

# Metro Transit Solar Portfolio Update



## Transportation Committee

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Presented by

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Metro Transit, Engineering and Facilities

# Solar Programs available in MN

- Net Metering allowed up to 1 MW DC
  - Previous allowed up to .040 MW DC
  - Rail Support Facility and 610 and Noble Park and Ride
  - RFP for Net Metering up to 3 MW DC at six transit facilities
- Community Solar Gardens (CSG)
  - Blue Lake WWTP 1.6 MW DC
  - RFP Solar sites 4 MW DC



# Net Metering

Conventional  
Net Metering



Meter spins backward  
when on-site production  
exceeds consumption

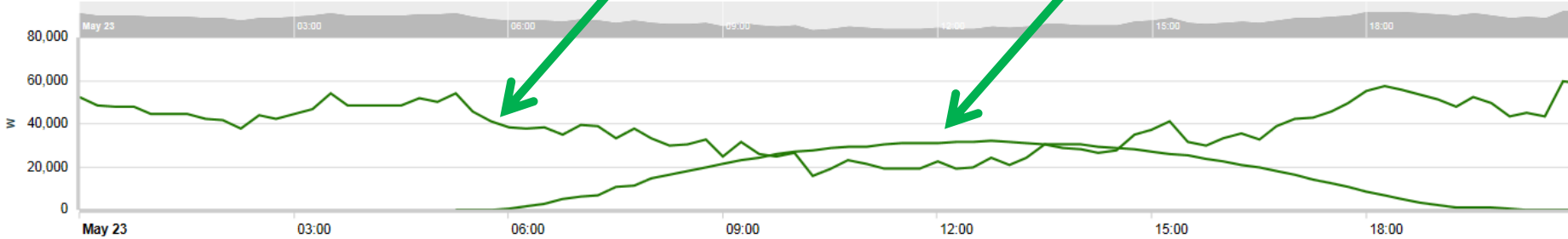
System located on-site



## Rail Support Facility

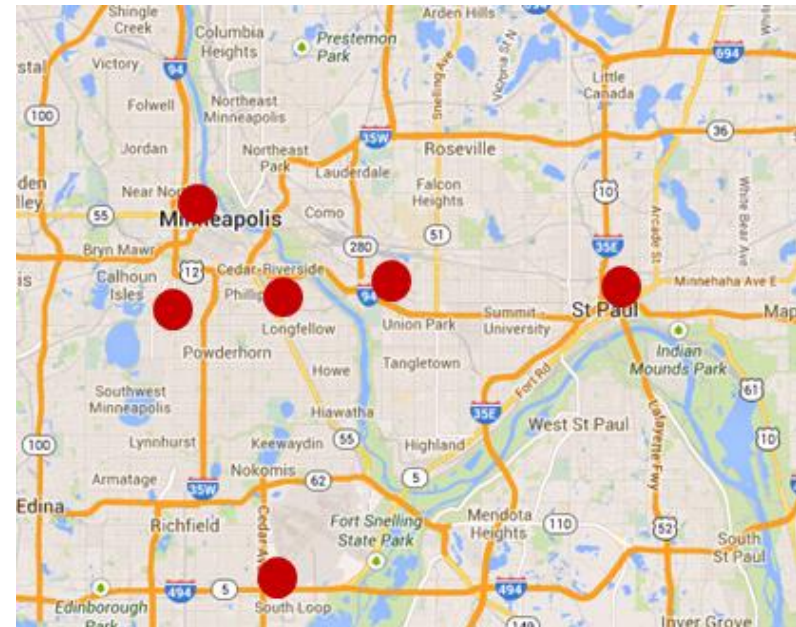
Power

1D 7D 30D 12M WTD MTD YTD

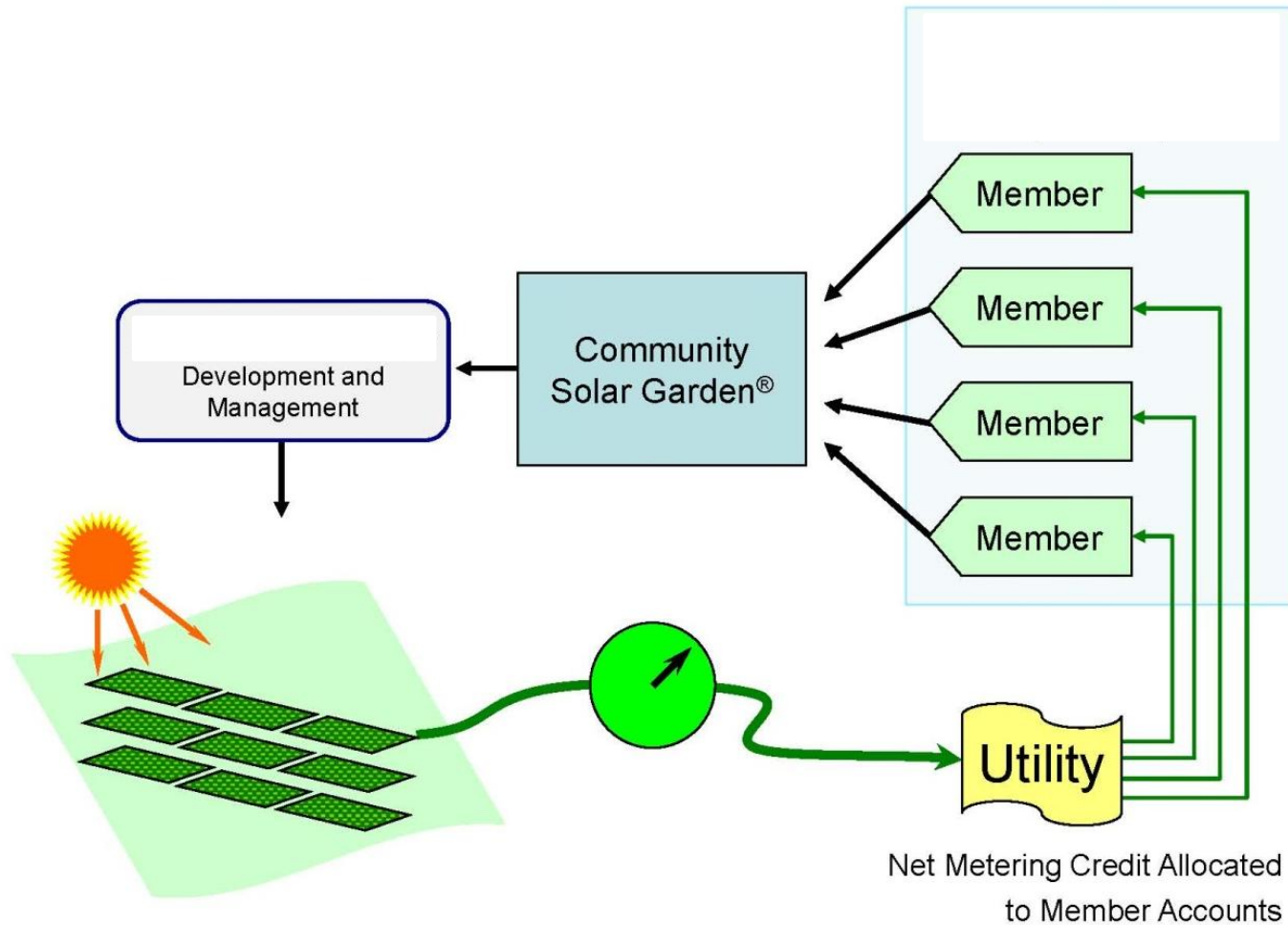


# Net Metering RFP

- Joint procurement with ES/MT to purchase electricity at a lower rate than commercially available
- FTH, Nicollet, South, Mpls LRT O&M, OHB, EMTF
- Roof top solar arrays totaling 3.0 MW DC
  - 9,500 solar panels
- Generates 3.45 MWh annually
  - 25% of electrical consumption
- Useful life 40 years
- Estimated savings \$3,745,000 (25yr)
- Operational 2016



# Community Solar Garden Program



## Blue Lake CSG Project Details

- Four solar gardens totaling 4MW DC
  - 15,152 solar panels; -20 acres
- Garden up to 1 MW
- Have a minimum of 5 subscribers
- Max subscription is 40% of total
- Generates -6.5M kWh annually
  - Met Council will receive 80% or 5.2M kWh
  - Remaining 20% goes to cities and counties
- Resides on Met Council land
- System's useful life is 40 years
- Online in 2016

# CSG Financial Benefit: Example at Year 1



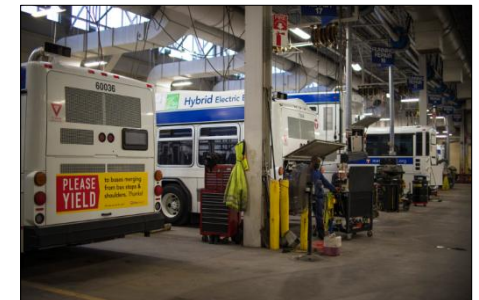
CSG  
Developer

buy kwh produced  
→  
9.5 cents/kwh (fixed)



Utility

Bill credit 9.5 cents/kwh  
→  
(3% annual increase)



# CSG Financial Benefit: Example at Year 6



CSG  
Developer

buy kwh produced  
→  
9.5 cents/kwh (fixed)



Utility

Bill credit 11 cents/kwh  
→  
(3% annual increase)





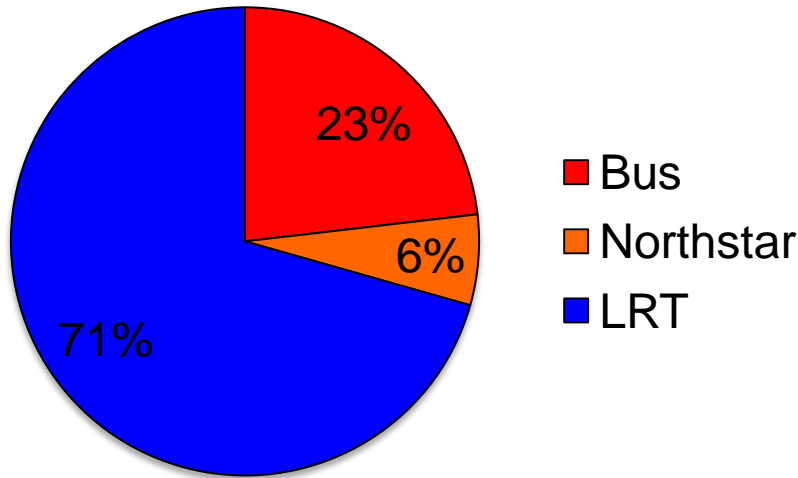
## CSG Financial Benefit: 25 Years

| Year | \$/kWh   | Bill Credit | MT Payment | MT Energy Credit | MT Savings |
|------|----------|-------------|------------|------------------|------------|
| 2016 | \$0.0947 | \$0.09470   | \$203,298  | \$203,298        | \$0.00     |
| 2020 | \$0.0947 | \$0.10978   | \$199,262  | \$230,999        | \$31,737   |
| 2025 | \$0.0947 | \$0.12727   | \$194,330  | \$261,163        | \$66,833   |
| 2030 | \$0.0947 | \$0.14754   | \$189,520  | \$295,266        | \$105,746  |
| 2039 | \$0.0947 | \$0.19251   | \$181,160  | \$368,262        | \$187,101  |

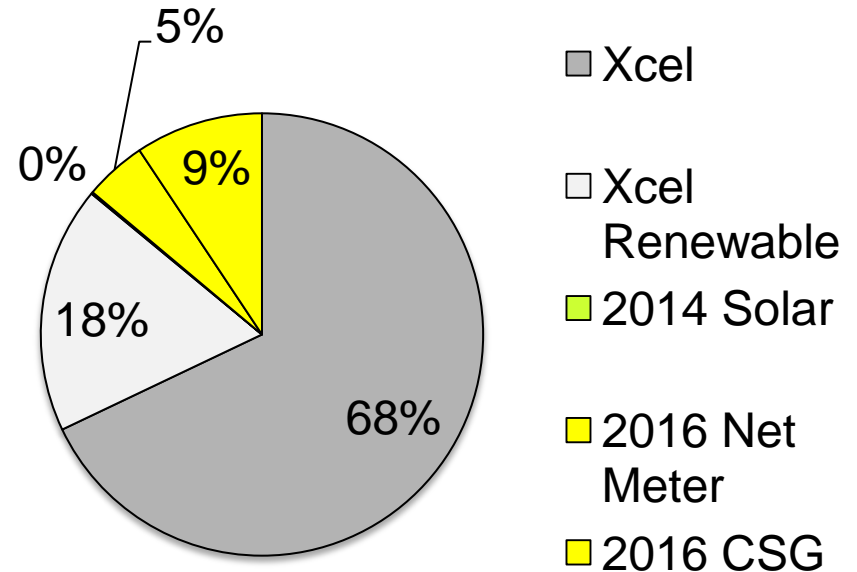
Accumulated Savings= **\$2.1 million** (over 25 years)

# 2016 Electrical Profile Metro Transit

**Electric Usage (by Mode)**  
75,000,000 kWh total

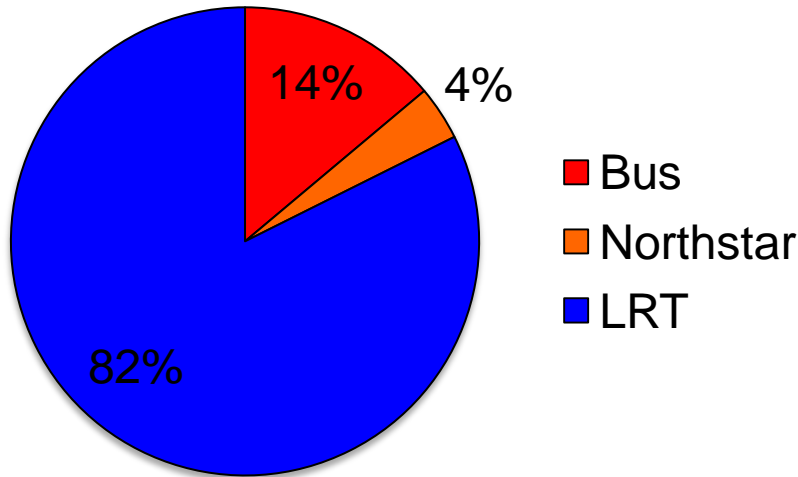


**Electricity (by Source)**  
Total -75,000,000 kWh  
Solar-10,500,000 kWh

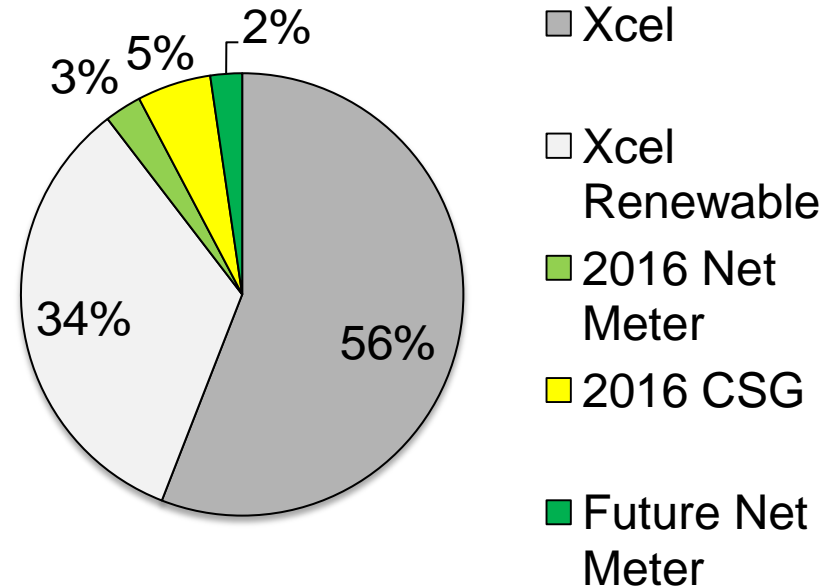


# 2025 Electrical Profile Metro Transit

**Electric Usage (by Mode)**  
125,000,000 kWh total



**Electricity (by Source)**  
Total -125,000,000 kWh  
Solar-17,500,000 kWh



# Questions?



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