



YUKON RESEARCH CENTRE
Yukon College

Northern Energy Innovation Energy Modelling

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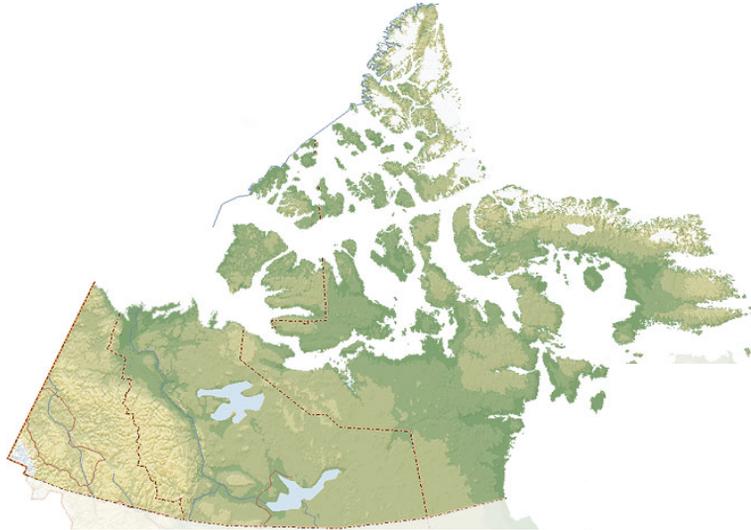
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Who we are

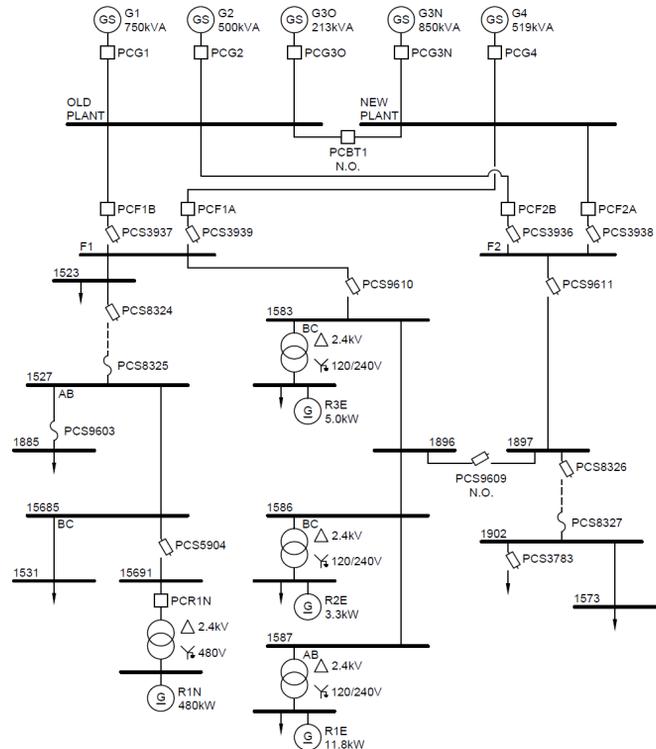
Northern Energy Innovation, Yukon Research Centre



What we are doing

Modelling

- Developing equipment models of real equipment found in remote power systems
- Building highly accurate power system models of remote communities
- Focus on integration of renewable energy
- How this is done while maintaining safe and reliable power for the community

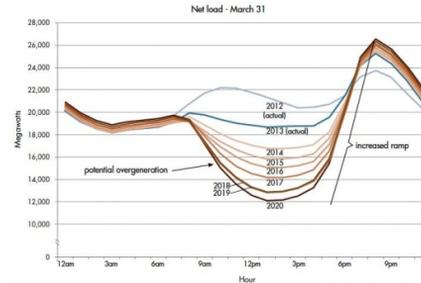
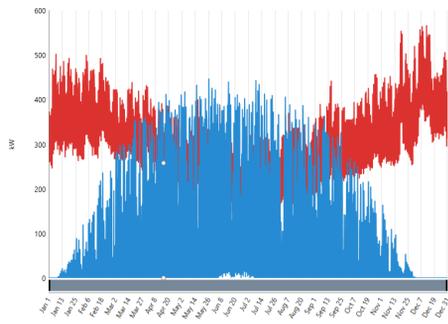


Considerations of integrating renewables

Adequacy

Adequacy

The ability to supply the required power and energy without exceeding system ratings or operating limits.

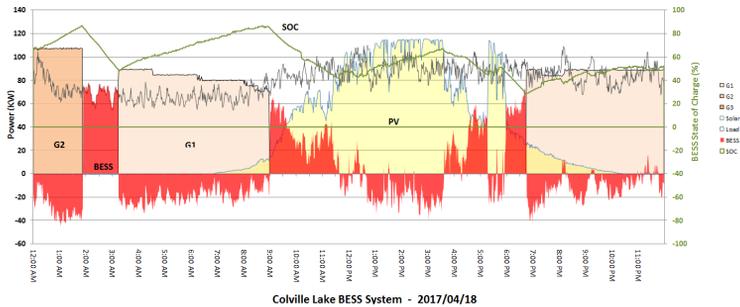


Considerations of integrating renewables

Resiliency

Resiliency

The ability to recover from perturbations in the system.

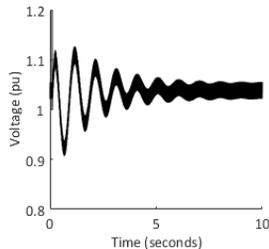
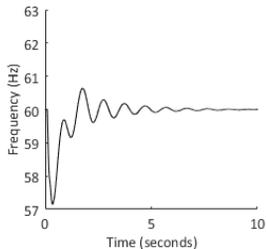


Considerations of integrating renewables

Security

Security

The ability to tolerate a credible event without loss of load, over-stress of equipment, or deviation from voltage and frequency tolerances.

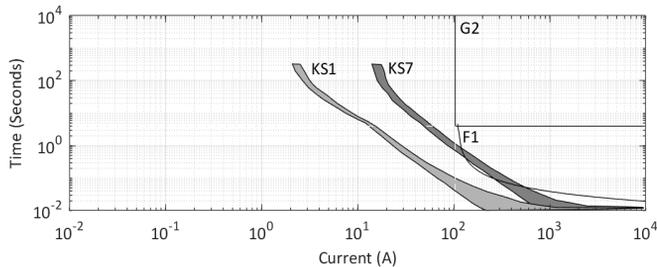


Considerations of integrating renewables

Safety

Safety

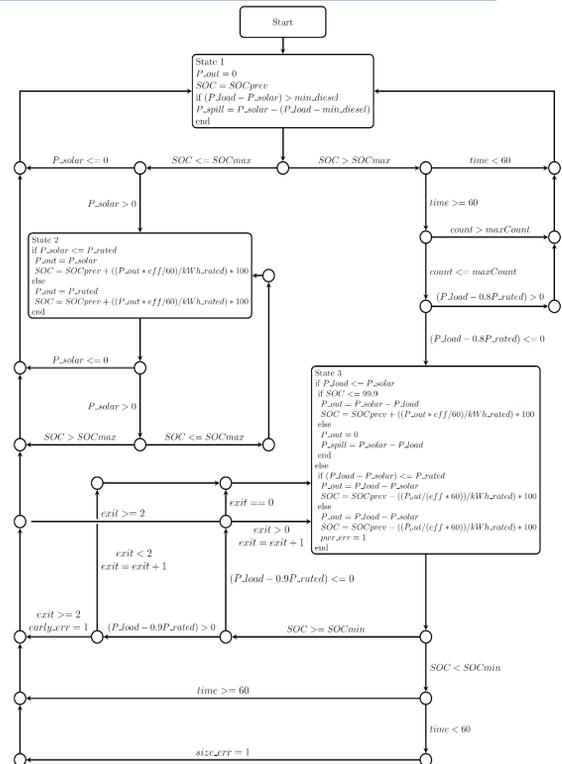
The ability to identify and protect from hazardous operation like faults, while staying in operation for all credible events.



How are we doing it

Data

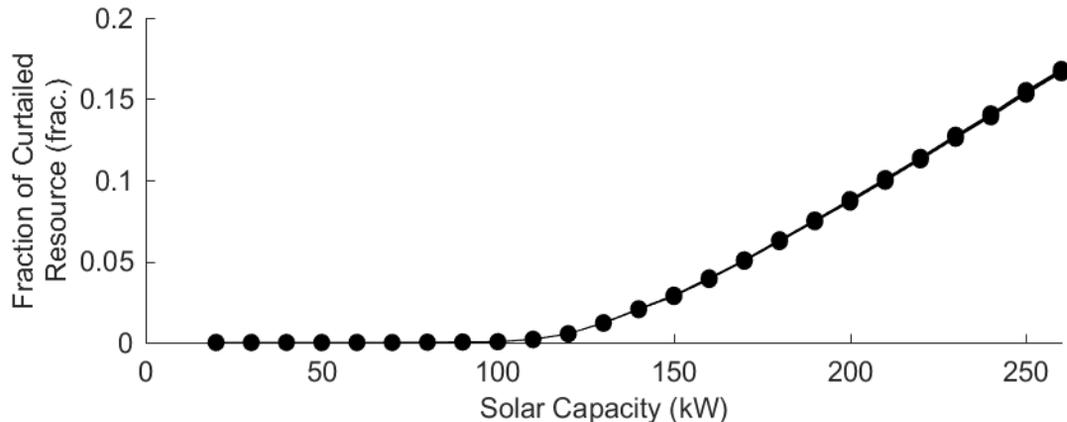
- Using real data, garbage in is garbage out
- Increased accuracy
- Proprietary data
- Unavailable data is supplemented with standard power system models



What can it be used for

Results

- Informs policy on maximum renewable penetration from a technical standpoint
- Provides flexibility to expose system to extreme operating conditions
- Identify viable value streams for emerging technologies
- Models are sufficiently specific to represent unique conditions for the modelled community





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