Solar Project Cost Impacts

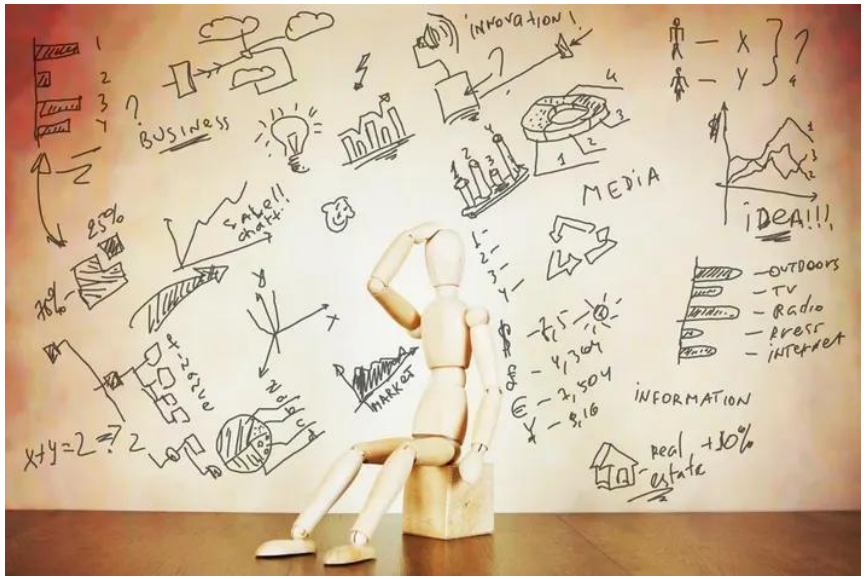
Presented by

Jeremiah LeRoy

Sustainability

Considerations

- Utility Rate Structures/Changing Tariffs
  - Peak Pricing and Time of Use
  - Electricity up ~22% since 2020
  - NG up ~24% since 2020
- Facility equipment
  - Natural Gas Equipment Prevalent
  - NG Rate increases
- Facility operations
  - Lack of Control
  - Schools unoccupied during peak output
- Weather



Incentives and Rebates

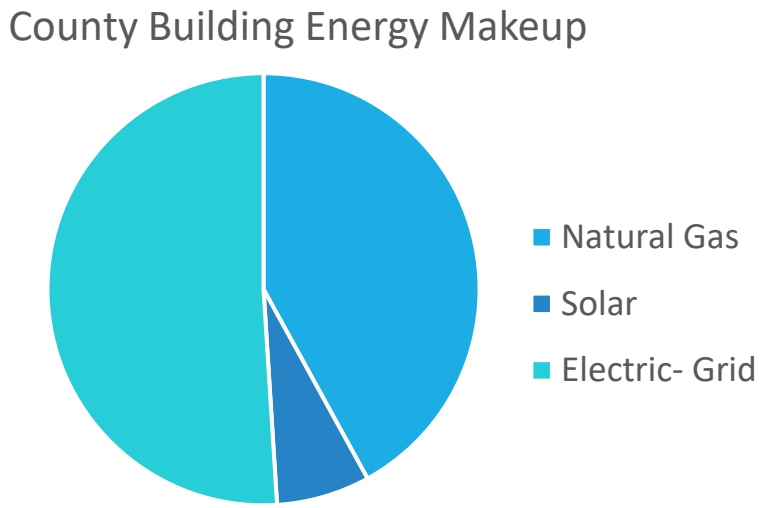
Total Solar Expenditures: $13.2M

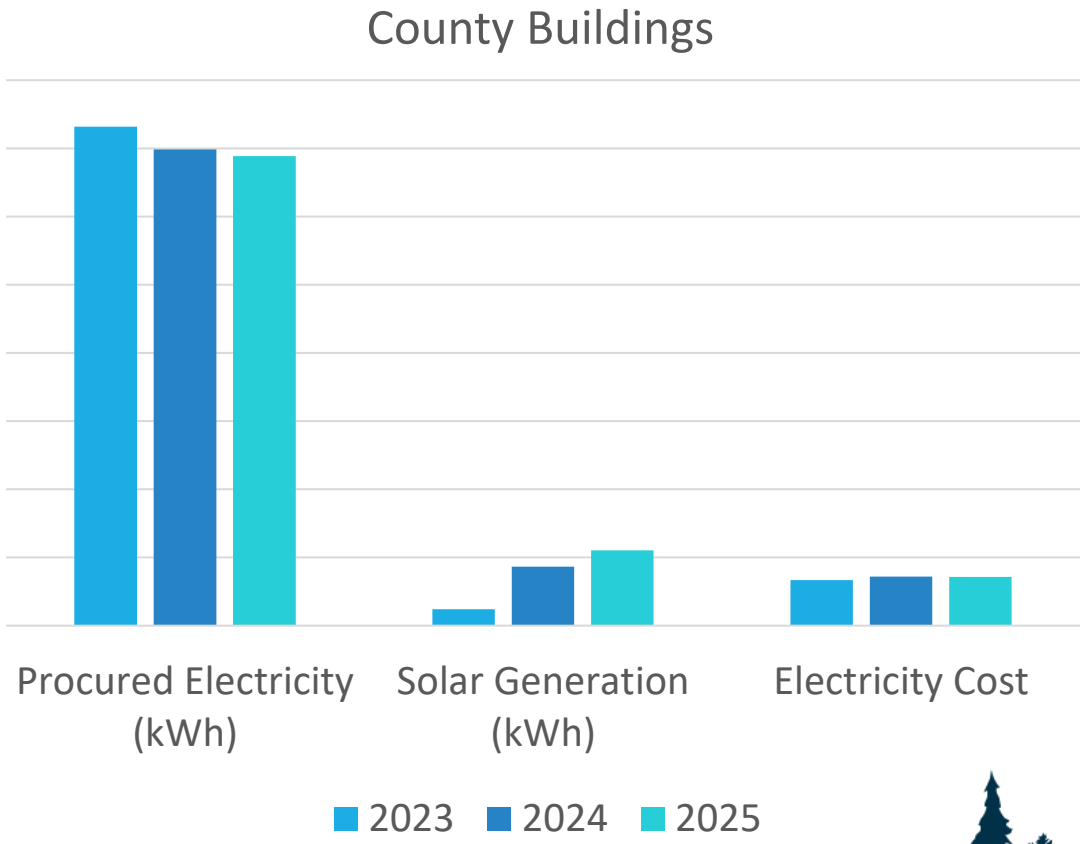
- Duke rebates: ~$2.3 million
- Federal tax rebates:
  - 2023: $1,181,000 ($550K pending)
  - 2024: $459,000 (pending)
  - 2025: $100,000 (to be filed)
- Total: **~$ 3.8 million**



County Buildings

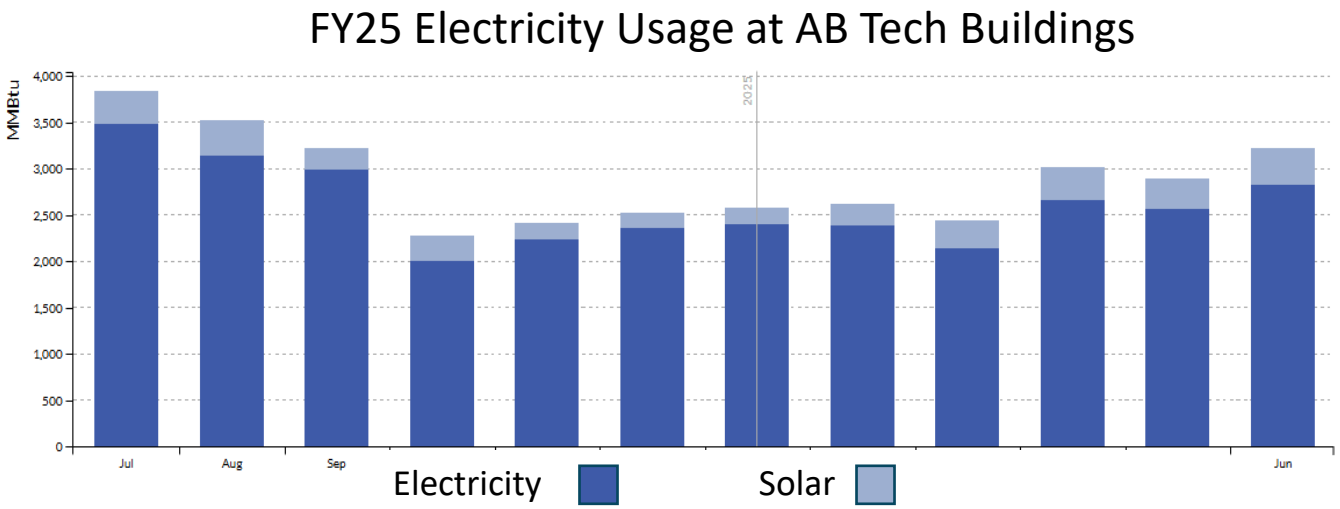
- # of buildings with solar: 18 of 44
- Last 12 months solar production: 1492 MWh
  - Solar sold back: 414 MWh
- 2025 estimate solar value: $125K - $140K
- GHG impact: 1026 Metric Tons CO2e

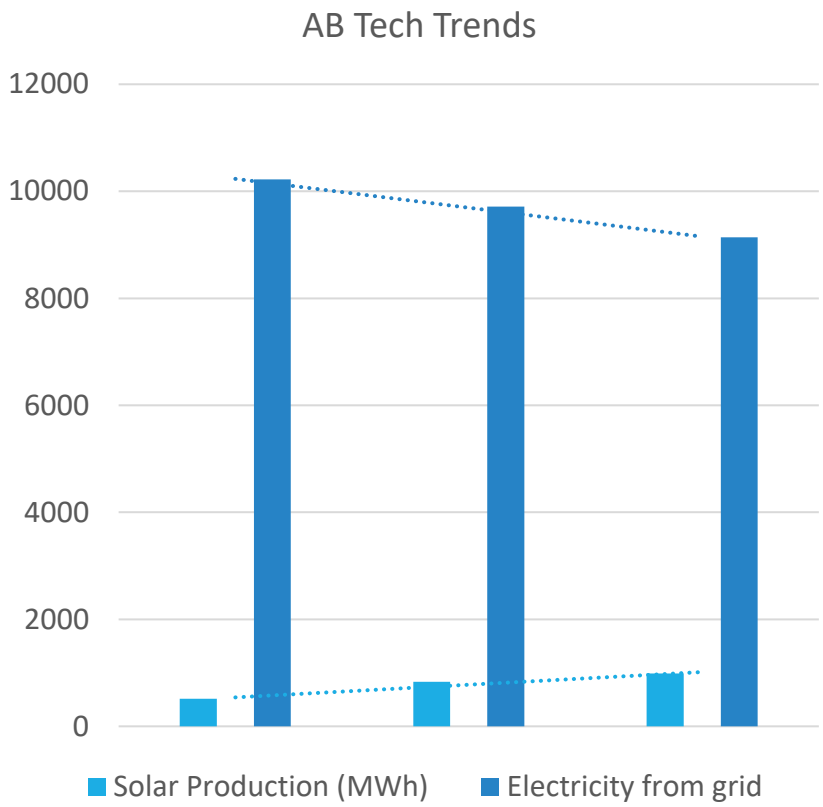




AB Tech

- Buildings with solar: 7 of 18
- FY2025 annual solar production (kWh): 987,289
- 2025 estimate solar value: $140K-$160K
- GHG impact: 663 Metric Tons CO2e



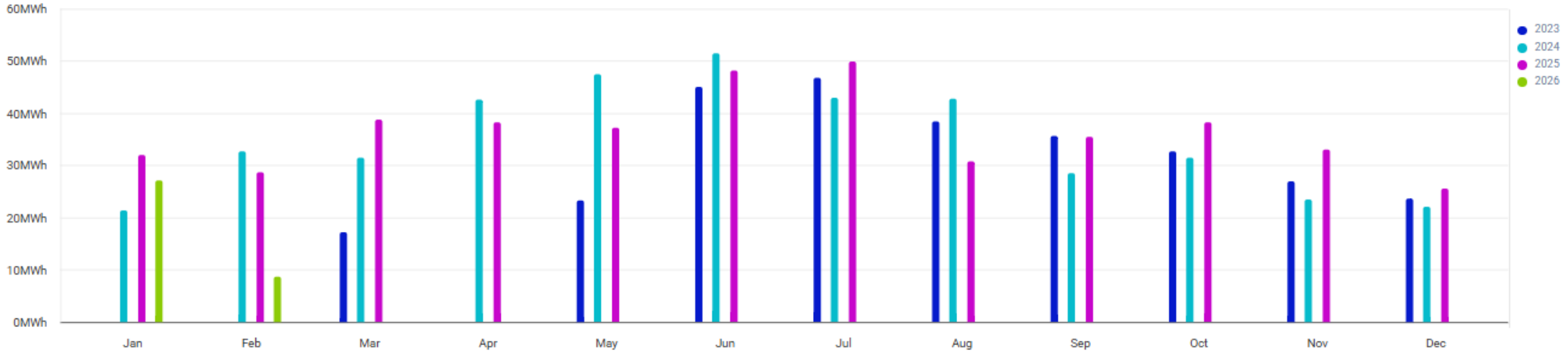


County Schools

- Schools with solar: 12 of 45
- 2025 annual production (MWh): 4,260
- 2025 estimate solar value: $300K-$325
- GHG impact: 2,862 Metric Tons CO2e



North Windy Ridge

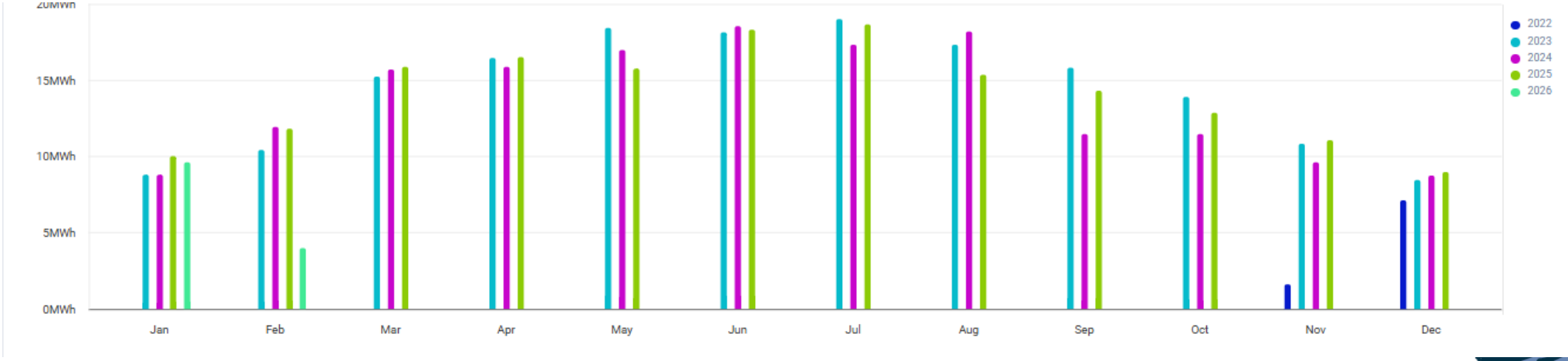


City Schools

- Schools with reporting solar: 4/ 8
  - (Lucy Herring not included, reporting in 2026)
- 2025 annual production (MWh): 1420 MWh
- 2025 estimate solar value: $100K-115K
- GHG impact: 954 Metric Tons CO2e



Asheville High School Cafeteria



Fire Stations

- Total production to date: 310 MWh
- New critical peak rates
- Installer went out of business with active workmanship warranty

Site	Est. Avg. Monthly Cost Avoidance ($.10/ kWh, 20% sold back)	Production (% of anticipated)
Black Mountain 19	$150-$200	111%
Leicester	$300-$350	109%
Reynolds	$250-$300	105%
Skyland	$350-$400	94%
Swannanoa 103	$125-175	107%
Swannanoa Bee Tree	$250- $300	112%
Upper Hominy	$325-$375	105%
West Buncombe	$425-$475	73%

SUMMARY	
Total Cost for Solar	$13.2M
Total Rebates/Incentives	$3.8M
Net Cost for Solar	$9.4M
Estimated Annual Value of Solar	~$700K
Return on Investment	**13.2 Years**

Utility Costs and Savings

Agency	Electricity Cost	Estimated Savings Year 1	30 Yr Estimated Savings
Buncombe County	$1,544,317	$108,803	$4,744,493
Asheville City Schools	$831,454	$142,424	$6,210,579
AB Tech	$1,075,344	$68,693	$2,995,445
County Schools	$3,498,000	$303,299	$13,225,738
Totals	**$6,949,115**	**$623,219**	**$27,176,255**

- **Combined Simple Payback ~14.2 yrs**

Lessons Learned

- Aggregated Procurement had some benefit but likely not as much as anticipated
- Utility tariff and rate changes are consistently working to undermine the economics of stand alone solar
- Future Solar Project must incorporate storage from the beginning. Retrofitting storage to charge from solar is challenging and not cost effective (can lead to an increase overall consumption)

Questions