

# RENEWABLE ENERGY FOR A RESILIENT RECOVERY

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PREPARED BY



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# 16 SHOVEL READY RENEWABLE ENERGY PROJECT IN BC





For many months now, the Province of BC has done an excellent job responding to the global pandemic. Clean Energy BC would like to congratulate the efforts and leadership to take the necessary measures to keep British Columbians safe. Now as we look forward, the direction we must go is clear. Across the province, nation and globe, there is a wide-spread call to build the economy back in a sustainable and just way. The clean energy sector is here to help the Province of BC achieve this goal.

### **Who are we?**

Clean Energy BC (CEBC) has been the voice of British Columbia's clean energy sector for over 25 years. We are an industry association that represents independent power producers (IPPs), developers, operators, service providers, a number of First Nations and academic institutions. CEBC believes in decarbonizing BC's energy system using low-carbon electricity produced by our IPPs. We mainly do this through the production of non-damming hydroelectricity, wind power and solar power.

### **Private Sector Investment**

The Honourable Seamus O'Regan, Canada's Minister of Natural Resources presented at the International Energy Agency's global conference in June 2020 and touched on an important aspect of economic recovery.

***"Public funds alone cannot meet the level of investment required for a rapid and sustainable recovery — attracting private sector investment is essential."***

— Minister O'Regan

### **CleanBC & Electrification**

Although this call on EngageBC is to provide ideas on how to best allocate \$1.5 billion, CEBC wants the Province of BC to know that the clean energy industry can also provide additional private economic stimulus dollars. Many First Nation communities are interested in developing renewable energy projects - diesel displacement and grid connected. Funding for these projects would not only provide economic stimulus but also capacity building opportunities.

CEBC urges for clear provincial direction on electrification, removing regulatory barriers and legislative change. CleanBC was released in December 2018, but since then BC has only passed Zero Emission Vehicle (ZEV) legislation to address part of the target, and not the built-environment or industry. BC Hydro and the BC Utilities Commission need a clear mandate on meeting the electrification targets to achieve CleanBC is critical. Without legislative action to back up the vision of CleanBC, electrification is missing from BC Hydro's load forecasting and is slowing the long term planning process currently underway. The 2030 climate targets to reduce emissions 40% below 2017 levels is just 10 short years away. Even with the additional electricity from Site C, BC is likely to come up short.

IPPs currently play an important role in the energy landscape; our membership is prepared to deliver more low cost renewable energy projects. The renewable energy sector is here to help.

### **Local Jobs & Regional Economic Development**

Depending on excess electricity from foreign markets is not the answer to meeting this gap. British Columbia has an abundance of resources to foster local development. Increasing electricity imports to meet this demand is short sighted and overlooks the multiplier economic benefit of stimulus from local clean infrastructure.





In the time when we need jobs the most, why depend on importing a commodity we can create locally. Why import electricity and export jobs?

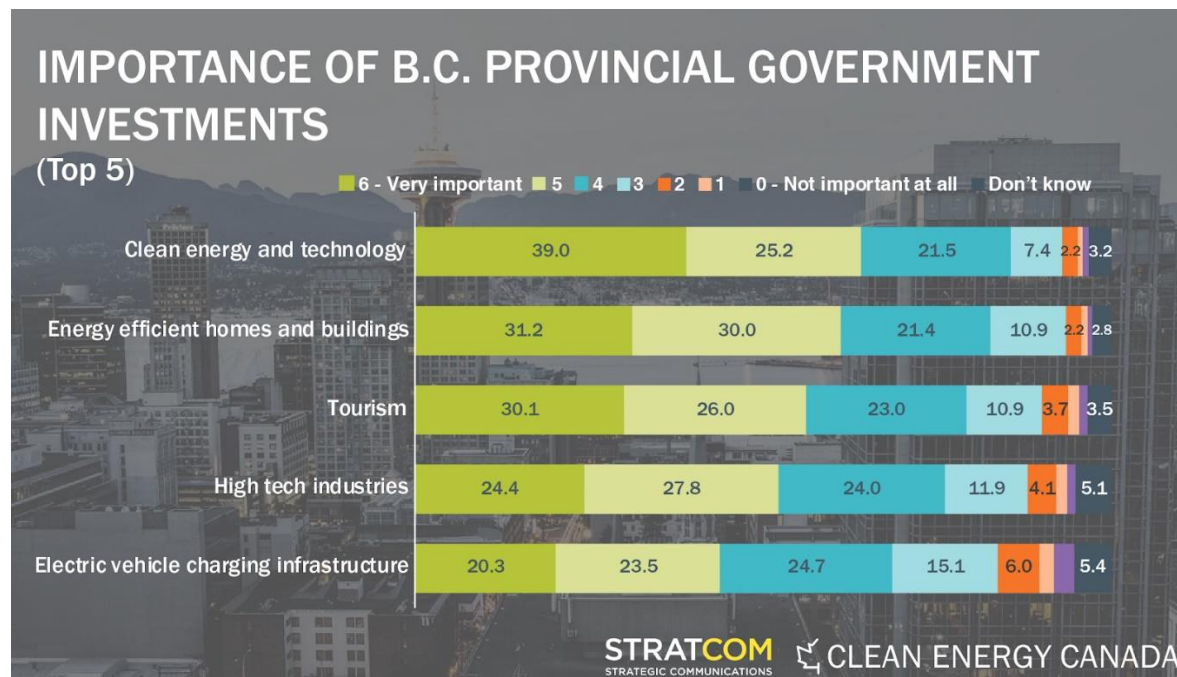
CEBC's membership provides reliable electricity to BC residents through production partnerships with BC Hydro. Our members' projects are delivered on time at the lowest cost with zero construction risk to the BC Hydro ratepayer and taxpayer. The sector supports the cultivation of energy sovereignty, fostering self-determination and capacity building within First Nation communities. Our membership includes a number of First Nations that own and operate clean energy facilities.

Private sector investment in BC's electricity system enhances the grid's dependability and contributes to a high standard of living in British Columbia by providing regional economic growth, ranging from stable family-supporting jobs to substantial local and provincial taxes.

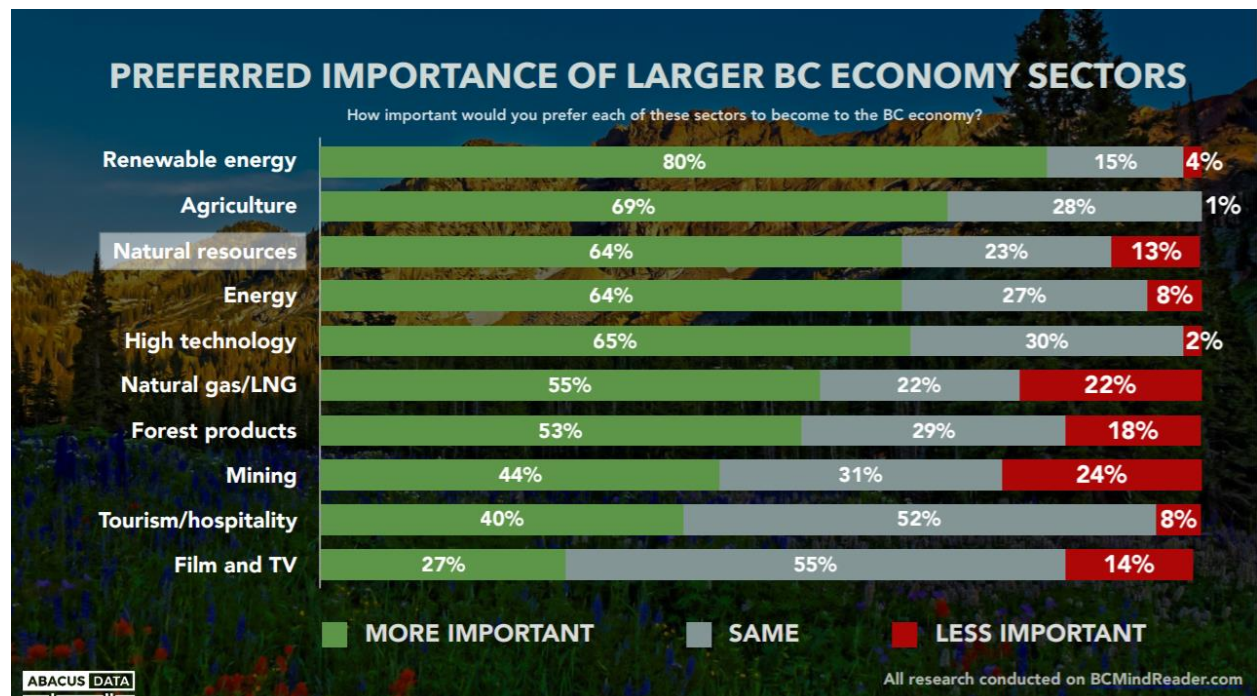
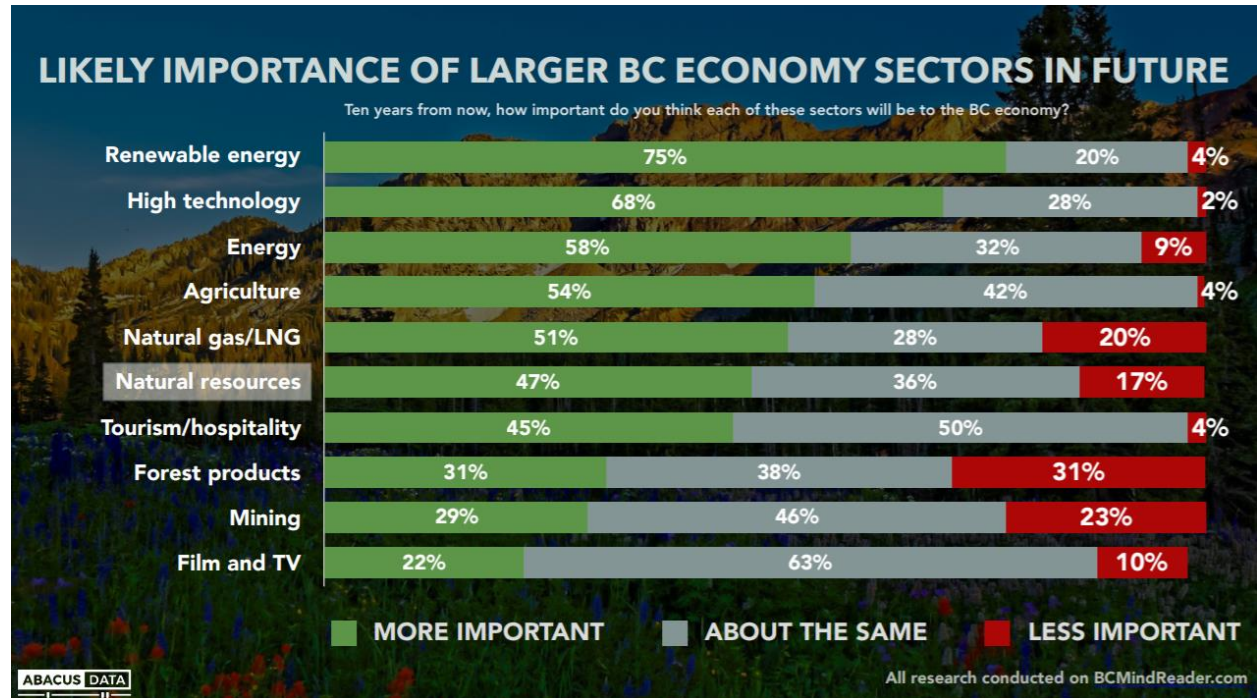
### British Columbians are Highly Supportive

Clean Energy Canada and StratCom recently polled British Columbians to gauge how the Provincial Government's recovery plan should look. This [survey](#) asked 802 people their opinion. Out of 10 focus areas in which the government could invest, people were most supportive of **"clean energy and technology"** with **64%** rating it as important.

**86%** of survey respondents stated that they support making **BC's economy cleaner**, regardless of impacts on competitiveness. The cost of solar and wind technologies have been dropping dramatically over the last 10 years, BC's clean energy sector believes we can support making the province's economy cleaner and cost competitive.



Earlier in 2019 when COVID-19 was a distant thought, BC Chamber of Commerce presented “pulse check” [survey data](#) at the BC Natural Resource Forum. This survey collected the opinions of 1,026 British Columbia business leaders and the results are highly supportive of renewable energy. Gathering the most support out of any sector, **80%** of business leaders would like to see the **renewable energy sector** play an even more important role in our economy.





### **Build Back Better with BC Renewable Energy**

On April 30th 2020, the BC Utilities Commission submitted a final report to BC Hydro on the [Indigenous Utilities Inquiry](#). The message and recommendations from this inquiry are clear: many First Nations in BC are highly supportive of renewable energy and want to be active players in the electricity landscape to achieve economic development and reconciliation. All clean energy projects developed and operated by our members have First Nations' involvement, ranging from 100% ownership, equity partnerships, revenue sharing agreements to Impact Benefit Agreements.

When CEBC called on our membership for shovel ready projects, we received many responses. This is a snapshot of what the renewable energy sector has to offer; these 16 projects are not only shovel ready but shovel worthy. These renewable energy projects are spread throughout the province and it is estimated that they would create over 2,350 direct construction jobs and over 430 direct employment opportunities in operations (*Appendix A.*). With a typical renewable energy facility's lifespan ranging between 25-40 years.

The renewable energy sector has a long history of partnerships with First Nations throughout the province and has proven to be a successful business model. Here are some examples of prominent clean energy leaders speaking on the matter:

***"Our region is economically depressed and our people are under employed. We need opportunities through project ownership. We have seen what happens as a people with industrial development when we are not fully involved."***

— [Fort Nelson First Nation Chief Sharleen Gale](#)

***"It's been positive [the Province of BC is] investing in helping remote First Nations build within their own communities but that's only a small part of the picture — we also really need economic development in many of our communities too, and electricity is one of the few things we can do in our territories to use our resources in ways that fit in with our values."***

— [President of the Nuuchahnulth Tribal Council, Kekiinusugs, Dr. Judith Sayers](#)

To be considered shovel ready, renewable energy projects must undertake a tremendous amount of planning, engineering, engagement and regulatory work. These 16 projects in the Renewable Energy Sector Snapshot (Appendix A) have already completed many steps that range from electricity interconnection studies to following rigorous environmental regulations through licensing, permitting and monitoring. A number of these projects were accepted in the now suspended Standing Offer Program which means they had all of the permitting completed. A few had started the construction phase but need to secure Electricity Purchase Agreements to become operational. This economic recovery response only provides a snapshot of the renewable energy potential in British Columbia. As the Province of BC looks forward to our CleanBC targets, CEBC urges the consideration of these local economic development opportunities as part of BC's COVID-19 economic recovery journey.



## Appendix A. Renewable Energy Snapshot for COVID-19 Economic Recovery July 2020

### ACE Solar Project

[ᑭᐱᐱᐱ Community Enterprises](#) is pursuing a utility scale solar development with a 26 MW facility. They have chosen to partner with Fortis BC. ᑭᐱᐱᐱ Community Enterprises' vision is to have a sustainable and self-sufficient economy by optimizing community and partner resources in a manner consistent with their values and principles.

***“When a First Nations benefits, the whole region benefits”.***

— Sophie Pierre, Ktunaxa Nation and Former Chief Commissioner, BC Treaty Commission  
([Powering Generations 2019](#), Trail BC)

### Ahtaapq Creek Hydropower Project

Hesquiaht First Nation owns 100% of [Ahtaapq Creek Hydropower Project](#). This is a diesel offset project aiming to reduce emissions and the community's dependency on expensive and dangerous diesel. Once this 350kW hydro, solar, diesel microgrid project is operational it will displace approximately 75% of the diesel currently being consumed.

### Bremner Trio

This 22MW hydroelectric project is owned by Bremner Trio Hydro Corp., Greengen Holdings Ltd and Sts'ailes Energy Development Limited Partnership. Douglas First Nation also holds a benefit agreement for this project. Through the construction of this project, 127 jobs would be created and \$22 million in investments has already been secured.

### Clarke Lake Geothermal Project

Fort Nelson First Nation and Saulteau First Nation are leading the [Clarke Lake Geothermal Project](#). This is an opportunity to breath new life into an old gas field. The geothermal resource is currently being evaluated but it could provide up to 15MW of electricity. There is also a co-benefit of using the heat for geothermal powered greenhouses, providing more employment opportunities while also increasing food security for the region.

### Fosthall Creek Power

This 15MW run of river facility is being led by Fosthall Creek Power Ltd. Splastin First Nation signed an impact benefit agreement regarding the [Fosthall Creek Power](#) project situated near Arrow Lake. This project has a penstock planned on an old log flume to further minimize its environmental footprint.

***“In order to move away from government funding and bring prosperity to our people, our vision is building long term partnerships such as the one we are signing today, ”***

—Chief Wayne Christian, Splastin First Nation

### Klemtu Hydropower Project

Kitasoo/Xai'xais First Nation owned [Klemtu Hydropower Project](#) is to enable upgrades and displace diesel consumption. The existing project needs upgrading as it currently doesn't meet all the energy needs of the community. Engineering work is being conducted by Barkley Project Group, renewable energy consultants head-quartered on Vancouver Island.

## **Appendix A. Renewable Energy Snapshot for COVID-19 Economic Recovery**

### **July 2020**

#### **Little Nitinat River Hydropower Project**

On the west coast of Vancouver Island, [Little Nitinat Hydropower Project](#) is a 4.5MW run of river project that is 100% community owned and would be a significant economic development opportunity for Ditidaht First Nation. Embarking on construction would create 26 jobs on Vancouver Island.

#### **Nahwitti Wind Project**

This [15 MW wind project](#) would become the second utility scale wind project on Vancouver Island, situated on the north island near the Cape Scott wind farm. Quatsino First Nation is involved with this project with a potential partnership. The wind resources in this region are very strong.

#### **Osoyoos Indian Band Solar Project**

Osoyoos Indian Band has chosen to work with FortisBC to construct this renewable energy project. Adding renewable energy infrastructure would continue to strengthen Osoyoos Indian Band's economic development [portfolio](#).

#### **Padakus Hydropower Project**

This diesel offset project is owned 100% by Dzawada'enuxw First Nation. Once [Padakus Hydropower Project](#) is operational this 350 kW run-of-river facility is anticipated to displace more than 90% of the diesel currently consumed.

#### **Red Willow Wind**

The North Eastern region of BC has a strong wind resource and would be well suited for [Red Willow Wind](#), a 200MW facility. Boralex and Aeolis Wind Power Corp. would head development on this facility. A number of First Nation apprenticeships, training programs, rural hiring and education programs would be included throughout development of this project. Due to its location, it has potential to play a role in green hydrogen development. Over 300 jobs would be created from this project.

#### **Sarita River Hydropower Project**

[Sarita River Hydro](#) is a 5.2 MW hydropower project being developed by the Huu-ay-aht First Nation near Bamfield on Vancouver Island. Once built it will be able to provide a secure backup supply to Anacla and Bamfield which can suffer power outages due to stormy weather in the winter months.

#### **Sundance Hydrogen**

As part of the [CleanBC](#) targets to reduce the GHG intensity of the natural gas supply, 15% should be coming from renewable natural gas (RNG) or hydrogen. However, there is currently a supply shortage of RNG and hydrogen. [Sundance Hydrogen](#) is a green hydrogen electrolyzer facility powered by a partnered wind energy facility, Thunder Mountain Wind Project. The hydrogen facility would be the first of its kind in British Columbia and is being led by Renewable Hydrogen Canada and Macquarie Green Investment Group with a partnership from FortisBC. Sundance Produce would also utilize the waste heat for greenhouses, this initiative is currently being led by West Moberly First Nation and Saulteau First Nation.



## **Appendix A. Renewable Energy Snapshot for COVID-19 Economic Recovery**

**July 2020**

### **Thunder Mountain Wind Project**

Thunder Mountain Wind Project is a 400 MW proposed facility that would provide the clean electricity to primarily power the Sundance Hydrogen facility and [Sundance Produce](#) initiative. Brookfield Renewable would be the lead on developing this project. The North Eastern region of BC has a strong wind regime well suited for wind power.

### **Tamihi Creek**

Tamihi Creek is a 15MW run of river facility located near the Fraser Valley Regional District. KMC Energy Corp. was formed in partnership with the Ts'elxwéyeqw Tribe First Nation. The Ts'elxwéyeqw Tribe First Nation comprises seven modern day bands: Aitchelitz, Tzeachten, Skowkale, Skway, Squiala, Soowahlie and Yakwekwioose. Utility Tamihi Creek will provide an avenue for the Ts'elxwéyeqw Tribe to participate in the clean energy sector and foster economic benefits through the development of their resources.

### **Wedge Creek Hydropower Project**

This 4.5MW run of river hydro project is 100% community owned by Lílwat Nation. Once complete, this project would provide a secure revenue stream through an EPA with BC Hydro. Located in the mountainous region near Green Lake, Whistler the terrain is well-suited for a run of river hydroelectric project. Construction will provide 26 local jobs in the region. Barkley Project Group is providing technical knowledge in the construction of [Wedge Creek Hydropower Project](#).

**Appendix B. 16 Shovel Ready Renewable Energy Projects in BC  
July 2020**

Lead	Partner	Project Name	Type	Size MW	Construction Jobs	Operation Jobs (annually)
ᑭᐱᑭᐱᑭ Community Enterprises	FortisBC	(1) ACE Solar Project	Solar	26	397.8	0.52
Hesquiaht First Nation	100% community owned	(2) Ahtaapq Creek Hydropower Project	Hydro, solar, diesel microgrid (off-grid, diesel offset)	0.35	2.016	0.028
Bremner Trio Hydro Corp.	Sts'ailes First Nation (equity partner), Douglas First Nation benefit agreement	(3)Bremner Trio	Run of River (grid tied)	22	126.72	1.76
Fort Nelson First Nation & Saulteau First Nations		(4)Clarke Lake Geothermal Project	Geothermal	15	91.05	17.55
SRE Hydro	Splastin First Nation	(5)Fosthall Creek Power	Run of River (grid tied)	15	86.4	1.2
Kitasoo First Nation	100% community owned	(6)Klemtu Hydropower Project	Hydro, solar, diesel microgrid (off-grid, diesel offset)	1.7	9.792	0.136
Ditidaht First Nation	100% community owned	(7)Little Nitinat River Hydropower Project	Run of River (grid tied)	4.5	25.92	0.36
Quatsino First Nation	Potential partnership	(8)Nahwitti Wind Project	Wind (grid tied)	15	27.45	2.7
Osoyoos Indian Band	FortisBC	(9)Osoyoos Indian Band Solar Project	Solar (grid tied)	10	153	.2
Dzawada'enuxw First Nation	100% community owned	(10)Padakus Hydropower Project	Hydro- diesel microgrid (off-grid, diesel offset)	0.31	1.7856	0.0248

(1) Solar, wind, hydro multipliers: "[British Columbia clean energy jobs map](#)", Pembina Institute.

(2) Geothermal multiplier: "[Jobs for Tomorrow](#)", Columbia Institute.

*\*mixed microgrid projects assumed hydro numbers due to remote locations and design complexity*

**Appendix B. 16 Shovel Ready Renewable Energy Projects in BC  
July 2020**

Boralex & Aeolis Wind Power Corp	First Nation apprentice and training programs	(11) Red Willow Wind	Wind (grid tied)	200	366	36
Huu-ay-aht First Nation	100% community owned	(12) Sarita River Hydropower Project	Run of River (grid tied)	5.4	31.104	0.432
Renewable Hydrogen Canada & Macquarie Green Investment Group	FortisBC & Sundance Produce (a green house ran from heat from the electrolyser currently with West Moberly and Saulteau First Nations, potential for other Nations to join)	(13) Sundance Hydrogen	Renewable hydrogen electrolyser & greenhouse		200	300 <i>(*hydrogen facility 50 full time jobs &amp; greenhouses 250)</i>
KMC Energy Corp	Ts'elxwéyeqw Tribe First Nation comprised of seven modern day bands (Aitchelitz, Tzeachten, Skowkale, Skway, Squiala, Soowahlie and Yakweakwioose)	(14) Tamihi Creek	Run of River (grid tied)	15	86.4	1.2
Brookfield Renewable	Aeolis Wind Power, RH2C, Macquarie Green Investment Group, and FortisBC	(15) Thunder Mountain Wind Project	Wind (grid tied, paired with electrolyser)	400	732	72
Lil'wat First Nation	100% community owned	(16) Wedge Creek Hydropower Project	Run of River (grid tied)	4.5	25.92	0.36

(1) Solar, wind, hydro multipliers: "[British Columbia clean energy jobs map](#)", Pembina Institute.

(2) Geothermal multiplier: "[Jobs for Tomorrow](#)", Columbia Institute.

*\*mixed microgrid projects assumed hydro numbers due to remote locations and design complexity*