

Combined Heat and Power (CHP) Academy

What We Learned:

Operational Realities of Community-Scale CHP

UBC Alex Fraser Research Forest- Noel McKinnon





Faculty of Forestry
Alex Fraser Research Forest

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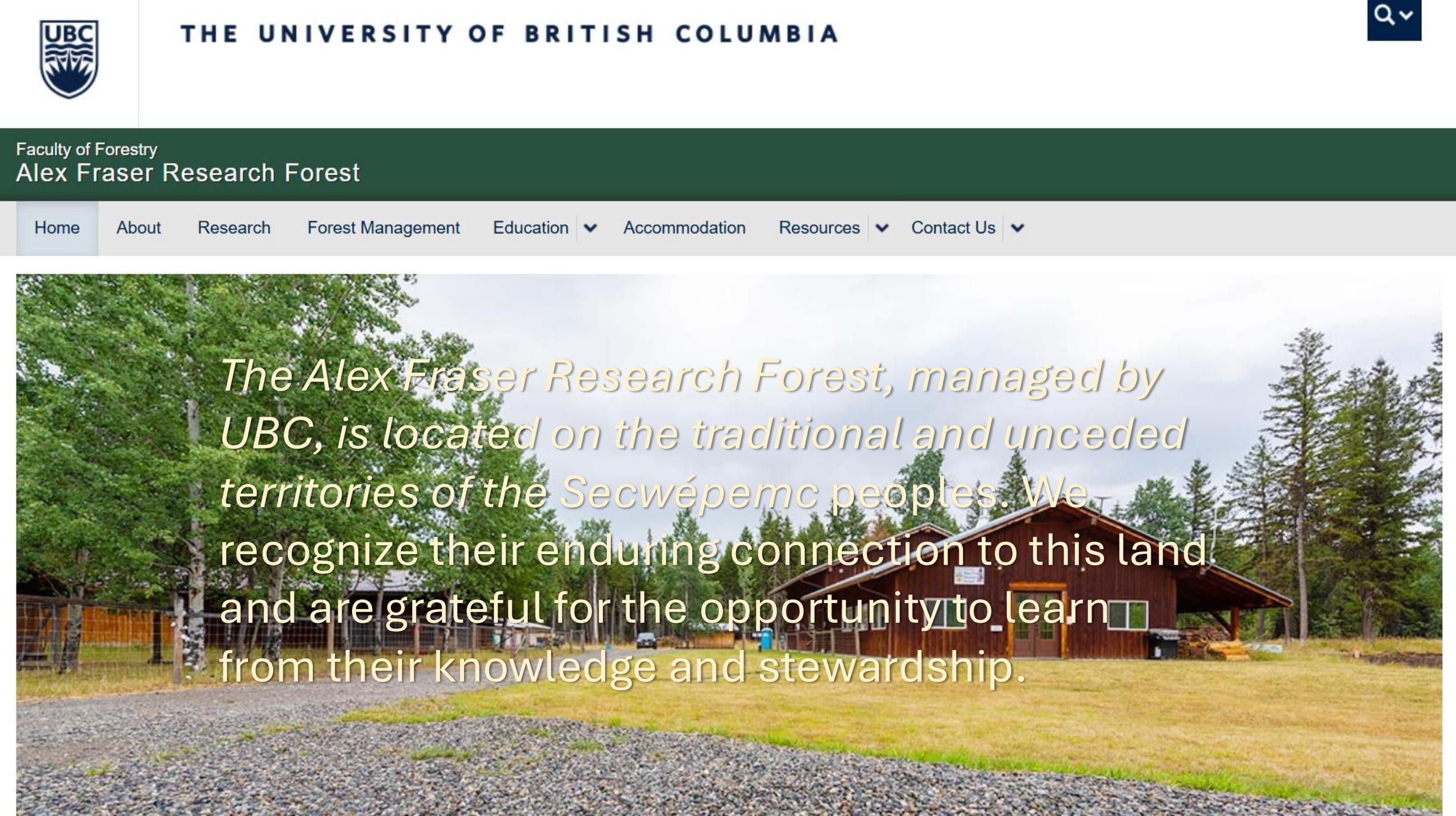
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A photograph of a large, dark brown wooden building with a gabled roof, situated in a forest. The building has several windows and a covered porch area. The foreground is a gravel path, and the background is filled with tall evergreen trees under a cloudy sky.

The Alex Fraser Research Forest, managed by UBC, is located on the traditional and unceded territories of the Secwépemc peoples. We recognize their enduring connection to this land and are grateful for the opportunity to learn from their knowledge and stewardship.

How it started



Partnership:

- Natural Resources Canada
- FPInnovations
- UBC – Forestry
- BC Ministry of Forests
- Pacifican



The CHP Academy: Why We Built It

- Biomass (CHP) basics training
- Demystify CHP
- Connect forestry, energy, and system operation



Why CHP Matters

- Need for electricity in remote communities
- Energy security
- Reduce wildfire risk
- Local fuels (<30km)
- Local jobs



How it ended!



CHP looks sleek, easy and sexy



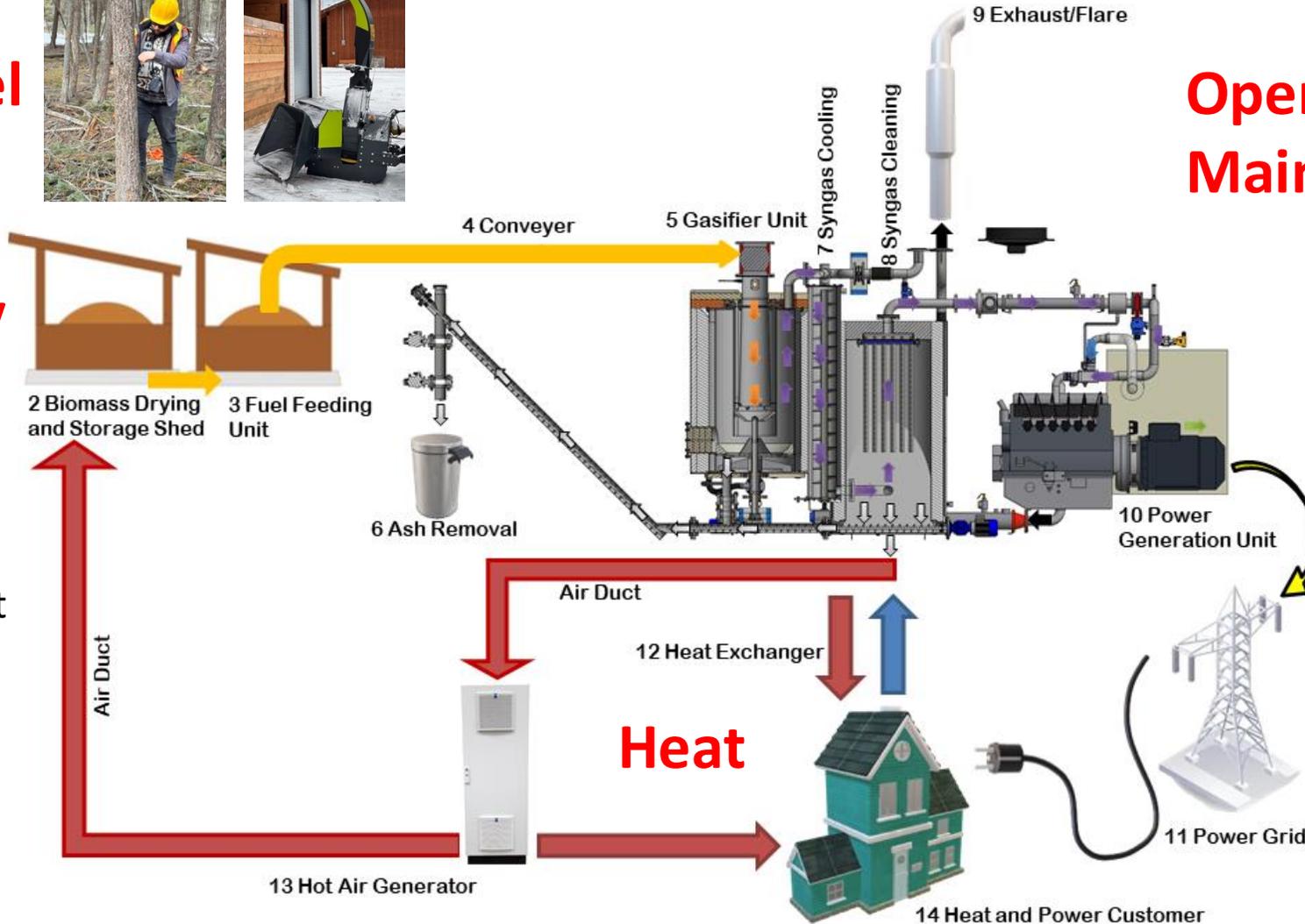
The reality is not so sexy!

Implementation

Trees & Fuel



Fuel quality



Process heat

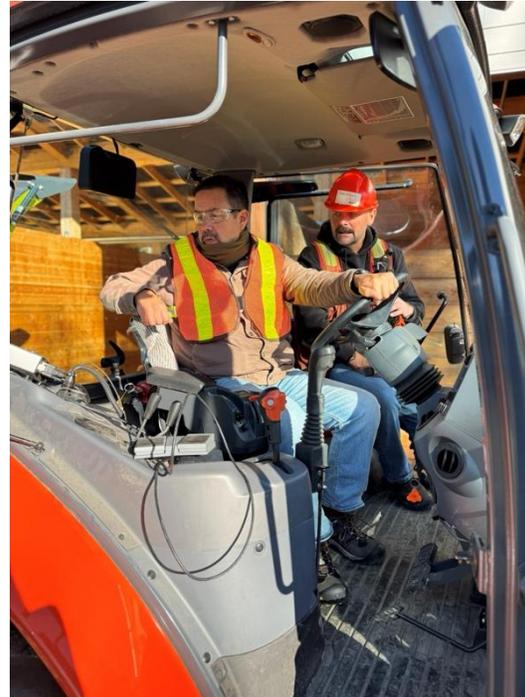
Heat

Operation & Maintenance

Power



De-risk, Demonstrate, Develop capacity



Trees to Fuel



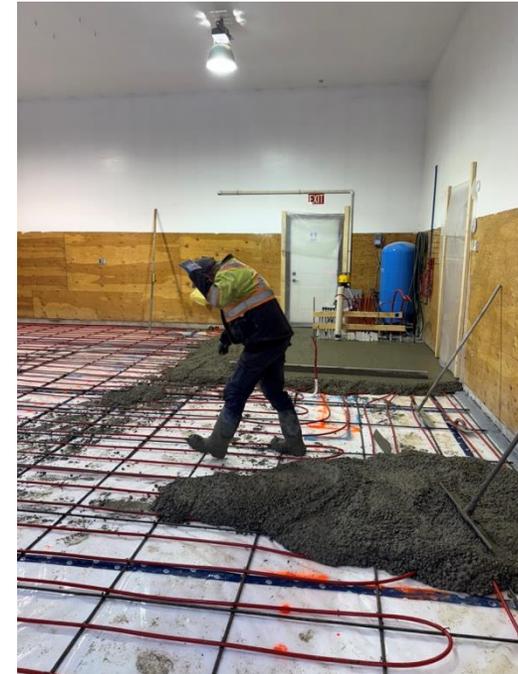
Fuel quality



Power



Heat



Operation & Maintenance



Implementation

- Investigate & learn
- Biomass (fuel) plan
- Technology selection
- Budget planning
- Building design
- Permits and Regulations
- Simplicity over efficiency
- Budget for people, not just machines
- Plan for when it breaks because it will



Key Takeaways

- CHP works — but only with:
 - Realistic expectations
 - Local capacity
 - Strong operations planning
- Success is slow
- Vested interest means more than complex plans and optimism



Next steps



Final message:

“Bioenergy is not about technology but it is about who, where, why and how”





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