BRITISH COLUMBIA

February 27, 2015

**VIA EMAIL**
Ref: 179857

To: All Secretary-Treasurers
All School Districts

**Re: 2015/16 Carbon Neutral Capital Program**

In November 2014, the Ministry issued a Call for Proposals under the Carbon Neutral Capital Program (CNCP). Applications were due January 9, 2015, and evaluations are now complete.

For the 2015/16 government fiscal year, $5 million in CNCP funding is being allocated based on CNCP proposals and supporting documentation submitted by school districts in the Call for Projects. The CNCP funding is meant to assist school districts with energy efficiency projects and to recognize the cost of carbon offsets paid by school districts annually.

Funding allocations and project numbers are listed by school district in the attached table.

The primary criteria in evaluating CNCP projects are emissions reductions and operational cost savings. Secondary considerations are contributions to the project from school districts and from third parties. Not every school district will receive CNCP individual project funding each year; however, the Ministry will ensure that over several years all school districts will receive at least as much CNCP funding as they spend on carbon offsets over those same years.

Boards of education will be issued a single Certificate of Approval (COA) for their CNCP capital allocation. If your school district is receiving CNCP funding this year, your Board must adopt a Capital Project Bylaw using the project number and total maximum allocation assigned to your school district in the attached table. Please forward the original bylaw document to the attention of Maureen MacDonald, Finance and Administration Officer, Resource Management Division, at the Ministry of Education.

Following registration of the bylaw, a COA will be issued to enable the District to draw the appropriate funds as needed. In accordance with Provincial Treasury policy, draws against the COA cannot occur until capital project expenditures have been made. **All COA's for the CNCP will expire March 31, 2016; therefore approved projects must be completed and funds drawn prior to that date.**

No additional capital will be available for the approved CNCP projects, so any unforeseen projects costs will be the sole responsibility of the school district.

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**Ministry of Education**
**Resource Management Division**
Mailing Address:
PO Box 9151 Stn Prov Govt
Victoria BC V8W 9H1
Location:
5th Floor, 620 Superior St
Victoria BC V8V 1V2

If you have any questions please contact Craig Harris, Planning Officer, at Craig.Harris@gov.bc.ca or 250-217-0514.

Sincerely,

Joel Palmer
Executive Director, Capital Management Branch

Attachment

pc: All Superintendents of Schools
Regional Directors, Capital Management Branch
Planning Officers, Capital Management Branch

# 2015/16 Ministry of Education Carbon Neutral Capital Program (CNCP) Projects and Funding

| SD # | SD Name | School | Project Description | Project Number | Total 15/16 CNCP Funding | SD Contribution ($) | 3rd Party Contribution ($s) | CNCP Funding Approved ($s) |
|---|---|---|---|---|---|---|---|---|
| 10 | Arrow Lakes | Lucerne Elem-Secondary | Solar | 126827 | 74,200 | $ 37,100 | $ - | $ 49,827 |
| | | Nakusp Elementary School | Solar | | 25,453 | $ 12,727 | $ - | Incl. |
| 19 | Revelstoke | Columbia Park Elementary | Replace RTU with heat pumps | 126828 | 366,000 | $ 291,000 | $ - | $ 75,000 |
| 22 | Vernon | Clarence Fulton Secondary | Boiler Replacement | 126829 | 187,000 | $ - | $ 30,000 | $ 157,000 |
| 23 | Central Okanagan | Constable Neil Bruce Middle | Boiler Replacement | 126830 | 169,200 | $ - | $ 9,240 | $ 159,960 |
| 27 | Cariboo-Chilcotin | Cataline Elementary | Boiler, mechup, lighting | 126831 | 1,757,902 | $ 1,341,760 | $ - | $ 416,142 |
| 33 | Chilliwack | Mt. Slesse Middle | Boiler Replacement | 126832 | 430,000 | $ 106,000 | $ 37,000 | $ 287,000 |
| 34 | Abbotsford | Yale Secondary | HVAC consolidation | 126833 | 582,000 | $ 236,000 | $ 236,000 | $ 110,000 |
| 35 | Langley | Walnut Grove Secondary | Boiler Replacement | 126834 | 403,975 | $ 185,671 | $ 38,304 | $ 180,000 |
| 36 | Surrey | Fleetwood Park Secondary | Boiler Replacement | 126835 | 592,500 | $ - | $ 27,000 | $ 565,500 |
| 38 | Richmond | Facilities, Maintenance & Ops | Purchase 3 electric vehicles | 126836 | 111,893 | $ 33,298 | $ 12,000 | $ 66,595 |
| 39 | Vancouver | Various Locations (15) | DDCs & Communic Upgrades | 126837 | 620,600 | $ 211,000 | $ 65,400 | $ 344,200 |
| 42 | Maple Ridge | Thomas Haney Secondary | Lighting, HVAC & HW | 126838 | 605,416 | $ 44,086 | $ 100,000 | $ 461,330 |
| 43 | Coquitlam | Mary Hill Elementary | Boiler Replacement | 126839 | 250,000 | $ 62,500 | $ 12,500 | $ 175,000 |
| 44 | North Vancouver | Boundary Elementary | Boiler Replacement | 126840 | 545,300 | $ 42,300 | $ 23,000 | $ 480,000 |
| 47 | Powell River | James Thomson Elementary | Boiler Replacement | 126841 | 77,800 | $ 13,800 | $ 12,000 | $ 52,000 |
| 50 | Haida Gwai'i | Queen Charlotte Secondary | Solar PV Panels | 126842 | 89,000 | $ 5,000 | | $ 84,000 |
| 51 | Boundary | Grand Forks Secondary | Boiler Replacement | 126843 | 230,000 | $ 115,765 | $ 28,000 | $ 86,235 |
| 57 | Prince George | Ecole Lac des Bois Elementary | Boiler Replacement | 126844 | 460,700 | $ 140,473 | $ - | $ 320,227 |
| 61 | Greater Victoria | Rockheights Middle School | Boiler Replacement | 126845 | 250,000 | $ - | $ 12,500 | $ 237,500 |
| 71 | Comox Valley | Royston Elementary | Boiler Replacement | 126846 | 103,000 | $ 6,600 | $ 6,400 | $ 90,000 |
| 72 | Campbell River | Cedar Elementary | Boiler Replacement | 126847 | 91,800 | $ 41,800 | $ - | $ 50,000 |
| 75 | Mission | Mission Secondary | Boiler Replacement | 126848 | 430,000 | $ 204,515 | $ - | $ 225,485 |
| 81 | Fort Nelson | J S Clark Elementary | Boiler Replacement | 126849 | 60,000 | $ - | $ - | $ 60,000 |
| 91 | Nechako Lakes | Fraser Lake Elem-Sec | Install AHUs | 126850 | 500,000 | $ 233,000 | $ - | $ 267,000 |
| | | | | | 9,013,739 | $ 3,364,395 | $ 649,344 | $ 5,000,001 |

**PV Grid-Tie System Basic Financial Analysis**

| Costs | | |
|---|---|---|
| Project Duration | | 30 |
| System Cost - PV Array | $ | (88,309.00) |
| System Cost - Wind Turbine | $ | - |
| **Other Funding** | | |
| Solar BC | | - |
| Total Funding | | - |

PV

| cost/watt | panel wattage | # of panels | Array kW |
|---|---|---|---|
| $ 3.84 | 260 | 96.0 | 24960.00 |

Wind

| Cost | Wind kw |
|---|---|
| $ - | 0.00 |

| Financial Rate Assumptions | |
|---|---|
| Discount Rate | 2.75% |
| Inflation | 2.90% |

| Estimated Annual Savings | | |
|---|---|---|
| Displaced Energy (kWh/yr) | | 22389.12 |
| First Year Unit Cost ($/kWh) | $ | 0.140 (2 tier split cost) |
| First Year $ savings/year | | 3,134.48 |

| Marketing Value (Per Year) | |
|---|---|

**Cash Flow Analysis**

| Year | YR 0 | YR 1 | YR 2 | YR 3 | YR 4 | YR 5 | YR 6 | YR 7 | YR 8 | YR 9 | YR 10 | YR 11 | YR 12 | YR 13 | YR 14 | YR 15 | YR 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| System Cost | $ (88,309.00) | | | | | | | | | | | | | | | | |
| Grant | $ - | | | | | | | | | | | | | | | | |
| Estimated BC Hydro Rate Escalation | | 6.0% | 4.0% | 3.2% | 3.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% |
| Energy Cost Savings | | $ 3,134.48 | $ 3,589.74 | $ 3,753.62 | $ 3,955.26 | $ 4,399.55 | $ 4,708.23 | $ 5,038.56 | $ 5,392.06 | $ 5,770.37 | $ 6,175.22 | $ 6,608.47 | $ 7,072.12 | $ 7,568.30 | $ 8,099.29 | $ 8,667.54 | $ 9,275.65 |
| Marketing Savings | | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Total Cashflow | $ (88,309.00) | $ 3,134.48 | $ 3,589.74 | $ 3,753.62 | $ 3,955.26 | $ 4,399.55 | $ 4,708.23 | $ 5,038.56 | $ 5,392.06 | $ 5,770.37 | $ 6,175.22 | $ 6,608.47 | $ 7,072.12 | $ 7,568.30 | $ 8,099.29 | $ 8,667.54 | $ 9,275.65 |
| **Avg annual savings** | **$ 9,243.25** | | | | | | | | | | | | | | | | |
| **Net Present Value** | **$79,420.97** | | | | | | | | | | | | | | | | |
| **IRR** | **6%** | | | | | | | | | | | | | | | | |

Important Notes:

Any investment payback analyses, utility usage and energy output calculations, return on investment calculations, or other financial or performance models with regard to Solar PV Systems, which manufacturer or installer may have prepared/furnished (including the charts on this and attached page) are illustrative and general estimates only, and are not forecasts of specific financial performance or of actual results of any system being furnished to Owner; such analyses and models are not guaranties and are based on assumptions (including weather assumptions, fuel escalations and others) that may not be applicable to Owner's project.

Tax benefits and credits are almost always taxpayer and funding source specific.

Taxpayers contemplating solar equipment purchases and installations should not assume they qualify for tax benefits generally presented in any financial models. They should consult with their own tax specialist to determine to what extent, if any, they, as Owner may qualify for tax benefits andcredit as a result of installing solar thermal systems.

| YR 17 | YR 18 | YR 19 | YR 20 | YR 21 | YR 22 | YR 23 | YR 24 | YR 25 | YR 26 | YR 27 | YR 28 | YR 29 | YR 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.0% | 4.0% | 4.0% | 4.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% |
| $ 9,926.43 | $ 10,622.87 | $ 11,368.17 | $ 12,165.76 | $ 10,628.44 | $ 11,264.77 | $ 11,939.19 | $ 12,653.99 | $ 13,411.58 | $ 14,214.53 | $ 15,065.56 | $ 15,967.53 | $ 16,923.51 | $ 17,936.72 |
| $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | | | | | |
| $ 9,926.43 | $ 10,622.87 | $ 11,368.17 | $ 12,165.76 | $ 10,628.44 | $ 11,264.77 | $ 11,939.19 | $ 12,653.99 | $ 13,411.58 | $ 14,214.53 | $ 15,065.56 | $ 15,967.53 | $ 16,923.51 | $ 17,936.72 |

TERRATEK
ENERGY SOLUTIONS INC.
"Your Gateway to Green Energy"

Corporate Headquarters
211-2459 Cousins Avenue
Courtenay, BC, V9N 3N6

Tel: (250) 897-3877
Fax: (250) 897-3895

January 8, 2015

Attn: Steve Goffic
School District # 50
Haida Gwaii, BC
steve@sd50.bc.ca

***Re: Proposed Solar System for Queen Charlotte School***

The following is a brief overview of the proposed photovoltaic (solar) system Queen Charlotte School on Haida Gwaii. Within this overview, Terratek will highlight the system cost, operating costs, energy production, and yearly CO2 savings.

System Overview:

The power system that was preliminary designed for the Queen Charlotte School is a 24.96 kW PV direct grid tie system. The system will integrate into BC Hydro Net metering Program. As part of this metering program, energy produced by the system will first offset any loads within the building and any excess energy produced by the solar system which is not being used will feed back into the power grid in the form of a credit.

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Preliminary System Cost:

The estimated cost for the proposed system was as follows:

| | |
|---|---|
| Solar Modules (96 panels): | $ 28,393.00 |
| Flush Roof Mounting System with Bonding | $ 6,040.50 |
| Grid Tie Micro Inverters with Monitoring | $ 26,688.50 |
| Electrical Materials: Wire, cabling, disconnect, bonding | $ 2,322.00 |
| Product Shipping and Travel Expenses | $ 11,000.00 |
| Project Installation | $ 12,160.00 |
| BC Hydro Net Metering Coordination and Requirements | $ 455.00 |
| BC Safety Authority Electrical Permit | $ 1,250.00 |
| Total (per-tax) | $ 88,309.00* |

*Please Note:*
*Some components or materials may need further refinement as Terratek made some preliminary assumptions in our original assessment.

Operating Costs:

The proposed system was designed to limit operating and maintenance costs throughout the life of the system. On the maintenance side, depending on how dirty the modules get throughout the course of the year there may be a requirement to wash them as required. All in all – this should be the only requirement necessary for district maintenance/operations.

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*Equipment:*

The solar modules and inverters are designed to last over 30 + years and provide the customer with a 25 year warranty. System switch gear, wiring, and breakers should last the duration of this period. Finally, the rack system and fastening hardware is designed and constructed out of materials that will not corrode over time.

Energy Production:

Haida Gwaii gets approximately 897 sun hours per year accordingly to Environment Canada. Based on these statistics this solar system will offset approximately 22,389.12 kWh per year (24.96 kW x 897 sun hours). Over the 30 year projected life of the system, the solar modules will harvest over 671,673.00 kWh of energy from the sun.

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CO2 Savings:

It is our understanding that BC Hydro generates the majority of Haida Gwaii's power supply by way of diesel generators. Diesel generators emit approximately 788 grams of CO2 per kWh of production. This equates to a CO2 savings of approximately 17,642.63 Kg per year (22,389.12 kW/year x 788 g/kWh – diesel generator). Assuming that the generation mix of BC Hydro does not change, the system will offset over 529,278.80 Kg of CO2 over the next 30 years.

If you have any additional questions or commits please feel free to contact me at any time.

Kind Regards,

Scott Fleenor, B.comm., C.E.M.
Principal
Terratek Energy Solutions Inc.
www.terratek.ca|1.877.335.1415