# Local Jurisdictions Going Solar with Leases and Power Purchase Agreements

SOLAR POWERING IOWA CONFERENCE 2016

MARCH 24, 2016

THE POWER BUREAU

# Overview

Introductions

Public Sector Considerations

Financing Structures
- Owner Financing
- Third Party Financing

Procurement with a Power Purchase Agreement

Key Questions

Discussion

# Introductions

**Mark Pruitt**

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- Currently
  - Principal, **The Power Bureau** – Energy Planning and Procurement
  - Principal, **Illinois Community Choice Aggregation Network** – Municipal aggregation planning, procurement
- Formerly
  - Director, **Illinois Power Agency** – Wholesale Electricity Procurement for Ameren and ComEd. Managed the Illinois Renewable Portfolio Standard
  - Program Director, **Energy Resources Center** – Retail Electricity and Natural Gas purchasing manager for 32 state agencies and local municipalities
  - Project Developer, **Nicor Energy Solutions** – Cogeneration and efficiency project development for federal facilities

# Public Sector Considerations

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## CHALLENGES

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- Financial, constituencies

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- Project specifications
- Provider qualifications
- Selection criteria (price, value, etc.)
- Final approval from Board

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**Contract Terms**

- Non-appropriation clause

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- New Revenue – SREC sales, Tax Credits, Depreciation, Grants

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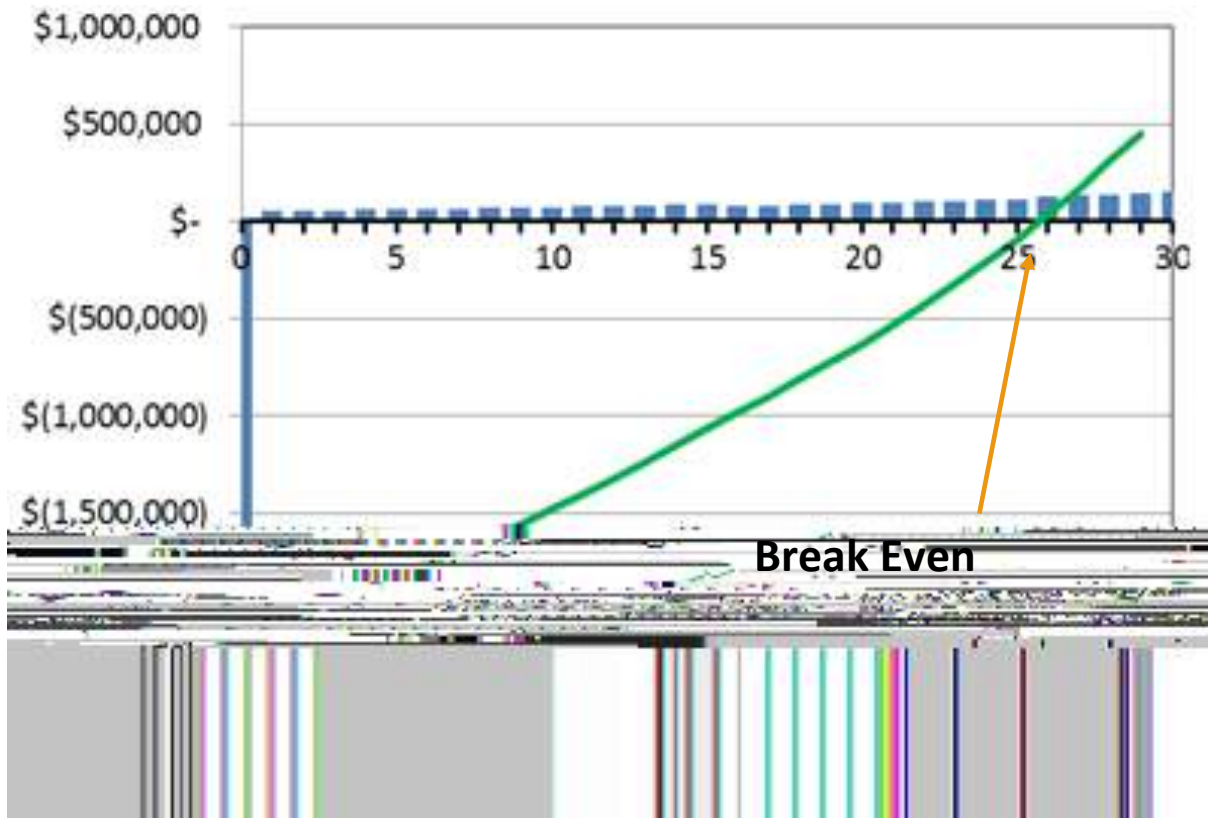
**General Financing Structures**

- Owner Financed – Cash, Debt
- Third Party Financed – Leases, Power Purchase Agreements

# Financing Structures: Public Sector

**Public sector project**

- 500kW, $2 million capital cost
- Offsetting $0.09/kWh grid supply
- Funded with cash reserves, no grants, no tax or SREC benefits
- All savings retained by host



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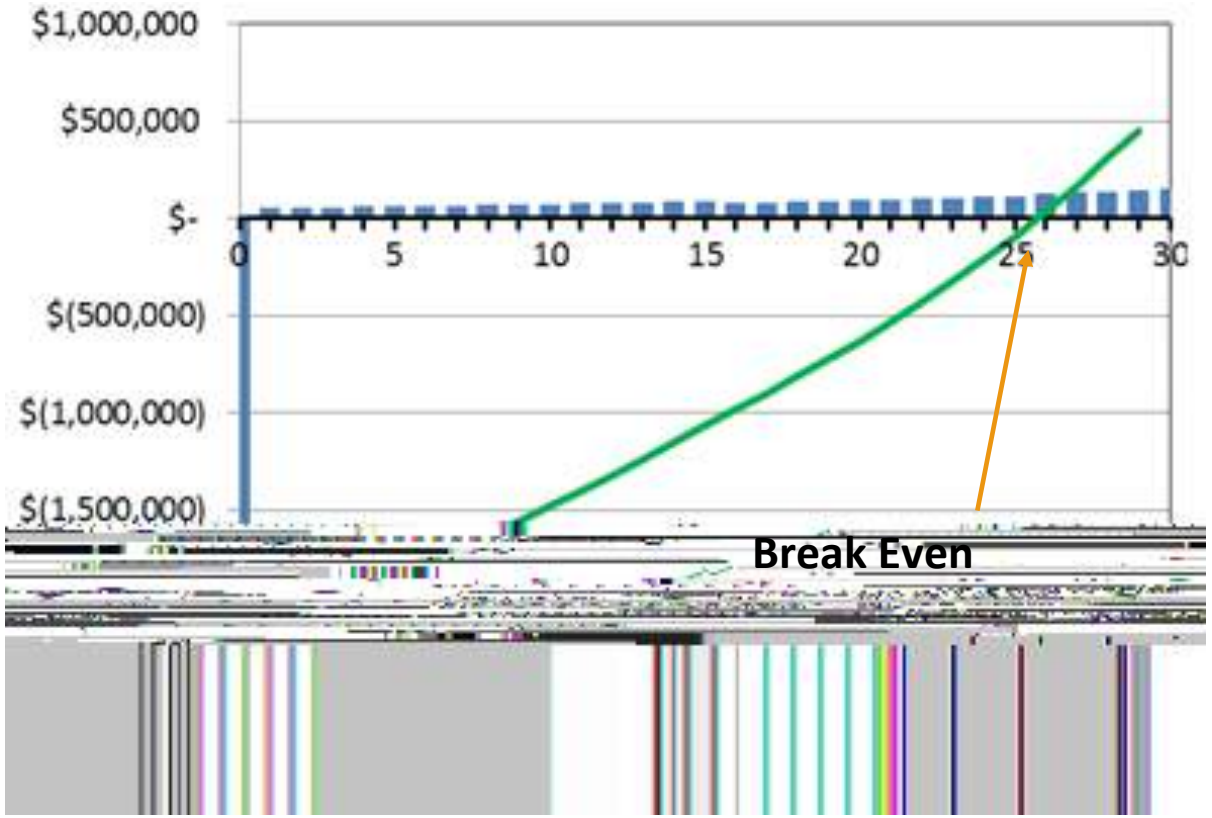

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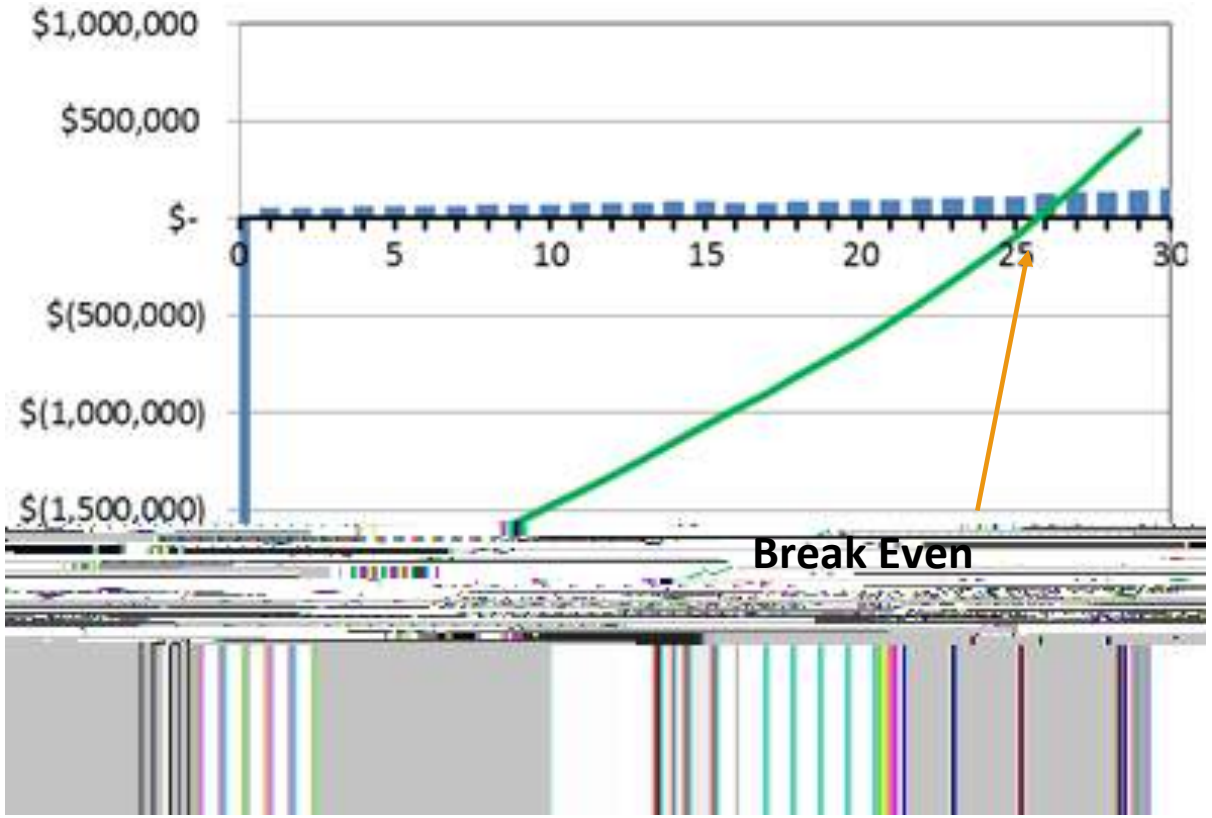
**Disadvantages**

- Long term payback
- Tend to be driven by grants



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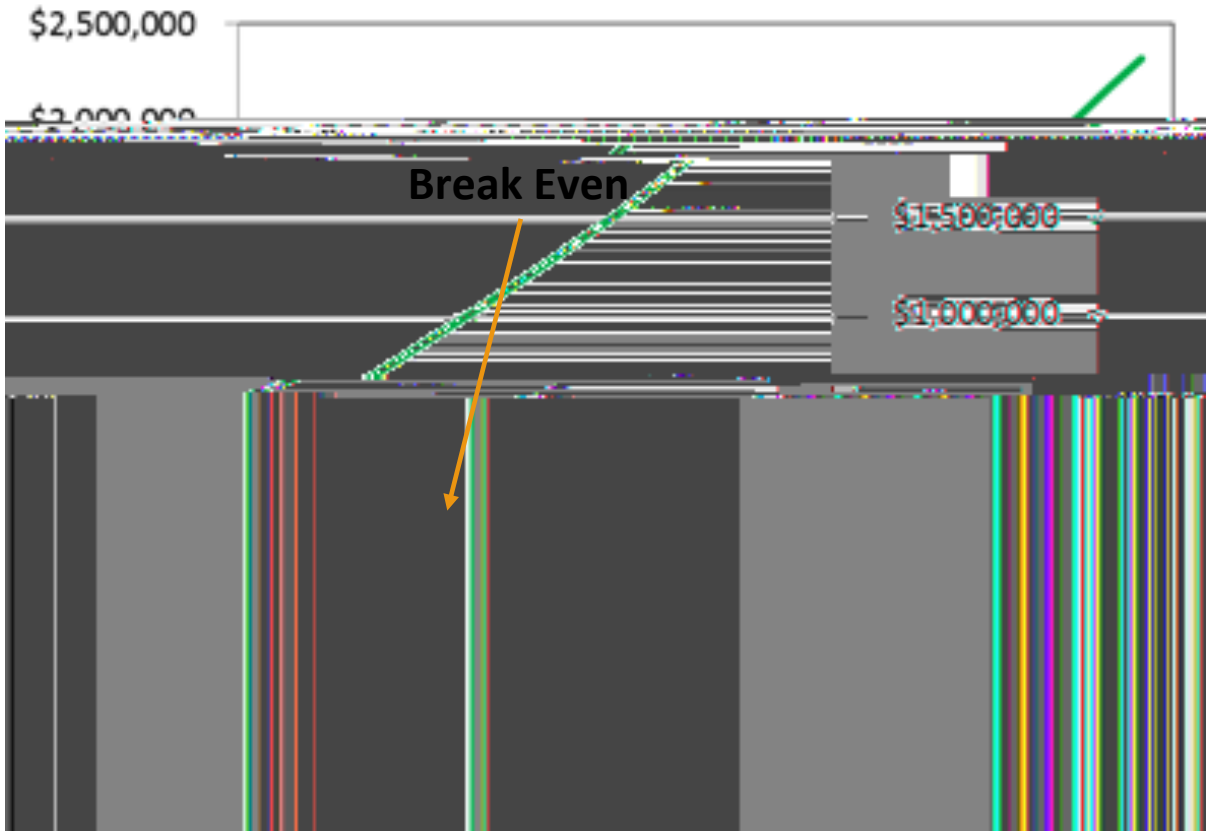

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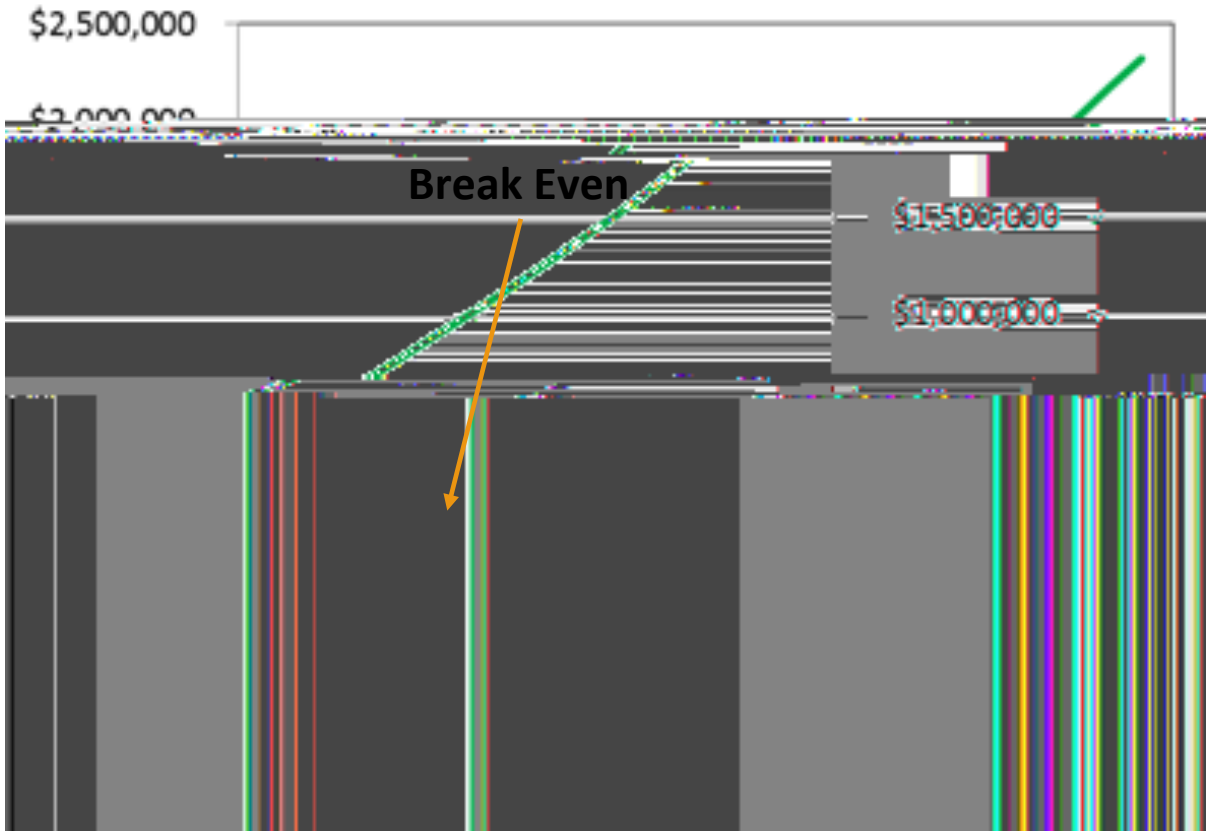
- Near-Term payback



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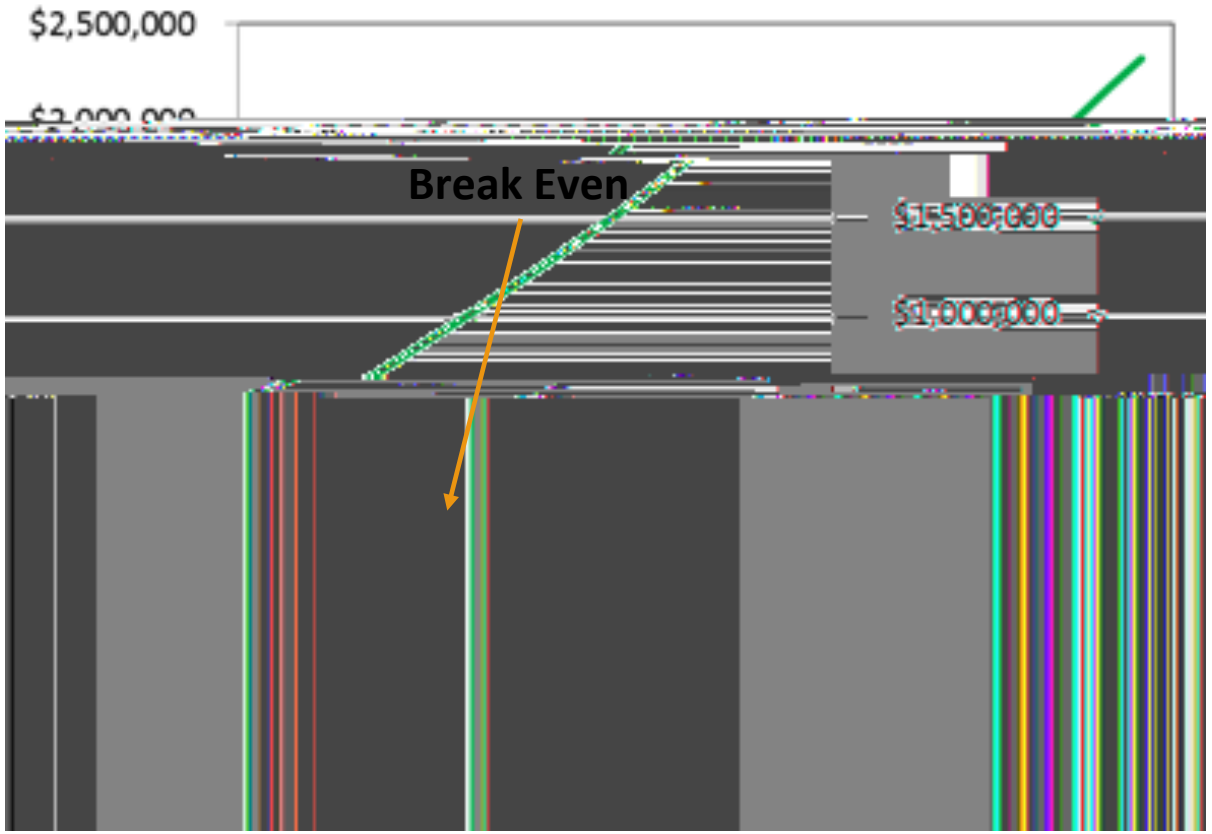
**Disadvantages**

- Must compete with other investment options



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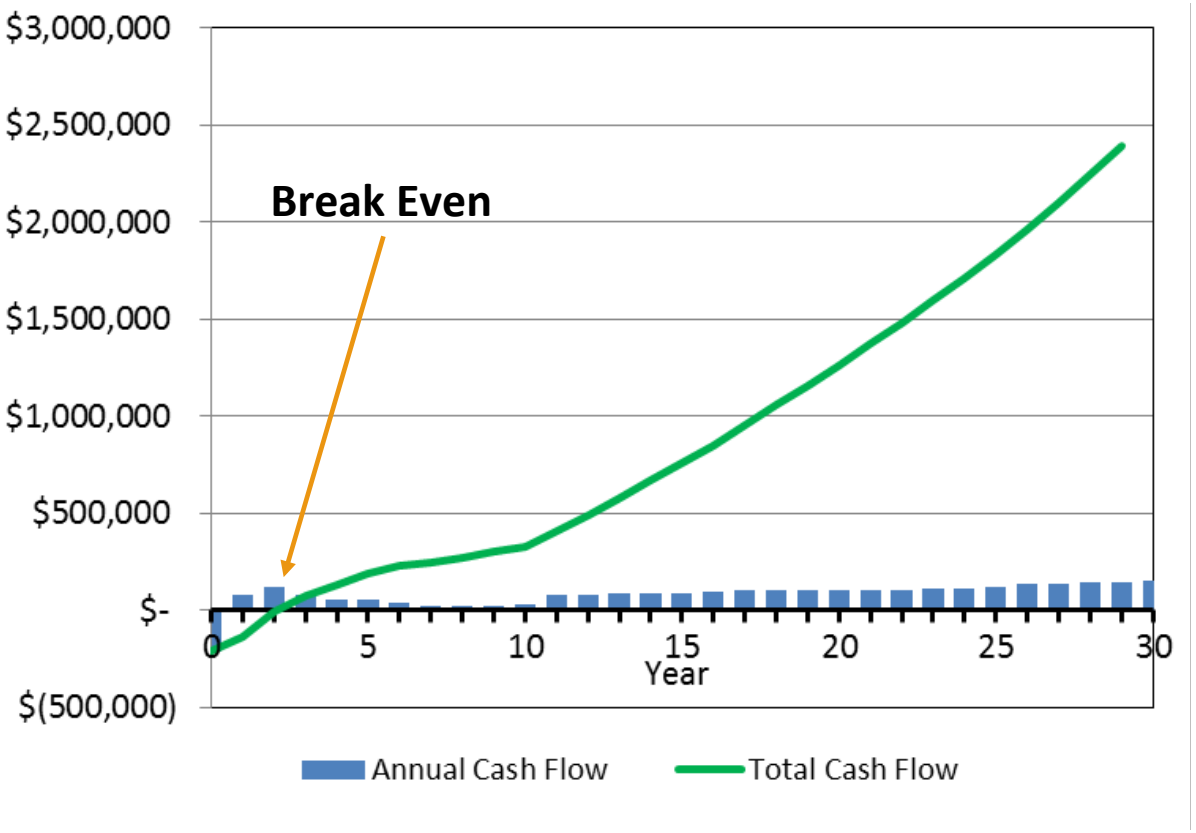

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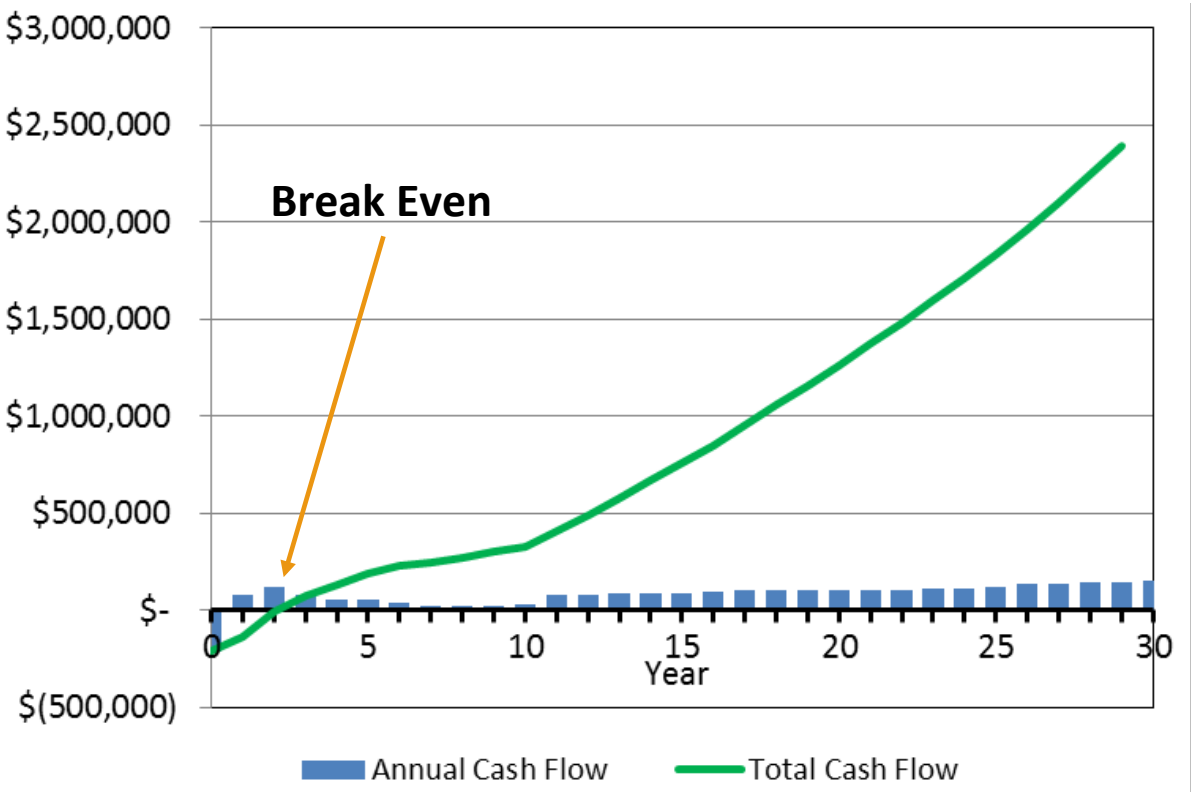
- Tax benefits flow to the third party developer



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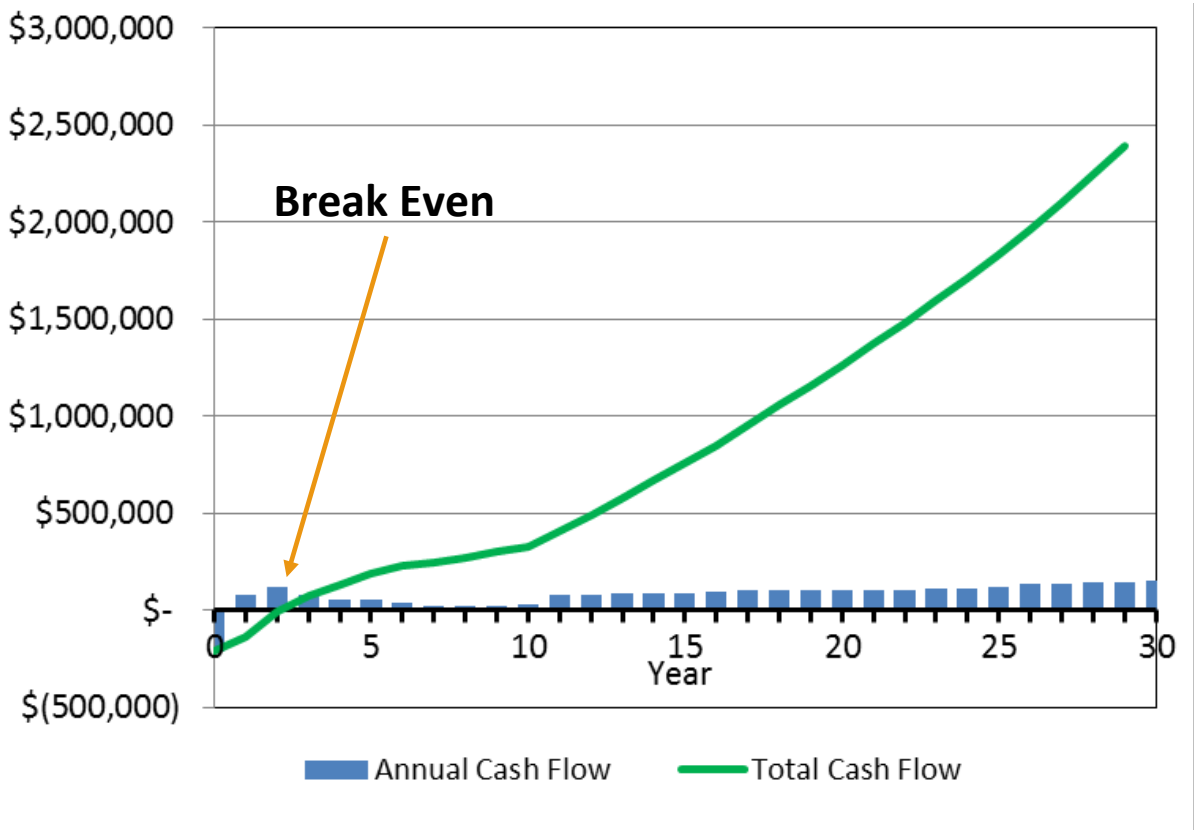
**Disadvantages**

- Complexity
- Long term relationship between host and developer



# Financing Structure: Third Party Options

**Operating Lease**

- Host pays fixed periodic fee, equivalent to expected energy production
- Host carries "technology risk"
- Lessor takes all tax credits
- Lessor responsible for O&M cost
- End-of-term cost is "fair market value"

**Capital Lease**

- Host pays fixed periodic fee, equivalent to expected energy production
- Host carries "technology risk"
- Lessor takes no tax credits
- O&M may be Host's responsibility
- End-of-term cost is nominal

**Power-Purchase Agreement**

- Host pays only for energy produced
- Eliminates "technology risk"
- Hedges against fluctuating utility and energy market costs
- PPA provider responsible for O&M cost
- More complicated agreement, difficult to work for smaller projects

# Financing Structure: PPA Structure

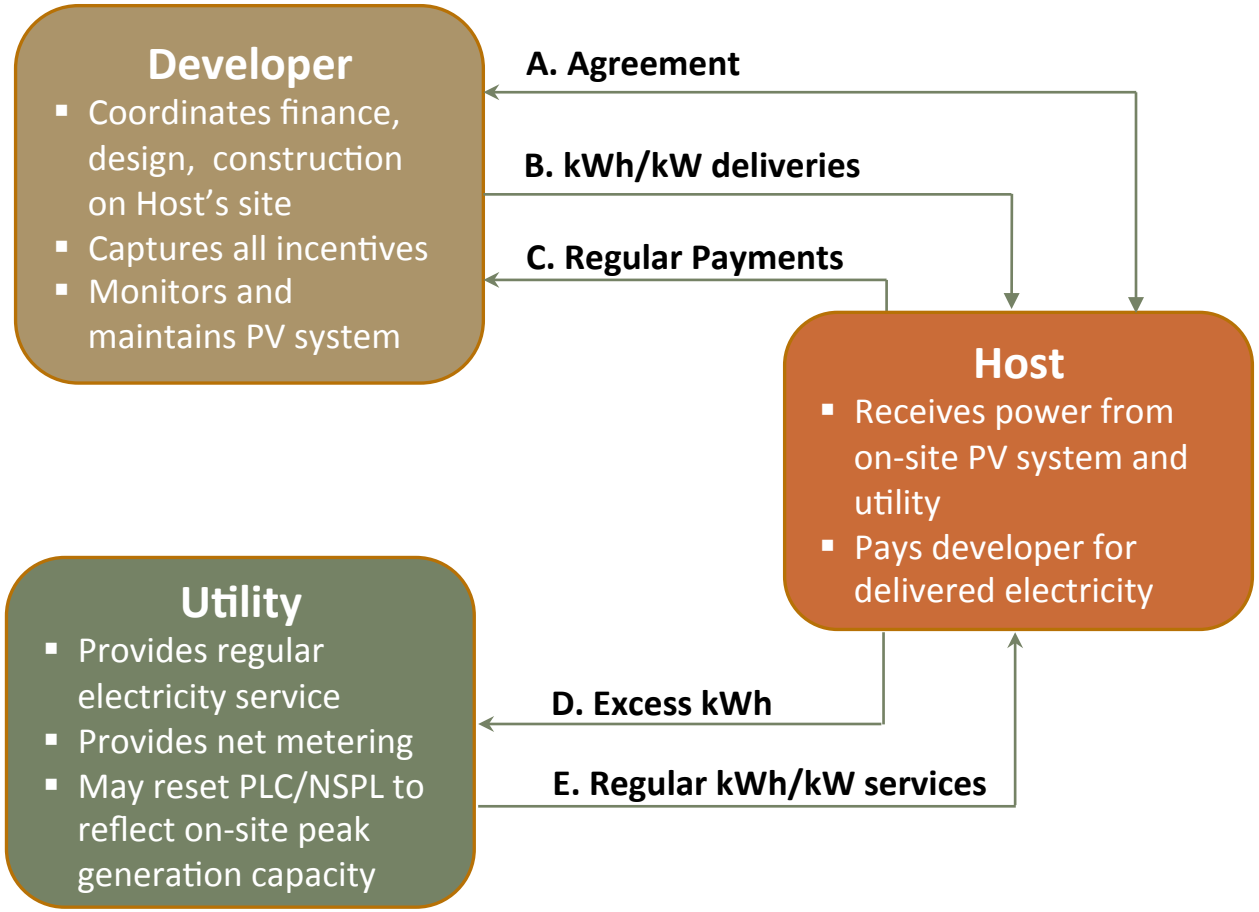
**A. Negotiated Agreement**
- Duration, prices, deliverables, etc.

**B. Energy Deliveries**
- As metered

**C. Regular Payments**
- Purchase the energy generated
- Negotiated price and schedule

**D. Export Excess Energy to Grid**
- Through local utility

**E. Receive regular Utility Services**
- Continued relationship



# Procurement Process: Stages

**Purpose**

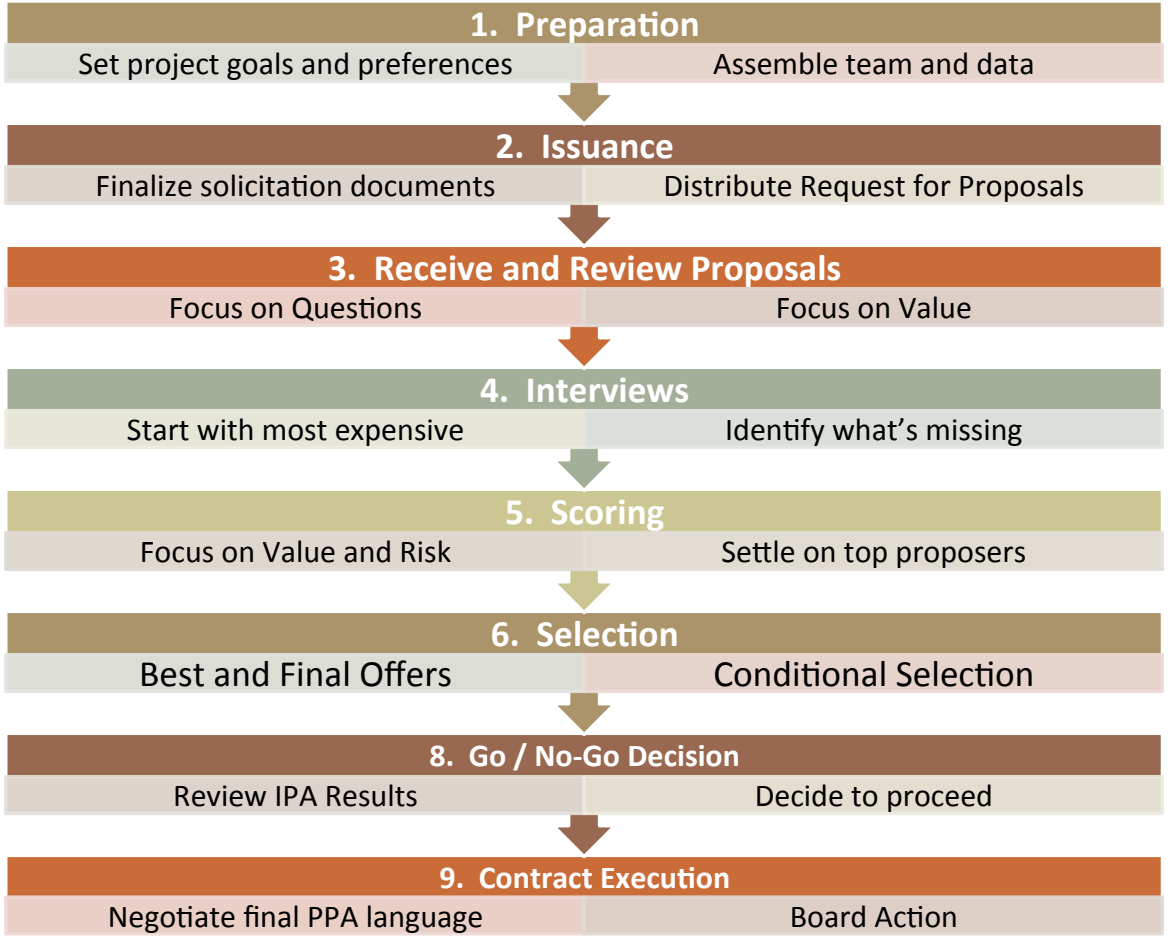
- Allows public sector buyer to better control the procurement process

**Benefits**

- Focuses expediting RFP process
- Sets appropriate internal expectation

**Requirements**

- Internal staff resources
- External Engineering Review
- Board coordination



# Procurement Process: Tools

**Site Assessment Tools**

- MS Excel workbook to compare direct purchase, lease, and PPA costs

**Model Solicitation**

- Focuses on Power Purchase Agreements
- Checklist for internally-generated materials
- Core solicitation documents and respondent forms

**Model Agreements**

- Can be amended to meet internal requirements

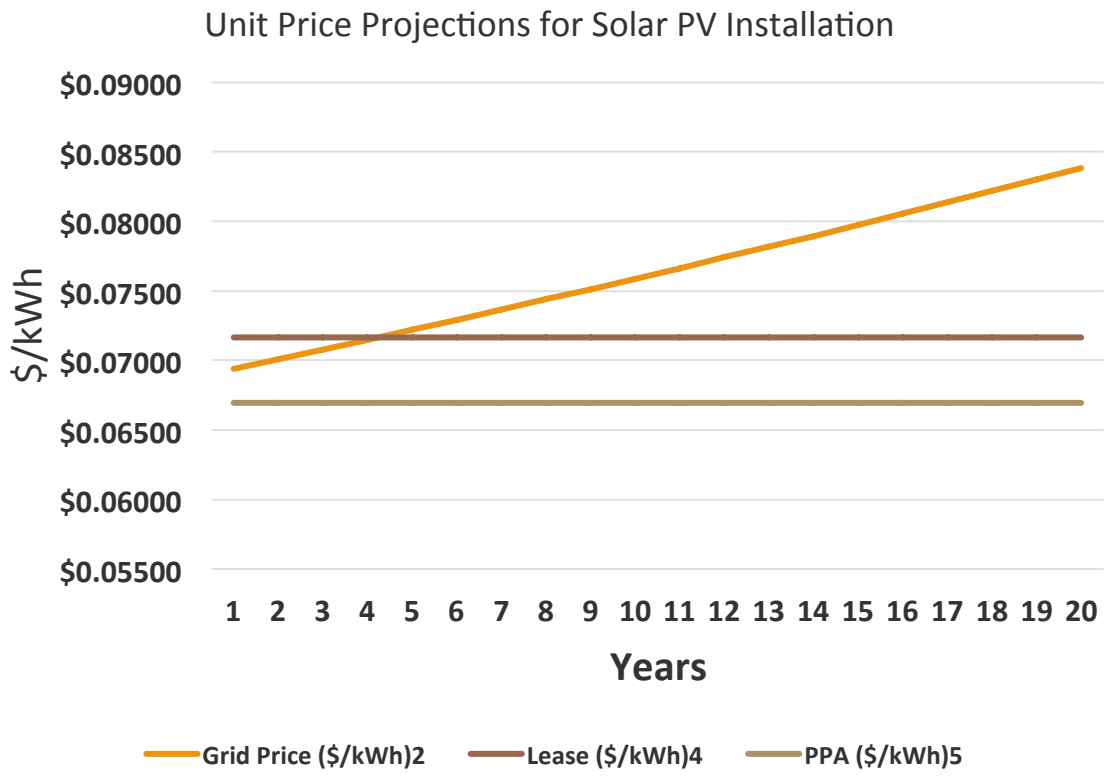
# Case Study: Illinois Sanitary District

**Initial Project**

- Initially identified 10 potential sites
- Ground- and roof-mounted systems

**Economic Evaluations**

- Using very conservative assumptions
  - **2 vacant sites eliminated**
  - **6 remaining sites showed potential**
  - **3 ground sites had the best potential (assuming a 1% per year increase in grid electricity supply)**
- Current site electricity costs: $0.069/kWh
  - **Electricity supply (volume related elements only)**
  - **Distribution (volume-related elements only**
  - **Taxes (volume-related elements only)**



# Case Study: Illinois Sanitary District

**Bid Results**

- Lead bidder combined the three ground-mount locations into a single offer:
  - **kW AC Capacity: 1,360.80**
  - **kWh AC Output Year 1: 1,805,509**
  - **kWh AC Output 20-Years: 34,394,955**
  - **Total Area Requirement: 208,200 sq. ft.**
- Also included utilizing battery storage to improve system functionality

**Economics (20 Year PPA)**

- Fixed price without escalations
  - **SRECs sold at $100: $0.049/kWh**
  - **SRECs sold at $0: $0.059/kWh**

# Key Questions

**How does management define value?**

- Setting a long term hedge, meet policy objectives

**What is the targeted price to meet or beat?**

- Current market price, some level of escalation over time?

**What is the optimal project size and other characteristics**

- Location, duration

**What level of investment is management willing to make?**

- Staff time, capital, property options

# Discussion

Thank you for your time and consideration

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