

### Early Termination Fees

By undertaking a renewable energy project under this program, MPW is committing to certain up-front capital costs associated with the interconnection and long-term contracts for the output of the renewable energy project. Therefore, it is appropriate and important to establish an early termination fee for a participant that terminates their commitment before the end of the term.

The early termination fees will be calculated based on the forecasted energy volume over the remaining term at the fixed renewable energy adder, then discounted by 50%. For example, if a participant's annual commitment was 2 million kWh at a 1.0¢/kWh Adder and they ended their commitment with 10 years remaining on the term, their early termination fee would be \$100,000 (2 million kWh/yr. x 1.0¢/kWh x 10 years x 50%).

This fee will be reduced in proportion to whatever percentage of the participant's commitment can be re-assigned to another customer within two months of the effective termination date. If the participant's entire commitment is reassigned within two months, the fee will be waived in its entirety.

### Renewable Projects

A new Renewable Energy Retail Adder rate will be established for each new local renewable energy project based on the costs and revenues associated with each project.

#### MPW Solar — Phase 1 (Grandview Avenue)

The first **Choose Green Business** project will be solar with a nameplate rating of 30 MWac and an anticipated initial annual electrical output of 60 million kWh/yr, located on MPW's Grandview Avenue well field site. The Adder for this project will be finalized when costs associated with the project are more clearly defined.

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