Solar 101

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About Me

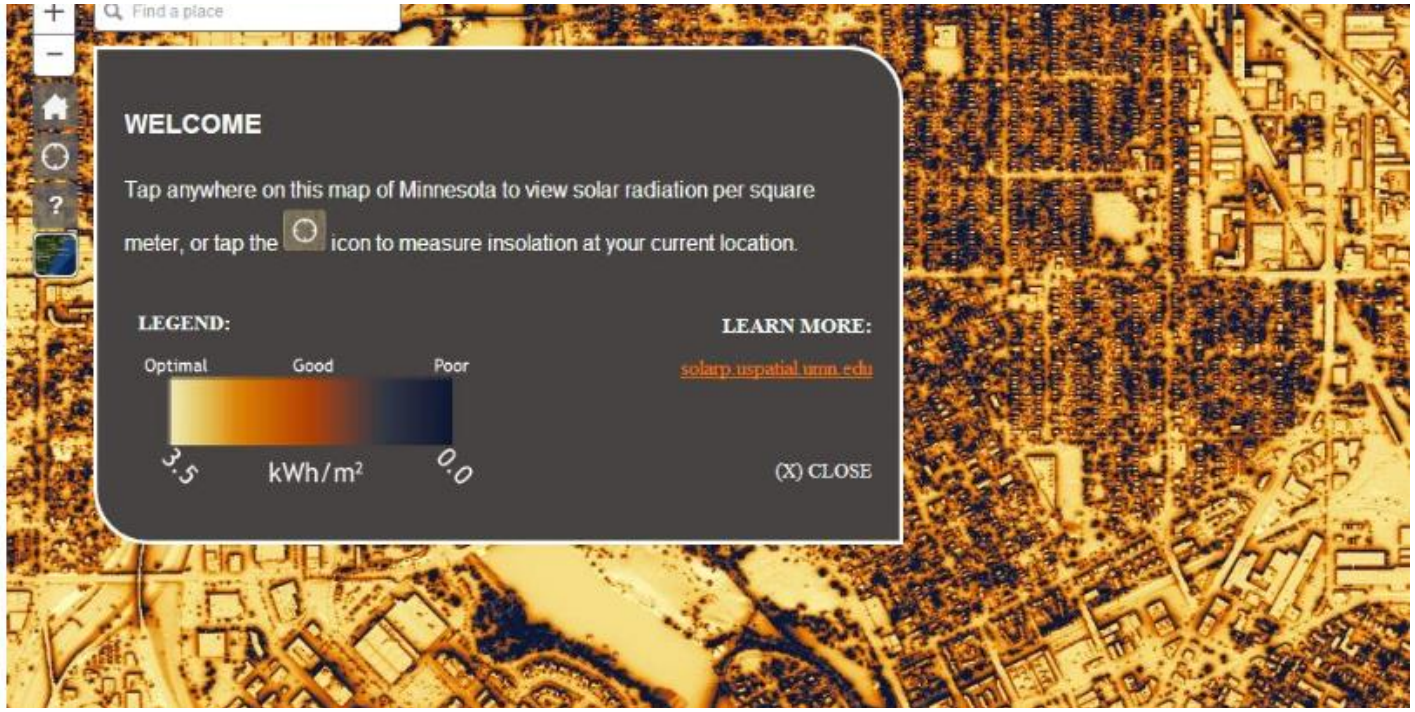
- Technical Sales Consultant
- Over 4 Years of Experience
- Over 300 Installed Designs (Off-Grid, Grid Tied, Hybrid)
- NABCEP PVIP Certified
- Building Analyst Technician (BA-T)

Key Terms

- Kilowatt (kW)
- Kilowatt hour (kWh)
- DC vs AC rating
- Inverter
- Interconnection point
- Meter
- Cost/Watt ($/w)

Curious About Solar?

- U of M Solar Suitability Map
- PV Watts
- Energy Usage
- Energy Goals
- Utility Company



Initial Considerations

- What is your total energy usage? (Consider an energy audit)
- Size of system (roof size, amount of land available for ground mount)
- How many panels to meet your goals?
- Battery Storage?
- Equipment selection (microinverters, string inverters, racking type..)
- Any required electrical upgrades?

Roof Mount

- Type of Roof (Shingle, Standing Seam, Tin, Flat Roof, Etc..)
- Azimuth (Orientation)
- Tilt
- Age of roof
- Structural Integrity of Building (Professional Engineering may be Required)
- Lower upfront cost, can be more limited

Ground Mount

- Distance from meter and/or electrical panel
- Ground type
- Length of trench
- Fixed tilt or adjustable?
- Higher upfront cost
- Easier maintenance

Working with an Installer

- Installer will collect all data as discussed before
- Site visit (virtual or in person)
- Sales proposal catered to meet your needs
- Contract
- Interconnection Application
- Permits
- Inspections

Customer Relationship with Itasca Mantrap

- Interconnection Application
- Interconnection Agreement
- Net Metering- Average Retail Rate
- Installer will work with them on ensuring all requirements are met to their standards

Complications/Design Considerations

- Multiple services- off peak, dual fuel, etc.
- Subtractive meter
- Steep roofs/multiple roof lines
- Location for batteries
- Meter upgrade (bi-directional meter)
- Transformer upgrade
- Unfavorable ground conditions

Broad Overview

- Do some independent research
- Contact installers
- Receive multiple bids
- Ensure you know what you are getting and when
- Sign