



# Solar Development at Minnesota's Closed Landfills

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Closed Landfill Program

# MPCA's Closed Landfill Program

- MPCA is responsible for the long-term care of 110 closed landfills (1994 legislation)
- Manages risks to protect human health and the environment
- Addresses groundwater contamination and landfill gas migration
- Develops Land use Plans for local government adoption



# Solar Opportunities at Closed Landfills

- The CLP currently manages over 8,500 acres of closed landfill property - about 75 percent of this acreage does not contain solid waste
- Many landfills have few solar obstructions
- Some of the landfills utilize electricity for operating gas extraction flares and groundwater pump-out wells
- The CLP develops land use plans that identify solar as a land use and many local governments have adopted zoning ordinances allowing this use
- The demand for solar development at closed landfills exists



# Lindenfelser Landfill Solar Array

- Installed as part of the Made in Minnesota Solar Incentive
- Paid for by surplussing (selling) land at another landfill
- 40 kW Array
- Installed to offset electrical use at site to power gas extraction system flare
- Since installation in 2015:
  - Energy Used = 37.7 MWh
  - Energy Generated = 132 MWh
  - Net = 94.4 MWh sold



# Washington County Landfill Solar Array

- Installed as part of the Made in Minnesota Solar Incentive
- Paid for by surplussing (selling) land at another landfill
- 40 kW Array
- Installed to offset electrical use at site to power gas extraction system flare, groundwater pumping wells, and leachate load out
- Since installation in 2015:
  - Energy Used = 179 MWh
  - Energy Generated = 164 MWh
  - Net = 14.2 MWh bought



# Solar Challenges at Closed Landfills

- The CLP's use of state general obligation bonds for response actions places use and sale restrictions on land where the bonds were spent, including leases for private benefit
- Minn. Rule 1245.0900 requires competitive bidding for leases on state-owned land
- Reconstructed waste covers less than 10+/- years old present a concern for waste settlement and possible need for repairs
- The occasional need for landfill cover repairs may require solar arrays installed on waste covers to be temporarily relocated



# Parcel Split – Anoka-Ramsey Landfill

- Work with City and County governments to split a parcel where g.o. bonds were used – but create the new parcel where the improvements did not occur



# Future Solar Development at Closed Landfills

- MPCA will assist EQB with providing landfill data, including spatial data depicting bond parcels
- Continue to look for opportunities to split parcels where we used bond funds to create land free from g.o. bond encumbrances
- Continue to build and own small arrays to offset electrical use/costs at individual sites
- Lease state's land to solar developers



# Questions?

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