COUNTY OF SANTA BARBARA
GENERAL SERVICES

Santa Barbara County

Solar Development Update

Energy Division 2025

one COUNTY one FUTURE

GENERAL SERVICES

AGENDA

1. Overview
2. Project Timeline
3. Tariff Comparison
4. Cost/Benefit Analysis
5. Summary & Recommendations

OVERVIEW

- With rising electricity costs, it is cost-effective and a matter of resilience to develop our own renewable energy systems.

- County's Zero Net Energy (ZNE) Resolution necessitates the development of renewable energy infrastructure.

- All projects in review are listed as strategies in the Energy Assurance Plan and support General Services in meeting Climate Action Plan goals.

- Staff are requesting direction whether to finance and own these projects, enter into Power Purchase Agreements (PPAs), or take no action.

PROJECT TIMELINE

- The Energy Division began scoping potential projects in **2022.**
- NEM 2.0 Applications began in **January 2023**, with some reviews extending over a year.
- Staff came to Board of Supervisors in **August 2023**, committing to release RFQ/P and provide options for financing projects.
- Optony hired to support development of RFQ/P in **January 2024**.
- Staff released Solar and Battery RFQ/P in **October 2024.**
- Staff issued notice of intent to award projects in **January 2025** to Endelos and Engie.

TARIFF COMPARISON (NEM 2.0 vs. NBT)

- Five out of eight proposed projects have Net Energy Metering 2.0 (NEM 2.0) interconnection agreements. The other three will need to pursue Net Billing Tariff (NBT).

- The deadline to achieve Permission To Operate (PTO) for NEM 2.0 projects is April 2026. This presents significant challenges due to long lead-time items, complexities in design, and contract negotiation timeframes.

- NEM 2.0 customers are credited 1:1 for excess electricity, making over-generation a driving factor for financial viability.

- NBT customers are compensated for excess electricity based on "avoided cost" to the utility, thus discounting over-generation.
  - This is typically why battery energy storage systems are included in NBT project design.

TARIFF COMPARISON (NEM 2.0 vs. NBT)

- Storing energy for use during peak hours (4:00PM – 9:00PM) maximizes the net savings for NBT projects and can supplement power needs during periods of high demand charges.

- BESS support efforts in resiliency at County facilities due to the capacity to backup critical loads during power outages.

- NBT project financials are typically less attractive than NEM 2.0, however; they still present positive net savings over the project timelines and support the County in meeting its energy and climate goals.

- Staff will take into consideration the cost implications of moving NEM 2.0 projects to NBT and are prepared to negotiate contract terms that are financially viable under both tariffs.

COST/BENEFIT CALCULATIONS

- Project descriptions include the type of project, total array size, estimated 20-year generation, and tariff status (NEM vs. NBT)
- Future costs and benefits are not presented in “present value”.
- Projected electricity costs are calculated using a **3% annual escalator.**
- Ownership models provided by contractors include design, construction, operations, and maintenance for **20 years.**
- Contractor PPA models include 20 years of operations and maintenance.
- PPAs require $0 capital investment and may be purchased outright at any time.

Site 1 – Northern Branch Jail (Engie)

- 1.078 MW ground-mount array
- NEM 2.0 Agreement Approved
- 36M kWh generation over 20 years

- **Direct Purchase:**
  - $5.7M total cost
  - $15M total savings
    - $9.3M net savings

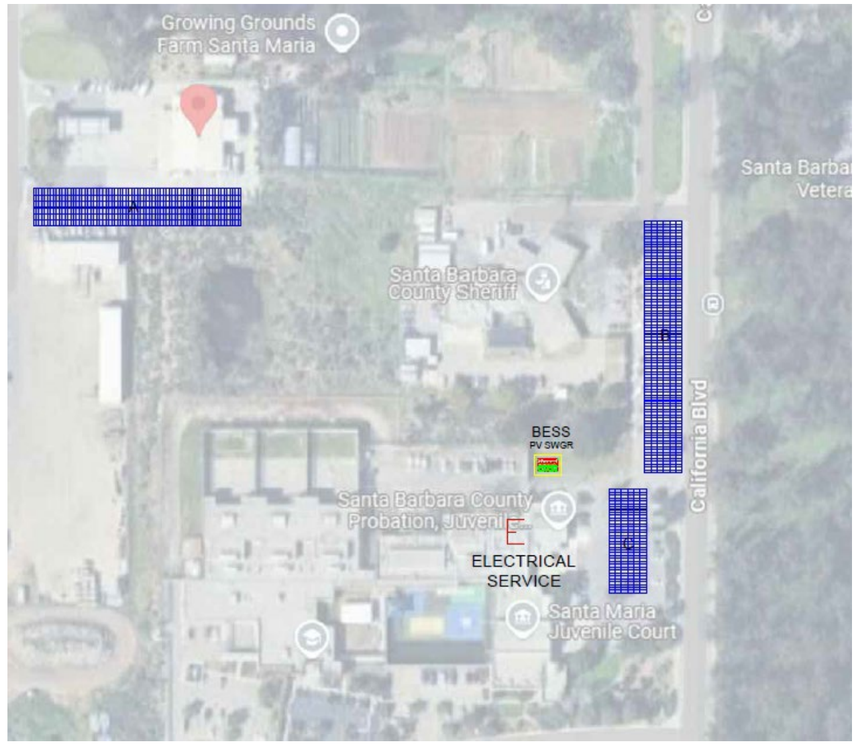
- **Power Purchase Agreement:**
  - $0.20 Levelized Cost of Energy
  - $7.5M estimated total expense
    - $7.5M net savings

Site 2 – Foster Road Campus (Engie)

- 732 kW solar canopies
- NEM 2.0 Agreement Approved
- 23M kWh generation over 20 years

- **Direct Purchase:**
  - $4.7M total cost
  - $12.5M total savings
    - $8.8M net savings

- **Power Purchase Agreement:**
  - $0.24 Levelized Cost of Energy
  - $5.6M estimated total expense
    - $6.6M net savings



Site 3 – Lake Cachuma (Engie)

- 505 kW solar canopies
- NEM 2.0 Application Pending
- 16.3M kWh over 20 years

- **Direct Purchase:**
  - $3.6M total cost
  - $5.7M total savings
    - $2.1M net savings

- **Power Purchase Agreement:**
  - $0.26 Levelized Cost of Energy
  - $4.4M estimated total expense
    - $1.4M net savings

Site 4 – Calle Real Campus (Endelos)

- 1.4 MW ground-mounted array
- NBT (No NEM 2.0 Agreement)
- 42M kWh over 20 years

- **Direct Purchase:**
  - $3.5M total cost
  - $12M total savings
    - $8.5M net savings

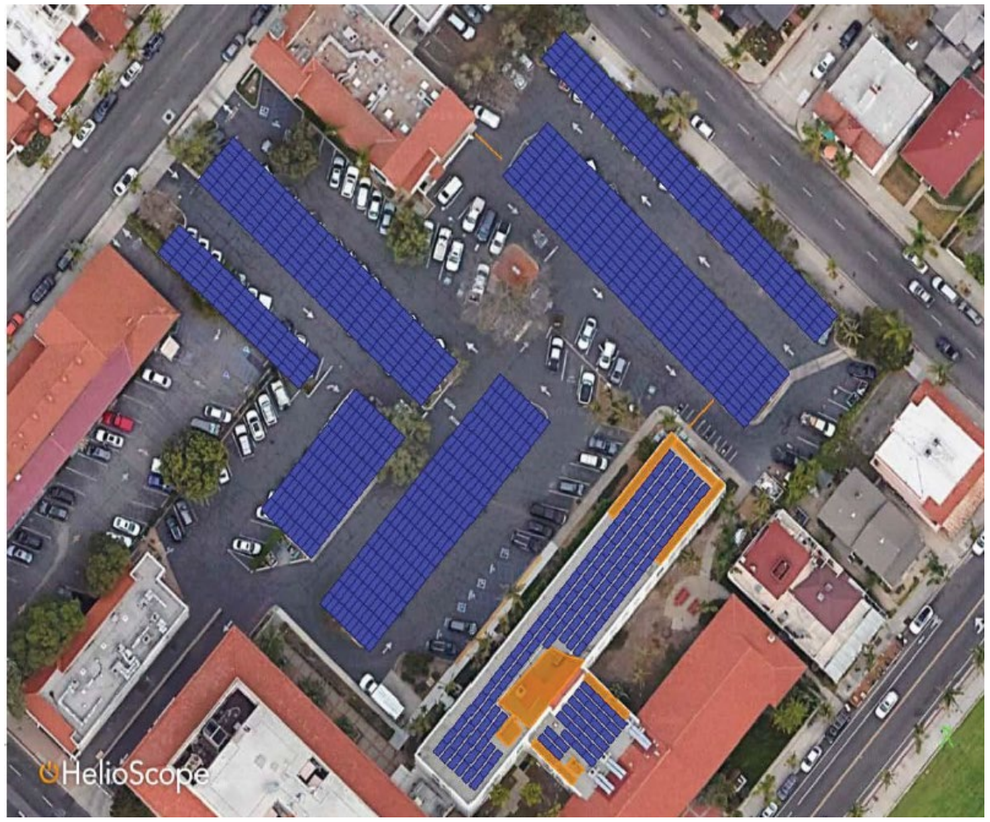
- **Power Purchase Agreement:**
  - $0.19 Levelized Cost of Energy
  - $8.2M estimated total expense
    - $3.7M net savings

Site 5 – Downtown Campus (Endelos)

- 583 kW solar canopies
- NEM 2.0 Application Approved
- 16.9M kWh over 20 years

- **Direct Purchase:**
    - $2.3M total cost
    - $5.2M total savings
        - $2.9M net savings

- **Power Purchase Agreement:**
    - $0.265 Levelized Cost of Energy
    - $4.4M estimated total expense
        - $2.7M net savings



Site 6 – SM Animal Shelter (Endelos)

- 135 kW solar canopies
- NBT – No NEM 2.0 Application
- 4M kWh over 20 years

- **Direct Purchase:**
  - $0.68M total cost
  - $2M total savings
    - $1.32M net savings

- **Power Purchase Agreement:**
  - $0.35 Levelized Cost of Energy
  - $6.3M estimated total expense
    - $0.65M net savings

Site 7 – Fire Station 34 / Coroner (Endelos)

- 73 kW solar canopies
- NEM 2.0 Application Approved
- 2.1M kWh over 20 years

- **Direct Purchase:**
  - $0.4M total cost
  - $1M total savings
    - $0.6M net savings

- **Power Purchase Agreement:**
  - $0.37 Levelized Cost of Energy
  - $0.4M estimated total expense
    - $0.19M net savings

Site 8 – Cuyama Aquatics Center (Endelos)

- 38 kW solar canopies
- NBT – No NEM 2.0 Agreement
- 1.1M kWh over 20 years

- **Direct Purchase:**
  - $0.27M total cost
  - $0.46M total savings
    - $0.19M net savings

- **Power Purchase Agreement:**
  - $0.47 Levelized Cost of Energy
  - $2M estimated total expense
    - $0 net savings

PROJECT SUMMARY

Location	Intent to Award	Tarriff Status	Ownership Cost	Ownership Net Benefit	PPA Expense	PPA Net Benefit
Calle Real Campus	Endelos	NBT	$3.5M	$8.5M	$8.2M	$3.7M
Foster Road Campus	Engie	NEM 2.0	$4.7M	$8.8M	$5.6M	$6.6M
Santa Barbara Downtown Campus	Endelos	NEM 2.0	$2.3M	$2.9M	$4.4M	$2.7M
Northern Branch Jail	Engie	NEM 2.0	$5.7M	$9.3M	$7.5M	$7.5M
Lake Cachuma	Engie	NEM 2.0	$3.6M	$2.1M	$4.4M	$1.4M
Santa Maria Animal Shelter	Endelos	NBT	$0.7M	$1.3M	$6.3M	$0.6M
New Cuyama Aquatics Center	Endelos	NEM 2.0	$0.3M	$0.2M	$2M	$0M
Sheriff Coroner Building / Fire Station 34	Endelos	NBT	$0.4M	$0.6M	$0.4M	$0.2M

PROJECT SUMMARY

- Direct purchase (ownership) presents highest return on investment, but will likely require a large portion of the cost to be debt financed.
  - Total Capital Cost = $21.3M ($15M after potential tax credits)
  - Total Savings = $55M
  - Net Benefit = $33.7M ($40M after potential tax credits)

- PPA model requires no capital investment and is financed by third-party
  - Total Capital Cost = $0
  - Total Avoided Cost = $23M

- Once direction is received, contract negotiations can begin. Purchase price and PPA terms will be negotiated and finalized.

- While owning systems outright will provide the best value to the County, without an appetite to raise funds quickly, PPAs present us the most attractive option.

BATTERY ENERGY STORAGE SYSTEMS (BESS)

- Staff are considering the application of BESS infrastructure at each location where feasible and cost-effective.

- While there are concerns about the safety of BESS infrastructure, best practices are well defined to maintain the safety and efficacy, such as:

1. Improved battery chemistry to reduce fire threat
2. BESS monitoring and management systems
3. Regularly scheduled maintenance and commissioning
4. Water-cooled systems to maximize temperature control
5. Strategic location of BESS infrastructure
6. Adherence to City and County ordinances
7. Coordination with local authority

PROJECT SCHEDULE

- Contract execution likely to take 90-120 days once direction approved
- Preliminary design will take an additional 60 days
- Once Purchase Orders are issued, NEM 2.0 projects will begin
  - NEM 2.0 projects must be operational by April 2026, which provides us less than 1-year to complete projects
  - NEM 2.0 tariffs will transition to NBT after 20 years of operation
- Net-Billing Projects (no NEM 2.0 agreements) have a more flexible start date and are being considered for BESS infrastructure to promote resiliency and improve cost savings

REQUEST FOR DIRECTION

Staff is requesting direction on the following options:

1. Direct staff to explore debt financing opportunities and move forward with direct purchase for all project sites; or

2. **Move forward and negotiate PPAs for all sites; or**

3. Move forward with Power Purchase Agreements for all Net Energy Metering 2.0 projects and postpone decision on Net-Billing Tariff projects; or

4. Some other combination of Direct Purchase vs. PPAs; or

5. No action

THANK YOU