

EHS SUPPORT

CONSIDER IT DONE

APRIL 2024



EHS  SupportSM





Who is EHS Support?

- Company Incorporated 2005
- Headquartered in Pittsburgh, PA
- Offices in 30 states, with over 150 employees
 - International locations in Canada, Australia, New Zealand, the United Kingdom, and South Africa
- Our Focus:
 - Solve complex environmental problems
 - Provide clients with unmatched customer service
 - Treat clients and employees with the highest level of respect

Local Resources. A Global Reach.



EHS SUPPORT RENEWABLES EXPERTISE

Knowledge

- U.S. Utility-Scale Wind and Solar Energy Systems
 - Assessment, Engineering, and Construction
- U.S. Commercial-Scale Solar Energy
 - Assessment, Design Management, Permitting, and Construction Management, Commissioning, O&M

Tools

- Development of Proprietary Solar Power and Financial Modeling Tool (SoSeF)
- Helioscope modelling experts

Experience

- Commercial Solar Feasibility Studies in the United States
 - 300+ megawatt (MW) of studies completed for 200+ sites
- USTDA funded feasibility study- coal to natural gas power station conversion
 - Solar feasibility analysis for hydrogen cogeneration
- Commercial Rooftop Solar Installation (AL)
- Additional commercial rooftop solar installation design underway (VA)
- Developing like-capabilities with EHS staff in Australia

EHS SUPPORT RENEWABLES CAPABILITIES

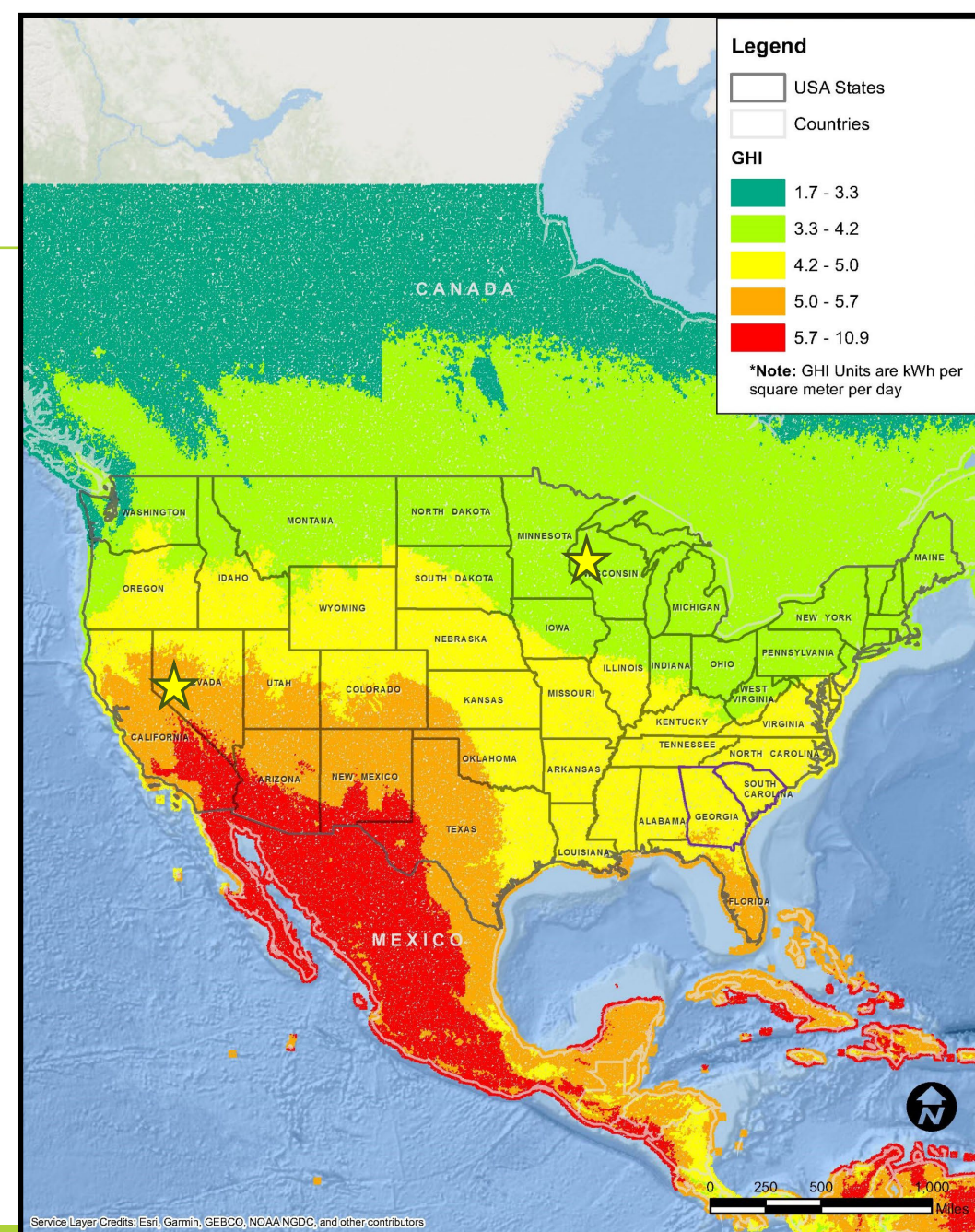
- Feasibility Evaluation and Conceptual Design
- Engineering Design Management
- Utility Liaison and Permitting
- Bid Solicitation and Contractor Selection
- Construction Administration and Oversight
- Contract Management
- O&M Support
- Federal Incentives Tax Filing Assistance

AGENDA

- Siting and Regulatory Considerations for Solar
- Solar Analysis Tools and Example Results
- Stella-Jones Case study
- Key Client Interview
- First Steps – Internal Communications
- Poll
- Q&A

SITING CONSIDERATIONS

- How much does the available solar resource affect project financials?
 - Misconception: Solar is only viable in more southern states (sunshine states)
 - Limitations: Site demand, Curtailment (line capacity), and Crediting Rates & Export Limits (Net Metering)
- Available solar resource contributes to financials, but regulatory drivers can have greater influence on overall project viability





SOLAR REGULATORY DRIVERS

- Federal Investment Tax Credit (Year Construction Starts) for Qualifying Projects through 2033
 - Base ITC 30%
 - Domestic Content Bonus 10% in addition to base ITC
 - Energy Community Bonus 10% in addition to base ITC
 - Low Income Bonus 10%-20% in addition to base ITC
- Bonus Depreciation (Year In Service)
 - 60% (2024) with 20% phase out annually
- MACRS Accelerated Depreciation
 - 6-year depreciation schedule
- State/Utility Tax Credits and Incentives
 - Nevada/Wisconsin – Property Tax and Net Energy Metering
- Solar Renewable Energy Credits (SRECs)

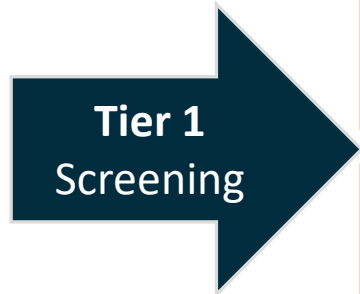
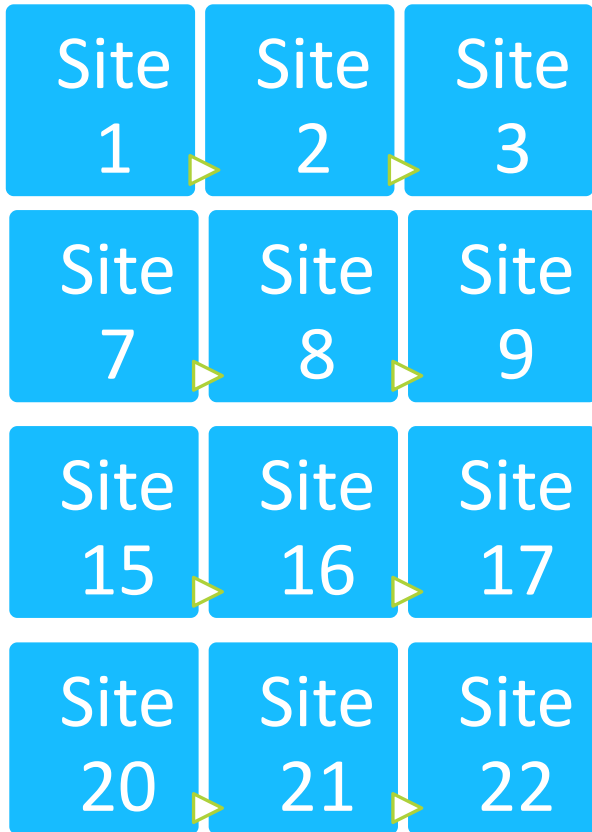
SITE ANALYSIS TOOLS

- **Solar Site Feasibility Tool (SoSeF)**
 - Designed “in-house” for rapid evaluation of project feasibility
 - Tier 1 and Tier 2 Versions
 - Tier 2 Version receives modelling outputs from Helioscope
 - Guides recommendations and decisions
- **Helioscope**
 - Solar Design and Modelling
 - Easily create PV systems on client sites
 - Provides energy generation estimates

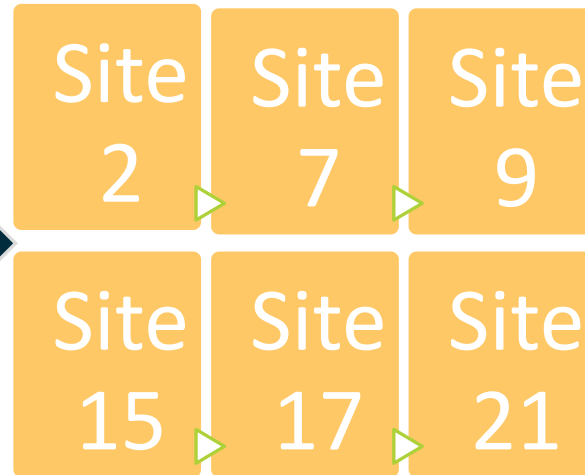
Full Scale Potential					
Site	AL (Site 1)	AL (Site 2)	VA	PA	KY
Total Capital Investment	\$2.05 million	\$3.79 million	\$2.18 million	\$1.86 million	\$2.74 million
Net Cost	\$953,828	\$1.75 million	\$938,312	\$979,088	\$1.45 million
PV System Size (MW)	1.38	2.77	1.48	1.04	1.57
Payback Period	5	6	5	6	6
Pre-Tax IRR	17.7%	14.7%	17.6%	15.6%	14.2%
Electricity Production Ratio (kwh annual/kw)	1,442	1,415	1,358	1,115	1,261
Percent of Site Requirement Generated	101%	98%	89%	72%	129%

SOLAR SITE SELECTION PROCESS OVERVIEW

Initial Client Site Portfolio



Short list of Retained Sites



Priority of Installation



SCREENING AND EVALUATION PROCESS



Site Screening (Tier 1)

- ❑ Review portfolio of sites for solar implementation options and identify constraints
- ❑ Analyze state and federal policies for solar
- ❑ SoSeF analysis to provide a preliminary estimate of:
 - ❑ Site solar generation capabilities
 - ❑ Capital and operational costs
 - ❑ Breakeven year

Deliverable:
Top 10 Site
Recommendations

Client selects sites for
further evaluation

Site Evaluation (Tier 2)

- ❑ Evaluate:
 - ❑ Facility electricity demand
 - ❑ Utility / Permitting requirements
 - ❑ Client goals
- ❑ Detailed Solar Modelling & Financial Evaluation to:
 - ❑ Maximize production per unit area
 - ❑ Balance system to meet facility electrical needs
 - ❑ Provide a detailed cash flow analysis

Client selects sites
for Construction

INFORMATION NEEDED – TIER 1

- Site Map/Aerial with mark-up showing the following:
 - Buildings Nomenclature
 - At a minimum, site address
- Identify local electric utility provider

TIER 1 ASSESSMENT EXAMPLE

- Aerial plus workbook screenshot
- Explain metrics used (RPS, qualitative assessment)

TIER 1 MULTI-SITE SCREENING RESULTS

Facility	State	Number of Buildings/Roofs	Nameplate Power Capacity (kW-dc)	Total Capital Cost (\$USD)	Net Capital Cost (\$USD)	System Generation (kWh/year)	Equivalent CO2 Offset (tonnes CO2/year)	Breakeven (years)
Roof-Mount Systems Assessed								
██████████	CA	4	238	\$418,000	\$186,000	399,937	280	2.5
██████	FL	1	277	\$482,000	\$229,000	437,872	310	6.5
██████████	IL	6	1,209	\$1,935,000	\$853,000	1,495,176	1,060	7.0
██████████	AR	5	797	\$1,304,000	\$615,000	1,124,682	800	7.0
██████████	AR	5	335	\$576,000	\$272,000	470,513	330	7.0
██████████	OH	6	2,112	\$3,284,000	\$1,712,000	2,484,117	1,760	8.5
██████████████████	OH	2	1,425	\$2,261,000	\$1,179,000	1,675,604	1,190	8.5
██████████	PA	2	158	\$284,000	\$124,000	197,063	140	8.5
██████████████████	TX	2	259	\$452,000	\$236,000	377,267	270	8.5
██████████	PA	3	359	\$615,000	\$269,000	425,604	300	9.0
Ground-Mount Systems Assessed								
██████████████████	FL	N/A	684	\$1,235,000	\$586,000	1,079,806	770	6.5
██████████████████	PA	N/A	1,921	\$3,006,000	\$1,315,000	2,274,660	1,610	8.0

SCREENING AND EVALUATION PROCESS



Site Screening (Tier 1)

- ❑ Review sites for solar implementation options and identify constraints
- ❑ Analyze state and federal policies for solar
- ❑ SoSeF analysis to provide a preliminary estimate of:
 - ❑ Site solar generation capabilities
 - ❑ Capital and operational costs
 - ❑ Breakeven year

Site Evaluation (Tier 2)

- ❑ Evaluate:
 - ❑ Facility electricity demand
 - ❑ Utility / Permitting requirements
 - ❑ Client goals
- ❑ Detailed Solar Modelling & Financial Evaluation to:
 - ❑ Maximize production per unit area
 - ❑ Balance system to meet facility electrical needs
 - ❑ Provide a detailed cash flow analysis

Deliverable:
Top 10 Site
Recommendations

Client selects sites for
further evaluation

Client selects sites
for **Construction**

INFORMATION NEEDED – TIER 2

1. Most recent 12-months of Electric Bills
2. Current Electricity Supply Agreement with Utility
3. Site Map or Aerial with mark-up showing the following:
 - Buildings Nomenclature, Transformers, Meters, and MCCs
4. Electrical and Structural Drawings (or design company names)
5. Site Contacts
 - Site Qualified Electrical Worker (QEW)
 - Site Health and Safety Representative
 - Utility Representative
6. Layout and Interconnection Discussion
 - Suitable/Acceptable rooftops or yard space
 - Suitable Interconnection Points within MCCs and Electrical Rooms

TIER 2 EVALUATION EXAMPLE

- Helioscope model and workbook
- Explain optimization process

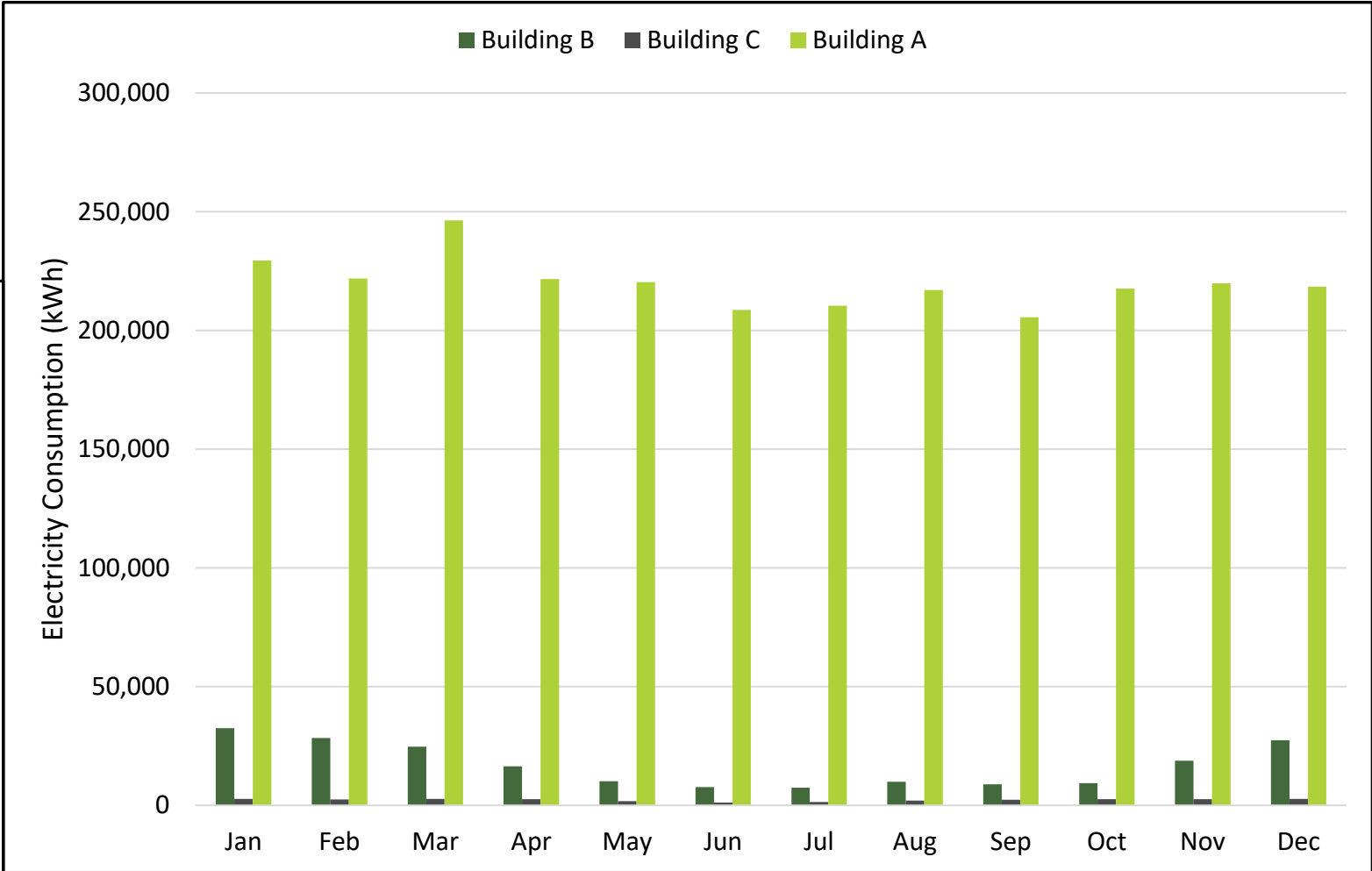
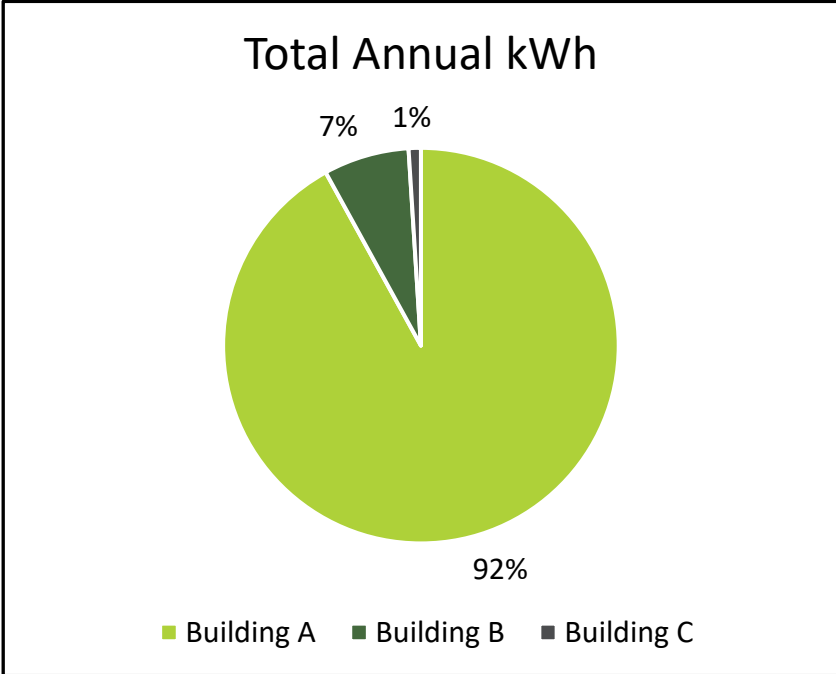
WISCONSIN SITE - BILL REVIEW

- Utility: Xcel Energy

- CG-7 Rate Tariff

- Electricity Consumption

- Site Total = 2,867,000 kWh/Year



XCEL ENERGY UTILITY REVIEW

	PG-1	PG-2A	PG-2B	PG-2C	PG-2D
System Size	<= 100 kWac	1-5 MWac	100 kWac – 1 MWac	<= 5 MWac	>= 1 MWac
Consume Energy Onsite (Avoid Retail Rates)	Yes	No	Yes	No	Yes
Excess/Exported Energy	Excess energy kept as a credit and rolled over to future months 12-month true-up at the Forecast LMP rate	All energy sold at the Forecast LMP rate plus capacity credits	Monthly excess energy sold at the Forecast LMP rate	Energy and capacity credits rates negotiated	Non-Export
Keep RECs	Yes	Yes	Yes	Yes	Yes

- Building C
- Building B

- Building A

WISCONSIN DESIGN- BUILDING A

Roof-Mount
1.9 MWdc
1 MWac
3,460 Panels



TIER II SUMMARY – WISCONSIN SITE

Production Metrics	
Site Offset	65%
Building Consumption	2,637,000 kWh/Year
Solar Production	1,866,000 kWh/Year
Carbon Avoidance ¹	1,411 MT CO ₂ e/Year
Financial Metrics	
Total Estimated CapEx ²	\$3,630,000
Estimated ITC Value ³	\$1,800,000
Net Estimated CapEx	\$1,830,000
Estimated Net Annual Savings	\$172,000/Year
Estimated Breakeven	7.5 Years
Total Capital Cost of Carbon Avoidance	\$2,580 / MT CO ₂ e / Year

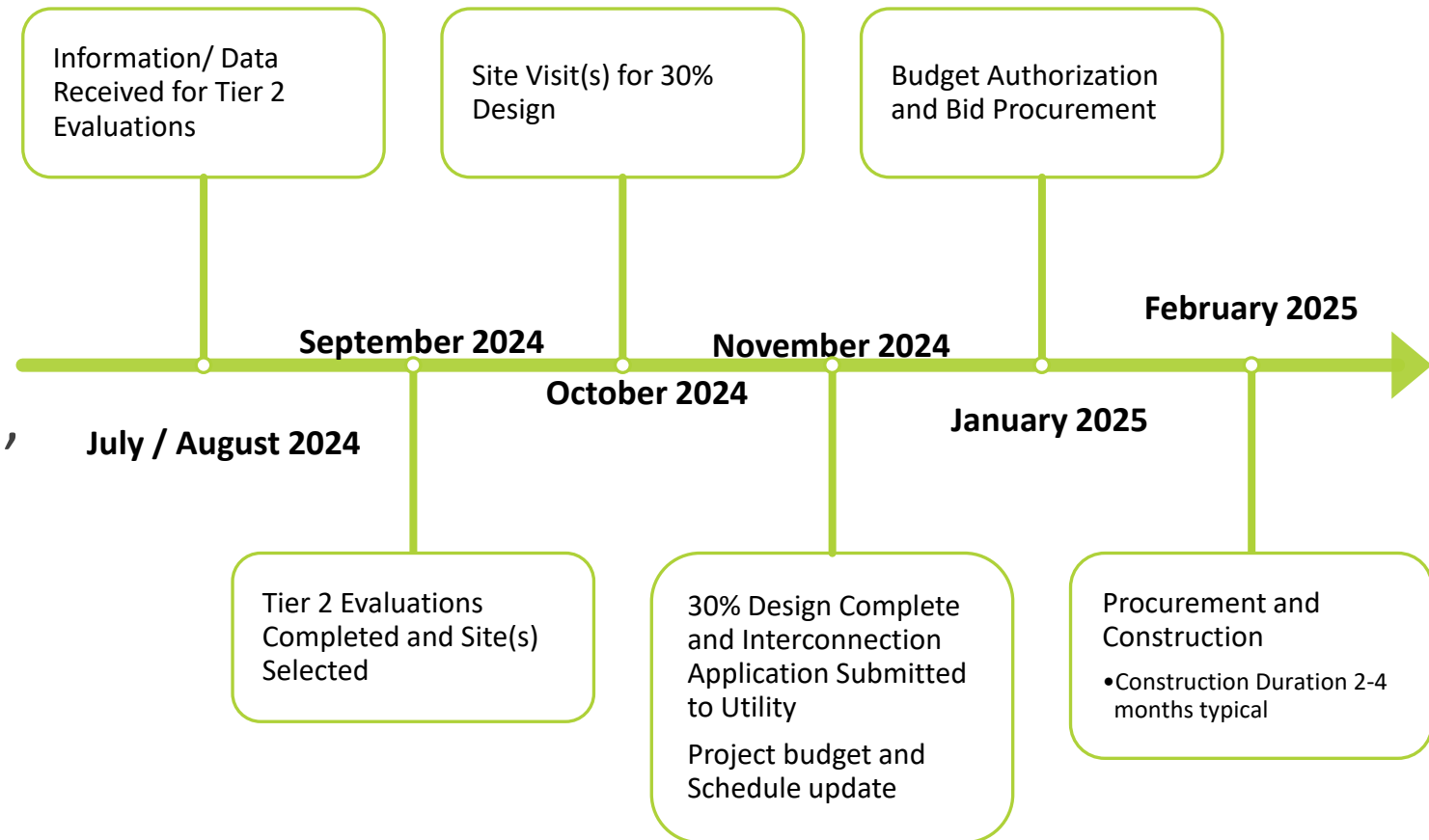
1. Based on the EPA eGrid 2021 non-baseload emission factor for Wisconsin (1666.63 lbs CO₂e/MWh).

2. Based on NREL Solar Benchmarking costs.

3. ITC value includes base incentives for projects less than 1 MW-AC, Energy Community, and Low-Income Bonus. ITC total value is 50%.

TYPICAL PROJECT SCHEDULE

- Tier 2 Evaluation
- 30% Design with Site Visit
- Utility Permitting
- Bid Solicitation and Contractor Selection
- Procurement, Construction, and Oversight
- O&M Support





CASE STUDY STELLA-JONES

- EHS Support is assisting Stella-Jones in the implementation of a GHG footprint reduction strategy
- Process for Stella-Jones to date:
 - Tier 1 Assessment on all U.S. based facilities completed (2021/2022)
 - Tier 1 Results Prioritized and Top 5 Selected for Tier 2 (2022)
 - AL Site selected as first plant for solar installation (2022)
 - ~1 MW-DC rooftop solar PV system on two separate roofs, PTO issued February 2023
 - Annual Re-Evaluation Process (2023)
 - New State Policies and Federal Tax Incentives
 - Tier 1 assessments completed for next top 10 sites
 - Two sites selected for Tier 2 Evaluation
 - Ongoing design for one site for implementation in 2024

CASE STUDY SOLAR PV SYSTEM METRICS



- Key Equipment:
 - 2,176 Solar Panels
 - 12 Inverters
- 990 KW DC / 700 KW AC
- Designed generational capacity of 1.3 million kWh per year
 - > 70% of onsite consumption
- Initial 932 metric tonnes of CO2 reduction

TOP 5 RECOMMENDATIONS

#1 AL (TCI = \$2.05 million, Net Cost = \$954K)

- 101% of Site electrical consumption generated
- IRR > 16%
- CO2 Offset > 3 millions lbs. / year
- Payback period <= 8 years
- Large enough to fund other sites

#2 VA (TCI = \$1.4 million, Net Cost = \$938K)

- 89% of Site electrical consumption generated
- IRR > 16%
- Payback period <= 6 years
- CO2 Offset > 3 millions lbs. / year
- Large enough to fund other sites
- Future added value in SRECs

#3 AR (TCI = \$2.8 million, Net Cost = \$1.56 million)

- 90% of Site electrical consumption generated
- IRR > 16%
- CO2 Offset > 3 millions lbs. / year
- Payback period <= 8 years
- Large enough to fund other sites

#4 KY (TCI = \$1.67 million, Net Cost = \$882K)

- 73.5% of Site electrical consumption generated
- IRR > 10%
- CO2 Offset > 1 millions lbs. / year
- Payback period <= 6 years

#5 GA* Ground Mount Install (TCI = \$1.32 million, Net Cost = \$733K)

- 56.4% of Site electrical consumption generated
- Potential IRR > 16%
- CO2 Offset > 1 millions lbs. / year
- Payback period <= 6 years
- Utilize unvalued land

*TCI = TOTAL CAPITAL INVESTMENT

TOP 5 PERMITTING RISK COMPARISON

AL (Risk Score = 6, Risk Category = Low)

- Standardized Interconnection Process (Low Risk)
- Standard PPA Structures to Avoid Capacity Limits (Low Risk)
- No change to rates or electric supply contract terms (Low Risk)
- No State RPS (Medium Risk for State Acceptance and Utility Permit Timeline but mitigated through standard schedules)
- No State Solar Carve Out in place (Low Risk as the PSC has ruled in favor of Vote Solar lobbying to permit NEM policies but at lower buy back rates compared to other states)

VA (Risk Score = 5.5, Risk Category = Low)

- Standard Interconnection Process (Medium Risk due to no Tiering based on capacity, may lead to increased cost for studies and additional time)
- Standard PPA Structures to Avoid Capacity Limits (Low-Medium Risk due to demand based PPA offering terms based on utility forecasted models, latest report shows ample capacity)
- No change to rates or electric supply contract terms (Low Risk)
- State RPS in Place (Low Risk, 100% renewable by 2050 and required to achieve a percent of this from in state resources)
- No State Solar Carve Out in Place (Low Risk as renewable goals are mandatory and large capacity for grid solar available without issues mentioned regarding grid stability)
- Awaiting market development for SREC (Additional benefit, utilities required to purchase if market develops)

AR (Risk Score = 8.5, Risk Category = Medium)

- Non-Standard Interconnection Process which must be approved by the PSC/PUC rather than Utility (Medium risk, may lead to increased timeline)
- PPA Structure must be approved by PSC/PUC rather than Utility (Medium risk, may lead to increased timeline and costs)
- No change to rates or electric supply contract terms (Low Risk)
- No State RPS (Medium-High Risk for State Acceptance and Utility Permit Timeline but unmitigated due to PSC/PUC approval process)
- No State Solar Carve Out in place (Medium Risk as there is a State mandated NEM policy)

KY (Risk Score = 6.5, Risk Category = Medium-Low)

- Standardized Interconnection Process (Low Risk)
- Standard PPA Structures to Avoid Capacity Limits (Low Risk)
- No change to rates or electric supply contract terms (Low Risk)
- No State RPS (Medium Risk for State Acceptance and Utility Permit Timeline but mitigated through standard schedules under TVA)
- No State Solar Carve Out in place (Medium-Low Risk as Site located within TVA region)

GA* Ground Mount Install (Risk Score = 13.5, Risk Category = High)

- Non-Standard Interconnection Process (Medium-High risk, may lead to increased timeline and costs)
- PPA Structure is not Standardized (Medium-High risk, may lead to increased timeline and costs)
- Many suppliers do not offer buy-back programs due to existing low electricity rates and such, supplier changes are likely (High risk)
- No State RPS (High Risk due to low statewide electricity rates)
- No State Solar Carve Out in place (Medium-High Risk as there is a State mandated NEM policy, although complex and limited in capacity)

KEY CLIENT INTERVIEW

- Interview questions

FIRST STEPS – INTERNAL COMMUNICATIONS

- Engaging the right people initially is key
 - Bring in key Leadership and Capital Project Managers for initial engagement to discuss options and gauge interest
- Target the right audience
 - Converse with key internal advocates with ESG directives and with those who are decision makers
 - Begin planning ESG roadmap to reduction
- Define the why
 - What are the goals of implementing renewable energy at your company?
 - Cost control over electricity price escalation
 - Carbon reduction / neutrality targets
 - Shareholder interest in climate positive actions





Poll



QUESTIONS?



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