

Draft Otter Tail Power Company Responses

These scenarios, outlined in a Memo¹, developed for the Minnesota DG Tariff Workgroup and Electric Utilities' Representatives are Otter Tail's first cut at addressing the potential arrangements to handle the customer DG requests. For the most part, Otter Tail views these scenarios as "specialized" and would likely involve further discussion. Using the tariffs available to Otter Tail customers today would not likely address all the potential situations for service / re-sale. In order to address these arrangements in final form, Otter Tail would need to enter into a contract with the customer and seek proper regulatory approval(s).

Assumptions: When the scenario indicates selling energy back to the utility, it is intended that Otter Tail Power Company will be purchasing the energy under a purchase power agreement. No distribution wheeling or potential "credits/costs" have been addressed in this draft.

Otter Tail attempted to address the following scenarios/clarifications as offered in the memo and further expanded by Xcel Energy for discussion purposes.

a) 1 MW natural gas fired DG

On-site Load:	1 MW
On-site Distributed Generation:	1 MW (natural gas)
Energy Purchased by DG Customer from the utility:	no
Energy Produced by DG Customer sold back to the utility:	yes
Hours of scheduled maintenance per year:	40 hours
Hours of unscheduled maintenance per year:	10 hours

1) Energy Purchased by DG customer from the utility truly is "no" (on-site load is always less than generation output and if generation is out for scheduled or unscheduled maintenance then load is tripped off), but site is still connected to system to sell surplus energy.

Charges to customer:

- Incremental facilities costs as determined by study – MISO contractor, \$5000 deposit. Customer is refunded/charged if study is less/more than deposit.
- Monthly delivery charges - per MISO Transmission Tariff if generator uses OTP transmission. Other situations (distribution wheeling etc. would require further provisions in a special contract with regulatory approval)

¹ Developed by John Bailey (Institute for Local Self-Reliance), John Jaffray (Praire Gen LLC), Rafi Sohail (Minnegasco) and submitted on 9/27/02. The tables shown are from the same memo.

a) 1 continued

- Monthly ancillary services charges – MISO collects payment based on Otter Tail CASOT Tariff² (Approval from FERC) includes Schedule 1,3b and 4a - about \$127/month.

Payments to customer:

- Surplus energy payments: - Purchase Power Agreement with Otter Tail Power Company

2) Energy purchased by DG customer from utility is “no” except during generator outages (scheduled or unscheduled).

Charges to customer:

- Incremental facilities costs as determined by study– see a) 1
- Monthly delivery charges – see a) 1
- Monthly ancillary services charges – see a) 1
- Monthly supply back-up capacity reservation fees – Otter Tail Standby Tariff
- Supply back-up energy usage charges as used– Otter Tail Standby Tariff or if this is a short-term outage, the generator could take Otter Tail CASOT Schedule 4B: Generator Back-up Supply Service for generators < 5 MW and for an outage less than 6 hours.]

Payments to customer:

- Surplus energy payments- Purchase Power Agreement with Otter Tail Power Company

3) Customer plans for situation 1) above, but from time to time site load exceeds generation output.

Charges to customer:

- Incremental facilities costs as determined by study– see a) 1
- Monthly delivery charges – see a) 1
- Monthly ancillary services charges– see a) 1
- Supply back-up capacity use penalty – not allowed under OTP Stand-by tariff. Special contract provision would likely apply.
- Supply back-up energy unauthorized usage charges – not allowed under OTP Stand-by tariff. Special contract provision would likely.

Payments to customer:

- Surplus energy payments- Purchase Power Agreement with Otter Tail Power Company

² Control Area Services and Operations Tariff. A Control Area is designed to control generation directly to maintain the control area’s interchange schedule with other control areas and contribute to frequency regulation of the interconnection. Otter Tail Power Company’s control area, made up of about a dozen entities, is connected to five neighboring control areas.

b) 1-2 Mw (variable load) natural gas-fired DG

On-site Load:	5 MW
On-site Distributed Generation:	1-2 MW (natural gas)
Energy Purchased by DG Customer from the utility:	yes
Energy Produced by DG Customer sold back to the utility:	no
Hours of scheduled maintenance per year:	40 hours
Hours of unscheduled maintenance per year:	10 hours

Charges to customer:

- Incremental facilities costs as determined by study
- Monthly delivery charges – [per tariff/contract](#)
- Monthly ancillary services charges- [Otter Tail CASOT Tariff \(Approval from FERC\) Schedules 1, 3B, 4A and optional 4B – about \\$252/mo.](#)
- (Optional) Supply back-up capacity - capacity reservation fee for 2 MW
 - 1MW Standby – [Stand-by Tariff, Back-up Service](#)
 - 1MW Supplemental – [Large General Service TOU Rate \(per language in Stand-by rate\) - or Optional CASOT Schedule 4B: Generator Backup Supply Service](#)
- (Optional) Supply back-up energy usage charges as used - [Stand-by Tariff, Back-up Service](#)
- Residual retail service charges for 3MW only – [applicable Otter Tail retail rate](#)

c) 1.9 (?) MW wind energy DG

On-site Load:	250 kW
On-site Distributed Generation:	1 MW (wind energy)
Energy Purchased by DG Customer from the utility:	yes
Energy Produced by DG Customer sold back to the utility:	yes
Hours of scheduled maintenance per year:	40 hours
Hours of unscheduled maintenance per year:	10 hours
Annual capacity factor of wind project	34 percent

1) [Self service \(I believe the question mark refers to a 1.9 MW generator yet the table refers to a 1 MW generator\)](#)

Charges to customer:

- Incremental facilities costs as determined by study– [see a\) 1](#)
- Monthly delivery charges for 1MW of generation- [The Otter Tail CASOT tariff doesn't apply any delivery charges. These charges would likely be assessed through MISO service.](#)
- Monthly ancillary services charges for 1 MW of generation- [Otter Tail CASOT Tariff \(Approval from FERC\) Schedules 1, 3B, 4A and optional 4B. We also have designed Schedule 9B \(Short-Interval Scheduling Service\) with wind entities in mind. If the wind entity is serving load it could arrange a short-interval schedule to supply such generation when the wind isn't blowing](#)

c) 1 continued

- Supply back-up capacity reservation fee for 250 kW of load – Stand-by Tariff
 - 250 kW Supplemental - Large General Service TOU Rate (per language in Stand-by rate)
 - - Supply back-up energy usage charges as used - Stand-by Tariff, Back-up Service

Payments to customer:

- Surplus energy payments- Purchase Power Agreement with Otter Tail Power Company

2) Buy-all/sell-all

Charges to customer:

- Incremental facilities costs as determined by study– see a) 1
- Monthly delivery charges for 750 kW of generation above load- The Otter Tail CASOT tariff doesn't apply any delivery charges. These charges would likely be assessed through MISO service
- Monthly ancillary services charges for 1 MW of generation- Otter Tail CASOT Tariff (Approval from FERC) Schedule 1, 3B, 4A and optional 4B about \$127/month excluding 4B (which is Generator Backup Supply Service.)
- Retail services for 250 kW of load - Applicable Otter Tail Retail Tariff

Payments to customer: Purchase Power Agreement with Otter Tail Power Company

d) 10 MW natural gas DG

On-site Load:	5 MW
On-site Distributed Generation:	10 MW
Energy Purchased by DG Customer from the utility:	no
Energy Produced by DG Customer sold back to the utility:	yes
Hours of scheduled maintenance per year:	40 hours
Hours of unscheduled maintenance per year:	10 hours

Same results as a) except Monthly ancillary services charges over \$631 per month

e) 3 kW solar photovoltaic DG

On-site Load:	1 kW
On-site Distributed Generation:	3 KW (photovoltaics)
Energy Purchased by DG Customer from the utility:	yes
Energy Produced by DG Customer sold back to the utility:	yes
Hours of scheduled maintenance per year:	5 hours
Hours of unscheduled maintenance per year:	0 hours

This situation would likely use Otter Tails Small Power Producer Riders (P-01M, P-05M, or P-06M). See our website http://www.otpc.com/business/comm_prices_fultxt.asp

f) Multiple DG Installation: 3 30 kW (natural gas)

On-site Load:	500 kW
On-site Distributed Generation:	3 30-kW (natural gas)
Energy Purchased by DG Customer from the utility:	Yes
Energy Produced by DG Customer sold back to the utility:	No
Hours of scheduled maintenance per year:	40
Hours of unscheduled maintenance per year:	10

The interconnection requirements may change between a 3 30 kW situation and a single unit 90 kW situation. However, the pricing results are the same as **b)** except for Monthly ancillary services charges – which would be substantially less.

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