Summerland's Solar+Storage Project: Questions & Answers

In order to facilitate community engagement and to ensure transparency regarding the Solar+Storage Project, a comprehensive list of questions and answers regarding the project are detailed below. This list will continue to be updated as the project progresses.

Frequently Asked Questions

How much of Summerland's electricity will the array provide?

Utilizing local weather station data, the estimated production was updated to an average of 1,495,000 kWh per year, which is approximately 1.6% of the amount of energy Summerland currently purchases from FortisBC and will offset the energy used by approximately 128 Summerland homes each year. A full year (May 2019-2020) of on-site data was collected from a solar monitoring station at the project site, which showed 105% of expected production (1,575,000 kWh).

As with all renewable energy projects, conserving energy and using it wisely is the most critical step to maximizing the return on investment from the solar array (the less energy the community uses overall, the greater percentage of the energy use will be provided by the solar array). Efforts to become more energy efficient as a community will continue to be a priority for the District throughout the life of the project.

Although the energy to be produced from the array represents a small percentage of the community's current total energy needs, the project is of sufficient scale to allow the District to transition its electrical utility infrastructure to also support future energy generation projects, and will provide significant cost savings to the utility over the life of the project. The average residential solar installation in Summerland currently is 7.3 kW and could produce up to 8,577 kWh annually, meaning 174 additional residential

installations would be required to produce the same amount of energy; however in that scenario, the cost savings to the District's utility would be a fraction of what the project will produce.

Will this project reduce our greenhouse gas emissions?

The Solar+Storage Project is a utility infrastructure project, rather than a greenhouse gas emissions (GHG) emissions reduction project. The benefits from the project centre on cost savings for the utility and customers, emergency power for the community, and resiliency for the utility system infrastructure.

However, according to the Province of BC's methodology for calculating the emissions from various energy sources, the solar energy that the project will produce has a lesser footprint than energy provided to our community from FortisBC. Thus, the solar power we produce will be "greener" (albeit the difference is small).

Utilizing electricity for emergency power (rather than diesel, which we now rely on) would also have a positive impact on the District's GHG emissions footprint. Further, increasing the production of local clean energy will allow our community to shift other fuels (such as electric vehicles instead of gasoline or diesel) with a lesser impact to our electrical utility and the fees we pay for energy.

Finally, localized energy sourcing has a positive impact on GHG emissions as it increases efficiency by reducing line losses that occur when energy is moved over large distances, and lessens the need for expansion of energy systems such as hydro dams and their associated transmission lines, access roads, and related infrastructure.

How long will the panels last? What about the batteries?

The estimated project life is 35 years for the solar array and 20 years for the battery system. A solar panel's performance warranty will typically guarantee 90% production at 10 years and 80% at 25 years. Performance warranties for Lithium-ion battery systems are typically 10 years and while they can vary, the system can be designed to retain a guaranteed capacity for 20 years.

What will the District's $980k contribution to the project cover?

After discussing similar projects with other communities and developers, and reviewing industry-standards for budgeting these types of projects, approximately 25% of the budget ($1.68M) was allocated for system upgrades - $980,000 of this was budgeted from the District's electrical utility reserve account, and the rest as part of the $6M grant funding.

Once the grant was awarded, in order to confirm the system's capacity for the project, a System Impact & Interconnection Study was commissioned. The study showed that the District's electrical utility system was well suited to take on this project, and the required system upgrade costs may not be as high as originally projected.

The System Impact and Interconnection Study offered a number of potential upgrades for consideration as part of the project, including:

- power system changes to accommodate the creation of a microgrid;
- system phase balancing; and
- reconfigurations of the system feeders at the substation.

Other possible system upgrades as identified by the Electrical Utility could include:

- improvements to the Electrical Utility's communications network;
- work on the substation breakers; and
- replacing existing infrastructure.

Which specific system upgrades are selected to maximize the benefits of the system will be considered in detail during the engineering phase of the project. The costs and benefits of each of the possible system upgrades will be discussed with Council to determine the best use of the system upgrade portion of the project budget.

How will this project save us money?

The District currently purchases electricity from FortisBC and pays additional "demand" fees that are directly related to the peak demand for energy (both on a monthly and annual basis). By reducing the amount of power purchased from Fortis overall, and by strategically utilizing the battery system to reduce the peak demands for power during energy-intensive times of the year, the District could substantially reduce these demand fees. The project is also expected to provide savings to the electrical utility through infrastructure investment deferral and improved reliability of the system.

Where is the project site? Is this location final?

Following a number of detailed site analyses and public feedback opportunities, in July 2020, Council finalized the site selection process by selecting the District's former Public Works yard & storage area (13500 Prairie Valley Road/12591 Morrow Street/Denike Street) as the project site, and directed staff to proceed with the Engineering, Procurement, and Construction phases of the project.

What community engagement has taken place regarding the project and the site?

In February 2017, the District hosted a Community Conversation *What is Summerland's Future in Solar?* to gauge support and direction from community. Over 100 attendees participated in the event, and 100% of surveyed participants agreed/strongly agreed developing local renewable energy generation resources is important to them.

Since that time, staff have made dedicated presentations about the project at ten open-to-the-public Council meetings, as well as provided project updates at budget and strategic priority review sessions of Council (also open to the public). The project has been featured at open houses, through the monthly newsletter, via dedicated page on the District website, in press releases, posters and sandwich boards, dedicated signage at Municipal Hall, and also through a solar energy email list with over 230 subscribers.

Another dedicated public meeting about the prime potential site and the project progress to date was held in May 2019, again with roughly 100 attendees. Letters to all property owners within 100m of the site were sent advising them of the selection of the site and the upcoming meeting. A subsequent survey asking for questions and concerns about the project and/or the site was administered, presented to Council, and published online. The site selection process was reviewed in the meeting, including other shortlisted sites and the rationale for the prime potential site.

On July 13, 2020, Council held a public meeting to share information about the project with the community and receive their feedback about the project and the prime potential site. They also received new information regarding land use and a detailed presentation of the detailed analyses completed for the prime potential location. Following this meeting, the site selection process was finalized and staff were directed to

proceed with the Engineering, Procurement, and Construction phases of the project. During these upcoming phases, there will be further community engagement activities and opportunities for community members to provide feedback to the District.

Who will supply/install the panels and/or batteries? Can my company's products or services be considered?

All procurement of engineering work, system components, and installation/construction labour will be procured through a public process following the District's procurement policies. Interested parties should regularly check the District's Bid Opportunities webpage for current opportunities to bid on project work.

Will the community be able to invest in the project, like the City of Nelson's Solar Garden?

A formal program to offer shares or investment opportunities in the project has not yet been decided on by council; however, the District understands there is strong community support for such an option and will explore this idea further as the detailed design process progresses.

What are the next steps for the project?

The site selection process was finalized on July 13, 2020 with Council selecting the District's former Public Works yard & storage area (13500 Prairie Valley Road/12591 Morrow Street/Denike Street) as the project site. Staff were also directed to: complete a remedial action / risk management plan for the site; and to proceed with the Engineering, Procurement, and Construction phases of the project.

Based on this direction, the expected next steps and their timelines are:

Fall 2020

- Complete remedial action / risk management plan
- Develop RFP for Engineering, Procurement, Construction
- Preliminary site clean-up

2021

- Issue EPC RFP
- Detailed design
- Choose solar panels, racking, BOS
- Finalize battery technology & supplier
- Complete contracts and equipment orders

2022

- Site Preparation
- Utility Upgrades

2023 (Deadline Sept.)

- Installation
- Interconnection

Project Purpose / Overview

1. Why is Summerland investing in a renewable energy project?

Summerland is one of five municipalities in BC to own their electrical utility. Currently, all of the energy sold in Summerland is purchased from FortisBC and then distributed by the Summerland Electrical Utility. By generating power locally, Summerland's community can keep money in the local economy and reduce the direct energy and peak demand fees paid each month to Fortis, plus show leadership on making the community resilient to power outages and taking local action on climate change.

2. How does this project align with Council's strategic priorities?

The District of Summerland has identified investing in renewable energy generation as an area of interest since at least 2011, when the first Community Climate Action Plan was adopted which called for investigation into / dissemination of renewable energy generation technologies in Summerland. The 2015 Official Community Plan further enshrined this as a priority by including encouragement of renewable energy technologies and generation.

Council's 2015-2019 Strategic Plan prioritized investigating renewable energy generation opportunities, and a dedicated staff position was budgeted for and approved in order to advance a solar project as well as the community's climate action initiatives.

The current Council was elected in 2019 and reconfirmed their commitment to bringing the benefits of local sources of clean energy to the community by identifying both Alternative Energy and Community Resiliency as strategic priorities for 2019-2022. The Solar+Storage Project also directly supports Council's strategic priority of Infrastructure Investment.

3. Why solar? Aren't there other renewable energy technologies?

Solar energy is a very simple and proven source of renewable energy, with few moving parts and little maintenance or operating costs. It is also easy to expand a solar array, to fix or replace damaged panels, and to integrate into an existing electric grid. As a first step into becoming an energy generator, Summerland has chosen to utilize solar energy so the Electric Utility's internal systems and infrastructure can be modified from distribution-only to distribution-and-generation without the added layers of complexity of other renewable energy sources such as micro-hydro (e.g., in-pipe turbines), geothermal, or wind. In the future, the utility will examine other renewable energy opportunities that could further strengthen the community's assets and ability to benefit from producing energy locally.

4. How much of Summerland's electricity will the array provide?

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6. How does the project demonstrate action on climate change?

While the primary drivers of the project are cost savings and system improvements/resiliency for the electrical utility, the Solar+Storage Project demonstrates leadership on climate change adaptation and mitigation in a number of ways. Firstly, as the future of technology changes to include electrical energy being the primary source for everything from vehicles to appliances to heating and cooling, the project increases Summerland's electrical utility's capacity to provide reliable energy to meet these needs while keeping costs to ratepayers low.

The decentralization and local control of energy also provides the community with an increased ability to withstand interruptions to the system from extreme weather and the associated outages. The project's use of innovative technologies will also provide a demonstration to encourage others to fuel switch and offset their energy use utilizing renewables.

Additionally, according to the Province of BC's methodology for calculating the emissions from various energy sources, the solar energy that the project will produce has a lesser footprint than energy provided to our community from FortisBC. Thus, the solar power we produce will be "greener" (albeit the difference is small).

Finally, localized energy sourcing increases efficiency by reducing line losses that occur when energy is moved over large distances, and lessens the need for expansion of energy systems such as hydro dams and their associated transmission lines, access roads, and associated infrastructure.

7. Who will directly benefit from this project?

As the project is expected to save the electrical utility over $200,000 per year (net of operational costs), and the utility returns a dividend to the municipality's general fund, all community members will directly benefit. A number of co-benefits are also expected from the project, outlined below.

8. What co-benefits are expected from the project?

The Solar+Storage Project is primarily a utility infrastructure project that will save costs and increase our electrical utility's ability to respond to disruptions (resiliency). There are a number of expected co-benefits from the project, including enhancing the local economy and creating jobs, increasing energy security and independence, supporting innovation, and attracting new residents and visitors, particularly young people and skilled tradespersons. There is also the potential to develop pollinator habitat as an understorey to the array, assisting the biodiversity of our area and providing natural services to surrounding agricultural producers.

Further, this project will form the basis for an integrated, long-term approach to sustainable energy management within the District, which will provide ongoing opportunities for job creation, community involvement, and partnerships with local businesses and schools.

Already since announcing the project plan, the District has seen an increase in inquiries about the project from outside the community and has heard a number of positive mentions about Summerland's leadership role in alternative energy from other communities, businesses, residents, and visitors.

9. What does "resiliency for the utility system infrastructure" actually mean? What specific resiliency benefits will we get?

Resiliency is a measure of how well a system responds to disruptions. Summerland is serviced at the end of a power transmission network. This put the Summerland electrical system in a vulnerable position in comparison to most communities. Summerland having its own generation source contributes to the system resilience because we can provide power to critical infrastructure in the event of loss of transmission supply which can be a result of motor vehicle accidents, weather events, or geotechnical events as examples.

Additional resiliency benefits include upgrades to our supervisory control system giving us more data about our system and better capabilities for managing it as well as lowering costs for future system upgrades that allow us to automatically respond to disruptions. We will also use this project funding to improve the condition of some of the existing system assets, thereby further improving our system resiliency. Investing in this type of infrastructure makes economic sense for Summerland's Electric Utility and even more so with Government funding.

In short, this project will form the basis for an integrated, long-term approach to sustainable energy management within the District, which will provide ongoing opportunities for job creation, community involvement, and partnerships.

The project will also offer resiliency benefits for the community as a whole - by developing a renewable energy project and associated eco-tourism industry, the project will draw visitors and skilled workers to the

region, which will strengthen the economy and improve community vibrancy on a long-term basis and ideally position us for future development and growth in the cleantech sector.

General Technical Aspects

10. Does Summerland get enough sunshine to make this project feasible?

Absolutely! Summerland has one of Canada's most favourable solar climates, with more than 2,000 hours of sunshine annually. According to a summary of Environment Canada climate data, Summerland is distinguished by more days with sunshine during the spring than other Canadian locations with climate data. Periods of sunshine have been recorded on average 88.4 days each spring. Extra hours of direct solar irradiance in spring are beneficial for the early seasonal production of solar energy.

High average global tilted irradiation is the most important consideration for developing a solar project. The District of Summerland was estimated to have a solar potential of 1152 kWh/kWp, and on-site monitoring station data from May 2019-2020 showed a verified potential of 1212 kWh/kWp. This is above FortisBC's municipal average of 1077 kWh/kWp and on par with the national municipal average of 1165 kWh/kWp provided by Natural Resources Canada.

11. Is it viable to generate solar power in the winter when energy demand is at its highest?

While solar power production is less in the winter than summer, there is still solar irradiance during the winter months (even on cloudy days), meaning the panels can produce energy all year. Almost one-third of the array's total production will take place in the winter months (Oct-Mar). And, because the District pays a monthly peak demand fee when purchasing energy, a reduction at any time of year has the potential to generate cost savings.

Also, utilizing battery energy storage will allow the District to offset the annual peak energy demand, which typically happens during winter evenings. This will save the electrical utility and our ratepayers money by allowing the District to reduce expensive peak charges.

12. If our peak consumption happens in winter, how will solar help us?

The District pays two types of "peak demand" (also sometimes called 'ratchet') fees for the energy we purchase for distribution: an annual fee based on the maximum amount of energy purchased in a 15-minute window anytime in the previous 11-months, and another for the specific peak reached in each calendar month. These fees combined add up to over $200,000/month.

The project will not have a substantial direct impact on the annual peak (typically occurs at night in the winter); however, it has the potential to influence the monthly demand fees, particularly in summer. It will also reduce the total amount we pay overall each month as we produce our own energy rather than purchasing it.

The Solar+Storage project also offers other direct financial benefits to our system such as extending the life of other system components and improving overall system communications and responsiveness. Other harder-to-quantify financial benefits for the community such as keeping energy dollars in the local economy, an increase in eco-tourism, demonstrating leadership, and increasing energy security and independence, are also expected.

13. What impact will the project have on Summerland's electrical grid?

A System Impact and Interconnection Study has been completed that shows little to no negative impacts to the District's electrical grid. On the contrary, the project is expected to have a number of benefits to the utility infrastructure, including providing upgrades to monitoring systems and physical assets, reducing wear and tear of utility equipment, as well as making the system more resilient to power outages.

14. What is the purpose of the batteries?

The energy storage component of the project serves several purposes. Battery energy storage is widely considered to be an effective way to increase the value and reliability of a renewable energy project, particularly with a variable source such as solar or wind. On its own, the battery system and its controls can be used to reduce peak demand charges by shifting the time at which energy is purchased from FortisBC, creating financial savings for the District and our customers. Battery storage can also be used in conjunction with the solar array to provide a source of energy for critical infrastructure in case of power outages.

15. Why is the project not using even larger batteries?

The savings from increasing sizes of batteries is not linear. In fact, the project consultants have explained that there is a tipping point where larger batteries actually weaken the economics of a project. As such, they ran a number of scenarios to determine the optimal size – in our case, this was expected to be 2.25 MW. This will be confirmed during detailed design.

16. Do the batteries need to be linked to the solar panels to work?

The battery energy storage component of the project can be configured as a stand-alone system or it can be directly tied to the solar array - the final decision will be made during the detailed project design. There are benefits to both configurations, such as the ability to create a micro-grid that can power essential electric loads (such as the RCMP station, Memorial Health Centre, and Fire Hall) during a power outage or the ability to provide infrastructure investment deferral by improving operational and loading characteristics of the feeder and transformer during peak hours. Some configurations may allow multiple benefits to be realized.

17. Is there any reason the battery storage has to be next to the solar panels? Is there merit in placing the batteries at the substation?

The battery does not have to be co-located with the solar. There are benefits to having them be co-located (such as reduced costs and infrastructure, the ability to DC couple, etc.) and also possible benefits of having the battery located elsewhere (such as creating a microgrid). During detailed design these options and their benefits will be explored more fully, but preliminary discussions with our consultants and industry experts suggest that co-location offers the most potential benefits, which is why we've pursued that conceptually up to this point.

18. Can be the batteries be charged by the grid when solar is lacking (night, winter, smoky skies)?

Yes. The battery energy storage system (BESS) will be grid connected and can therefore be charged by our distribution system (the energy for which is supplied by FortisBC).

19. Technology seems to be changing so fast – is there value in waiting for new technologies to come on the market?

While the renewable energy industry is growing by leaps and bounds and technology is becoming more efficient and affordable as that growth occurs, the intention of the project is to prioritize the use of tested and proven technologies in order to minimize risks and maximize benefits to the community. The technologies available today will provide a healthy return on investment to the community and the District can begin realizing savings as soon as the project is online. Waiting for new technologies may produce additional savings, but they will likely be offset by the opportunity costs of delaying the project.

20. Does the budget include wiring from the batteries to any District facilities which do not currently have back up emergency power?

Since the system is tied directly to our distribution network, it is electrically connected to all of the District's grid connected facilities. It is possible to configure the system to create a micro-grid that would more effectively provide power to specific facilities in times of grid outages – the costs and benefits of doing so will be examined during detailed design.

21. Since diesel generators already provide emergency power for our critical infrastructure, why is battery storage justified?

The primary function of the system is to provide cost savings to the utility. System resiliency by providing emergency power is a valuable secondary benefit but not the core focus of the project. Furthermore, it is unlikely that an equivalent sized diesel plant (2MW) would provide Summerland with the same economic benefits and in addition would not be in alignment with Summerland's GHG reduction goals.

22. How many panels will be used in the project?

Until the specific type of panels to be used is determined, this cannot be answered exactly; however, assuming an average-quality 375-watt panel is used, the project will require about 3200 panels.

23. Do the panels make noise?

No, there are no moving parts and therefore there should be no audible noise from the solar array since the District intends to use fixed racking (no tracking systems). The battery energy storage system will utilize HVAC equipment to maintain battery temperature and electrical transformers; the noise is comparable to residential and commercial HVAC units and existing transformers found throughout the community currently.

24. Are the panels made with toxic chemicals? Can they leech onto the ground?

As with all electronics, the system components include the use of metals and chemicals. There is no possibility of these leeching onto the ground.

We will be closely looking at the environmental qualities of any products we purchase, utilizing tools such as the solar scorecard (http://www.solarscorecard.com/2018-19/) and the expertise of our engineering consultants to ensure that we are making the best decision for the environment possible.

25. How long will the panels last? What about the batteries?

The estimated project life is 35 years for the solar array and 20 years for the battery system. A solar panel's performance warranty will typically guarantee 90% production at 10 years and 80% at 25 years. Performance

warranties for Lithium-ion battery systems are typically 10 years and while they can vary, the system can be designed to retain a guaranteed capacity for 20 years.

26. How long will it take to build the array?

The exact timeline depends on a number of factors, including availability of labour and equipment, lead time on the panels being manufactured and delivered, and finalizing the detailed design of the site. Once the detailed design begins in earnest, it is expected that the array will be completely finished within 18-24 months.

27. Will the project utilize trackers (single or dual tilt)?

Although the final system design has not been confirmed, the use of trackers has not been included in any of the preliminary design work or financial calculations due to feedback from industry experts and other owners of solar arrays that suggest that their lifetime costs outweigh the benefits. Further work to confirm the costs and benefits of using this technology in Summerland's project will be completed during detailed design.

28. Could the panels be placed on rooftops or over parking spaces instead?

Although seemingly attractive, multiple installations across many rooftops is actually much less efficient and far more expensive than a single large-scale array. Parking-area arrays are also much more costly than a standard ground-mounted array.

Site-Specific Technical Aspects

29. How will the panels be attached to the ground?

Typical ground-mounted solar systems are secured either by piles driven into the earth or with ballasts. The results of a geotechnical assessment of the site show that driven piles are most suitable for this particular site; however, the specific racking system and accompanying footings will be finalized during the Engineering phase of the project.

30. Is the property fully serviced?

No services (electrical, water, sewer, etc.) exist to the site other than a degraded access road.

31. What system upgrades will be completed as part of the project?

The project budget includes $1.68M for system upgrades – how that will be allocated to maximize the benefits of the system will be determined during detailed engineering and design. The System Impact and Interconnection Study offered a number of potential upgrades for consideration as part of the project, including the possibility of a microgrid that could either supplement or replace the existing diesel generators (which need to be refueled, have O&M and replacement costs, and contribute to the community's GHG footprint). Other potential options include upgrades to the Electrical Utility's communications network, system phase balancing, and reconfigurations of the system feeders at the substation.

The costs and benefits of each of the possible system upgrades will be evaluated during detailed design and discussed with Council to determine the best use of the system upgrade portion of the project budget.

32. How much of the array's understory will be dedicated to pollinator habitat or other crops?

The exact understory of the array has not yet been determined as a wide range of possibilities exist, each with their own unique benefits and challenges. One of the potential co-benefits of the project could be to utilize a pollinator-friendly planting under the array, which has been shown at other project sites to minimize maintenance requirements, increase efficiency of the panels via lowered ground temperatures, and benefit surrounding agricultural producers and overall ecosystem health.

33. What benefits are there to developing on a brownfield site?

Brownfields are properties previously used for industrial or commercial purposes in such a way that expansion, redevelopment, or reuse of them may be complicated by the presence of hazardous substances or contaminants. These sites are often left vacant or underutilized due to potential contamination and/or the presence of hazardous materials, causing blight and eroding the tax bases of communities.

Brownfields have unique attributes that can offer significant advantages for developing solar arrays, including unshaded open spaces, proximity to electrical infrastructure, and avoiding the significant environmental, archaeological, and social impacts associated with deployment of solar on previously undisturbed lands. Financial incentives are also available for the redevelopment of brownfields, particularly into 'brightfields' (renewable energy projects).

34. What measures will be put in place in terms of security on the site?

The specific measures required will be determined during detailed design; however, at a minimum the site will be fenced and remotely monitored for any on-site disturbances.

Project Finances

35. How is this project funded?

In 2016, the District was successful in obtaining grant funding through the provincial Rural Dividend Fund ($100,000) to undertake an initial investigation into the feasibility of the project. Funding from this program, as well as a contribution from the District' climate action reserve fund and in-kind staff time, allowed the District to hire industry experts to assist with a review of possible locations and to provide analysis of the technical and financial feasibility of a local solar energy generation project.

In early 2018, the District of Summerland was conditionally awarded $6,000,000 in grant funding for the engineering, procurement, and construction phases of the Solar+Storage project through the Strategic Priorities Fund of the Gas Tax Program. The total project cost was estimated at $6,980,000. The conditions for the award were met in 2019, and a contribution agreement was signed securing the funds.

The remainder of the project costs are to be funded through in-kind staff time and the District's electrical utility reserve funds.

36. How does the project budget break down?

At a high level, the project budget includes $2.3M for the solar array, $3M for the battery storage, and $1.68M for system upgrades. A further breakdown is as follows:

$2.3M for the solar array

- $1.2M cost of materials
- $136k permits, other soft costs (e.g., legal)
- $931k engineering, procurement, construction

$3M for the battery storage

- $2.8M cost of materials
- $97k warranty, other soft costs
- $130k engineering, procurement, construction

$1.68M for system upgrades

- Specifics to be determined during detailed design/engineering

These budget numbers were provided by a professional and experienced consulting firm that regularly provides financial due diligence reporting to banks and other financers for Solar & Storage projects, and includes all costs of capital, engineering, permits, warranties, and construction.

37. What will the District's $980k contribution to the project cover?

After discussing similar projects with other communities and developers, and reviewing industry-standards for budgeting these types of projects, approximately 25% of the budget ($1.68M) was allocated for system upgrades - $980,000 of this was budgeted from the District's electrical utility reserve account, and the rest as part of the $6M grant funding.

Once the grant was awarded, in order to confirm the system's capacity for the project, a System Impact & Interconnection Study was commissioned. The study showed that the District's electrical utility system was well suited to take on this project, and the required system upgrade costs may not be as high as originally projected.

The System Impact and Interconnection Study offered a number of potential upgrades for consideration as part of the project, including:

- power system changes to accommodate the creation of a microgrid;
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Other possible system upgrades as identified by the Electrical Utility could include:

- improvements to the Electrical Utility's communications network;
- work on the substation breakers; and
- replacing existing infrastructure.

Which specific system upgrades are selected to maximize the benefits of the system will be considered in detail during the engineering phase of the project. The costs and benefits of each of the possible system upgrades will be discussed with Council to determine the best use of the system upgrade portion of the project budget.

38. Has the $6,000,000 grant been secured with all conditions met?

Yes, the conditions of the award, including the provision of a detailed financial analysis, were confirmed as being fulfilled in 2019 by the Gas Tax Committee, and a contribution agreement for the $6M grant was signed. Changes to the project scope or location would require a contract amendment, which would then need to be negotiated with the funder.

39. Has a financial analysis been completed for the project?

Yes, a detailed financial analysis was completed by a professional and experienced consulting firm (Fractal Energy Storage Consultants) that regularly provides financial due diligence reporting to banks and other financers for Solar & Storage projects, and includes all costs of capital, engineering, permits, warranties, and construction. The analysis has been released by Council with some redactions and is published on the District's website; it was provided in 2019 to Council and the $6M funder (the Gas Tax Committee) and was accepted by both.

The financial analysis was completed utilizing actual utility data to model expected system performance and results with four possible configurations for the energy storage system. Although the final details such as the specific battery chemistry and other hardware chosen will influence the overall project costs and payback, the analysis shows that in each configuration, regardless of utilizing grant funding or not, the project should at least break even and is expected to have a positive financial return. Taking the grant funding for the project into account, the project is expected to have a payback period for the District's financial contribution ($980,000) of approximately 5.3 years or less.

40. How will this project save us money?

The District currently purchases electricity from FortisBC and pays additional "demand" fees that are directly related to the peak demand for energy (both on a monthly and annual basis). By reducing the amount of power purchased from Fortis overall, and by strategically utilizing the battery system to reduce the peak demands for power during energy-intensive times of the year, the District could reduce the cost of energy in Summerland by approximately $260,000 per year. The project is also expected to provide savings to the electrical utility through infrastructure investment deferral and improved reliability of the system.

41. Where are the projected savings to the rate payer?

How the savings that the utility will realize will be translated to direct savings to the rate payers has not yet been determined and is the prerogative of Council during budgeting. That said, the utility is expected to save over $260,000/year (approximately $200,000 net of operational costs) as a result of this project.

42. What is the expected return on investment / payback from this project?

While the final details of the project (such as the specific battery chemistry chosen) will influence the overall costs and payback, a financial analysis of the project has shown that regardless of utilizing grant funding or not, the project should at least break even and is expected to have a positive financial return. Taking the grant funding for the project into account, the project is expected to have a payback period for the District of approximately 5.3 years or less.

43. How much will it cost to operate and maintain the project?

Solar energy is a relatively simple technology, with few moving parts and little maintenance or operating costs. Monitoring of the battery system to maximize its benefits to ratepayers and the grid represents the

largest part of the operating expenses, followed by operating expenses for the solar panels (managing unwanted plants growing underneath, cleaning as required, etc.), and insurance.

In total, the annual operating expenses at the project site are estimated to be very minimal (up to $70,000).

44. Was the value of the land included in the financial calculations?

Because the project utilizes District-owned property that will continue to be owned by the District and will remain in the District's land inventory following the project, the land value was not considered to be a relevant factor in the project calculation and as such was not included.

45. How does the District of Summerland plan to fund the replacement of the system?

The District maintains an electric utility reserve for asset renewal related to the electrical utility, which is funded by annual electric operational surpluses. As part of the District's work to develop an Asset Management Financial Plan, various funding options to ensure this reserve remains adequately funded over the lifetime of all utility assets (which will include the solar and storage components), are being examined. A like-for-like replacement of the capital components of the project at today's costs would require a ~1.5% increase to rates, which is considered reasonable given the expected community benefits from the project.

46. What are the decommissioning costs for the project?

As the project end-of-life is at least 35 years in the future and the availability and costs of recycling or other end-of-life options for the system components is not possible to predict, decommissioning costs have not been included in the financial analysis to date. However, other projects which have decommissioned their projects in 2020 experienced costs of approximately $26/kWh for battery storage systems and $39/kWp for solar arrays. For the District's project, that would amount to approximately $91,000. As the storage industry advances, it is expected that recycling opportunities will become more available and that end-of-life projects will actually be paid for their system components rather than being a cost, which would reduce this amount.

It is expected that most, if not all, of the system upgrade infrastructure will be permanent or able to be reused in other areas of the utility and as such will not be decommissioned when the solar arrays and/or batteries reach their end of life.

As part of the District's work on Asset Management, various funding options to ensure adequate funding for end-of-life disposal of all utility assets (including the solar and storage components) are being examined.

47. I've heard some solar projects in other communities were found to not be economically feasible – what makes Summerland's project different?

Summerland is one of five municipalities in BC to own their electrical utility, giving our community a unique advantage when it comes to utilizing solar energy. The project will allow our electrical utility to shift from distribution-only to distribution-and-generation, which will reduce our dependency on external power providers and keep energy dollars in our local economy. It will also reduce the overall fees we pay for energy by an expected $260,000 per year -a benefit communities without a utility do not share.

Summerland's Solar+Storage Project is further distinguished from other projects by its inclusion of battery storage. Coupling solar and storage provides additional benefits to our electrical utility and increases the cost savings we are able to realize from the project. Our project also does not intend to use trackers, which have been found in many cases to add more expenses than benefits to a project over its lifetime.

Finally, some installations (e.g., Medicine Hat's solar plant) utilize a completely different technology (solar thermal – used for heating) and do not have any significant implications for our project. There are a number of successful solar photovoltaic (PV) (the technology we will use, which generates electricity) installations across the globe that staff and our consultants are aware of and have used as examples to guide our project planning, including Sterling MA, Roseville CA, Tuscon AZ, Kimberly BC, and Brooks AB. Solar PV installations worldwide have increased more than 44x in the past 10 years and represent one of the fastest growing sectors of the energy market internationally.

48. Will generating our own power mean we pay additional fees to Fortis?

No. In fact the project is expected to *reduce* the fees we pay by approximately $260,000 per year.

Site Selection

49. How much space does the project require?

The solar array requires approximately 5 acres of space, and the battery system will likely be housed on-site in a 40' metal shipping container. Other considerations for siting the project included slope, shading, access, security, environmental impacts, and geotechnical stability.

50. Where is the project site? Is this location final?

Following a number of detailed site analyses and public feedback opportunities, in July 2020, Council finalized the site selection process by selecting the District's former Public Works yard & storage area (13500 Prairie Valley Road/12591 Morrow Street/Denike Street) as the project site, and directed staff to proceed with the Engineering, Procurement, and Construction phases of the project.

51. What was the site selection process?

In consultation with industry experts, staff completed a thorough examination of all District-owned property over 0.5 acres in size in consideration of the project site (108 parcels). Technical factors such as topography, solar irradiance (how much sun is available annually), proximity to the distribution system, and available acreage were considered first. Sites with the appropriate slope and solar resourcing were then reviewed in the context of: zoning; OCP designation; and Environmentally Sensitive, High Hazard, and Wildfire Interface Development Permit Areas.

Sites excluded from further consideration included: sites designated as parks (such as beaches and sports fields); sites within the monitoring area for the perpetual slide; the Adams Bird Sanctuary; parcels within the Agricultural Land Reserve; the active landfill area; sites at the north end of Garnet Valley; reservoirs; and KVR and Highway 97 rights-of-way. The remaining sites were evaluated for factors including environmental sensitivity, accessibility, security, ease of interconnection to the grid, and overall project complexity.

Taken together, these filters were used to create a short list of potential sites for Council's consideration, with a single site being recommended - the District's former Public Works yard & storage area located at 13500 Prairie Valley Road/12591 Morrow Street/Denike Street. Detailed analyses of the site were then undertaken to confirm the on-site conditions for the project.

In July 2020, Council finalized the site selection process by selecting 13500 Prairie Valley Road/12591 Morrow Street/Denike Street as the project site.

52. What other sites were shortlisted?

Following a thorough review of all District-owned properties over 0.5 acres in size (108 parcels), four categories of sites were determined to be most suitable for the project:

1. individual buildings in the Arena Complex area
2. lands surrounding the landfill
3. the Dunn Street properties currently held as rental houses
4. the District's former Public Works yard & storage area (*selected as project site*)

Each of these sites and their unique challenges and opportunities were presented to Council both in the February 27, 2019 closed meeting as well as in an open meeting of Council on June 24, 2019. The shortlisted sites were also presented to the public at a community event on May 27, 2019 regarding the project site and process and information regarding all shortlisted sites and the selection process have been posted on the District's website since early 2019. They were also reviewed at the July 13, 2020 Committee of the Whole meeting.

The table below provides an overview of the potential challenges and benefits of Categories 1-3:

Category	Challenges	Opportunities
1: Arena complex	• Age & condition of buildings • Insufficient roof space – would require ground mounting also • Added complexity of spreading over multiple locations	• No line losses • Could possibly leverage to replace arena roof • Long-term opportunity to redevelop this area & include solar
2: Surrounding landfill (includes Water Treatment Plant [WTP])	• Security concerns • Dust from landfill operations • Wildfire dangers; no water access • Natural areas undisturbed • Highest interconnection costs • Insufficient roof space on WTP – requires ground mounting also • May limit future expansion of landfill or WTP operations	• Close to major electric load (WTP) • Ample space for future expansion • Proximity to upcoming fiber network expansion (to WTP)
3: Dunn St. properties	• Within ALR • Dust from highway • May limit future expansion of WasteWater Treatment Plant	• Very visible location • Good natural security • Close to major electric load • Area already disturbed

53. What makes the selected site ideal?

The District's former Public Works yard & storage area located at 13500 Prairie Valley Road/12591 Morrow Street/Denike Street was found to offer the best balance of appropriate zoning and long-term land use, environmental protection, fit with the project objectives, and available co-benefits.

The previously-disturbed, brownfield nature of the site means that the environmental impacts of the project will be minimized (disturbed areas normally have lower environmental sensitivity) and may even be net-

positive as the project will provide an opportunity to remediate the impacts of the historic activities on the site, including cleaning up and securing the storage area that currently exists on site for Works-related materials.

This area has high social and recreational value that would not be negatively impacted by the solar array installation; in fact, the project will offer opportunities to improve the area's recreational amenities (e.g., parking, garbage/recycling cans, signage, maps, etc.), and mitigate some risks and impacts of the current, unmanaged trail use in the area.

Although the site is somewhat central to the community and thereby accessible for visitors and other interested parties, due to its raised elevation above the surrounding topography, the proposed site is generally not visible from the lower elevation residential and rural areas which surround the site and the visual impacts are considered minor.

The site also does not have the same dust issues as other shortlisted sites, meaning the efficiency of the panels will be higher at this location in addition to lower operations and maintenance requirements. Dusty conditions are estimated to reduce the solar production from 10-50%, depending on the severity. Conservatively, a 25% reduction would be expected, leading to a loss of approximately $700,000 in revenue over the life of the project, in addition to the added operations and maintenance costs.

Finally, the site's proximity to critical loads within the downtown area, such as police, fire, and the health centre, means these facilities could be connected to the array in such as way as to ensure they are able to stay powered in case of an emergency.

54. Was the site selection made in a closed meeting of Council?

The site selection process was discussed in several open Council meetings throughout 2018 and those meetings were advertised to the public through all regular channels, including via the solar energy email list.

In February 2019, a closed meeting of Council was held to allow a robust discussion around possible locations for the project, including the potential of using privately-owned sites, pursuant to Sections 90(1)(e) of the Community Charter for Council to discuss the acquisition, disposition, or expropriation of land or improvements.

During the February 2019 closed meeting, Council provided the following direction to staff:

1. approved a prime potential site (13500 Prairie Valley Road/12591 Morrow Street/Denike Street) for detailed examination in order to confirm its suitability for the project; and
2. directed staff to initiate community engagement regarding the prime potential site.

Following this direction from Council, a public session was held around the prime potential site and site selection process, a community survey and written feedback opportunity was provided, received community feedback and information about possible backup sites were presented at open meetings of Council, and the project progress was also presented an open houses and a number of other public meetings throughout 2019 and early into 2020.

The results of the detailed analyses and community engagement efforts were provided to Council in April 2020 and were further presented at the July 13, 2020 Committee of the Whole meeting, which was open to the public and livestreamed on the District's YouTube channel. Following that meeting, Council finalized the

site selection process by selecting 13500 Prairie Valley Road/12591 Morrow Street/Denike Street as the project site.

55. Was the site pre-selected by staff?

No. Staff, in consultation with industry experts, completed a thorough examination of all District-owned property over 0.5 acres in size in consideration of the project site (108 parcels) to ensure that all available options were equally assessed. Early in the process, the District's former Public Works yard & storage area was identified by consultants as an ideal site for the project due to its status as a brownfield site, proximity to a substation, and the on-site and surrounding environmental values making other land uses complicated; however, all 108 parcels were reviewed equally and a shortlist of four sites was presented to Council for consideration along with staff's recommendation based on work completed during the site selection process.

All funding applications for the project were clear that the site selection process was ongoing and that no site had yet been selected by Council. At no time ahead of Council's decision to select the former Public Works yard & storage area as the prime potential site did staff indicate internally or externally that the site selection was complete or that anyone but Council would or should be selecting the site.

56. Was land use considered in the site selection process?

Yes. The technical aspects of the project were considered first (topography, solar irradiance, parcel size, etc.), after which sites with the appropriate technical requirements were then reviewed in the context of: zoning; OCP designation; and Environmentally Sensitive, High Hazard, and Wildfire Interface Development Permit Areas.

The project site has an OCP designation of 'Administrative' and is zoned 'Institutional'.

57. Were privately-owned sites considered?

As land acquisition costs are not an eligible expense under the grant funding and as Council did not direct staff to conduct an in-depth investigation of the use of private sites for the project (although their potential use was discussed), only District-owned properties were examined in detail.

58. Is this site a temporary location / can the panels be moved?

The site is not premised as being temporary – any site could be seen as temporary in that the infrastructure could be removed reasonably easily if desired. It could also be decided to renew the infrastructure at this site at end of life and continue to use it as a solar array (or other energy project).

If/when the infrastructure moves and to where would be up to Council to decide; however, relocating the panels and the associated racking equipment and other system components would likely have a significant cost and should be avoided if possible. While impossible to determine the exact costs for certain, the non-capital project costs of engineering/procurement/construction are approximately $1.1M (~16% of total) and many of those items would need to be re-borne for a new location.

59. What happens if Council decides to move the project?

For any potential site, a number of detailed analyses are required, including: an environmental inventory and environmental site assessment mapping; a geotechnical assessment; a review for known on-site first nations values; and installation of a solar monitoring station.

These studies were completed for the site over approximately 10 months at a cost of approximately $55,000, in addition to other site-specific studies costing approximately $20,000. These amounts do not include staff time.

These studies would be required to be repeated at any potential new site, in addition to any further works determined to be required by the site-specific conditions (e.g., a structural assessment of a rooftop's capacity to hold the panels, added costs and lost revenue from a dusty environment). Public engagement events, information vehicles such as site renderings, and citizen surveys would also be required. One the results of the studies were provided and the engagement activities completed, staff would then bring back the information to Council to inform them of any significant barriers to proceeding and to seek direction on next steps.

Additionally, any changes to the project scope ahead of its completion date (including a different site) will need to be reported to the project funder, and a revised contribution agreement would need to be negotiated.

60. Will the public still be able to use the nearby trails?

Yes! One of the potential co-benefits of the project is the addition of amenities for recreational users, such as parking, maps, trail signage, picnic benches, charging stations for e-bikes, informational kiosks, and garbage and recycling bins. It is hoped that the site will be a popular attraction for community members and visitors interested in sustainability and renewable energy. The project might also be leveraged in order to formalize the current unsanctioned trail network through a comprehensive review of trail use in the area, in consultation with surrounding landowners and user groups.

61. What work has been done to confirm if First Nations values are present on the site?

A review of the Province's Remote Access to Archaeological Data (RAAD) system was conducted and did not show any identified First Nations archaeological sites or Historic places. A follow up with the Provincial Archaeological Report Library (PARL) also did not show any known First Nations Values on site.

Although minimal site disturbance is expected during construction, once a detailed site design has been drafted, the District will engage with a qualified archaeologist to complete a Preliminary Field Reconnaissance to assess for values and make recommendations on how to address them if found during the construction process.

62. What are the environmental impacts to the site (flora, fauna)?

An environmental assessment of the site has been completed in conformance with the Terms of Reference for Environmental Assessment Reports in Summerland. This report includes an inventory of on-site environmental values and preliminary impact mitigation strategies for the site.

A large portion of the site has been previously disturbed, including a large paved section with removed trees and foliage. Additionally, leftover materials from previous industrial uses are scattered throughout the site and a number of District-owned materials (e.g., pipes) are currently stored on site.

The project will provide an opportunity to remediate the impacts from these previous uses and restore the natural area at the site through the planting of pollinator habitat, removal of garbage on site, and other such measures. Additionally, the project will provide an opportunity to improve the recreational amenities in the surrounding area and limit the impacts from current, unsanctioned recreational uses.

63. What measures will be put in place to maintain the ecological diversity of the site?

While a detailed site plan will be completed as part of the Engineering phase of the project, the environmental inventory shows that there appears to be an adequate area available on site for the development of the Solar+Storage Project as currently envisioned; however, the project footprint is constrained by the surrounding environmentally-sensitive portions of the parcel.

To ensure this project is completed in accordance with the *District's Terms of Reference: Environmental Assessment Reports*, once the site design is further established, a Protection, Mitigation, Compensation and Implementation Strategy will be completed in consultation with a Qualified Environmental Professional.

64. What are the alternative uses for these parcels of land?

The parcels are zoned as Institutional and are designated as Administrative in the Official Community Plan, as there had previously (2009-2011) been a discussion regarding the possibility of Okanagan College developing an Institute of Wine, Food, Hospitality and Tourism Management at the site which did not come to fruition. The site has some potential for residential development; however, an OCP and zoning bylaw amendment as well as a comprehensive Neighbourhood Planning process would be required, and known barriers include a lack of utility services, environmental constraints due to high-value assets throughout the site (including a wetland area identified in the environmental inventory), wildfire interface, and current uses as a recreational area for a variety of user groups.

65. Will the project prevent sanitary sewer service from being extended into Deer Ridge?

The current Official Community Plan does not include either the project site or the Deer Ridge area in the sewer designated service area, nor the immediately adjacent parcels (see Schedule G of the OCP). However, if Council decided to extend sewer to the Deer Ridge area, the alignment that the extension is most likely to follow (the former flume trail) would not be impeded by the solar project as their footprints do not overlap.

Additionally, the solar project site has an OCP designation of Administrative and is zoned Institutional, meaning any residential use is not contemplated in the current Official Community Plan. If an OCP amendment were to be put in place to allow residential development in this area, the costs likely to be borne by a developer to bring sewer to the site would cover approximately 18% of the total cost of the sewer extension to Deer Ridge.

66. How will the project affect growth into North Prairie Valley?

The areas west of Deer Ridge were removed from the Urban Growth Area in the most recent Official Community Plan and are not currently slated for development. The current OCP supports the continual upgrade of services within the Urban Growth Area and gives priority to infill and intensification within the Urban Growth Area before extending services.

A comprehensive Neighbourhood Plan would need to be completed to confirm any potential impacts the Project may have on development in areas north/northwest of the site if these areas were added to the community's growth plans in the future; however, sewer can still be extended to the area at roughly the same cost (only 18% of the total cost to extend sewer would potentially be borne by a residential development at the project site). Further, the array could ultimately be moved if the community benefits for another use at the project site were determined to be greater than that of the project (although relocating the array would likely have a significant cost and should be avoided if possible).

67. What other locations are available for the project?

Through the site selection process, 108 District-owned parcels were examined. A short-list of 4 possible sites was determined and presented to Council for consideration, with one site being recommended by staff as its attributes were most ideal for the project from a number of perspectives. The other shortlisted sites each have unique challenges and opportunities, and there is no clear "second-best" site – a result of a relatively small number of available parcels with the correct technical aspects (size, slope, shading) combined with existing land use challenges (e.g., ALR, Parks, etc.).

68. There were several parcels listed in the System Impact and Interconnection Study as desirable that were not shortlisted – why?

The System Impact and Interconnection Study (SIIS) looked at the parcels strictly from a technical aspect (slope, shading, and proximity to existing power lines). The full site selection process also considered factors including environmental sensitivity, accessibility, security, ease of interconnection to the grid, and overall project complexity.

The Fyffe Rd. location did not meet the criteria established by the SIIS for slope, but was highlighted as promising due to its potential to be integrated with a conceptual long-term plan for the electrical utility infrastructure in that area which has since been further studied and found to be infeasible. As it was only considered in the context of the conceptual plan, once that was no longer under consideration, the Fyffe Rd. site (like all others that did not meet the slope threshold) was not advanced in the site selection process.

The Canyon View parcel was excluded from further consideration as it has an OCP designation of Agricultural and is also in the perpetual slide area.

The lands surrounding the landfill and the parcels at the south end of Cartwright Mountain were both advanced to the site selection shortlist.

Public Engagement

69. What community engagement has taken place regarding the project and the site?

In February 2017, the District hosted a Community Conversation What is Summerland's Future in Solar? to gauge support and direction from community. Over 100 attendees participated in the event, and 100% of surveyed participants agreed/strongly agreed developing local renewable energy generation resources is important to them.

Since that time, staff have made dedicated presentations about the project at ten open-to-the-public Council meetings, as well as provided project updates at budget and strategic priority review sessions of Council (also open to the public). The project has been featured at open houses, through the monthly newsletter, via dedicated page on the District website, in press releases, posters and sandwich boards, dedicated signage at Municipal Hall, and also through a solar energy email list with over 230 subscribers.

Another dedicated public meeting about the prime potential site and the project progress to date was held in May 2019, again with roughly 100 attendees. Letters to all property owners within 100m of the site were sent advising them of the selection of the site and the upcoming meeting. A subsequent survey asking for questions and concerns about the project and/or the site was administered, presented to Council, and published online. The site selection process was reviewed in the meeting, including other shortlisted sites and the rationale for the prime potential site.

On July 13, 2020, Council held a public meeting to share information about the project with the community and receive their feedback about the project and the prime potential site. They also received new information regarding land use and a detailed presentation of the detailed analyses completed for the prime potential location. Following this meeting, the site selection process was finalized and staff were directed to proceed with the Engineering, Procurement, and Construction phases of the project. During these upcoming phases, there will be further community engagement activities and opportunities for community members to provide feedback to the District.

70. Is there strong support for this project in the community?

The District has been soliciting feedback about the project since early 2017 through dedicated events, meetings of council, an email list (over 230 subscribers), dedicated webpage, newsletter articles, and resident surveys. Throughout the public engagement activities, and through passive communications (email, drop-ins, phone calls), the vast majority of feedback received related to the project site and overall planning has been extremely positive, and the surveys conducted have also demonstrated a high level of community support.

Additionally, a number of groups and individuals provided letters of support for the District's original grant application for the Integrated Solar Project, including the Summerland Chamber of Commerce, Regional District of Okanagan Similkameen, South Okanagan Similkameen Conservation Program, the City of Penticton's Community Sustainability Committee, First Things First Okanagan, Swiss Solar Tech, Friends of the (Summerland Ornamental) Gardens, and the International Living Future Institute.

Project End of Life

71. Won't the panels and battery degrade? Will they still be efficient over the life of the project?

While the final design and engineering for the project are yet to be completed, many projects of this type currently being installed are sized so that even with the degradation of the panels and batteries over time, the full system capacity is still available for the full life of the project.

72. What will happen to the land after the panels are at end of life?

What happens to the site parcels at the end of the project will be determined by the council at that time, in line with the OCP and community priorities. The land under the array could easily be utilized for other purposes at the end of the project life, as there will be minimal disturbance to the area.

73. Can the panels be recycled after the project?

Options for recycling solar panels are somewhat limited currently; however, this is an emerging aspect of the solar industry and has been identified as a major need in the coming decades. It is expected that a reliable recycling option will exist by the end of the project life.

74. What end-of-life benefits will the community see from this project?

In addition to the benefits to the community throughout the life of the project, including approximately $200,000/year in net cost savings, keeping energy dollars in the local economy, attracting new residents and visitors, and increasing energy security and independence, a number of benefits to the community are expected past the end of the project.

These ongoing benefits include: permanent upgrades to the District's Electrical Utility infrastructure; the ability to generate energy rather than only distributing it; the experience and systems to bring on other renewable energy projects; and a reputation as a community that invests in innovation and renewable energy.

Procurement

75. What kind of batteries will be used?

The specific batteries will be chosen through a public procurement process as part of the detailed design of the project. Although there are many types of battery chemistries and technologies, the intention of the District is to utilize a technology that is proven and reliable, as well as efficient, affordable, and high-density (how much energy can be stored vs. how much space is required).

Best industry practices require that the technology for the proposed solar PV, battery storage and key components thereof must be backed by a minimum of twelve months of established production history at a scale of 10 MW or larger at a single plant located in North America in order to be considered. All components must be UL-listed or certified.

76. What kind of panels will the project use?

The specific panels will be chosen through a public procurement process as part of the detailed design of the project. Some of the important factors that will be considered in selecting a type of panel include: reliability of the manufacturer; efficiency and durability of the panel; total environmental impact of the product, including manufacturing and shipping; and recyclability of the panels at end-of-life.

77. Who will supply/install the panels and/or batteries? Can my company's products or services be considered?

All procurement of engineering work, system components, and installation/construction labour will be procured through a public process in accordance with the District's procurement policies. Opportunities to bid on project work are posted to the District's Bid Opportunities webpage at http://summerland.ca/bids and to BC Bid at http://bcbid.gov.bc.ca/.

Community Investment / Private Solar

78. Will the community be able to invest in the project, like the City of Nelson's Solar Garden?

A formal program to offer shares or investment opportunities in the project has not yet been decided on by council; however, the District understands there is strong community support for such an option and will explore this idea further as the detailed design process progresses.

79. Will there be an opportunity for Summerland residents to be included in a bulk buy of whatever materials are being purchased for the project?

This is an item about which we have heard strong interest from the community, but no decision has been made. Once the project proceeds to detailed design, staff anticipate this topic will be discussed with Council to gauge their interest and support for such an offering.

80. Will incentives for individual projects on private property be available?

The District has a Net Metering program for residents who wish to produce their own renewable energy and sell excess power to Summerland's electrical utility. At this time, the District is not aware of any grants or funding sources for the capital components of a privately-owned solar array.

81. How can I get grid-connected solar on my home?

The District of Summerland offers a Net Metering program for residents who wish to install their own solar panels on their homes in order to offset part of their energy costs, as well as sell back any annual excess energy they put onto the grid at the wholesale rate. To become a part of our Net Metering Program, visit www.summerland.ca/netmetering and review the Summerland *Distributed Generation Program Process Overview***.**

Next Steps

82. What are the next steps for the project?

The site selection process was finalized on July 13, 2020 with Council selecting the District's former Public Works yard & storage area (13500 Prairie Valley Road/12591 Morrow Street/Denike Street) as the project site. Staff were also directed to: complete a remedial action / risk management plan for the site; and to proceed with the Engineering, Procurement, and Construction phases of the project.

Based on this direction, the expected next steps and their timelines are:

Fall 2020

- Complete remedial action / risk management plan
- Develop RFP for Engineering, Procurement, Construction
- Preliminary site clean-up

2021

- Issue EPC RFP
- Detailed design
- Choose solar panels, racking, BOS
- Finalize battery technology & supplier
- Complete contracts and equipment orders

2022

- Site Preparation
- Utility Upgrades

2023 (Deadline Sept.)

- Installation
- Interconnection

83. What opportunities are there for solar projects in Summerland in the future?

The Solar+Storage Project will form the basis for an integrated, long-term approach to sustainable energy management within the District and will allow the District's electrical utility to be modified from distribution-only to distribution-and-generation. In the future, the utility will examine other renewable energy opportunities that could further strengthen the community's assets and ability to benefit from producing energy locally, including the possibility of additional solar.

The District has already added solar panels to two District-owned buildings and has relaunched the Distributed Generation program to make it easier and more affordable for Summerland residents to install solar on their own properties.

84. How can I provide feedback on the project?

Comments, questions, and ideas regarding the project can be sent to climate.action@summerland.ca or by phone at 250.404.4068. Anyone interested in the project can also utilize these contacts to request to be added to Summerland's solar energy email list, which provides updates on the project status and matters related to solar energy in Summerland.