

Socio-Technical Baseline Capacities: Energy Transition Opportunities

Rhys McMaster, Bram Noble, Greg Poelzer

Presenting Researcher: Rhys McMaster

MSc Candidate, University of Saskatchewan

Partner Communities: Aklavik, Fort McPherson, Inuvik, Tsiigehtchic

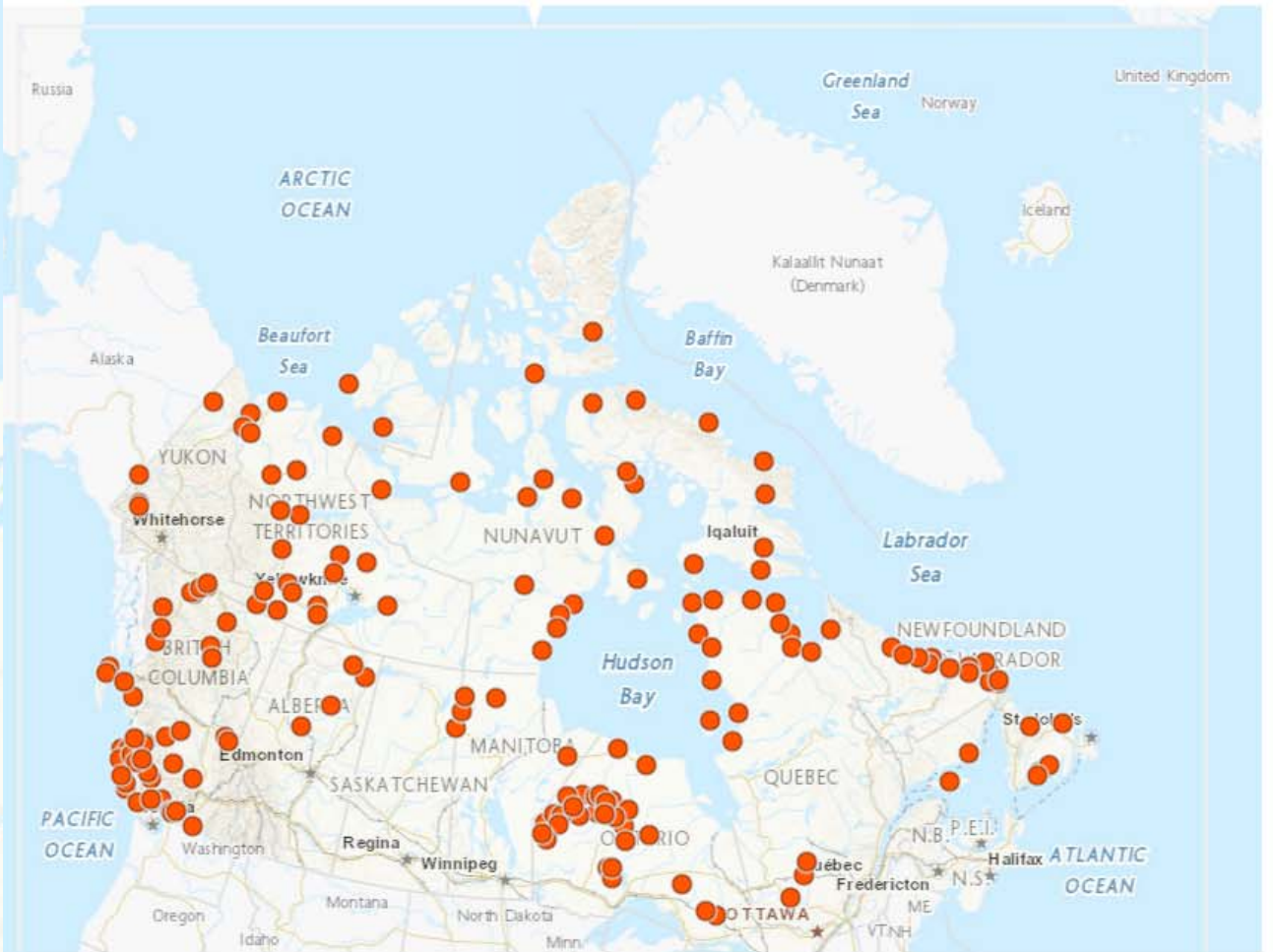
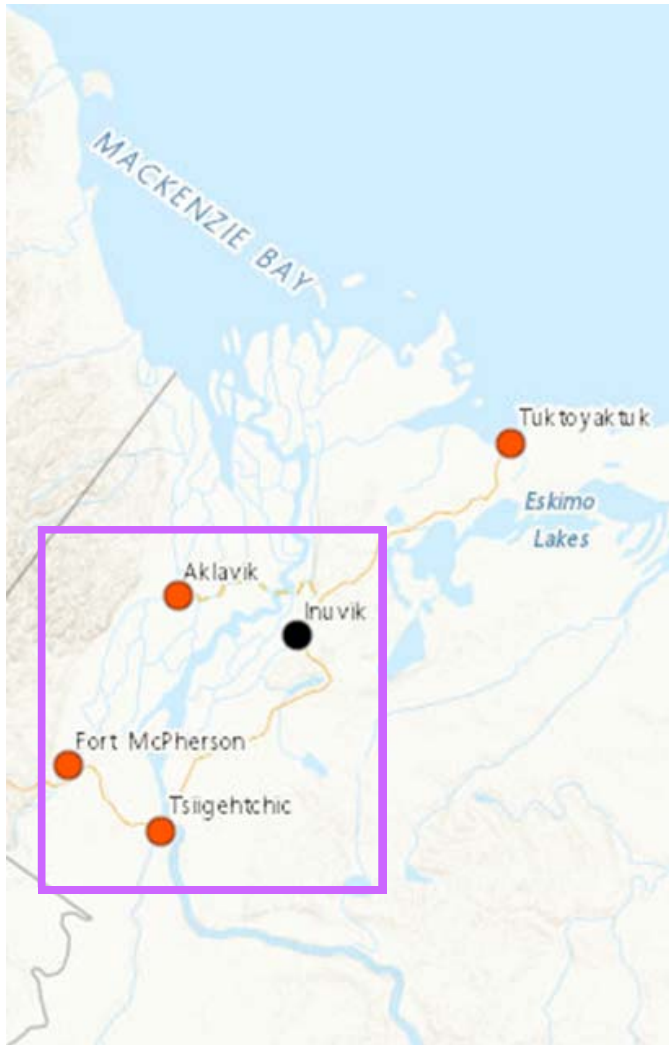
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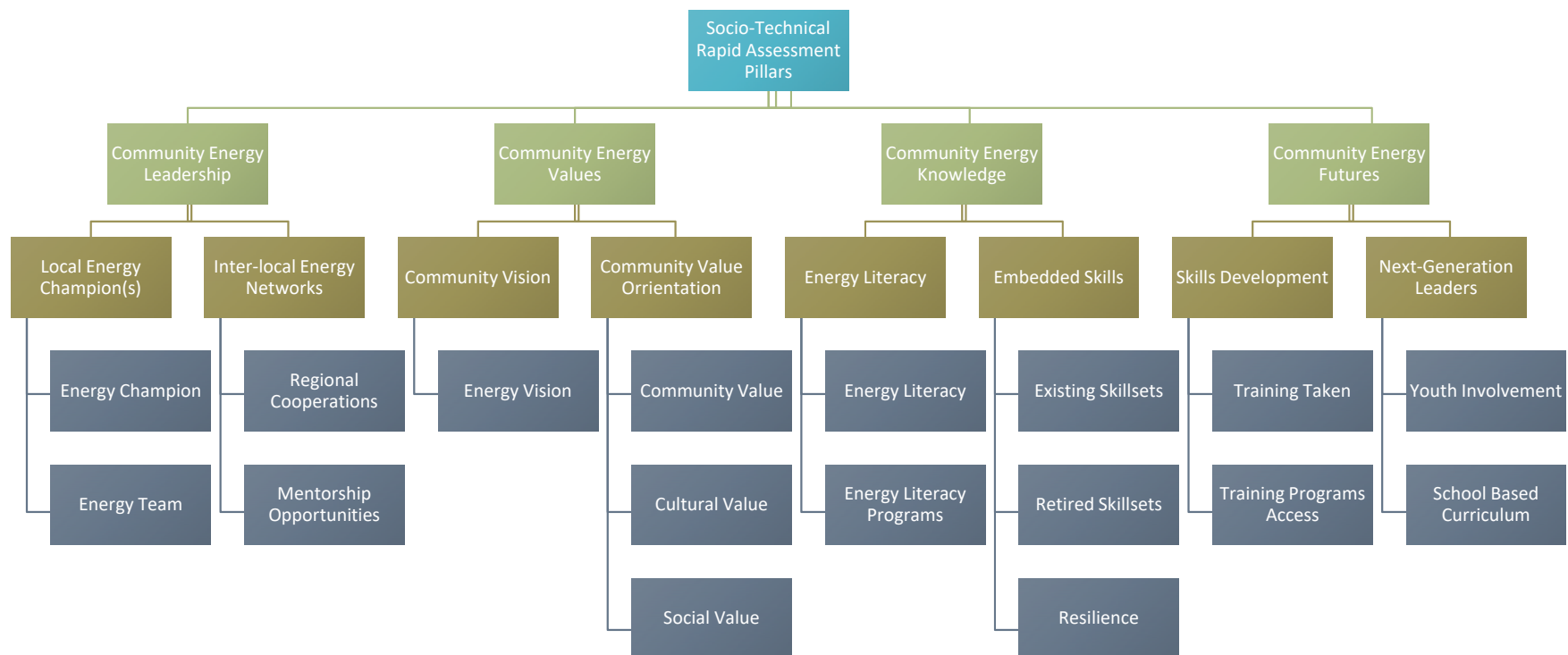
SSHRC  CRSH



Definition

Energy systems are socio-technological systems that involve not only machines, pipes, mines, refineries, and devices but also the humans who design and make technologies, develop and manage routines, and use and consume energy

(Miller, Iles, Jones 2013)



The Conceptual Pillars of the Rapid Assessment of Socio-Technical Baseline Capacities in the Circumpolar North

Pilot Testing with Partners



Semi-Structured
Interviews



Community
Leaders and Key
Informants by
CASES Researchers



Community
Members by Youth
Researchers



94 Interviews
Completed



23 Key Informants
& Community
Leaders
71 Community
Members

Socio-Technical Baseline Holistic Profile

Pillar	Definition	Trends	Frequency (%)	Overall Trend	Extract
Community Energy Leadership	The nature of the local energy champion(s) (energy champion, and energy team) and inter-local energy networks (regional corporations, and mentorship opportunities)	Opportunities	13%	Challenge	Not as often as we would like. We would love to share our knowledge, but a lot of times, too, you just get bogged down in your own business that you just--to actually connect with another community would take more time and more effort and if we had a whole department just on biomass and all of the aspects of biomass, then that department could focus on getting the community running as well as it can in sustainable energy and then, sharing that, eventually sharing that, with the other communities.
		Challenges	23%		
Community Energy Values	The nature of the community's energy vision and value orientation (community value, cultural value, and social value)	Opportunities	82%	Opportunity	We could have--we could own it. We could have people working on it year-round, summertime would be the busy time, harvesting willows and wood chips to housing it over the months, so that you get the right moisture content in the chips. It could be a year-round thing. It just needs to be--it needs its own department where you have a manager, you have the employees, you have finance. It needs to be focused on 100% rather than just say that biomass is part of the agenda, where it should be its own entity.
		Challenges	22%		
Community Energy Knowledge	The nature of the community's energy literacy (energy literacy, and energy literacy programs), and embedded skills (existing skillsets, retired skillsets, and resilience)	Opportunities	60%	Opportunity	I think that there're definitely people that could help from all ages. From awareness from kids and Elders, who have certain trade skills, that or not even just Elders- people who have retired but have certain trade skills like electrical. That would be useful for doing stuff simple as setting up solar panels at a cabin, for instance. I think that there's a wide array of people who can help and make a positive impact.
		Challenges	42%		
Community Energy Futures	The nature of the community's skills development (training taken, and training program access) and next generation leaders (youth involvement, and school-based curriculum)	Opportunities	33%	Challenge	Training-wise, I think first they gotta get awareness out there that this is what our communities need, more renewable energy and people trained to run the renewable energy. Then once the awareness is out there and there's a demand, I think there should be sufficient training. I think there should be a bit more government funding towards that.
		Challenges	55%		

Pillar 1: Community Energy Leadership

Pillar	Definition	Trends	Frequency (%)	Overall Trend	Extract
Community Energy Leadership	The nature of the local energy champion(s) (energy champion, and energy team) and inter-local energy networks (regional corporations, and mentorship opportunities)	Opportunities	13%	Challenge	Not as often as we would like. We would love to share our knowledge, but a lot of times, too, you just get bogged down in your own business that you just--to actually connect with another community would take more time and more effort if we had a whole department just on biomass and all of the aspects of biomass, then that department could focus on getting the community running as well as it can in sustainable energy and then, sharing that, eventually sharing that, with the other communities.
		Challenges	23%		
Local Energy Champion(s)	The nature and role of the community's individual or group (ex: energy planner, volunteer group) with a clear mandate to lead community energy transition; and the sufficient resources available to lead community energy initiatives (ex: logistical, financial)	Opportunities	9%	Challenge	I know there's lots of pots of money out there for energy sources, but we don't have anybody in our office that can utilize those funding pots to get started, to get studies and reports done, and to get that money, that's where we stand right now.
		Challenges	11%		
Inter-local Energy Networks	The nature of the community's access to a network of professional and technical knowledge of available and emerging energy technology and innovations; and the opportunity the community has to engage in community-to-community learning (ex: sister community relationships) and mentorship/ regional corporations about opportunities and solutions for energy community frontrunners	Opportunities	8%	Challenge	Okay. I don't see too many that necessarily collaborate...I think the only time that there's sorta connection in sister communities is really, for instance, if Fort McPherson and Tsiigehtchic, who are brother-sister communities, don't--one of them gets solar panels and the other one will be like, "Well, I wanna take part in that too." So, it's not really a collaboration, but it's more like if it works here, it'll work there. Otherwise, I, personally, don't see it, but there might be some that I don't see that goes on.
		Challenges	18%		

Pillar 2: Community Energy Values

Pillar	Definition	Trends	Frequency (%)	Overall Trend	Extract
Community Energy Values	The nature of the community's energy vision and value orientation (community value, cultural value, and social value)	Opportunities	82%	Opportunity	We could have--we could own it. We could have people working on it year-round, summer time would be the busy time, harvesting willows and wood chips to housing it over the months, so that you get the right moisture content in the chips. It could be a year-round thing. It just needs to be--it needs its own department where you have a manager, you have the employees, you have finance. It needs to be focused on 100% rather than just say that biomass is part of the agenda, where it should be its own entity.
		Challenges	22%		
Community Vision	The nature of the community's energy vision for future energy investments and transitions	Opportunities	12%	Opportunity	But I think we really should – I've been looking at possibly doing a proposal, and I've talked to Council about getting a small biomass here to warm- if not just to sunshine in all our trailer here and the Northern store. It would save us a huge – we spend 15 to 20,000 a month from November to April every year and we're using fuel. We can cut that down to about seven to 10,000. That's major savings for us, it really is. That's 50 to 60% savings. Now, I know you gotta put out first in the first couple of years to pay for it, but 10 years down the road it's gonna be well worth it. It really is.
		Challenges	0%		
Community Value Orientation	What is the nature of the community's recognized value added and shared value found in energy planning, projects, and transitions in the forms of cultural, community and social values	Opportunities	73%	Opportunity	A lot of our hunters and trappers can't go hunting and that because the cost of gasoline is too high. I've got a boat, but I don't use it as much as I used to because the price of gas is quite costly. I mean, when we wanna go, we go. But we don't just take off every weekend like we used to. When my wife and I worked, we were able to take off anytime we wanted because we always had that paycheck coming in. Now we have to sort of budget a little bit. But the price of gas is very costly. I know a lot of our elderly hunters and trappers that want to get out there, they can't afford to. It's just too expensive. We're not going back to the dog teams. When we had the dog teams, we were able to go anywhere. We didn't need to have that expense of that five-gallon jerry can of gasoline and so on.
		Challenges	22%		

Pillar 3: Community Energy Knowledge

Pillar	Definition	Trends	Frequency (%)	Overall Trend	Extract
Community Energy Knowledge	The nature of the community's energy literacy (energy literacy, and energy literacy programs), and embedded skills (existing skillsets, retired skillsets, and resilience)	Opportunities	60%	Opportunity	I think that there're definitely people that could help from all ages. From awareness from kids and Elders, who have certain trade skills, that or not even just Elders- people who have retired but have certain trade skills like electrical. That would be useful for doing stuff simple as setting up solar panels at a cabin, for instance. I think that there's a wide array of people who can help and make a positive impact.
		Challenges	42%		
Energy Literacy	The nature of the community's energy literacy of energy use, energy sources, energy technologies; and the nature of the community's access to energy literacy education, workshops and programs	Opportunities	15%	Challenge	But I mean if you were to go ask people oh what does the Aadrii Joint Venture do, I don't think many people in Fort McPherson would actually know that "Oh yeah this joint venture is taking heat from the diesel system and circulating it other areas of McPherson, mainly the school." I don't think people would really know that.
		Challenges	34%		
Embedded Skills	what is the level of existing skillsets within the community across a range of areas (ex: technical, managerial, accounting), what are the retired skillsets that exist within the community, and what is the resilience of said skillsets to transition	Opportunities	55%	Opportunity	We have everything in house. We have our own techs. It's only on special stuff that we bring in people from out of province, or territory, to do it. Like we get people from Alberta to do the generator rewinding's, and that's just- you shouldn't have someone there all the time- like that goes out every 3 or 4 years. So it just wouldn't make sense to hire someone to stay there. So we get people for special work like that.
		Challenges	27%		

Pillar 4: Community Energy Futures

Pillar	Definition	Trends	Frequency (%)	Overall Trend	Extract
Community Energy Futures	The nature of the community's skills development (training taken, and training program access) and next generation leaders (youth involvement, and school based curriculum)	Opportunities	33%	Challenge	Training-wise, I think first they gotta get awareness out there that this is what our communities need, more renewable energy and people trained to run the renewable energy. Then once the awareness is out there and there's a demand, I think there should be sufficient training. I think there should be a bit more government funding towards that.
		Challenges	55%		
Skills Development	What is the level of access the community has to training programs, education, and workshop opportunities, and what is the nature of community members' participation in said programs	Opportunities	25%	Challenge	But what I'm hoping is that when we're training that we're not gonna put the education level too high 'cause then that's definitely going to kick a lot of people out. But at the same time recognizing that there is probably a literacy level that needs to be met first. But definitely with the hands on, working with machines, and working with those types of things, absolutely. I think there's lots of potential there.
		Challenges	55%		
Next-Generation Leaders	What is the nature of school-based energy curriculum within the community, and what is the nature of youth engagement within community energy planning, projects, and transitions	Opportunities	12%	Opportunity	Then he's recruiting and bringing in some younger Gwich'in to be trained for what he does, as well. So, there's those sort of things starting to happen which is great to see. The power corp. President, a couple years ago, we were trying to work to just provide for more apprentice type training positions for those right out of high school, so it's something we still have in the works.
		Challenges	4%		

Pillar	Definition	Trends	Frequency (%)	Overall Trend	Extract
Community Energy Preferences	What is the community's preference for what type of knowledge and training they want access to, and what is the community's preference for technology to be developed here	Opportunities	74%	Opportunity	I think what you're doing is a really good thing, because you're asking our opinions. I don't think wind would work for Tsiigehtchic, because we're not on flat land. We do get some wind off of the river, but for wind energy you'd need more wind for that to – I think solar would be the best one. There is hydro, but I'm not sure about the maintenance for hydro with the ice moving in the fall and in the spring. Would that create more of a maintenance issue with hydro, or... I think the lowest maintenance would be solar.
		Challenges	4%		
Knowledge Access Preferences	What knowledge and training does the community want access to	Opportunities	38%	Opportunity	I definitely think local programming. I wanna say online programming but our connectivity can be so hit and miss in the communities as well. Yeah in a perfect world, definitely lower-level education that would be more accessible to more people. We just don't have very many people who are getting to the Masters level and if they are, then they're not really interested in coming back here.
		Challenges	0%		
Technology Preferences	What technology does the community prefer to be developed	Opportunities	68%	Opportunity	I think that the technology that's very under researched and underutilized up here is small scale hydro. That's where I think the real potential is up here.
		Challenges	4%		

Recommendations for the Framework

- Consideration of Emergent Themes Found Through Second Round of Coding
- Importance of the Framework Remaining a Rapid Assessment Tool

Recommendations for the Territory



Importance of Energy
Literacy Programming



Importance of Skill
Development Programming



Importance of Inter-Local
Energy Networks

Recommendations for the North



The Presence of Community
Energy Champions



Community Value Versus
Social Value



The Presence of Technical
Skillsets Across the Region

Recommendations for Engagement

Communities and projects under study are not currently matched with sites of research capacity raises questions about capacity building and the nature of research “on” versus “with” Indigenous peoples (Bullock et al., 2018)

- CASES Partner Communities
- Invested Leadership
- Community Youth Researchers

Thank You!

rhys.mcmaster@usask.ca
www.linkedin.com/in/rhysmcmaster



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