



# **Solar Power for Lake County Buildings**

**Sustainability Programs Manager  
August 30<sup>th</sup> 2023**

# Solar Since 2019



- **2019 Master Power Purchase Agreement (PPA) entered with WCP Solar**
  - **No final realized project, but there has resulted a planned development of two installations in Libertyville and Old Mill Creek.**
  - **WCP has conducted reviews of multiple facilities which has given the County information on the suitability of solar options for its rooftops and open space.**
- **In January of 2023, Lake County's energy consultant group Tradition Energy put forth a proposal for having ComEd utility accounts subscribe to community solar developments.**

# Solar Since 2019

- In January of 2023, the Illinois Clean Energy Community Foundation delivered a \$2M grant to be used on an owned solar array for its new net-zero ROC facility.
- There are better-than-usual federal and state incentives to receive a faster return on investments for solar development.



# Lake County Sites

- **Of the 10 original locations analyzed for suitability, 7 sites were deemed appropriate for an installation by WCP.**
- **4 sites were suitable for rooftop solar and 3 were suitable for ground-mounted solar.**
- **The ground-mounted solar arrays are in the process of being approved for permits by their local municipalities.**

Site	Address
DOT – Heavy Duty Facility	600 W. Winchester Rd.
DOT – Truck Barn	600 W. Winchester Rd.
Des Plaines WRF – Building 55	800 Krause Dr.
Des Plaines WRF – open space	800 Krause Dr.
County Admin and Court Complex	18 N. County Street
County Jail Parking Lot	20 S. County St.
New Century Town WRF – open space	50 S. American Way
Mill Creek WRF – open space	16750 Ancona Ave.
Central Permit Facility – open space	500 W. Winchester Rd.

- A site suitable for a roof-mounted array was characterized by:
  - Roof age
  - Tree canopy cover
  - Meteorological conditions
  - Building plans
  - Electric transmission infrastructure
- A site suitable for a ground-mounted array was characterized by:
  - Future land availability and building plans
  - Meteorological conditions
  - Ecological conditions
  - Electric transmission infrastructure

# Option 1: Power Purchase Agreement

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- **Benefits of a PPA:**
  - **Avoid upfront costs for purchasing and installing solar equipment.**
  - **County pays for the energy produced by the solar system at a predetermined rate, which is often lower than the retail electricity rate.**
  - **Developer is responsible for financing, installing, and maintaining the solar system.**
- **Drawbacks of PPA:**
  - **Additional utility bills each month.**
  - **Cannot sell extra energy back to the grid.**
  - **Cannot upgrade roof or remove building for entirety of agreement (25 years standard).**
  - **Will not receive Renewable Energy Credits or tax benefits.**

# Option 2a: Community Solar Subscribing



- **Benefits of Community Solar Subscription:**

- Avoid upfront costs for purchasing and installing solar equipment.
- Developer is responsible for financing, installing, and maintaining the solar system.
- Support local solar field development.
- Usually easy to opt-in and out of subscriptions.

- **Drawbacks of Community Solar Subscription:**

- No access to tax benefits of solar.
- No ownership of array.
- Savings differ from summer to winter.
- Includes a subscription fee.



ENERGY



INVOICE  
CREDITS



7-26-23

SOLAR in YOUR  
AREA

UTILITY AREA

YOUR ORGANIZATION

# Option 2b: Community Solar Leasing

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- **Benefits of Community Solar Leasing:**
  - Avoid upfront costs for purchasing and installing solar equipment.
  - Developer is responsible for financing, installing, and maintaining the solar system.
  - Earn long-term lease payments on land or roof-space.
  - County has the option to subscribe to the system and save on electricity rates with solar bill credits (Frost Brown Todd LLC, 2023).
  - Other ComEd customers would have the option to subscribe to the system and reach similar savings.
- **Drawbacks of Community Solar Leasing:**
  - Large spaces required for community solar arrays (30,000+ sqft) (UGE International, 2023).
  - County will not own the solar array but will act as a host for developer.
  - Cannot upgrade roof or remove building for entirety of lease agreement (25–30-year standard).
  - Will not receive Renewable Energy Credits or tax benefits (UGE International, 2023).



# Option 3: Ownership

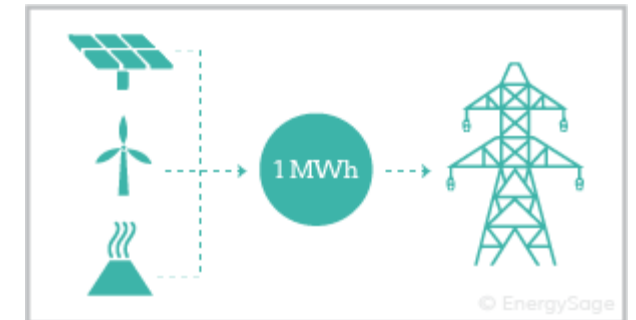
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- **Benefits of Ownership:**
  - County will receive and have the option to sell renewable energy credits for a profit.
  - Eligibility for federal tax credits (30% base and up to 60%) for new solar projects make upfront investment in solar much cheaper than usual (Federal Solar Tax Credits for Businesses, n.d.).
  - No limitation on rooftop or land space for development.
- Can sell excess generated energy back to the grid.
- Savings on utility bills.
- **Drawbacks of Ownership:**
  - County is responsible for financing, installing, and maintaining the solar system.
  - Difficult to upgrade roof or remove building for lifetime of product (25 years standard).

# Renewable Energy Credits

- RECs are the “zero-carbon” part of a renewable energy system.
- Whoever builds a solar array can choose to either sell or “retire” (use) their RECs.
- Not all RECs cost the same:
  - Supply and demand variability
  - Volume of purchase
  - Resource and technology type (e.g., solar, wind, geothermal, biomass, low-impact hydro)
  - Geography (e.g., local, regional, national)
  - Age of project and generation vintage
  - Certification/verification status



# Recommendations

- **Finish ongoing PPA agreements for ground-mounted systems.**
- **Determine ownership funding options for buildings that it is feasible to build upon.**
- **Subscribe remaining ComEd accounts to community solar.**
- **Analyze County's available lands for community solar development lease options.**
- **Continue to invest in local and national RECs where reasonable and look at options to increase investment based on savings achieved.**





**Questions**