

Powerhouse Integration for RE systems

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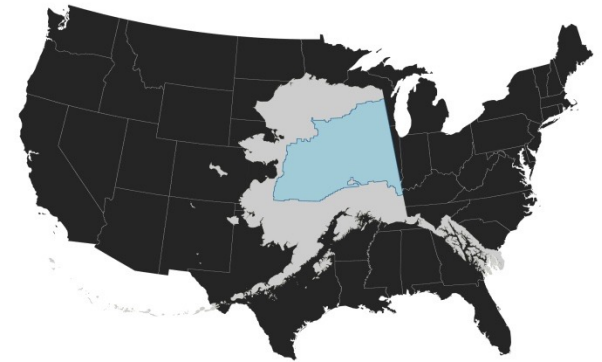
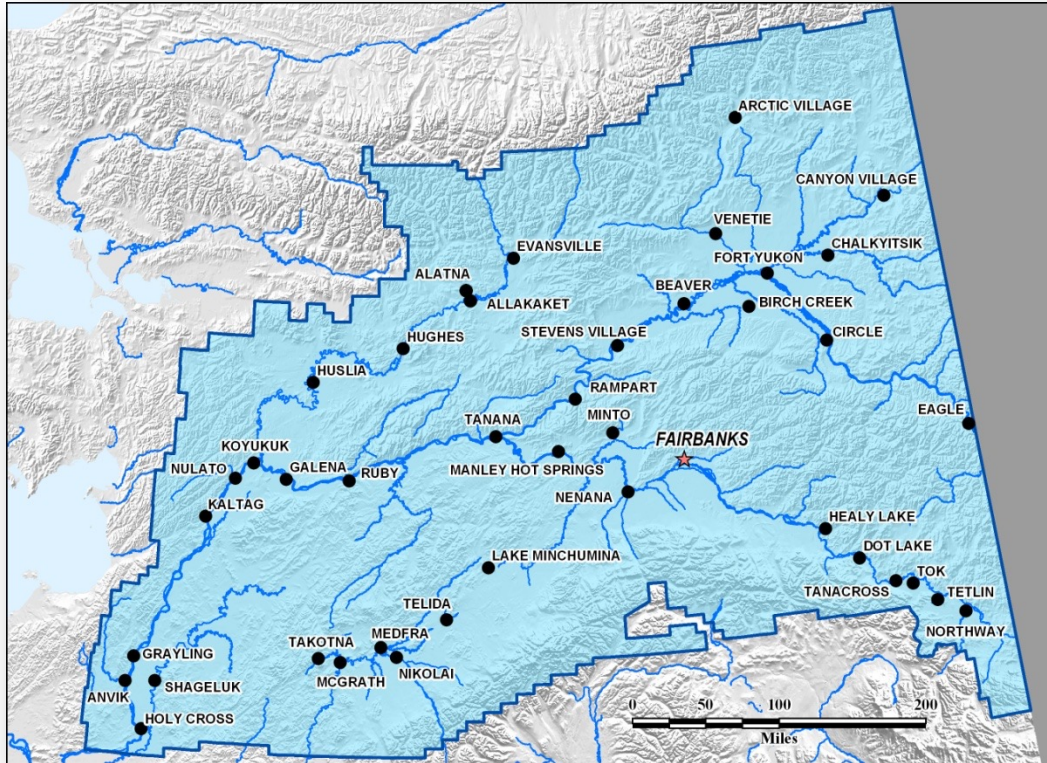


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TCC Region

- 235,000 Square Miles
- 37% of the State
- Extreme Subarctic
- Majority off road system
- Avg. Village load is about 100-150 people, 75kW load
- Roughly the size of Texas, fewer miles of road that Rhode Island



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This is where we are: “Tribal Energy Security?”



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Solar in our Villages

So, we started here...



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Solar in our Villages

But we really wanted to get here...



All we had to do was find funding, upgrade generators, re-tap gen heads, move the main feed, replace step up transformers, re-wire half the village, re-wire the switchgear, engineer a moveable building foundation, navigate contractor challenges, avoid the folks who said we were wasting our time, find good contractors who wanted to work in the bush, ID a suitable inverter system, educate the community, rework their local use of the PCE formula, establish a PPA, find more funding, improve the control system Then repeat 15 more time.



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Power Plant Upgrades



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Utility Collaboration

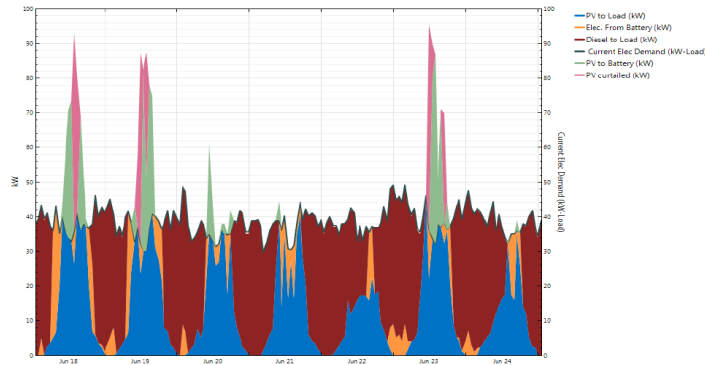
- Who is running the plant and how long have they been there?
- How pretty is your switchgear....
- Split phase or 3 phase?



Diesel Off

“ No Models are correct but some are Useful”

Dispatch – Nominal battery cost



← NREL Modeling

Actual Hughes Data →



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Questions?

“Success is the constant process
of overcoming obstacles”

-somebody smarter than Dave

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