

Residential Bill Impact Estimate Calculator
Rate Schedule D1 vs. Distributed Generation (Rider 18)

This calculator compares a residential customer's bill without solar generation or enrollment in the Distributed Generation (Rider 18) program to a residential bill with solar generation and enrollment in the program. An average residential home is serviced by DTE Energy under the D1 Residential rate schedule.



Based on spreadsheet from DTE, <https://www.newlook.dteenergy.com/wps/wcm/connect/718d4bb3-07d4-4b4b-8b89-d4117a09bdb7/Rider18Calculator.xlsx?MOD=AJPERES>

Important Notes:

INPUTS - ESTIMATE YOUR ACTIVITY			
Billing Period		30	days
Inflow (energy delivered by DTE)		10	kWh
Outflow (energy exported to DTE)		394	kWh
Solar Generation		704	kWh
Annual Peak Demand (Avg)		0.95	kW
Onsite Usage (Inflow+Generation)		320	kWh

SUMMARY – 2021		
Residential D1 Rate with Rider 18		\$9.44
Rider 18 - Ending Bank Balance		\$32.20
Residential D1 Rate without solar		\$64.36
Estimated Rider 18 Bill Savings with Solar		\$54.92
Rider 18 Savings + Banked Credits		\$87.12

MARY – 2022 – U20836 proposed outflow and den		
Residential D1.12 Rate with U20836 2021		\$8.75
Residential D1 Rate with Rider 18 2021		\$9.44
Residential D1 Rate without solar		\$64.36
Estimated R18 Saving with Solar, U20836		\$55.61
Estimated Rider 18 Bill Savings with Solar		\$54.92

SUMMARY – 2022 – U20836 proposed outflow, D1, Rider 18		
Residential D1 Rate with U20836 outflow 2021		\$9.44
Residential D1 Rate with Rider 18 2021		\$9.44
Residential D1 Rate without solar		\$64.36
Estimated R18 Saving with Solar, U20836		\$54.92
Estimated Rider 18 Bill Savings with Solar		\$54.92

Rate Schedule D1 Bill without solar			
	Rate	Bill Det	Bill
Power Supply			
Capacity Charges:			
First 17 kWh	#####	320	\$14.40
Excess	#####	0	\$0.00
Non-Capacity Charge	#####	320	\$13.36
PSCR	#####	320	\$2.13
Other Power Supply Volumetric Surcharges			(\$0.05)
Power Supply Subtotal			####
<u>Delivery</u>			
Service Charge	\$7.50	1	\$7.50
Distribution Charge	#####	320	\$21.16
LIEAF	\$0.87	1	\$0.87
Other Delivery Volumetric Surcharges			\$2.55
Delivery Subtotal			####
Total			####
Tax			\$2.44
Grand Total			####

Rate Schedule D1 Bill with Solar, 2021 Rider 18				
	Rate	Bill Det	Bill	
Power Supply				
Capacity Charges:				
First 17 kWh	#####	10	\$0.45	
Excess	#####	0	\$0.00	
Non-Capacity Charge	#####	10	\$0.42	
PSCR	#####	10	\$0.07	
Other Power Supply Volumetric Surcharges				
\$0.00				
Outflow Credits				
First 17 kWh	#####	394	###	
Excess	#####	0	\$0.00	
Excess Gen Bank Adjustment			\$32.20	
Power Supply Subtotal			\$0.00	
<u>Delivery</u>				
Service Charge	\$7.50	1	\$7.50	
Distribution Charge	#####	10	\$0.66	
LIEAF	\$0.87	1	\$0.87	
Other Delivery Volumetric Surcharges			\$0.08	
Delivery Subtotal			\$9.11	
Total			\$9.11	
Tax			\$0.33	
Grand Total			\$9.44	
<u>Excess Generation Bank</u>				
Start			\$0.00	
Change			\$32.20	
End			\$32.20	

20836 proposed Rate D1.12 Bill with Solar, Rider 18				
	Rate	Bill Det	Bill	
Power Supply				
Capacity Charges:				
Capacity Energy Charge	#####	0.95	\$0.00	
Non-Capacity Energy Char	#####	10	\$0.49	
PSCR	#####	10	\$0.07	
Other Power Supply Volumetric Surcharges			\$0.00	
Outflow Credits				
All outflow kWh	#####	394	(\$16.30)	
Excess Gen Bank Adjustment			\$15.74	
Power Supply Subtotal			\$0.00	
<u>Delivery</u>				
Service Charge	\$7.50	1	\$7.50	
Distribution Charge	\$10.76	0.95	\$0.00	
LIEAF	\$0.87	1	\$0.87	
Other Delivery Volumetric Surcharges			\$0.08	
Delivery Subtotal			\$8.45	
Total			\$8.45	
Tax			\$0.30	
Grand Total			\$8.75	
<u>Excess Generation Bank</u>				
Start			\$0.00	
Change			\$15.74	
End			\$15.74	

20836 proposed outflow, Rate D1 with Solar, Rider 18				
	Rate	Bill Det	Bill	
Power Supply				
Capacity Charges:				
First 17 kWh	\$0.04500	10	\$0.45	
Excess	\$0.06484	0	\$0.00	
Non-Capacity Charge	\$0.04176	10	\$0.42	
PSCR	\$0.00665	10	\$0.07	
Other Power Supply Volumetric Surcharges			\$0.00	
Outflow Credits				
All outflow kWh	(\$0.04136)	394	####	
Excess Gen Bank Adjustment			####	
Power Supply Subtotal			\$0.00	
Delivery				
Service Charge	\$7.50	1	\$7.50	
Distribution Charge	\$0.06611	10	\$0.66	
LIEAF	\$0.87	1	\$0.87	
Other Delivery Volumetric Surcharges			\$0.08	
Delivery Subtotal			\$9.11	
Total			\$9.11	
Tax			\$0.33	
Grand Total			\$9.44	
Excess Generation Bank				
Start			\$0.00	
Change			\$15.36	
End			\$15.36	

Other Power Supply Volume	Rate	Bill Det	Bill	
Securitization Charge	#####	320	\$0.07	
Bill Credit	#####	320	-\$0.12	
Total			-\$0.05	

Other Power Supply Volume	Rate	Bill Det	Bill	
Securitization Charge	#####	10	\$0.00	
Bill Credit	#####	10	\$0.00	
Total			\$0.00	

Other Power Supply Volume	Rate	Bill Det	Bill	
Securitization Charge	#####	10	\$0.00	
Bill Credit	#####	10	\$0.00	
Total			\$0.00	

Other Power Supply Volume	Rate	Bill Det	Bill	
Securitization Charge	\$0.000210	10	\$0.00	
Bill Credit	-\$0.000382	10	\$0.00	
Total			\$0.00	

Other Delivery Volumetric Surcharges				
Securitization Charge	#####	320	\$0.57	
Bill Credit	#####	320	-\$0.03	
Nuclear Surcharge	#####	320	\$0.27	
EWR	#####	320	\$1.74	
Total			\$2.55	

Other Delivery Volumetric Surcharges				
Securitization Charge	#####	10	\$0.02	
Bill Credit	#####	10	\$0.00	
Nuclear Surcharge	#####	10	\$0.01	
EWR	#####	10	\$0.05	
Total			\$0.08	

Other Delivery Volumetric Surcharges				
Securitization Charge	#####	10	\$0.02	
Bill Credit	#####	10	\$0.00	
Nuclear Surcharge	#####	10	\$0.01	
EWR	#####	10	\$0.05	
Total			\$0.08	

Other Delivery Volumetric Surcharges				
Securitization Charge	\$0.001792	10	\$0.02	
Bill Credit	-\$0.000095	10	\$0.00	
Nuclear Surcharge	\$0.000842	10	\$0.01	
EWR	\$0.005423	10	\$0.05	
Total			\$0.08	

FULL SERVICE - Rider 18 Credits

PSCR (January 1, 2022)	\$0.00665	
<u>RESIDENTIAL</u>	Rider 18 Tariff (No PSCR) As of 1/1/22 (incl. PSCR)	
D1/D1.6		
First 17 KWH/Day	(\$0.07746)	(\$0.08411)
Excess	(\$0.09730)	(\$0.10395)
D1.1		
Summer	(\$0.06666)	(\$0.07331)
Winter	(\$0.03429)	(\$0.04094)
D1.2		
Summer On Peak	(\$0.15329)	(\$0.15994)
Summer Off Peak	(\$0.04648)	(\$0.05313)
Winter On Peak	(\$0.12830)	(\$0.13495)
Winter Off Peak	(\$0.04436)	(\$0.05101)
D1.7		
Summer On Peak	(\$0.13096)	(\$0.13761)
Summer Off Peak	(\$0.03715)	(\$0.04380)
Winter On Peak	(\$0.05130)	(\$0.05795)
Winter Off Peak	(\$0.03831)	(\$0.04496)
D1.9		
On Peak	(\$0.16751)	(\$0.17416)
Off Peak	(\$0.03490)	(\$0.04155)
D2		
Summer First 17 kWh/day	(\$0.08210)	(\$0.08875)
Summer Excess	(\$0.10199)	(\$0.10864)
Winter First 20 kWh/day	(\$0.06314)	(\$0.06979)
Winter Excess	(\$0.04651)	(\$0.05316)
D5		
All Outflow	(\$0.04063)	(\$0.04728)
<u>COMMERCIAL SECONDARY</u>		
D1.1 Commercial		
Summer	(\$0.07288)	(\$0.07953)
Winter	(\$0.03985)	(\$0.04650)
D1.7 Commercial		
Summer On Peak	(\$0.05124)	(\$0.05789)
Summer Off Peak	(\$0.03470)	(\$0.04135)
Winter On Peak	(\$0.03883)	(\$0.04548)
Winter Off Peak	(\$0.03883)	(\$0.04548)
D1.9		
On Peak	(\$0.16873)	(\$0.17538)
Off Peak	(\$0.03612)	(\$0.04277)
D3		
All Outflow	(\$0.07437)	(\$0.08102)
D3.2		
All Outflow	(\$0.06685)	(\$0.07350)
D3.3		
All Outflow	(\$0.06080)	(\$0.06745)
D4		
First 200 kWh per kW	(\$0.04171)	(\$0.04836)
Excess	(\$0.03219)	(\$0.03884)
Demand	(\$13.86)	(\$13.86)
D5		
All Outflow	(\$0.04045)	(\$0.04710)
E1.1		
All Outflow	(\$0.04857)	(\$0.05522)
<u>PRIMARY</u>		
D11		
Primary		
On Peak	(\$0.04261)	(\$0.04926)
Off Peak	(\$0.03261)	(\$0.03926)
Demand	(\$13.78)	(\$13.78)
Subtransmission		
On Peak	(\$0.04149)	(\$0.04814)
Off Peak	(\$0.03149)	(\$0.03814)
Demand	(\$13.21)	(\$13.21)
Transmission		
On Peak	(\$0.04070)	(\$0.04735)
Off Peak	(\$0.03070)	(\$0.03735)
Demand	(\$12.93)	(\$12.93)
D6.2		
Primary		
On Peak	(\$0.03532)	(\$0.04197)
Off Peak	(\$0.03232)	(\$0.03897)
Demand	(\$14.81)	(\$14.81)
Subtransmission		
On Peak	(\$0.03425)	(\$0.04090)
Off Peak	(\$0.03125)	(\$0.03790)
Demand	(\$14.21)	(\$14.21)
Transmission		
On Peak	(\$0.03351)	(\$0.04016)
Off Peak	(\$0.03051)	(\$0.03716)
Demand	(\$13.91)	(\$13.91)
D8		
Primary		
On Peak	(\$0.04261)	(\$0.04926)
Off Peak	(\$0.03261)	(\$0.03926)
Demand	(\$6.38)	(\$6.38)
Subtransmission		
On Peak	(\$0.04149)	(\$0.04814)
Off Peak	(\$0.03149)	(\$0.03814)
Demand	(\$6.12)	(\$6.12)
Transmission		
On Peak	(\$0.04070)	(\$0.04735)
Off Peak	(\$0.03070)	(\$0.03735)
Demand	(\$5.99)	(\$5.99)
D10		
Summer	(\$0.08768)	(\$0.09433)
Winter	(\$0.06754)	(\$0.07419)

FULL SERVICE - D1 Rate

Residential	
Power Supply	
Capacity Charges	
First 17 kWh	\$0.04500
Excess kWh (>17 kWh)	\$0.06484
Non-Capacity Charges	\$0.04176
PSCR	\$0.00665
Securitization Charge	\$0.000210
Bill Credit	#####
Delivery	
Service Charge	\$7.50
Distribution Charge	\$0.06611
Nuclear Surcharge	\$0.000842
EWB	\$0.005423
Securitization Charge	\$0.001792
Bill Credit	#####
LIEAF	\$0.87

U20836 Outflow credit

Locational marginal price	#####	
Secondary transmission loss factor	10.3 %	1.103

Capacity Energy Charge: Charged amount shown below, dependent on Service Level		
Service Level		
Capacity Charge		
Less than 1 kW	\$0.00	
More than 1 kW but less than 2 kv	\$5.85	
More than 2 kW but less than 3 kv	\$11.70	
More than 3 kW but less than 4 kv	\$17.56	
More than 4 kW but less than 5 kv	\$23.41	
More than 5 kW but less than 6 kv	\$29.26	
More than 6 kW but less than 7 kv	\$35.11	
More than 7 kW but less than 8 kv	\$40.96	
More than 8 kW but less than 9 kv	\$46.81	
More than 9 kW	\$52.67, plus \$5.85 per kW	
Demand more than 9 kW billed on 0.1 kW increments		
Non-Capacity Energy Charge (June through September):		
6.432¢ per kWh for all On-peak kWh	0.06432	0.05952381
4.740¢ per kWh for all Off-peak kWh	0.0474	0.44047619
Non - capacity Energy Charge (October through May):		
5.157¢ per kWh for all On-peak kWh	0.05157	0.05952381
4.740¢ per kWh for all Off-peak kWh	0.0474	0.44047619
On-Peak Hours: All kWh used between 3:00PM and 7:00PM Monday through Friday.		
Off-Peak Hours: All other kWh used.		
0.04866 estimated overall Non-capacity peak / off peak rate		

Delivery Charges:
Service Charge:
\$7.50 per month
Distribution Charge:
Charged amount shown below, dependent on Service Level
Service Level
Distribution Charge
Less than 1 kW
\$0.00
More than 1 kW but less than 2 kW
\$10.76
More than 2 kW but less than 3 kW
\$21.51
More than 3 kW but less than 4 kW
\$32.27
More than 4 kW but less than 5 kW
\$43.02
More than 5 kW but less than 6 kW
\$53.78
More than 6 kW but less than 7 kW
\$64.53
More than 7 kW but less than 8 kW
\$75.29
More than 8 kW but less than 9 kW
\$86.04
More than 9 kW
\$96.80, plus \$10.76
Demand more than 9 kW billed on 0.1 kW increments

Bill calculator tool including proposed U-20836 charges for solar customers. It is attached with this public comment, and is also posted at the following link:
https://docs.google.com/spreadsheets/d/1tL2J_7q509SLd0RXQ_INwAPwF4ncFXPZ2FXTWgP6jIE/edit?usp=sharing

[illegible]

Monthly results from the above bill calculator tool, based on our monthly usage for the past year.

	Inflow	0	8	12	6	169	93	425	382	406	185	257	140	14	10	
	Outflow	92	229	358	327	211	60	38	26	30	63	15	84	246	394	
	584	822	618	204	641	570	689	452	305	275	206	268	419	432	648	704
	2022 U20836 rate case	June 2021	July 2021	Aug 2021	Sept 2021	Oct 2021	Nov 2021	Dec 2021	Jan 2022	Feb 2022	Mar 2022	April 2022	May 2022	June 2022	July 2022	Annual
	D1.2 R18 billed cost	\$0.61	\$5.24	\$6.01	\$4.74	\$19.05	\$14.09	\$40.27	\$36.62	\$38.19	\$20.25	\$26.03	\$15.48	\$5.88	\$4.96	\$231.57
	D1 no solar est cost	\$28.15	\$81.75	\$47.64	\$72.72	\$80.01	\$67.48	\$127.01	\$107.54	\$123.48	\$103.45	\$129.34	\$135.17	\$74.96	\$64.36	\$1,133.16
	D1 R18 2021 est cost	\$8.67	\$9.28	\$9.60	\$9.14	\$21.62	\$19.60	\$79.31	\$72.84	\$76.69	\$35.36	\$52.08	\$25.69	\$9.75	\$9.44	\$421.12
	D1 R18 2021 est cost w/ gen bank	\$8.67	\$9.28	\$9.60	\$9.14	\$21.62	\$15.98	\$42.87	\$39.42	\$66.06	\$35.36	\$52.08	\$25.69	\$9.75	\$9.44	\$337.01
	gen bank change	\$7.74	\$18.52	\$28.99	\$26.94	\$1.92	\$3.62	\$36.44	\$33.42	\$10.63				\$19.39	\$32.20	
	gen bank end	\$7.74	\$26.26	\$55.25	\$82.19	\$84.11	\$80.49	\$44.05	\$10.63	\$0.00	\$0.00	\$0.00	\$0.00	\$19.39	\$51.59	
	D1 R18 LMP outflow, est cost	\$8.67	\$9.28	\$9.60	\$9.14	\$29.00	\$22.27	\$81.00	\$73.99	\$78.02	\$38.15	\$52.75	\$29.44	\$9.75	\$9.44	\$442.55
	D1 R18 LMP outflow, est cost w/ gen bank	\$8.67	\$9.28	\$9.60	\$9.14	\$21.96	\$16.08	\$55.03	\$73.99	\$78.02	\$38.15	\$52.75	\$29.44	\$9.75	\$9.44	\$403.35
	gen bank change	\$3.81	\$8.73	\$13.69	\$12.97	\$7.04	\$8.19	\$25.97						\$8.88	\$15.36	
	gen bank end	\$3.81	\$12.54	\$26.23	\$39.20	\$32.16	\$25.97	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$8.88	\$24.24	
	D1.12 R18 2022 est cost, .95kW Demand	\$8.67	\$8.73	\$8.77	\$8.72	\$10.68	\$12.19	\$34.78	\$32.60	\$34.01	\$18.09	\$24.88	\$14.25	\$8.78	\$8.75	\$216.50
	D1.12 R18 2022 est cost, .95kW Demand w/ gen bank	\$8.67	\$8.73	\$8.77	\$8.72	\$10.09	\$9.55	\$12.91	\$17.51	\$34.01	\$18.09	\$24.88	\$14.25	\$8.78	\$8.75	\$176.31
	gen bank change	\$3.81	\$9.03	\$14.15	\$13.20	\$0.59	\$2.64	\$21.87	\$15.09					\$9.41	\$15.74	
	gen bank end	\$3.81	\$12.84	\$26.99	\$40.19	\$39.60	\$36.96	\$15.09	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$9.41	\$25.15	
	D1.12 R18 2022 est cost, 5.9 kw Demand	\$90.74	\$84.84	\$79.08	\$80.13	\$96.25	\$98.33	\$121.16	\$118.88	\$120.27	\$104.23	\$111.19	\$100.30	\$84.44	\$77.27	\$1,191.53
	D1.12 R18 2022 est cost, 12kW Demand	\$211.66	\$205.76	\$200.00	\$201.05	\$217.17	\$219.25	\$242.08	\$239.80	\$241.19	\$225.15	\$232.11	\$221.23	\$205.37	\$198.19	\$2,642.59

Plot of the monthly electric cost, for previous rates and proposed U-20836 rates:

Calculator: https://docs.google.com/spreadsheets/d/1tL2J_7q509SLd0RXQ_INwAPwF4ncFXPZ2FXTWgP6jE/edit?usp=sharing																	
Inflow	0	8	12	6	169	93	425	382	406	185	257	140	14	10			
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Generation	204	641	570	689	452	305	275	206	268	419	432	648	613	704			
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D1 no solar est cost	\$28.15	\$81.75	\$47.64	\$72.72	\$80.01	\$67.48	\$127.01	\$107.54	\$123.48	\$103.45	\$129.34	\$135.17	\$74.96	\$64.36	\$1,133.16		
D1 R18 2021 est cost w/ gen bank	\$8.67	\$9.28	\$9.60	\$9.14	\$21.62	\$15.98	\$42.87	\$39.42	\$66.06	\$35.36	\$52.08	\$25.69	\$9.75	\$9.44	\$337.01		
D1 R18 LMP outflow, est cost w/ gen bank	\$8.67	\$9.28	\$9.60	\$9.14	\$21.96	\$16.08	\$55.03	\$73.99	\$78.02	\$38.15	\$52.75	\$29.44	\$9.75	\$9.44	\$403.35		
2022 est cost, .95kW Demand w/ gen bank	\$8.67	\$8.73	\$8.77	\$8.72	\$10.09	\$9.55	\$12.91	\$17.51	\$34.01	\$18.09	\$24.88	\$14.25	\$8.78	\$8.75	\$176.31		
D1.12 R18 2022 est cost, 5.9 kw Demand	\$90.74	\$84.84	\$79.08	\$80.13	\$96.25	\$98.33	\$121.16	\$118.88	\$120.27	\$104.23	\$111.19	\$100.30	\$84.44	\$77.27	\$1,191.53		
D1.12 R18 2022 est cost, 12kW Demand	\$211.66	\$205.76	\$200.00	\$201.05	\$217.17	\$219.25	\$242.08	\$239.80	\$241.19	\$225.15	\$232.11	\$221.23	\$205.37	\$198.19	\$2,642.59		

Example monthly electrical cost, Solar & battery backup system approximately matched to annual usage.

Legend:

- D1.2 R18 billed cost
- D1 no solar est cost
- D1 R18 LMP outflow, est cost w/ gen bank
- D1 R18 2021 est cost w/ gen bank
- D1.12 R18 2022 est cost, .95kW Demand w/ gen bank
- D1.12 R18 2022 est cost, 5.9 kw Demand
- D1.12 R18 2022 est cost, 12kW Demand

Annotations:

- D1.12 R18 U20836, 12kW demand, \$2643 annual cost (11)
- D1.12 R18 U20836, 5.9kW demand, \$1192 annual cost (10)
- D1.12 R18 U20836, .95kW demand, \$176 annual cost (9)
- D1 2021 No Solar, \$1133 annual cost (6)
- D1 R18 U20836 LMP outflow credit, \$403 annual cost (8)
- D1 R18 2021, \$337 annual cost (7)
- D1.12 R18 2021, (current rate), \$232 annual cost (5)