

Energy Storage

Questions, Considerations, and Concerns

Chris Larson, P.E.

Northwest Iowa Power Cooperative

Electrify Iowa!

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Energy Storage

Questions, Considerations, and Concerns

- What's your use case?
 - Peak shaving
 - Energy arbitrage
 - System reliability: help with voltage/frequency
 - Defer major system upgrades
 - Selling excess to the Market when prices are high enough?
 - Should this be part of a Community Storage project?
- Given your price/kW, how large (or small) of a storage solution should be installed to have an ROI < solution lifetime?
- Does your utility / G&T / RTO / ISO have a mechanism or requirements for connecting energy storage solutions?

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- Should this solution be installed in a single location?
 - Or spread throughout a territory?
- Where should this solution be installed?
 - Before the meter? At a substation?
 - Behind the meter?
- How much real estate will be needed for this solution?
 - Will you need to purchase land?
- What new/modified infrastructure will be needed to connect this solution?
- Does this solution need to coordinate with an existing solution?

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- Who will dispatch this solution?
- How will this solution be dispatched?
 - All at once?
 - In portions?
- How *fast* does this solution need to be dispatched?
 - Can it be scheduled?
 - Does it need to be automatic?
- Who will maintain this solution?
 - Your own personnel?
 - May require training.
 - Contract with vendor?
 - May need to be escorted while on company property.

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- Does this solution need to be exercised?
- For electric energy storage:
 - How many MW *and* MWh needed?
 - How long does it have to re-charge?
 - How often is it needed to discharge to what level?
- For electric storage solution, does this solution need to be single phase or three phase?
- What protection does this solution require?
 - Fusing or circuit breaker?
 - What does this need to coordinate with?

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- If installed outdoors, what wildlife control measures will be needed?
- If a problem does arise, how quickly can it be rectified?
 - By your personnel?
 - By vendor?
 - Within 24-48 hours?
- How does this solution deteriorate over time?
- What is the lead time on replacement equipment?
- When the solution has reached end-of-life, what happens?
 - If battery solution, are they disposed and replaced?
- What will be the cost to retire this solution?

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Answers?