CONFIDENTIALITY AGREEMENT

This Confidentiality Agreement (the "Agreement") is made as of the 1st day of August, 2018

BY AND BETWEEN

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, as represented by the Ministry of Energy, Mines and Petroleum Resources (the "Province")

AND

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

(together, the "Disclosing Parties"; individually, the "Disclosing Party")

AND

MARVIN SHAFFER & ASSOCIATES LTD.

(the "Receiving Party")

(the foregoing may be referred to individually as "Party" or collectively as the "Parties")

A. RECITALS:

WHEREAS the Province wishes to be adequately prepared to develop a Northern Strategy in British Columbia to guide the development of additional natural gas supply, transportation and value-added processing;

WHEREAS to inform the realization of the aforementioned outcome, the Province has selected the Recipient to conduct a preliminary investigation of the potential for the development of indigenous power authorities to provide electricity and/or related services to upstream, midstream and downstream natural gas firms in northern British Columbia (the "Project"); and

WHEREAS a Disclosing Party may during the term hereof provide, or may have prior to the execution hereof provided, to the Receiving Party, for the purposes of the Project, in confidence, in any form whatsoever, certain non-public, confidential or proprietary information, which the Disclosing Party has indicated is confidential or which a reasonable person would consider the Disclosing Party would view as confidential, including, without limitation, information relating to aspects of the Disclosing Party's business, operations and financial condition and prospects, pricing, commercial strategies, financial, technical, scientific, economic, planning and marketing information, minutes, notes, drafts, commentaries, opinions, recommendations, positions, and proposed regulations, as well as non-public, confidential or proprietary information belonging to a third party (all of such information, subject to paragraph 6 hereof, the "Information").

B. AGREEMENT:

NOW THEREFORE, IN CONSIDERATION of the Parties entering into this Agreement and the mutual promises and agreements contained in this Agreement, the Parties agree that:

- 1. <u>Confidentiality Obligation.</u> Regardless of whether the Project is completed or not, during the period for which the obligations set forth in this Agreement are in effect, the Receiving Party will keep such Information confidential, subject to the terms of this Agreement.
- 2. <u>Duty To Safeguard.</u> The Receiving Party will safeguard the Information against disclosure by employing the same means to protect the Information as it does to protect its own non-public, confidential or proprietary information; provided, however, that if a Disclosing Party requests that the Receiving Party employ specific reasonable measures against disclosure (e.g., restrictions on copying), the Receiving Party will, by accepting the Information, be bound by such measures, provided that the Disclosing Party makes such request in writing on or before the date the Information is provided and identifies with specificity the Information that is to be subject to such specific reasonable measures.
- 3. Restricted Use. The Receiving Party shall not itself, or permit its employees or agents at any time to, use any of the Information in any way detrimental to the Disclosing Party, reveal, report, publish, transfer or otherwise disclose to any person, corporation or other entity any of the Information without the prior written consent of the Disclosing Party, except the Receiving Party may distribute the Information, subject to any specific reasonable measures directed against disclosure in the manner set out in paragraph 2 hereof, to responsible officers, employees and consultants of it or any affiliates of the Receiving Party who have a need to know such Information for purposes of working on the Project, provided that any disclosure by such officer, employees or consultants of the Receiving Party or of an affiliate of the Receiving Party in violation of the provisions of this Agreement shall be a breach of this Agreement by the Receiving Party.
- 4. Return of Information. Immediately upon request by a Disclosing Party, the Receiving Party shall promptly return Information disclosed by that Disclosing Party in documentary form and all copies or other reproductions thereof. Information that has been included in analyses, studies, compilations prepared by or for the Receiving Party will be held by the Receiving Party subject to the terms of this Agreement or destroyed at the Receiving Party's option. The Receiving Party agrees to represent in writing to the Disclosing Party that it has complied with the provisions of this paragraph. Notwithstanding the foregoing provisions of this paragraph, the Receiving Party may retain copies of any Information in its routine back up of electronic data processing systems. The Receiving Party's obligations under this Agreement shall, however, survive any such return or destruction of the Information.
- 5. <u>Legal Compulsion To Disclose.</u> Notwithstanding any other provision hereof, if the Receiving Party becomes compelled by law or by the order of any judicial, administrative or similar body with enforcement powers to disclose any of the Information, the Receiving Party shall give the Disclosing Party prompt prior written notice of such requirement so that the Disclosing Party may seek a protective order or other appropriate remedy and/or waive compliance with the terms of this Agreement. If such protective order or other remedy is not sought or obtained, or the Disclosing Party waives compliance with the terms hereof, the Receiving Party legally compelled to disclose the Information agrees to provide only that limited portion of the Information that is legally required and to exercise reasonable efforts to obtain assurance that confidential treatment will be accorded such Information.

- 6. **Exclusions.** The term "Information" does not include any information which (i) at the time of disclosure (or thereafter, but then only after such subsequent availability) is generally available to the public (other than as a result of a disclosure by any Party in violation of this Agreement), (ii) was available to the Receiving Party on a non-confidential basis from a source other than the Disclosing Party, provided that such source is not and was not known by the Receiving Party to be bound by a confidentiality agreement that was applicable to the information, or (iii) has been independently acquired or developed by the Receiving Party without violating any of its obligations under this Agreement.
- 7. **No Waiver of Privilege.** The Recipient acknowledges that, in providing Information to the Receiving Party, it is not the intention of the Disclosing Party to waive solicitor-client privilege or to waive, defeat or negate any privilege or confidence, including Parliamentary privilege and Cabinet confidentiality, or any other protection provided by law, that applies to the Confidential Information and to the discussions relating to it.
- 8. **Governing Law.** This Agreement shall be interpreted, governed and construed under the laws of the Province of British Columbia and the laws of Canada applicable therein as if it were executed and to be performed wholly within the Province of British Columbia.
- 9. <u>Prevention.</u> If the Receiving Party discloses any Information in contravention of the provisions of this Agreement, the Receiving Party shall immediately take reasonable steps to prevent further publication, dissemination or use, including legal action to prohibit any third party from using or dealing with the Information that has been disclosed to it.
- 10. **Equitable Relief.** The Parties agree that in the event of a breach of this Agreement, or to prevent a breach or contemplated breach, the Disclosing Party shall be entitled to equitable relief, including injunction and specific performance, in addition to all other remedies available at law or equity.
- 11. <u>Entire Agreement.</u> This Agreement contains the final and mutual understandings among the Parties relating to confidentiality, and supersedes and replaces all prior discussions, understandings and agreements between them as to confidentiality.
- 12. <u>Amendments.</u> Any amendment or modification of this Agreement shall be in writing and signed by all Parties.
- 13. **Assignment.** This Agreement may not be assigned by either Party without the prior written consent of the other Parties, which consent is not to be unreasonably withheld.
- 14. **Enurement.** This Agreement shall be binding upon and enure to the benefit of the Parties and their respective successors and permitted assigns.
- 15. **Execution.** Execution by any Party of a facsimile or electronic copy of this Agreement will be deemed to constitute effective execution of this Agreement by that Party.
- 16. <u>Survival.</u> The obligations of confidentiality, non-disclosure and restricted use contained in this Agreement will automatically terminate two years after the date of this Agreement, except as otherwise agreed in writing by the Parties.

17. <u>Execution In Counterpart.</u> This Agreement may be executed in counterparts, and each counterpart shall for all purposes be an original, and all such counterparts shall together constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties have entered into this Agreement effective as of the date first above written on the respective dates set forth below.

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, as represented by the Ministry of Energy, Mines and Petroleum Resources
By:
Title:
Date:
BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
By:
Title:
Date:
MARVIN SHAFFER & ASSOCIATES LTD.
By:
Title:
Date:

17. <u>Execution In Counterpart.</u> This Agreement may be executed in counterparts, and each counterpart shall for all purposes be an original, and all such counterparts shall together constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties have entered into this Agreement effective as of the date first above written on the respective dates set forth below.

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, as represented by the Ministry of Energy, Mines and Petroleum Resources

By:

Title:

ASM

Date: Asgust 2, 2018

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

ву:

Title: Server Manager 1 Bus

Date: August 2 2018

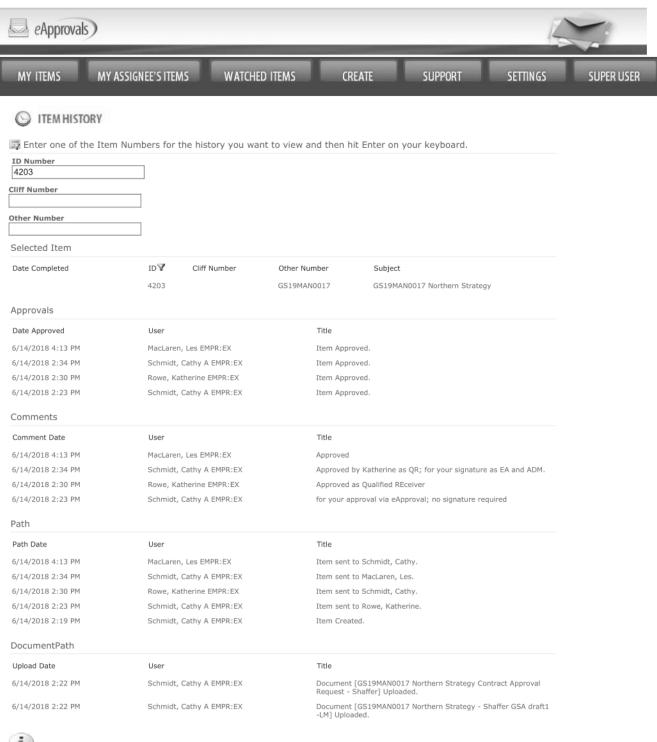
MARVIN SHAFFER & ASSOCIATES LTD.

Ву:

Title:

Date:

Page 1 of 1 eApprovals



For support, email iCollaborate@gov.bc.ca

Morrison, Lauren EMPR:EX

From: Roland, Michelle CSNR:EX

Sent: June 15, 2018 11:33 AM

To: Schmidt, Cathy A EMPR:EX

Cc: Parmar, Ranbir S CSNR:EX

Subject: RE: GS19MAN0017 Northern Strategy for Approval

Hi Cathy,

Approved as A/CFO

Thanks, Michelle 778-698-3752

From: Schmidt, Cathy A EMPR:EX Sent: Friday, June 15, 2018 9:05 AM To: Roland, Michelle CSNR:EX Cc: Parmar, Ranbir S CSNR:EX

Subject: GS19MAN0017 Northern Strategy for Approval

Importance: High

Good morning Michelle,

I'm Les' new Executive Coordinator.

Attached eApproval printable history (4203) plus GS19MAN0017 Northern Strategy GSA and Contract Approval Request form for your approval. We are hoping to get sign off today if at all possible.

Please let me know if you need anything further.

Cathy Schmidt
Executive Coordinator
Electricity and Alternative Energy Division
Ministry of Energy, Mines and Petroleum Resources
PO Box 9314 Stn Prov Govt
4th Floor, 1810 Blanshard Street
Victoria, BC V8W 9N1
250-952-0673



Natural Resource Sector

CONTRACT APPROVAL REQUEST

			MINISTRY IDENT	IFICAT	ION		
Ministry:	☐ Aboriginal Relations & Reconciliatio ☐ Agriculture ☐ Energy and Mines				 Environment Forests, Lands, & Natural Resource Operations Natural Gas Development (and Minister Responsible for Housing) 		
Branch / Division:	Electri	icity and Altern	ative Energy Division				
Region / City:	Victori	ia					
						Primary Contact for This Request (select one)	
Expense Authority:	Les Ma	cLaren			Phone: 778-698-7183		
Qualified Receiver:	Katherir	ne Rowe			Phone: 778-698-7190		
Other contact - if applicable:					Phone:		
			REQUEST DI	ETAILS			
Contract Number (if kn	own):	GS19MAN0	017				
Project Title:		Northern Strategy					
Ministry Cost Estimate	e :	\$12,500					
Cost Recoverable:		No Yes - Recovery Source (e.g. name of Federal department, private organization, etc. / program or initiative name): Amount of Recovery \$ Recovery Percentage: %					
Funding Source Base \$ Other \$ Specify:							
Describe the Location, Services/Work, Purpose: The Contractor will conduct a preliminary investigation of the potential for the developm indigenous power authorities to provide electricity and/or related services to upstream, is stream and downstream natural gas firms in northern B.C. Two scenarios will be part of investigation: a threshold level gas development scenario that assumes sufficient new downstream gas processing activity in the Prince Rupert area that would require the construction of a new pipeline from northeast BC; and an expanded gas development scenario that would require the construction of additional or larger pipeline capacity.			es to upstream, mid- ios will be part of the s sufficient new d require the s development				
Why Can't Existing Staff Fill the Need? Existing staff do not have the level of expertise required for this role.							
			The Province will be hampered in developing a Northern Strategy in British Columbia to guide he development of additional natural gas supply, transportation and value-added processing.				
If Direct Award:	Associations Justification	Ltd.	rationale t	Resources: Legal Entities: Mar	vin Shaffer and		

	Rationale for selecting the contractor:				
	The Contractor provides considerable, proven expertise regarding economic analysis and knowledge of BC energy structures needed for the investigation of potential indigenous power authorities in Northern B.C.				
Include Option to Renew:	☐ Yes	⊠ No			
Anticipated Term of Agreement:	From: June 19, 2018	To: July 31, 2018			

						Y	T	1
	Core Policy Compliance Checklist Contract planning needs to be appropriate to the value of and complexity / risks associated with the services or work. For						N	n/
key Core polic	ing needs to be appropriate y and best practices items. I anual, and the Financial Sen	However, this is not a	complete list. Refere					
	1. The Goods and Services Catalogue has been searched and a Corporate Supply Arrangement (CSA) is not available for the required services / works (CPPM 6.3.2.c.2).							
2. If request the contri	If request is for a service contract over \$100,000, has a Cost Benefit Justification (CBJ) been prepared and placed on the contract file in the event review of the CBJ is needed (CPPM 6.3.1.5)?							
3. (3 month)	ntract is being direct awarder s from previous expiry date), pined total of the contracts. by the appropriate expense	the new contract must	t be approved by an explies to the requested of	pense authority wi	th authority for			
	act will not establish an emp					\boxtimes		
Best Practic	es Checklist							
₄ Has a Ri	sk Assessment been done eents Matrix (NRS 1289).	to determine appropri	iate insurance requirer	nents? Refer to	the Insurance			
Contract Type	Deration Local Miles Services If unsure of CSNR Contract Custom agreen vetted through		of agreement, co	Major Works lower values) Other contract the Contract the Contract of an approve	ed contract templ	mailb	- spe	ecify at
		ACCOUNT & PR	OCUREMENT CO	DDING				
Account Codin	ng (STOBS: See Master STO	3 List & Description / Exp	ense Tab if needed)			-		
Client #	Response Centre #	Service Line #	STOB#	Project #	AMO	TNUC		
s.21	27714	26314	26314 6001		\$11,000		7 6	
	27714	26314	26314 6002 2		\$1,500			
See Code De	scriptions at end of form	for full description	ns.					
Procurement I	Process Code (where direct	t award applies, includ	e the necessary details	in the justification	section of this for	rm)		
☐ 100 OPEN	COMPETITIVE PROCESS	Etc. Define				RD - SERVICES AND ON UNDER \$25,000 or cost effective to		
	FAWARD - PUBLIC SECTOR IIZATION	Define how	204 DIRECT AWARD – CONFIDENTIALITY. Define how open bidding harms the ministry's confidentiality.			RS. ND SE use of list).	RVICE	
using the "I of the "I form, cl proven	FAWARD – SOLE SOURCE. If its code, in the Justification area of Direct Award" section of this early define how you have strictly that only one contractor is and/or available.	(No substa	☐ 205 DIRECT AWARD – NOTICE OF INTENT (No substantiated objections) ☐ 400 SELECTED VENI QUALIFIED LIST a competitive productions			R FRO		
_	FAWARD - EMERGENCY	ANOTHER	☐ 206 DIRECT AWARD – PERMITTED UNDER ANOTHER CORPORATE POLICY OR LEGISLATION A01 COMPETITION AN ON A PRE-QUALIF					
☐ 500 Purcha	se from a Corporate Supply	Arrangement (CSA)						

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Ø	200					600	Excluded – Product Compatibility / Exclusive Rights	
	300	Purchase of an Exempted Com	modity	/ Service		700	Excluded – Procurement of Prototype	
	400	Excluded - Emergency				800	Excluded – Regional / Economic Development	
_	Т-	ategory (re: STOBS 60, 61, and	1					
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_				API	PROV	AL		
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inclu	uded in	the e-mail string.						
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Sig	nature			Date				
		Kathadaa Bassa						
Pnr	nt Name:	Katherine Rowe				-		
		PROGRAM MANAGER / EX	PENSE	AUTHORIT	Y - req	uired		
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Prin	nt Name:	Les MacLaren						
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Prin	nt Name:	Les MacLaren						
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Sig	nature	, ,		Date /	4CF	00	2 de	
Prir	nt Name:	Ranbir Parmar, CFO Corporate Service	es Natura	al Resource S		7	thre 15/18	

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GENERAL SERVICE AGREEMENT



For Administrative Purposes Only				
Ministry Contract No.: GSMAN0017 Requisition No.:	Financial Information			
Solicitation No.(if applicable):	Client:	s.21		
Commodity Code:	Responsibility Centre:	27714		
	Service Line:	26314		
Contractor Information	STOB:	6001/6002		
	Project:	2700000		
Supplier Name: Marvin Shaffer & Associates Ltd.				
Supplier No.:	Template version: July 4, 2016			
<i>Telephone No.:</i> <u>(604) 787-1620</u>				
E-mail Address: <u>marvshaffer@gmail.com</u>				
Website:				

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SCHEDULE A - SERVICES

Part 1 - Term

Part 2 - Services

Part 3 - Related Documentation

Part 4 - Key Personnel

SCHEDULE B – FEES AND EXPENSES

Part 1 - Maximum Amount Payable

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Part 4 - Statements of Account

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SCHEDULE C - APPROVED SUBCONTRACTOR(S)

SCHEDULE D - INSURANCE

SCHEDULE E - PRIVACY PROTECTION SCHEDULE

SCHEDULE F - ADDITIONAL TERMS

SCHEDULE G - SECURITY SCHEDULE

THIS AGREEMENT is dated for reference the 19th day of June, 2018.

BETWEEN:

MARVIN SHAFFER and Associates Ltd. (the "Contractor") with the following specified address: 1675 Larch Street,
Vancouver, BC V6K 3N7

AND:

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, as represented by **The Ministry of Energy, Mines and Petroleum Resources** (the "Province") with the following specified address and fax number:

4th floor – 1810 Blanshard Street

Winteria BC VOW ONE

Victoria BC V8W 9N1 Fax: 250-356-2965

The Province wishes to retain the Contractor to provide the services specified in Schedule A and, in consideration for the remuneration set out in Schedule B, the Contractor has agreed to provide those services, on the terms and conditions set out in this Agreement.

As a result, the Province and the Contractor agree as follows:

1 DEFINITIONS

General

- 1.1 In this Agreement, unless the context otherwise requires:
 - (a) "Business Day" means a day, other than a Saturday or Sunday, on which Provincial government offices are open for normal business in British Columbia;
 - (b) "Incorporated Material" means any material in existence prior to the start of the Term or developed independently of this Agreement, and that is incorporated or embedded in the Produced Material by the Contractor or a Subcontractor;
 - (c) "Material" means the Produced Material and the Received Material;
 - (d) "Produced Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are produced or provided by the Contractor or a Subcontractor and includes the Incorporated Material;
 - (e) "Received Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are received by the Contractor or a Subcontractor from the Province or any other person;
 - (f) "Services" means the services described in Part 2 of Schedule A;
 - (g) "Subcontractor" means a person described in paragraph (a) or (b) of section 13.4; and
 - (h) "Term" means the term of the Agreement described in Part 1 of Schedule A subject to that term ending earlier in accordance with this Agreement.

Meaning of "record"

1.2 The definition of "record" in the *Interpretation Act* is incorporated into this Agreement and "records" will bear a corresponding meaning.

2 SERVICES

Provision of services

2.1 The Contractor must provide the Services in accordance with this Agreement.

Term

2.2 Regardless of the date of execution or delivery of this Agreement, the Contractor must provide the Services during the Term.

Supply of various items

2.3 Unless the parties otherwise agree in writing, the Contractor must supply and pay for all labour, materials, equipment, tools, facilities, approvals and licenses necessary or advisable to perform the Contractor's obligations under this Agreement, including the license under section 6.4.

Standard of care

2.4 Unless otherwise specified in this Agreement, the Contractor must perform the Services to a standard of care, skill and diligence maintained by persons providing, on a commercial basis, services similar to the Services.

Standards in relation to persons performing Services

2.5 The Contractor must ensure that all persons employed or retained to perform the Services are qualified and competent to perform them and are properly trained, instructed and supervised.

Instructions by Province

2.6 The Province may from time to time give the Contractor reasonable instructions (in writing or otherwise) as to the performance of the Services. The Contractor must comply with those instructions but, unless otherwise specified in this Agreement, the Contractor may determine the manner in which the instructions are carried out.

Confirmation of non-written instructions

2.7 If the Province provides an instruction under section 2.6 other than in writing, the Contractor may request that the instruction be confirmed by the Province in writing, which request the Province must comply with as soon as it is reasonably practicable to do so.

Effectiveness of non-written instructions

2.8 Requesting written confirmation of an instruction under section 2.7 does not relieve the Contractor from complying with the instruction at the time the instruction was given.

Applicable laws

2.9 In the performance of the Contractor's obligations under this Agreement, the Contractor must comply with all applicable laws.

3 PAYMENT

Fees and expenses

- 3.1 If the Contractor complies with this Agreement, then the Province must pay to the Contractor at the times and on the conditions set out in Schedule B:
 - (a) the fees described in that Schedule;
 - (b) the expenses, if any, described in that Schedule if they are supported, where applicable, by proper receipts and, in the Province's opinion, are necessarily incurred by the Contractor in providing the Services; and
 - (c) any applicable taxes payable by the Province under law or agreement with the relevant taxation authorities on the fees and expenses described in paragraphs (a) and (b).

The Province is not obliged to pay to the Contractor more than the "Maximum Amount" specified in Schedule B on account of fees and expenses.

Statements of accounts

3.2 In order to obtain payment of any fees and expenses under this Agreement, the Contractor must submit to the Province a written statement of account in a form satisfactory to the Province upon completion of the Services or at other times described in Schedule B.

Withholding of amounts

3.3 Without limiting section 9.1, the Province may withhold from any payment due to the Contractor an amount sufficient to indemnify, in whole or in part, the Province and its employees and agents against any liens or other third-party claims that have arisen or could arise in connection with the provision of the Services. An amount withheld under this section must be promptly paid by the Province to the Contractor upon the basis for withholding the amount having been fully resolved to the satisfaction of the Province.

Appropriation

3.4 The Province's obligation to pay money to the Contractor is subject to the *Financial Administration Act*, which makes that obligation subject to an appropriation being available in the fiscal year of the Province during which payment becomes due.

Currency

3.5 Unless otherwise specified in this Agreement, all references to money are to Canadian dollars.

Non-resident income tax

3.6 If the Contractor is not a resident in Canada, the Contractor acknowledges that the Province may be required by law to withhold income tax from the fees described in Schedule B and then to remit that tax to the Receiver General of Canada on the Contractor's behalf.

Prohibition against committing money

3.7 Without limiting section 13.10(a), the Contractor must not in relation to performing the Contractor's obligations under this Agreement commit or purport to commit the Province to pay any money except as may be expressly provided for in this Agreement.

Refunds of taxes

- 3.8 The Contractor must:
 - (a) apply for, and use reasonable efforts to obtain, any available refund, credit, rebate or remission of federal, provincial or other tax or duty imposed on the Contractor as a result of this Agreement that the Province has paid or reimbursed to the Contractor or agreed to pay or reimburse to the Contractor under this Agreement; and
 - (b) immediately on receiving, or being credited with, any amount applied for under paragraph (a), remit that amount to the Province.

4 REPRESENTATIONS AND WARRANTIES

- 4.1 As at the date this Agreement is executed and delivered by, or on behalf of, the parties, the Contractor represents and warrants to the Province as follows:
 - (a) except to the extent the Contractor has previously disclosed otherwise in writing to the Province,

- all information, statements, documents and reports furnished or submitted by the Contractor to the Province in connection with this Agreement (including as part of any competitive process resulting in this Agreement being entered into) are in all material respects true and correct,
- (ii) the Contractor has sufficient trained staff, facilities, materials, appropriate equipment and approved subcontractual or other agreements in place and available to enable the Contractor to fully perform the Services and to grant any licenses under this Agreement, and
- (iii) the Contractor holds all permits, licenses, approvals and statutory authorities issued by any government or government agency that are necessary for the performance of the Contractor's obligations under this Agreement; and
- (b) if the Contractor is not an individual,
 - (i) the Contractor has the power and capacity to enter into this Agreement and to observe, perform and comply with the terms of this Agreement and all necessary corporate or other proceedings have been taken and done to authorize the execution and delivery of this Agreement by, or on behalf of, the Contractor, and
 - (ii) this Agreement has been legally and properly executed by, or on behalf of, the Contractor and is legally binding upon and enforceable against the Contractor in accordance with its terms except as enforcement may be limited by bankruptcy, insolvency or other laws affecting the rights of creditors generally and except that equitable remedies may be granted only in the discretion of a court of competent jurisdiction.

5 PRIVACY, SECURITY AND CONFIDENTIALITY

Privacy

5.1 The Contractor must comply with the Privacy Protection Schedule attached as Schedule E.

Security

- 5.2 The Contractor must:
 - (a) make reasonable security arrangements to protect the Material from unauthorized access, collection, use, disclosure, alteration or disposal; and
 - (b) comply with the Security Schedule attached as Schedule G.

Confidentiality

- 5.3 The Contractor must treat as confidential all information in the Material and all other information accessed or obtained by the Contractor or a Subcontractor (whether verbally, electronically or otherwise) as a result of this Agreement, and not permit its disclosure or use without the Province's prior written consent except:
 - (a) as required to perform the Contractor's obligations under this Agreement or to comply with applicable laws;
 - (b) if it is information that is generally known to the public other than as result of a breach of this Agreement; or
 - (c) if it is information in any Incorporated Material.

Public announcements

5.4 Any public announcement relating to this Agreement will be arranged by the Province and, if such consultation is reasonably practicable, after consultation with the Contractor.

Restrictions on promotion

5.5 The Contractor must not, without the prior written approval of the Province, refer for promotional purposes to the Province being a customer of the Contractor or the Province having entered into this Agreement.

6 MATERIAL AND INTELLECTUAL PROPERTY

Access to Material

6.1 If the Contractor receives a request for access to any of the Material from a person other than the Province, and this Agreement does not require or authorize the Contractor to provide that access, the Contractor must promptly advise the person to make the request to the Province.

Ownership and delivery of Material

6.2 The Province exclusively owns all property rights in the Material which are not intellectual property rights. The Contractor must deliver any Material to the Province immediately upon the Province's request.

Matters respecting intellectual property

- 6.3 The Province exclusively owns all intellectual property rights, including copyright, in:
 - (a) Received Material that the Contractor receives from the Province; and
 - (b) Produced Material, other than any Incorporated Material.

Upon the Province's request, the Contractor must deliver to the Province documents satisfactory to the Province that irrevocably waive in the Province's favour any moral rights which the Contractor (or employees of the Contractor) or a Subcontractor (or employees of a Subcontractor) may have in the Produced Material and that confirm the vesting in the Province of the copyright in the Produced Material, other than any Incorporated Material.

Rights in relation to Incorporated Material

- 6.4 Upon any Incorporated Material being embedded or incorporated in the Produced Material and to the extent that it remains so embedded or incorporated, the Contractor grants to the Province:
 - (a) a non-exclusive, perpetual, irrevocable, royalty-free, worldwide license to exercise, in respect of that Incorporated Material, the rights set out in the *Copyright Act* (Canada), including the right to use, reproduce, modify, publish and distribute that Incorporated Material; and
 - (b) the right to sublicense or assign to third-parties any or all of the rights granted to the Province under section 6.4(a).

7 RECORDS AND REPORTS

Work reporting

7.1 Upon the Province's request, the Contractor must fully inform the Province of all work done by the Contractor or a Subcontractor in connection with providing the Services.

Time and expense records

7.2 If Schedule B provides for the Contractor to be paid fees at a daily or hourly rate or for the Contractor to be paid or reimbursed for expenses, the Contractor must maintain time records and books of account, invoices, receipts and vouchers of expenses in support of those payments, in form and content satisfactory to the Province. Unless otherwise specified in this Agreement, the Contractor must retain such documents for a period of not less than seven years after this Agreement ends.

8 AUDIT

8.1 In addition to any other rights of inspection the Province may have under statute or otherwise, the Province may at any reasonable time and on reasonable notice to the Contractor, enter on the Contractor's premises to inspect and, at the Province's discretion, copy any of the Material and the Contractor must permit, and provide reasonable assistance to, the exercise by the Province of the Province's rights under this section.

9 INDEMNITY AND INSURANCE

Indemnity

- 9.1 The Contractor must indemnify and save harmless the Province and the Province's employees and agents from any loss, claim (including any claim of infringement of third-party intellectual property rights), damage award, action, cause of action, cost or expense that the Province or any of the Province's employees or agents may sustain, incur, suffer or be put to at any time, either before or after this Agreement ends, (each a "Loss") to the extent the Loss is directly or indirectly caused or contributed to by:
 - (a) any act or omission by the Contractor or by any of the Contractor's agents, employees, officers, directors or Subcontractors in connection with this Agreement; or
 - (b) any representation or warranty of the Contractor being or becoming untrue or incorrect.

Insurance

9.2 The Contractor must comply with the Insurance Schedule attached as Schedule D.

Workers compensation

9.3 Without limiting the generality of section 2.9, the Contractor must comply with, and must ensure that any Subcontractors comply with, all applicable occupational health and safety laws in relation to the performance of the Contractor's obligations under this Agreement, including the *Workers Compensation Act* in British Columbia or similar laws in other jurisdictions.

10 FORCE MAJEURE

Definitions relating to force majeure

- 10.1 In this section and sections 10.2 and 10.3:
 - (a) "Event of Force Majeure" means one of the following events:
 - (i) a natural disaster, fire, flood, storm, epidemic or power failure,
 - (ii) a war (declared and undeclared), insurrection or act of terrorism or piracy,
 - (iii) a strike (including illegal work stoppage or slowdown) or lockout, or
 - (iv) a freight embargo

if the event prevents a party from performing the party's obligations in accordance with this Agreement and is beyond the reasonable control of that party; and

(b) "Affected Party" means a party prevented from performing the party's obligations in accordance with this Agreement by an Event of Force Majeure.

Consequence of Event of Force Majeure

10.2 An Affected Party is not liable to the other party for any failure or delay in the performance of the Affected Party's obligations under this Agreement resulting from an Event of Force Majeure and any time periods for the performance of such obligations are automatically extended for the duration of the Event of Force Majeure provided that the Affected Party complies with the requirements of section 10.3.

Duties of Affected Party

10.3 An Affected Party must promptly notify the other party in writing upon the occurrence of the Event of Force Majeure and make all reasonable efforts to prevent, control or limit the effect of the Event of Force Majeure so as to resume compliance with the Affected Party's obligations under this Agreement as soon as possible.

11 DEFAULT AND TERMINATION

Definitions relating to default and termination

- 11.1 In this section and sections 11.2 to 11.4:
 - (a) "Event of Default" means any of the following:
 - (i) an Insolvency Event,
 - the Contractor fails to perform any of the Contractor's obligations under this Agreement, or
 - (iii) any representation or warranty made by the Contractor in this Agreement is untrue or incorrect; and
 - (b) "Insolvency Event" means any of the following:
 - (i) an order is made, a resolution is passed or a petition is filed, for the Contractor's liquidation or winding up,
 - (ii) the Contractor commits an act of bankruptcy, makes an assignment for the benefit of the Contractor's creditors or otherwise acknowledges the Contractor's insolvency,
 - (iii) a bankruptcy petition is filed or presented against the Contractor or a proposal under the *Bankruptcy and Insolvency Act* (Canada) is made by the Contractor,
 - (iv) a compromise or arrangement is proposed in respect of the Contractor under the *Companies' Creditors Arrangement Act* (Canada),
 - (v) a receiver or receiver-manager is appointed for any of the Contractor's property, or
 - (vi) the Contractor ceases, in the Province's reasonable opinion, to carry on business as a going concern.

Province's options on default

- 11.2 On the happening of an Event of Default, or at any time thereafter, the Province may, at its option, elect to do any one or more of the following:
 - (a) by written notice to the Contractor, require that the Event of Default be remedied within a time period specified in the notice;
 - (b) pursue any remedy or take any other action available to it at law or in equity; or
 - (c) by written notice to the Contractor, terminate this Agreement with immediate effect or on a future date specified in the notice, subject to the expiration of any time period specified under section 11.2(a).

11.3 No failure or delay on the part of the Province to exercise its rights in relation to an Event of Default will constitute a waiver by the Province of such rights.

Province's right to terminate other than for default

11.4 In addition to the Province's right to terminate this Agreement under section 11.2(c) on the happening of an Event of Default, the Province may terminate this Agreement for any reason by giving at least 10 days' written notice of termination to the Contractor.

Payment consequences of termination

- 11.5 Unless Schedule B otherwise provides, if the Province terminates this Agreement under section 11.4:
 - (a) the Province must, within 30 days of such termination, pay to the Contractor any unpaid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that was completed to the Province's satisfaction before termination of this Agreement; and
 - (b) the Contractor must, within 30 days of such termination, repay to the Province any paid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that the Province has notified the Contractor in writing was not completed to the Province's satisfaction before termination of this Agreement.

Discharge of liability

11.6 The payment by the Province of the amount described in section 11.5(a) discharges the Province from all liability to make payments to the Contractor under this Agreement.

Notice in relation to Events of Default

11.7 If the Contractor becomes aware that an Event of Default has occurred or anticipates that an Event of Default is likely to occur, the Contractor must promptly notify the Province of the particulars of the Event of Default or anticipated Event of Default. A notice under this section as to the occurrence of an Event of Default must also specify the steps the Contractor proposes to take to address, or prevent recurrence of, the Event of Default. A notice under this section as to an anticipated Event of Default must specify the steps the Contractor proposes to take to prevent the occurrence of the anticipated Event of Default.

12 DISPUTE RESOLUTION

Dispute resolution process

- 12.1 In the event of any dispute between the parties arising out of or in connection with this Agreement, the following dispute resolution process will apply unless the parties otherwise agree in writing:
 - (a) the parties must initially attempt to resolve the dispute through collaborative negotiation;
 - (b) if the dispute is not resolved through collaborative negotiation within 15 Business Days of the dispute arising, the parties must then attempt to resolve the dispute through mediation under the rules of the Mediate BC Society; and
 - (c) if the dispute is not resolved through mediation within 30 Business Days of the commencement of mediation, the dispute must be referred to and finally resolved by arbitration under the *Arbitration Act*.

Location of arbitration or mediation

12.2 Unless the parties otherwise agree in writing, an arbitration or mediation under section 12.1 will be held in Victoria, British Columbia.

Costs of mediation or arbitration

12.3 Unless the parties otherwise agree in writing or, in the case of an arbitration, the arbitrator otherwise orders, the parties must share equally the costs of a mediation or arbitration under section 12.1 other than those costs relating to the production of expert evidence or representation by counsel.

13 MISCELLANEOUS

Delivery of notices

- 13.1 Any notice contemplated by this Agreement, to be effective, must be in writing and delivered as follows:
 - (a) by fax to the addressee's fax number specified on the first page of this Agreement, in which case it will be deemed to be received on the day of transmittal unless transmitted after the normal business hours of the addressee or on a day that is not a Business Day, in which cases it will be deemed to be received on the next following Business Day;
 - (b) by hand to the addressee's address specified on the first page of this Agreement, in which case it will be deemed to be received on the day of its delivery; or
 - (c) by prepaid post to the addressee's address specified on the first page of this Agreement, in which case if mailed during any period when normal postal services prevail, it will be deemed to be received on the fifth Business Day after its mailing.

Change of address or fax number

13.2 Either party may from time to time give notice to the other party of a substitute address or fax number, which from the date such notice is given will supersede for purposes of section 13.1 any previous address or fax number specified for the party giving the notice.

Assignment

13.3 The Contractor must not assign any of the Contractor's rights or obligations under this Agreement without the Province's prior written consent. Upon providing written notice to the Contractor, the Province may assign to any person any of the Province's rights under this Agreement and may assign to any "government corporation", as defined in the *Financial Administration Act*, any of the Province's obligations under this Agreement.

Subcontracting

- 13.4 The Contractor must not subcontract any of the Contractor's obligations under this Agreement to any person without the Province's prior written consent, excepting persons listed in the attached Schedule C. No subcontract, whether consented to or not, relieves the Contractor from any obligations under this Agreement. The Contractor must ensure that:
 - (a) any person retained by the Contractor to perform obligations under this Agreement; and
 - (b) any person retained by a person described in paragraph (a) to perform those obligations fully complies with this Agreement in performing the subcontracted obligations.

Waiver

13.5 A waiver of any term or breach of this Agreement is effective only if it is in writing and signed by, or on behalf of, the waiving party and is not a waiver of any other term or breach.

Modifications

13.6 No modification of this Agreement is effective unless it is in writing and signed by, or on behalf of, the parties.

Entire agreement

13.7 This Agreement (including any modification of it) constitutes the entire agreement between the parties as to performance of the Services.

Survival of certain provisions

13.8 Sections 2.9, 3.1 to 3.4, 3.7, 3.8, 5.1 to 5.5, 6.1 to 6.4, 7.1, 7.2, 8.1, 9.1, 9.2, 9.5, 10.1 to 10.3, 11.2, 11.3, 11.5, 11.6, 12.1 to 12.3, 13.1, 13.2, 13.8, and 13.10, any accrued but unpaid payment obligations, and any other sections of this Agreement (including schedules) which, by their terms or nature, are intended to survive the completion of the Services or termination of this Agreement, will continue in force indefinitely subject to any applicable limitation period prescribed by law, even after this Agreement ends.

Schedules

13.9 The schedules to this Agreement (including any appendices or other documents attached to, or incorporated by reference into, those schedules) are part of this Agreement.

Independent contractor

- 13.10 In relation to the performance of the Contractor's obligations under this Agreement, the Contractor is an independent contractor and not:
 - (a) an employee or partner of the Province; or
 - (b) an agent of the Province except as may be expressly provided for in this Agreement.

The Contractor must not act or purport to act contrary to this section.

Personnel not to be employees of Province

13.11 The Contractor must not do anything that would result in personnel hired or used by the Contractor or a Subcontractor in relation to providing the Services being considered employees of the Province.

Key Personnel

13.12 If one or more individuals are specified as "Key Personnel" of the Contractor in Part 4 of Schedule A, the Contractor must cause those individuals to perform the Services on the Contractor's behalf, unless the Province otherwise approves in writing, which approval must not be unreasonably withheld.

Pertinent information

13.13 The Province must make available to the Contractor all information in the Province's possession which the Province considers pertinent to the performance of the Services.

Conflict of interest

13.14 The Contractor must not provide any services to any person in circumstances which, in the Province's reasonable opinion, could give rise to a conflict of interest between the Contractor's duties to that person and the Contractor's duties to the Province under this Agreement.

Time

13.15 Time is of the essence in this Agreement and, without limitation, will remain of the essence after any modification or extension of this Agreement, whether or not expressly restated in the document effecting the modification or extension.

Conflicts among provisions

- 13.16 Conflicts among provisions of this Agreement will be resolved as follows:
 - (a) a provision in the body of this Agreement will prevail over any conflicting provision in, attached to or incorporated by reference into a schedule, unless that conflicting provision expressly states otherwise; and
 - (b) a provision in a schedule will prevail over any conflicting provision in a document attached to or incorporated by reference into a schedule, unless the schedule expressly states otherwise.

Agreement not permit nor fetter

13.17 This Agreement does not operate as a permit, license, approval or other statutory authority which the Contractor may be required to obtain from the Province or any of its agencies in order to provide the Services. Nothing in this Agreement is to be construed as interfering with, or fettering in any manner, the exercise by the Province or its agencies of any statutory, prerogative, executive or legislative power or duty.

Remainder not affected by invalidity

13.18 If any provision of this Agreement or the application of it to any person or circumstance is invalid or unenforceable to any extent, the remainder of this Agreement and the application of such provision to any other person or circumstance will not be affected or impaired and will be valid and enforceable to the extent permitted by law.

Further assurances

13.19 Each party must perform the acts, execute and deliver the writings, and give the assurances as may be reasonably necessary to give full effect to this Agreement.

Additional terms

13.20 Any additional terms set out in the attached Schedule F apply to this Agreement.

Governing law

13.21 This Agreement is governed by, and is to be interpreted and construed in accordance with, the laws applicable in British Columbia.

14 INTERPRETATION

- 14.1 In this Agreement:
 - (a) "includes" and "including" are not intended to be limiting;
 - unless the context otherwise requires, references to sections by number are to sections of this Agreement;
 - (c) the Contractor and the Province are referred to as "the parties" and each of them as a "party";
 - (d) "attached" means attached to this Agreement when used in relation to a schedule;
 - (e) unless otherwise specified, a reference to a statute by name means the statute of British Columbia by that name, as amended or replaced from time to time;
 - the headings have been inserted for convenience of reference only and are not intended to describe, enlarge or restrict the scope or meaning of this Agreement or any provision of it;
 - (g) "person" includes an individual, partnership, corporation or legal entity of any nature; and
 - unless the context otherwise requires, words expressed in the singular include the plural and vice versa.

15 EXECUTION AND DELIVERY OF AGREEMENT

15.1 This Agreement may be entered into by a separate copy of this Agreement being executed by, or on behalf of, each party and that executed copy being delivered to the other party by a method provided for in section 13.1 or any other method agreed to by the parties.

The parties have executed this Agreement as follows:

SIGNED on the 15 day of	SIGNED on the 15 day of
(or, if not an individual, on its behalf by its authorized signatory or signatories):	Province by its duly authorized representative:
Mseff	6
Signature(s)	Signature
MARVIN SHAFFER	LES MACLAREN
Print Name(s)	Print Name
PRESIDENT,	RAM
Print Title(s)	Print Title
MARIN SHAFFER + ASSOCIA	4Tes

Schedule A - Services

PART 1. TERM:

1. Subject to section 2 of this Part 1, The term of this Agreement commences on June 19, 2018 and ends on July 31, 2018.

PART 2. SERVICES:

The Contractor must conduct a preliminary investigation of the potential for the development of indigenous power authorities to provide electricity and/or related services to upstream, mid-stream and downstream natural gas firms in northern B.C. Two scenarios will be part of the investigation: a threshold level gas development scenario that assumes sufficient new downstream gas processing activity in the Prince Rupert area that would require the construction of a new pipeline from northeast BC; and an expanded gas development scenario that would require the construction of additional or larger pipeline capacity.

Through the delivery of the Services the Province wishes to realize the following outcomes and, without limiting the obligation of the Contractor to comply with other provisions of this Part, the Contractor must use commercially reasonable efforts to achieve them:

1. The Province is adequately prepared to develop a Northern Strategy in British Columbia to guide the development of additional natural gas supply, transportation and value-added processing.

The parties acknowledge that the Contractor does not warrant that these outcomes will be achieved.

PART 3. RELATED DOCUMENTATION:

- The Contractor must perform the Services in accordance with the obligations set out in this Schedule A
 including any engagement letter, Solicitation document excerpt, proposal excerpt or other
 documentation attached as an Appendix to, or specified as being incorporated by reference in, this
 Schedule.
- 2. Attached as an Appendix to this Schedule A: Appendix 1 –Work Plan

PART 4. KEY PERSONNEL:

 The Key Personnel of the Contractor are as follows: Not Applicable

Attachment 1 to Schedule A

Potential for Indigenous Power Authorities in Northern BC

Purpose

This study will provide a preliminary investigation of the potential for the development of indigenous power authorities to provide electricity and/or related services to upstream, mid-stream and downstream natural gas firms in northern B.C.

The study will investigate the potential under two scenarios: a threshold level gas development scenario that assumes sufficient new downstream gas processing activity in the Prince Rupert area that would require the construction of a new pipeline from northeast BC; and an expanded gas development scenario that would require the construction of additional or larger pipeline capacity.

The specific objectives of the study will be to define:

- the nature and magnitude of new gas industry electricity requirements by region under each scenario;
- the government electrification policy assumptions that underlie those requirements;
- the alternative ways in which the new electricity requirements could be provided, including traditional supply arrangements with BC Hydro, contracted supply with indigenous power authorities, or other entities;
- the general pricing and other key terms (e.g., reliability of service) under which power authority supply would be viable and economic;
- the role and requirements of BC Hydro in any indigenous power authority supply of electricity or related requirements, including new transmission to the natural gas sector;
- strengths and weaknesses of the power authority approach;
- recommendations for follow-up more detailed analysis and consultation with affected parties.

Workplan

The study will entail the following work tasks:

- Meet with client to review scope of work; to discuss data sources; and to identify Ministry, BC Hydro, potential First Nation participant and industry contacts.
- Consult with client and Ministry contacts to define:
 - illustrative gas sector components for the threshold and expanded gas development scenarios: specifically, the downstream gas processing facilities in the northwest, pipeline size and routing, and incremental gas production and related activity in the Northeast, and
 - the electrification policy that should be assumed in respect of these facilities and activities
- 3. Consult with BC Hydro and industry contacts to define:
 - the nature and magnitude of the electricity supply, transmission, interconnection and other requirements for the gas facilities and activities by region,
 - the alternative ways in which those requirements could be met, and
 - cost, reliability and other factors governing the feasibility of the alternative sources of supply.
- 4. Consult with First Nation contacts on their interests in the supply of electricity and related services to new gas industry requirements and the alternative models, including the establishment of indigenous power authorities to accomplish that.
- 5. Draft initial report outlining potential opportunities for indigenous power authorities, their strengths and weaknesses and the conditions under which they could be feasible and beneficial to all parties, including the legislative and other legal authorities necessary to establish any such authorities.
- 6. Review draft with client.
- 7. Draft final report including recommendations for follow-up analysis and consultation.

Schedule B – Fees and Expenses

1. MAXIMUM AMOUNT PAYABLE:

<u>Maximum Amount</u>: Despite sections 2 and 3 of this Schedule, \$12,500 is the maximum amount which the Province is obliged to pay to the Contractor for fees and expenses under this Agreement (exclusive of any applicable taxes described in section 3.1(c) of this Agreement).

2. FEES:

Fees: At a rate of \$275 per hour to a maximum of \$11,000 for performing the Services during the Term.

3. EXPENSES:

Expenses: \$1,500 for expenses associated with performing the Services during the Term.

4. STATEMENTS OF ACCOUNT:

<u>Statements of Account</u>: In order to obtain payment of any fees and expenses under this Agreement, the Contractor must deliver to the Province at the end of the Term or, if the Contractor completes the Services before that time, on the completion of the Services, a written statement of account in a form satisfactory to the Province containing:

- (a) the Contractor's legal name and address;
- (b) the date of the statement;
- (c) the Contractor's calculation of all fees claimed under this Agreement, including a declaration that the Services for which the Contractor claims fees have been completed;
- (d) a chronological listing, in reasonable detail, of any expenses claimed by the Contractor with receipts attached, if applicable, and, if the Contractor is claiming reimbursement of any GST or other applicable taxes paid or payable by the Contractor in relation to those expenses, a description of any credits, rebates, refunds or remissions the Contractor is entitled to from the relevant taxation authorities in relation to those taxes;
- (e) the Contractor's calculation of all applicable taxes payable by the Province in relation to the Services;
- (f) a description of this Agreement to which the statement relates;
- (g) a statement number for identification; and
- (h) any other billing information reasonably requested by the Province.

5. PAYMENTS DUE:

Payments Due: Within 30 days of the Province's receipt of the Contractor's written statement of account delivered in accordance with this Schedule, the Province must pay the Contractor the fees and expenses (plus all applicable taxes) claimed in the statement if they are in accordance with this Schedule. Statements of account or contract invoices offering an early payment discount may be paid by the Province as required to obtain the discount.

Schedule C – Approved Subcontractor(s)

Not applicable

Schedule D - Insurance

Not applicable

Schedule E – Privacy Protection Schedule

Definitions

- 1. In this Schedule,
 - (a) "access" means disclosure by the provision of access;
 - (b) "Act" means the Freedom of Information and Protection of Privacy Act;
 - (c) "contact information" means information to enable an individual at a place of business to be contacted and includes the name, position name or title, business telephone number, business address, business email or business fax number of the individual;
 - (d) "personal information" means recorded information about an identifiable individual, other than contact information, collected or created by the Contractor as a result of the Agreement or any previous agreement between the Province and the Contractor dealing with the same subject matter as the Agreement but excluding any such information that, if this Schedule did not apply to it, would not be under the "control of a public body" within the meaning of the Act; and
 - (e) "privacy course" means the Province's online privacy and information sharing training course.

Purpose

- 2. The purpose of this Schedule is to:
 - (a) enable the Province to comply with the Province's statutory obligations under the Act with respect to personal information; and
 - (b) ensure that, as a service provider, the Contractor is aware of and complies with the Contractor's statutory obligations under the Act with respect to personal information.

Collection of personal information

- 3. Unless the Agreement otherwise specifies or the Province otherwise directs in writing, the Contractor may only collect or create personal information that is necessary for the performance of the Contractor's obligations, or the exercise of the Contractor's rights, under the Agreement.
- Unless the Agreement otherwise specifies or the Province otherwise directs in writing, the Contractor must collect personal information directly from the individual the information is about.
- 5. Unless the Agreement otherwise specifies or the Province otherwise directs in writing, the Contractor must tell an individual from whom the Contractor collects personal information:
 - (a) the purpose for collecting it;
 - (b) the legal authority for collecting it; and

(c) the title, business address and business telephone number of the person designated by the Province to answer questions about the Contractor's collection of personal information.

Privacy Training

- 6. The Contractor must ensure that each person who will provide services under the Agreement that involve the collection or creation of personal information will complete, at the Contractor's expense, the privacy course prior to that person providing those services.
- 7. The requirement in section 6 will only apply to persons who have not previously completed the privacy course.

Accuracy of personal information

8. The Contractor must make every reasonable effort to ensure the accuracy and completeness of any personal information to be used by the Contractor or the Province to make a decision that directly affects the individual the information is about.

Requests for access to personal information

9. If the Contractor receives a request for access to personal information from a person other than the Province, the Contractor must promptly advise the person to make the request to the Province unless the Agreement expressly requires the Contractor to provide such access and, if the Province has advised the Contractor of the name or title and contact information of an official of the Province to whom such requests are to be made, the Contractor must also promptly provide that official's name or title and contact information to the person making the request.

Correction of personal information

- 10. Within 5 Business Days of receiving a written direction from the Province to correct or annotate any personal information, the Contractor must annotate or correct the information in accordance with the direction.
- 11. When issuing a written direction under section 10, the Province must advise the Contractor of the date the correction request to which the direction relates was received by the Province in order that the Contractor may comply with section 12.
- 12. Within 5 Business Days of correcting or annotating any personal information under section 10, the Contractor must provide the corrected or annotated information to any party to whom, within one year prior to the date the correction request was made to the Province, the Contractor disclosed the information being corrected or annotated.
- 13. If the Contractor receives a request for correction of personal information from a person other than the Province, the Contractor must promptly advise the person to make the request to the Province and, if the Province has advised the Contractor of the name or title and contact information of an official of the Province to whom such requests are to be made, the Contractor must also promptly provide that official's name or title and contact information to the person making the request.

Protection of personal information

14. The Contractor must protect personal information by making reasonable security arrangements against such risks as unauthorized access, collection, use, disclosure or disposal, including any expressly set out in the Agreement.

Storage and access to personal information

15. Unless the Province otherwise directs in writing, the Contractor must not store personal information outside Canada or permit access to personal information from outside Canada.

Retention of personal information

16. Unless the Agreement otherwise specifies, the Contractor must retain personal information until directed by the Province in writing to dispose of it or deliver it as specified in the direction.

Use of personal information

17. Unless the Province otherwise directs in writing, the Contractor may only use personal information if that use is for the performance of the Contractor's obligations, or the exercise of the Contractor's rights, under the Agreement.

Disclosure of personal information

- 18. Unless the Province otherwise directs in writing, the Contractor may only disclose personal information inside Canada to any person other than the Province if the disclosure is for the performance of the Contractor's obligations, or the exercise of the Contractor's rights, under the Agreement.
- 19. Unless the Agreement otherwise specifies or the Province otherwise directs in writing, the Contractor must not disclose personal information outside Canada.

Notice of foreign demands for disclosure

- 20. In addition to any obligation the Contractor may have to provide the notification contemplated by section 30.2 of the Act, if in relation to personal information in the custody or under the control of the Contractor, the Contractor:
 - (a) receives a foreign demand for disclosure;
 - (b) receives a request to disclose, produce or provide access that the Contractor knows or has reason to suspect is for the purpose of responding to a foreign demand for disclosure; or
 - (c) has reason to suspect that an unauthorized disclosure of personal information has occurred in response to a foreign demand for disclosure

the Contractor must immediately notify the Province and, in so doing, provide the information described in section 30.2(3) of the Act. In this section, the phrases "foreign demand for disclosure" and "unauthorized disclosure of personal information" will bear the same meanings as in section 30.2 of the Act.

Notice of unauthorized disclosure

21. In addition to any obligation the Contractor may have to provide the notification contemplated by section 30.5 of the Act, if the Contractor knows that there has been an unauthorized disclosure of personal information in the custody or under the control of the Contractor, the Contractor must immediately notify the Province. In this section, the phrase "unauthorized disclosure of personal information" will bear the same meaning as in section 30.5 of the Act.

Inspection of personal information

22. In addition to any other rights of inspection the Province may have under the Agreement or under statute, the Province may, at any reasonable time and on reasonable notice to the Contractor, enter on the

Contractor's premises to inspect any personal information in the possession of the Contractor or any of the Contractor's information management policies or practices relevant to the Contractor's management of personal information or the Contractor's compliance with this Schedule and the Contractor must permit, and provide reasonable assistance to, any such inspection.

Compliance with the Act and directions

- 23. The Contractor must in relation to personal information comply with:
 - (a) the requirements of the Act applicable to the Contractor as a service provider, including any applicable order of the commissioner under the Act; and
 - (b) any direction given by the Province under this Schedule.
- 24. The Contractor acknowledges that it is familiar with the requirements of the Act governing personal information that are applicable to it as a service provider.

Notice of non-compliance

25. If for any reason the Contractor does not comply, or anticipates that it will be unable to comply, with a provision in this Schedule in any respect, the Contractor must promptly notify the Province of the particulars of the non-compliance or anticipated non-compliance and what steps it proposes to take to address, or prevent recurrence of, the non-compliance or anticipated non-compliance.

Termination of Agreement

26. In addition to any other rights of termination which the Province may have under the Agreement or otherwise at law, the Province may, subject to any provisions in the Agreement establishing mandatory cure periods for defaults by the Contractor, terminate the Agreement by giving written notice of such termination to the Contractor, upon any failure of the Contractor to comply with this Schedule in a material respect.

Interpretation

- 27. In this Schedule, references to sections by number are to sections of this Schedule unless otherwise specified in this Schedule.
- 28. Any reference to the "Contractor" in this Schedule includes any subcontractor or agent retained by the Contractor to perform obligations under the Agreement and the Contractor must ensure that any such subcontractors and agents comply with this Schedule.
- 29. The obligations of the Contractor in this Schedule will survive the termination of the Agreement.
- 30. If a provision of the Agreement (including any direction given by the Province under this Schedule) conflicts with a requirement of the Act or an applicable order of the commissioner under the Act, the conflicting provision of the Agreement (or direction) will be inoperative to the extent of the conflict.
- 31. The Contractor must comply with the provisions of this Schedule despite any conflicting provision of this Agreement or, subject to section 32, the law of any jurisdiction outside Canada.
- 32. Nothing in this Schedule requires the Contractor to contravene the law of any jurisdiction outside Canada unless such contravention is required to comply with the Act.

Schedule F - Additional Terms

Not applicable

Schedule G – Security Schedule

Definitions

- 1. In this Schedule,
 - (a) "Equipment" means any equipment, including interconnected systems or subsystems of equipment, software and networks, used or to be used by the Contractor to provide the Services;
 - (b) "Facilities" means any facilities at which the Contractor provides or is to provide the Services;
 - (c) "Information" means information
 - (i) in the Material, or
 - (ii) accessed, produced or obtained by the Contractor (whether verbally, electronically or otherwise) as a result of the Agreement;
 - (d) "Record" means a "record" as defined in the Interpretation Act;
 - (e) "Sensitive Information" means
 - (i) Information that is "personal information" as defined in the Freedom of Information and Protection of Privacy Act, or
 - (ii) any other Information specified as "Sensitive Information" in Appendix G6, if attached; and
 - (f) "Services Worker" means an individual involved in providing the Services for or on behalf of the Contractor and, for greater certainty, may include
 - (i) the Contractor or a subcontractor if an individual, or
 - (ii) an employee or volunteer of the Contractor or of a subcontractor.

Schedule contains additional obligations

2. The obligations of the Contractor in this Schedule are in addition to any other obligations in the Agreement or the schedules attached to it relating to security including, without limitation, the obligations of the Contractor in the Privacy Protection Schedule, if attached.

Services Worker confidentiality agreements

3. The Contractor must not permit a Services Worker who is an employee or volunteer of the Contractor to have access to Sensitive Information unless the Services Worker has first entered into a confidentiality agreement with the Contractor to keep Sensitive Information confidential on substantially similar terms as those that apply to the Contractor under the Agreement.

Services Worker security screening

4. The Contractor may only permit a Services Worker who is an employee or a volunteer of the Contractor to have access to Sensitive Information or otherwise be involved in providing the Services if, after having subjected the Services Worker to the personnel security screening requirements set out in Appendix G1 and any additional requirements the Contractor may consider appropriate, the Contractor is satisfied that the Services Worker does not constitute an unreasonable security risk. The Contractor must create, obtain and retain Records documenting the Contractor's compliance with the security screening requirements set out in Appendix G1 in accordance with the provisions of that appendix.

Services Worker activity logging

- 5. Subject to section 6, the Contractor must create and maintain detailed Records logging the activities of all Service Workers in relation to:
 - (a) their access to Sensitive Information; and
 - (b) other matters specified by the Province in writing for the purposes of this section.
- 6. The Records described in section 5 must be made and maintained in a manner, and contain information, specified in Appendix G2, if attached.

Facilities and Equipment protection and access control

- 7. The Contractor must create, maintain and follow a documented process to:
 - (a) protect Facilities and Equipment of the Contractor required by the Contractor to provide the Services from loss, damage or any other occurrence that may result in any of those Facilities and Equipment being unavailable when required to provide the Services; and
 - (b) limit access to Facilities and Equipment of the Contractor
 - (i) being used by the Contractor to provide the Services, or
 - (ii) that may be used by someone to access Information

to those persons who are authorized to have that access and for the purposes for which they are authorized, which process must include measures to verify the identity of those persons.

8. If the Province makes available to the Contractor any Facilities or Equipment of the Province for the use of the Contractor in providing the Services, the Contractor must comply with any policies and procedures provided to it by the Province on acceptable use, protection of, and access to, such Facilities or Equipment.

Sensitive Information access control

- The Contractor must:
 - (a) create, maintain and follow a documented process for limiting access to Sensitive Information to those persons who are authorized to have that access and for the purposes for which they are authorized, which process must include measures to verify the identity of those persons; and
 - (b) comply with the information access control requirements set out in Appendix G3, if attached.

Integrity of Information

- 10. The Contractor must:
 - (a) create, maintain and follow a documented process for maintaining the integrity of Information while possessed or accessed by the Contractor; and
 - (b) comply with the information integrity requirements set out in Appendix G4, if attached.
- 11. For the purposes of section 10, maintaining the integrity of Information means that, except to the extent expressly authorized by the Agreement or approved in writing by the Province, the Information has:
 - (a) remained as complete as when it was acquired or accessed by the Contractor; and
 - (b) not been altered in any material respect.

Documentation of changes to processes

12. The Contractor must create and maintain detailed Records logging any changes it makes to the processes described in sections 7, 9 and 10.

Notice of security breaches

- 13. If Contractor becomes aware that:
 - (a) unauthorized access, collection, use, disclosure, alteration or disposal of Information or Records containing Information; or
 - (b) unauthorized access to Facilities or Equipment

has occurred or is likely to occur (whether or not related to a failure by the Contractor to comply with this Schedule or the Agreement), the Contractor must immediately notify the Province of the particulars of that occurrence or likely occurrence. If the Contractor provides a notification under this section other than in writing, that notification must be confirmed in writing to the Province as soon as it is reasonably practicable for the Contractor to do so.

Review of security breaches

14. If the Province decides to conduct a review of a matter described in section 13 (whether or not the matter came to the attention of the Province as a result of a notification under section 13), the Contractor must, on the request of the Province, participate in the review to the extent that it is reasonably practicable for the Contractor to do so.

Retention of Records

15. Unless the Agreement otherwise specifies, the Contractor must retain all Records in the Contractor's possession that contain Information until directed by the Province in writing to dispose of them or deliver them as specified in the direction.

Storage of Records

16. Until disposed of or delivered in accordance with section 15, the Contractor must store any Records in the Contractor's possession that contain Information in accordance with the provisions of Appendix G5, if attached.

Audit

- 17. In addition to any other rights of inspection the Province may have under the Agreement or under statute, the Province may, at any reasonable time and on reasonable notice to the Contractor, enter on the Contractor's premises to inspect and, at the Province's discretion, copy:
 - (a) any Records in the possession of the Contractor containing Information; or
 - (b) any of the Contractor's Information management policies or processes (including the processes described in sections 7, 9 and 10 and the logs described in sections 5 and 12) relevant to the Contractor's compliance with this Schedule

and the Contractor must permit, and provide reasonable assistance to the exercise by the Province of the Province's rights under this section.

Termination of Agreement

18. In addition to any other rights of termination which the Province may have under the Agreement or otherwise at law, the Province may, subject to any provisions in the Agreement establishing mandatory cure periods for defaults by the Contractor, terminate the Agreement by giving written notice of such termination to the Contractor, upon any failure of the Contractor to comply with this Schedule in a material respect.

Interpretation

- 19. In this Schedule, unless otherwise specified:
 - (a) references to sections are to sections of this Schedule; and
 - (b) references to appendices are to the appendices attached to this Schedule.
- 20. Any reference to the "Contractor" in this Schedule includes any subcontractor retained by the Contractor to perform obligations under the Agreement and the Contractor must ensure that any such subcontractors comply with this Schedule.
- The appendices attached to this Schedule are part of this Schedule.
- 22. If there is a conflict between a provision in an appendix attached to this Schedule and any other provision of this Schedule, the provision in the appendix is inoperative to the extent of the conflict unless the appendix states that it operates despite a conflicting provision of this Schedule.
- 23. If there is a conflict between:
 - (a) a provision of the Agreement, this Schedule or an appendix attached to this Schedule; and
 - (b) a documented process required by this Schedule to be created or maintained by the Contractor
 - the provision of the Agreement, Schedule or appendix will prevail to the extent of the conflict.
- 24. The obligations of the Contractor in this Schedule will survive the termination of the Agreement.

SCHEDULE G - Appendix G1 - Security screening requirements

The personnel security screening requirements set out in this Appendix G1 are for the purpose of assisting the Contractor to determine whether or not a Services Worker constitutes an unreasonable security risk.

Verification of name, date of birth and address

1. The Contractor must verify the name, date of birth and current address of a Services Worker by viewing at least one piece of "primary identification" of the Services Worker and at least one piece of "secondary identification" of the Services Worker,* as described in the table following this section. The Contractor must obtain or create, as applicable, Records of all such verifications and retain a copy of those Records. For a Services Worker from another province or jurisdiction, reasonably equivalent identification documents are acceptable.

Primary Identification	Secondary Identification
Issued by ICBC: B.C. driver's licence or learner's licence (must have photo) B.C. Identification (BCID) card Issued by provincial or territorial government: Canadian birth certificate Issued by Government of Canada: Canadian Citizenship Card Permanent Resident Card Canadian Record of Landing/Canadian Immigration Identification Record	 School ID card (student card) Bank card (only if holder's name is on card) Credit card (only if holder's name is on card) Passport Foreign birth certificate (a baptismal certificate is not acceptable) Canadian or U.S. driver's licence Naturalization certificate Canadian Forces identification Police identification Foreign Affairs Canada or consular identification Vehicle registration (only if owner's signature is shown) Picture employee ID card Firearms Acquisition Certificate Social Insurance Card (only if has signature strip) B.C. CareCard Native Status Card Parole Certificate ID Correctional Service Conditional Release Card

^{*}It is not necessary that each piece of identification viewed by the Contractor contains the name, date of birth and current address of the Services Worker. It is sufficient that, in combination, the identification viewed contains that information.

Verification of education and professional qualifications

2. The Contractor must verify, by reasonable means, any relevant education and professional qualifications of a Services Worker, obtain or create, as applicable, Records of all such verifications, and retain a copy of those Records.

Verification of employment history and reference checks

3. The Contractor must verify, by reasonable means, any relevant employment history of a Services Worker, which will generally consist of the Contractor requesting that a Services Worker provide employment references and the Contractor contacting those references. If a Services Worker has no relevant employment history, the Contractor must seek to verify the character or other relevant personal characteristics of the Services Worker by requesting the Services Worker to provide one or more personal references and contacting those references. The Contractor must obtain or create, as applicable, Records of all such verifications and retain a copy of those Records.

Security interview

4. The Contractor must allow the Province to conduct a security-focused interview with a Services Worker if the Province identifies a reasonable security concern and notifies the Contractor it wishes to do so.



Natural Resource Sector

CONTRACT APPROVAL REQUEST

MINISTRY IDENTIFICATION							
Ministry:	□ A	boriginal Relations & Reconciliati griculture nergy and Mines	Environment Forests, Lands, & Natural Re Natural Gas Development (and Minister Responsible for Housi	ds, & Natural Resource Operations Development			
Branch / Division:	Electric	city and Alternative Energy Divisi					
Region / City:	Victoria	a					
					Primary Contact for This Request (select one)		
Expense Authority:	Les Mac	Laren		Phone: 778-698-7183			
Qualified Receiver:	Katherin	e Rowe		Phone: 778-698-7190			
Other contact - if applicable:				Phone:			
		REQUEST	DETAILS				
Contract Number (if kno	wn):	GS19MAN0017					
Project Title:		Northern Strategy					
Ministry Cost Estimate:		\$12,500					
Cost Recoverable:		No Secovery Source (e.g. name of Federal department, private organization, etc. / program or initiative name): Amount of Recovery \$ Recovery Percentage: %					
Funding Source		Base \$ Other \$	Sp	pecify:			
Describe the Location, Services/Work, Purpose: The Contractor will conduct a preliminary investigation indigenous power authorities to provide electricity a stream and downstream natural gas firms in norther investigation: a threshold level gas development of downstream gas processing activity in the Prince From scenario that would require the construction of additional conduct a preliminary investigation.				ctricity and/or related services to n northern B.C. Two scenarios oment scenario that assumes so Prince Rupert area that would re st BC; and an expanded gas de	o upstream, mid- will be part of the ufficient new equire the evelopment		
Why Can't Existing Stathe Need?	ff Fill	Existing staff do not have the level of expertise required for this role.					
Describe the Impact on Program Delivery if Not Approved: The Province will be hampered in developing a Northern Strategy in British Columbia to the development of additional natural gas supply, transportation and value-added process.							
If Direct Award:		Contractor (legal entity) Name - Associations Ltd. Justification –circumstances, ar One qualified and available ven	nd rationale		Shaffer and		

	Rationale for selecting the contractor:				
	The Contractor provides considerable, proven expertise regarding economic analysis and knowledge of BC energy structures needed for the investigation of potential indigenous power authorities in Northern B.C.				
Include Option to Renew:	Yes	⊠ No			
Anticipated Term of Agreement:	From: June 19, 2018	To: July 31, 2018			

Con	tuant mlammin			Core Policy Complia		-td	ith the semi		Y	N	n/a
key	Core policy cedures Man	and best p nual, and th	ractices items. ne Financial Se	te to the value of and control However, this is not a prvices Procurement We	complete list. Reference bsite: Planning.	nces a	re available a	at: Chapter 6 of t			
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2.	the contract file in the event review of the CBJ is needed (CPPM 6.3.1.5)?								\boxtimes		
3.	If this contract is being direct awarded to a contractor that has been used for similar work in the previous 3 months (3 months from previous expiry date), the new contract must be approved by an expense authority with authority for the combined total of the contracts. If this condition applies to the requested contract, has the contract been approved by the appropriate expense authority (CPPM 6.3.1.4)?										
4.	The contra	act will not	establish an <u>er</u>	nployer / employee relat	ionship (CPPM 6.3.1.7)				\boxtimes		
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	100 Purchase Subject to Agreement on Internal Trade (AIT)			ernal		500	Excluded – Sec	uri	ty, Order, Etc.
\boxtimes	200	Purchase Below Applicable AIT threshold				600	Excluded – Pro	dud	ct Compatibility / Exclusive Rights
	300	Purchase of an Exempted Commodity / Service				700	Excluded – Pro	cur	ement of Prototype
	☐ 400 Excluded - Emergency					800	Excluded – Reg	gior	nal / Economic Development
Cor	tract C	ategory (re: STOBS 60, 61, and	163)						
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CODE DESCRIPTIONS CONTRACT APPROVAL REQUEST - NATURAL RESOURCE SECTOR

	Procurement Process Codes
Code	Description
100	Open competitive process : An open competitive solicitation process (e.g., Invitation to Quote, Request for Proposal, Joint Solution Procurement, Invitation to Tender, or other) has been used normally by advertising the opportunity on BC Bid.
200	Direct Award - Public sector organization : Contracts may be negotiated and directly awarded without competitive process where the contract is with another government organization.
201	Direct Award - Sole source: Contracts may be negotiated and directly awarded without competitive process where the ministry can strictly prove that only one contractor is qualified to provide the goods, services or construction or is capable of engaging in a disposal opportunity.
202	Direct Award – Emergency : Contracts may be negotiated and directly awarded without competitive process where an unforeseeable emergency exists and the goods, service or construction could not be obtained in time by means of a competitive process.
203	Direct Award - Security, order, etc. : Contracts may be negotiated and directly awarded without competitive process where a competitive process would interfere with a ministry's ability to maintain security or order or to protect human, animal or plant life or health.
204	Direct Award – Confidentiality : Contracts may be negotiated and directly awarded without competitive process where the acquisition is of a confidential or privileged nature and disclosure through an open bidding process could reasonably be expected to compromise government confidentiality, cause economic disruption or be contrary to the public interest
205	Direct Award - Notice of Intent : When a contract for services or construction valued at \$50,000 or more, is intended to be directly awarded on the basis that there is only one vendor that can provide the services or goods required, but this cannot be strictly proven, a Notice of Intent must be posted on BC Bid.
206	Direct Award : Use this code where the Direct Award was permitted under another corporate policy or legislation. Do not use this code if another direct award code applies.
207	Direct Award – Services and Construction Under \$25,000: Any service or construction opportunity, or supply arrangement for the supply of services or construction, with an estimated value of less than \$25,000, should be competed to the extent reasonable and cost effective. Do not use this code if one of the exceptions in Core Policy and Procedures Manual: Chapter 6.3.3(a) applies. In that case use one of codes 200 to 204 whichever applies.
300	Competitive Process Among Selected Vendors (Construction and Services under \$75,000): A competitive solicitation process among a limited list of vendors and not advertised on BCBid (i.e. solicitation of three or more vendors) If vendors are on a pre-qualification list, then use 401.
400	Selected Vendor from Pre-qualification List: Select this code for a contract that is issued to a vendor on a pre- qualification list without undertaking a competitive process. The process followed must be consistent with the rules set out in the original request for qualifications.
401	Competition Among Vendors on a Pre-qualification List: A competitive solicitation process among a limited list of vendors selected from a pre-qualification list. Select this code if a competitive solicitation process is conducted among a limited list of vendors selected from a pre-qualification list. The process followed to select vendors must be consistent with the rules set out in the original request for qualifications.
500	Purchase from a Corporate Supply Arrangement (CSA): A purchase from a pre-established corporate supply arrangement such as a Master Standing Offer, Standing Offer or the Queens Printer.

Codes continued . . .

Trade Agreement Exclusion Codes – These codes reflect Agreement on Internal Trade (AIT) reporting requirements and thresholds only. Do not use these codes to track compliance with policy or with the New West Partnership Trade Agreement (NWPTA) or other applicable trade agreements.

trade a	greements.
Code	Description
100	Purchase subject to Agreement on Internal Trade (AIT): The purchase is over the trade agreement (AIT) threshold for national advertising (\$25K for goods / \$100K. for services / \$100K. for construction) and is not excluded or exempted under any other category below.
200	Purchase below applicable AIT threshold: The purchase is under the trade agreement thresholds (dollar values as noted above).
300	Purchase of an exempted commodity/service: The purchase is for goods, services or construction that is exempted from coverage of AIT or to which AIT does not apply by virtue of its specific reference in AIT (for example grants, entitlements or ministerial appointments).
400	Excluded – Emergency : A purchase where an unforeseeable situation of urgency exists and the goods, services or construction cannot be obtained in time by means of an open procurement.
500	Excluded - Security, order, etc. : A purchase where compliance with the open tendering provisions set out in AIT would interfere with the Province's ability to maintain security or order or to protect human, animal or plant life or health.
600	Excluded - Product compatibility/exclusive rights : A purchase which must: ensure compatibility with existing products; recognize exclusive rights, such as exclusive licenses, copyright and patent rights; or maintain specialized products that must be maintained by the manufacturer or its representative.
700	Excluded - Procurement of prototype : The procurement of a prototype or a first good or service to be developed in the course of and for a particular contract for research, experiment, study or original development, but not for any subsequent purchases.
800	Excluded - Regional/Economic development : A purchase which, under exceptional circumstances, may be excluded by the Province from the application of applicable chapters of the agreements for regional and economic development.

Contract Category for STOB 60, 61, and 63: The following definitions are to be used to classify contracts in STOBS 60, 61, and 63 which fall into the categories listed. If the contract does not fit into one of these broad categories, it should be excluded from the analysis. If the contract falls into more than 1 category, choose the predominant category. Recoverable contracts should be identified as such and will be excluded from the information submitted to central agencies if submission is required.

CACIGGE	a nom the information submitted to central agencies it submission is required.
Code	Description
GMA	General Management Advice: Contract providing information for, or advice on, the planning and/or management of programs.
HR/LR	Human Resources & Labour Relations : Contracts providing Human Resources services or human resource related services such as coaching/facilitation and organizational design.
IT	Information Technology : Consulting services related to information technology. This would include contracts consulting on systems development or management of systems. It would not include the work done to develop the system, writing code, data entry etc
PRA	Policy, Research and Analysis : Contracts providing planning services that contribute to or recommend policy, or consultation on policy issues; contracts that provide research and analysis to advise in program management
PM	Project Management: Contracts where an external project manager is hired to run a project or facilitate activities.
СОМ	Communications : Contracts proving professional services related to the planning writing, preparation or distribution of communications.
BSA	Business Support & Administrative : Contracts where administrative support is supplied such as administrative service, filing, cataloguing, records administration, etc. Also includes Secretariat support services.
OP	Operational : Contracts where non-consulting type work is being performed that is performing a service that does not fit into one of the categories above. Examples include data entry, building fences, maintenance activities, writing and delivery of training program.
OTH	Other: Contracts which do not fall into any of the above categories.

MODIFICATION AGREEMENT

BETWEEN HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, represented by The Ministry of Energy, Mines and Petroleum Resources (the "Province", "we", "us", or "our", as applicable) AND Marvin Shaffer & Associates Ltd. (the "Contractor" "you" or "your" as applicable) BACKGROUND A. The parties entered into an agreement dated June 19, 2018, under which the Contractor must conduct a preliminary investigation of the potential for the development of indigenous power authorities to provide electricity and/or related services to upstream, mid-stream and downstream natural gas firms in northern B.C. (the "Agreement"). B. The parties have agreed to modify the Agreement. **AGREEMENT** The parties agree as follows: (1) The term of the agreement is extended to end on August 31, 2018. (2) In all other respects, the Agreement is confirmed. SIGNED AND DELIVERED on the _____ day of _____, 20___ on behalf of the Province by its duly authorized representative: Print Name _____ SIGNED AND DELIVERED on the _____ day of _____, 20___ by or on behalf of the Contractor (or by its authorized signatory or signatories if the Contractor is a corporation): Signature _____

Print Name _____

Morrison, Lauren EMPR:EX

From: West, Michele L EMPR:EX
Sent: September 6, 2018 4:25 PM

To: CSNR EMPR Accounts Payable CSNR:EX

Subject: invoice, Marvin Shaffer, GS19MAN0017, supplier 304238.pdf **Attachments:** invoice, Marvin Shaffer, GS19MAN0017, supplier 304238.pdf

Hello,

Please process the attached invoice, with cheque payable to Marvin Shaffer & Associates Ltd., GS19MAN0017.

Supplier s.22 (site 003), \$11,550.00.

Thank you, Michele

Michele West

Branch Coordinator | Electricity and Alternative Energy Division Ministry of Energy, Mines and Petroleum Resources | 250.952.0286

Energizing BC: clean, sustainable and productive

BACKGROUND INFORMATION FOR DIRECT AWARD APPROVAL

Contract/File No: GSMAN0017	☐ New Direct Award OR ☑ Modification to Existing
Ministry:	
Contract Manager (coordinator): Katherine Rowe For Description of Service or Works: Professional advice to information of Service or Works:	ull Legal Name of Contractor: Marvin Shaffer & Associates Ltd form development of Northern Strategy
 Agreement (NWPTA) under the following allowable ex Code 200 – Purchase Below Applicable GFTA Thres 	• • •
NEW DIRECT AWARD VALUE	
Contract Value: \$12,500	Term Start Date: June 19, 2018 End Date: August 31, 2018
Select the code that reflects the procurement process used. Click HERE for full code descriptions. 201 Direct Award - Process used. Click HERE for full code descriptions.	Sole Source
The purpose of the modification is to extend the end date of While the Contractor has made good progress towards achieved the Services. There are no other modifications to Rationale for selecting the contractor:	expertise regarding economic analysis and knowledge of BC energy

DETAILS AND HISTORY OF THIS CONTRACT'S MODIFICATION(S)

Attach copies of any previously completed direct award justification and approval forms pertaining to this contract.

Not applicable

	Revised Amount	% of Increase	Affected Term Date				
Previous Modification	\$	%	Term Start Date:	End Date:			
Previous Modification	\$	%	Term Start Date:	End Date:			
Previous Modification	\$	%	Term Start Date:	End Date:			
Previous Modification	\$	%	Term Start Date:	End Date:			
Current Modification	\$	%	Term Start Date:	End Date:			
TOTAL	\$	%					

ACCOUNT CODING FOR CURRENT MODIFICATION (NO CHANGE TO ORIGINAL VALUES)

LINE	DESCRIPTION (mandatory)	QUANTITY	CHARGE ACCOUNT					
LINE		(Line value)	Client	RC	Service Line	STOB	Project	
1	Northern Strategy	\$11,000	s.21	27714	26314	6001	2700000	
2	Northern Strategy	\$1,500		27714	26314	6002	2700000	
3		\$						
4		\$						

DETAILS OF PREVIOUS DIRECT AWARDS MADE TO THIS CONTRACTOR

List all other directly awarded contracts made to this contractor in the Last 12 Months.

Description & Location of Work	Contract Value	Contract Term Dates		
	\$	Term Start Date:	End Date:	
	\$	Term Start Date:	End Date:	
	\$	Term Start Date:	End Date:	
	\$	Term Start Date:	End Date:	
	\$	Term Start Date:	End Date:	
	\$	Term Start Date:	End Date:	

APPROVALS

	Expense Authority Unless local office policy dictates otherwise, the expense authority has the authority to direct award contracts to the total value (original contract value plus any and all cumulative modifications) of the expense authority granted them.				
	Signature of Expense Authority	Date Signed			
	Printed Name of Expense Authority				
	Re-Awarding without Competitive Process to Same Contractor Where re-award is being made to the same contractor under the following conditions, a new contract will be entered into, not a modification to an existing contract:				
	 the contract is for a continuation of the same or similar work; and the re-awarding is made within three months of the completion or expiry of the previous directly awarded contract; and the re-awarding is done without a competitive process. 				
	Signature of Expense Authority	Date Signed			
	Printed Name of Expense Authority				
	Direct Award to Present or Past Employees				
	Written approval of the applicable Expense Authority must be obtained when contemplating a direct award to regular or auxiliary status employee or to a recent (within one year) employee.				
	Authorized Signatory	Date Signed			
	Printed Name of Authorized Signatory				

Morrison, Lauren EMPR:EX

From: MacLaren, Les EMPR:EX
Sent: June 14, 2018 12:28 PM
To: Schur, TJ EMPR:EX

Cc: Schmidt, Cathy A EMPR:EX; King, Sandra M EMPR:EX

Subject: RE: Northern Strategy

Thanks!

From: Schur, TJ EMPR:EX

Sent: Thursday, June 14, 2018 12:27 PM

To: MacLaren, Les EMPR:EX <Les.MacLaren@gov.bc.ca>

Cc: Schmidt, Cathy A EMPR:EX <Cathy.Schmidt@gov.bc.ca>; King, Sandra M EMPR:EX <Sandra.M.King@gov.bc.ca>

Subject: RE: Northern Strategy

Hi Les,

I can get Sandy to help me today so it should be fine.

Whatever I don't know about the EMPR process I can find out with the helpful folks around me.

Consider it done.

Cheers,

TJ

From: MacLaren, Les EMPR:EX Sent: June 14, 2018 12:25 PM

To: Schur, TJ EMPR:EX < TJ.Schur@gov.bc.ca>

Cc: Schmidt, Cathy A EMPR:EX < Cathy.Schmidt@gov.bc.ca>

Subject: Northern Strategy

Hi TJ

Marvin and I have agreed on the scope of work set out in the attached agreement. I am hoping that as a contract whizz you could clean this up, do a RFGT, and run the package through CSNR. I would like to have this available to sign on Monday if possible.

Please let me know if you can do this.

Les

From: MacLaren, Les EMLI:EX

Sent: September 5, 2018 6:42 AM

To: Schmidt, Cathy A EMLI:EX

Cc: Schur, TJ EMLI:EX

Subject: FW: billing

Attachments: b-MEMPR-2018.doc

Hi Cathy:

Please move this along. We have Marvin's final report. TJ helped with this.

Les

-----Original Message-----

From: Marvin Shaffer [mailto:marvshaffer@gmail.com]

Sent: Monday, August 27, 2018 12:53 PM

To: MacLaren, Les EMPR:EX <Les.MacLaren@gov.bc.ca>

Subject: billing

Hi Les,

Attached is my billing for the Electrification and First Nation Power Authority investigation. Please forward it for processing.

Thanks, Marvin



Marvin Shaffer & Associates Ltd.

Consulting Economists

1675 Larch Street Vancouver, BC V6K 3N7

STATEMENT

August, 2018

TO: Ministry of Energy Mines and Petroleum Resources 4th Floor, 1810 Blanshard Street Victoria, British Columbia V8W 9N1

Attention: Les MacLaren

RE: Preliminary Investigation of First Nation Northern Power Authorities

Professional Fees:

Marvin Shaffer 50 hrs @\$275/hr 13750.00 *Contract limit* 11000.00

Expenses:

Total Fees and Expenses

\$11000.00

GST (@5%): 550.00

TOTAL: \$11,550.00

GST Business Number: 10354 9937 RT0001

monthjuly			
Date	Hours	Activity	
1	7	carryover from June	
2			
3	2.5	prep and participation in conference call - team mtg	
4	0.5	call with Les and Simon;notes	
5	1	emails/notes re mtgs	
6	2	call with Garry; call with Harvie et al.; notes	
7			
8			
9			
10			
11			
12	0.5	prep for Fri mtgs	
13	4.5	calls/mtgs: Les; Progress; Wauters; BCH, and notes	
14			
15			
16			
		mtg with LNG Can; call with G Turner; emails re mtgs with FNs; model	
17	3.5	development	
18	1.5	call with s.16 advisors	
19	1.5	notes on report outline; mtg with Willms and Luzstig on Naikun	
20			
21			
22	0.5	II D II 1 - 10 I D I 1 1 1 - 10	
23	0.5	calls- Roger Harris s.16 and Ryan Leighton s.16	
24	2	call with Terry Lindholm re industry perspective on electrification in NE; start on draft report	
25	2	on drait report	
26	2	mtg with Chris Hemingsley/Sanders at BCH	
27	1.5	mtg with Gary Wauters and Doug McArthur re NW power authority issues	
28	2	development of electrification model	
29	2	do to opinion of diode inidation model	
30			
31			
31			
TOTAL	32.5		

monthaug		
Date	Hours	Activity
1		
2	2	mtg with BCH re authority models; call with Progress calls with s.16 consultants and with NWIW;
3	2	notes
4		
5		
6		
_		organize consulation notes for draft report; start on
7	1	draft
8	•	
9	3	draft report sections 2 and 3
10	3	complete draft
11		
12		
13		
14		
15		
16		
17		
18		
19 20		
20	1.5	mta with LNC consultants; notes; edite to report
22	2	mtg with LNG consultants; notes; edits to report mtg with BCH; revisions to model
23	2	Thig with BCH, revisions to model
24	2	complete exec summary;final edits
25	2	complete exec summary, imal edits
26		
27	1	review Hemmingsley comments and edits
28	'	review Heriliningsley confinents and edits
29		
30		
31		
01		
TOTAL	17.5	

From: MacLaren, Les EMLI:EX
Sent: September 11, 2018 3:09 PM

To: 'Marvin Shaffer'
Subject: RE: report

Hi Marvin

Sorry for the delay. Yes I have read your report and think it highlights the economic issues and opportunities, as well as strengths and weaknesses of potential arrangements with First Nations.

I had a couple of comments. First is adding page numbers would be helpful. On pages 4 and 18 when you note the s.16 model could result in BC Hydro potentially having to deny service, further context might be helpful about being off-side with the BCUC as well given BC Hydro's obligation to serve customers requesting service in its franchise area. I was confused in Case 3 in the table on page 8 what the "at 700MW" meant in the description.

I don't have further questions at this time, and will need to loop back with Dave Nik and Ines when they get back from the World Gas Congress on how they want to proceed with this and the other pieces of the Northern Strategy.

I submitted your billing for processing last week.

Thanks again for this great work!

Les

----Original Message----

From: Marvin Shaffer [mailto:marvshaffer@gmail.com]

Sent: Tuesday, September 11, 2018 8:17 AM

To: MacLaren, Les EMPR:EX <Les.MacLaren@gov.bc.ca>

Subject: report

Hi Les,

I assume you have had a chance to go through my report. I just wanted to check/confirm that there is nothing further you would like to discuss or revisions you would like to see, If there is anything please let me know. I did send in my final bill (which I assume you have received and have forwarded for processing) but would of course be happy to go over the report with you or the relevant gas strategy committee if that was of interest.

Marvin

From: Marvin Shaffer <marvshaffer@gmail.com>

Sent: September 12, 2018 11:35 AM

To: MacLaren, Les EMLI:EX

Subject: Re: report

Attachments: final report-9-12-18.docx; ATT00001.txt

Hi Les,

Attached is the revised final report with pages numbers and some minor edits to address the points you raised. If there is anything further please let me know.

Thanks, Marvin

Preliminary Investigation of Gas Industry Electrification Opportunities and First Nation Participation in Electric Supply and Related Infrastructure Development

prepared for:
Ministry of Energy Mines and Petroleum Resources

by:
Marvin Shaffer & Associates Ltd

Final Report September 12, 2018

Executive Summary

- The purpose of this report is to present the results of a preliminary investigation of
 electrification opportunities in gas production, transmission and downstream processing
 in northern B.C. and the potential for First Nations to participate in electricity supply and
 infrastructure development through the creation of First Nation Power Authorities or
 other arrangements.
- This report relies heavily on consultation with Ministry and BC Hydro personnel and with representatives and consultants for industry and First Nations.

Ministry officials set out the context for the study, in particular the desire to align as much as possible First Nation and GHG interests with the economic development opportunity of new gas processing and related activity. Staff provided information on the potential magnitude of new gas industry electric loads and data related to the economics of electrification.

BC Hydro staff provided information and data related to their analysis of the economics of electrification; the nature and costs of addressing transmission constraints that would have to be addressed to serve major new northwest loads; and issues and opportunities for First Nation participation in the supply of electricity and related infrastructure development.

Industry representatives provided information on their development plans and potential loads and their analysis of the economics and challenges of electrification. Key factors were the low cost of gas and, for the northwest and North Montney regions, transmission constraints raising both cost and timing issues. Information and cost estimates for an HVDC transmission line concept for the northwest were provided and discussed.

Consultants and representatives for First Nations provided information on their interests in participating in electricity supply and related infrastructure development. In the northwest there is strong interest in developing new power projects. The potential for a regional power authority that could provide a vehicle for broad regional participation and potentially attract government support was discussed. In the northeast the more immediate opportunity is for participation in the development of transmission lines and related infrastructure required to connect new loads to the grid. The s.16 discussed the specific proposal they have presented to the province to have the exclusive right to develop and maintain new connector lines s.16

• The potential load from new gas industry activity is very large including electricity for liquefaction, methanol production and natural gas liquids extraction and processing in the northwest; for compression on new pipelines where there is access to the grid; and for processing and pipeline compression in the gas fields in the northeast. How much of that potential materializes is uncertain. There is the question of what new developments and activity actually take place. And then there is the question of the extent to which electricity would be used instead of gas for their energy requirements.

The economics of electricity use are challenging because of low gas prices and where there is no grid access or constraints, significant transmission system upgrade costs. A simple model developed to provide some perspective to the economics of electrification indicated that electricity prices would have to be significantly less than BC Hydro's forecast standard industrial tariff for there to be no incremental costs to purchase and use electricity instead of using gas.

Because of forecast surpluses of electricity supply, BC Hydro would benefit from the new gas loads – the tariff revenues would exceed the value of foregone surplus sales. However, the estimated benefits to BC Hydro would be less than the incremental costs to customers. Even if BC Hydro offered incentives equal to the full amount of the benefit it could expect from new sales, there would still be an incremental cost of electrification for customers. Expressed differently, the implicit cost of carbon- the value that one would have to assign to the avoidance of GHG emissions for there to be no net costs of electrification taking impacts on industry and BC Hydro into account – exceed the assumed \$50/tonne carbon tax.

Government measures (in addition to BC Hydro offering discounts or incentives equal to its expected net benefit) would be required for the electrification potential to be realized. Measures could include support for required transmission system upgrades and increasing the carbon tax. These would impose significant costs and risks for government and BC Hydro.

 There is strong First Nation interest in participating in independent power project developments that could serve new liquefaction and other loads in the northwest. The question is how such developments would affect the already challenging economics of electrification. And if these project developments are viable, how best could First Nations participate in their development – individually or through a broader regional power authority.

The economic problem is that in the short to medium term, BC Hydro does not need additional resources to supply new loads. Even the lowest cost IPPs would be more expensive for BC Hydro than using existing surplus to supply new loads. For customers, a direct purchase of First Nation IPP supply (most likely wind energy) would require back-up from BC Hydro. The cost of that back-up at BC Hydro's standard industrial tariff (which would in effect be a low load factor purchase) would be relatively high.

One way to enhance the viability of wind projects in the northwest would be for BC Hydro to offer a back-up service at a market-based price. The market-based pricing would protect BC Hydro, transferring the price risk to the customer. At the same time, it would offer an expected low cost complement to wind supply, improving the economics for customers. Other measures would be to seek senior government infrastructure support for the costly grid connections that new projects would require and careful consideration of the optimal timing of development.

With respect to vehicle for development, a First Nation Power Authority offers a number of advantages over individual First Nation IPPs. It would enable broader regional participation and benefit as compared to an individual 'winner-take-all' approach. And the broader regional participation might provide greater opportunity for senior government support.

Legislation would be required to create a First Nation Power Authority and some initial resources and project development opportunities would have to be provided. Extensive consultation with all of the potentially participating First Nations would be required to develop the necessary legislation, and detailed analysis and consultation with BC Hydro, power customers and potential IPP project developers would be required to identify and set out a development strategy for candidate initial Power Authority projects.

 There is no comparable immediate interest and opportunity for First Nation independent power project developments or power authorities in the northeast. The more immediate interest is in developing and maintaining the lines and infrastructure customers need to connect to the grid. s.16; s.17

s.16: s.17

1.0 Introduction

There is renewed interest in the development of liquefied natural gas (LNG) and other gas processing in northwestern British Columbia. In addition to LNG Canada's first phase project in Kitimat which is nearing a final investment decision, there is the potential for a second phase of that project and other LNG developments in the region. Interest has been expressed for the production of methanol in the Prince Rupert area. There is also the potential for the extraction of natural gas liquids for export or further processing into petrochemical products.

With new processing activity in the northwest there would be new gas pipeline development and increased or accelerated upstream gas production activity in the northeast. All of this would generate significant economic impacts for the directly affected regions and the province as a whole. It could as well enhance the value of British Columbia's natural gas resources by providing access to new markets and higher value utilization.

At the same time, new LNG and other downstream processing, pipeline development and upstream gas activity would raise major concerns about the potential for very large increases in greenhouse gas (GHG) emissions – increases that could preclude the achievement of the province's GHG reduction targets. It would also raise questions about impacts on First Nation traditional territories and the accommodation of First Nation interests and concerns.

To gain broad support for new gas industry development, strategies that substantially address the implications for GHG emissions and the concerns and interests of First Nations will have to be developed. One such strategy involves electrification of downstream, midstream and upstream gas industry activity to the full extent possible.

Where electrification displaces existing combustion of gas in gas production and transmission, it would meaningfully contribute to the reduction of GHG emissions in the province. And where electricity is used instead of gas in new gas activity, it would avoid the major increases in emissions that would otherwise take place.

Electrification would not only help address GHG concerns, it could also provide greater opportunity for First Nations to participate in the supply of electricity and development of transmission/customer connection infrastructure, something that a number of First Nations have expressed strong interest in pursuing. For these First Nations, participation in electricity supply or related infrastructure development would provide a very important means of aligning interests and accommodating concerns.

The purpose of this report is to present the results of a preliminary investigation of electrification opportunities in gas production, transmission and downstream processing in northern B.C. and the potential for First Nations to participate in electricity supply and infrastructure development through the creation of First Nation Power Authorities or other arrangements.

2.0 Consultation

This preliminary investigation relies heavily on consultation with Ministry staff, BC Hydro personnel, and representatives and consultants for industry and First Nations.

Ministry:- Ministry officials set out the broad context for this work, in particular the desire to align as much as possible GHG and First Nation interests with the major economic development opportunity that new natural gas processing and related activity represent. Ministry staff identified the nature and scale of the new gas processing activities that could be developed in the northwest and some of the pipeline and electricity infrastructure planning and coordination issues that would have to be addressed. They provided natural gas price forecasts and other information required to assess the economics of electrification, as well as a range in the amount of the electrical load that could potentially result from new downstream, midstream and upstream gas activity.

BC Hydro:- BC Hydro staff provided information on the electrification that has recently taken place in the gas producing regions in northeast British Columbia and a range of forecasts for new electrification that could take place there with and without incentive programs. It also provided forecasts of electricity tariffs and the costs of electricity supply that it has used to analyze the economics of further electrification from the point of view of BC Hydro ratepayers.

With respect to electrification of new gas processing in the northwest, BC Hydro staff identified the transmission constraints in the connection from Prince George to the coast. There are limitations in the amount of new capacity that can be served with the existing 500 kV transmission line, limitations that would be exceeded even with capacity-enhancing reinforcements if there were major (over 400 MW) increases in load. Also, the single line connection does not provide the forced outage reliability that some (in particular LNG) gas processors would require. Staff indicated that a second line providing the transfer capacity and redundancy required by major new loads in the northwest could be in-service by 2028.

BC Hydro staff also discussed the potential for First Nation participation in the supply of electricity and development of related infrastructure. With respect to the creation of a First Nation Power Authority in the northwest, questions about contractual supply arrangements were discussed. Alternatives include energy purchase agreements with BC Hydro secured through regional calls, direct contract awards by BC Hydro, or direct sales by the Authority to the gas processing customers, with BC Hydro providing back-up supply. The tariff implications for what could be low load factor back-up supply were discussed.

s.16; s.17

NE Industry:- Representatives from Progress Energy explained the economic challenge they face to electrify in the North Montney region. There is no transmission access in that region; electrification would require the development of a new line from the GM Shrum station that would cost in the order of s.17; s.21 . In addition, even without the added transmission cost, the price spread between natural gas and electricity still favours the use of natural gas for compression and processing notwithstanding a carbon tax at \$50/tonne and the limited carbon offset revenues they might receive.

s.17

A consultant for Encana and other gas producers indicated that there is increasing interest in electrification but challenges include the very low cost of natural gas and concerns about scheduling risks that requests for electric service can entail. He also noted that gas companies generally do not want to own and maintain their connector lines, but they cannot always transfer them to BC Hydro after construction. BC Hydro will not take responsibility for lower voltage distribution lines and will only take responsibility for transmission lines built to specified standards.

s.17

Representatives from LNG Canada provided information on their analysis of electrification of their operations. Key considerations were the availability and reliability of supply; the relative cost of electric versus gas drive liquefaction; the CO₂ footprint of the electric supply; and regional First Nation benefits and opportunities. For their first phase development in Kitimat, reliable BC Hydro supply was not available due to transmission constraints which could not be addressed in time for the project. Also, even at BC Hydro's standard industrial rate, electric drive

was more expensive than gas drive. The significant capital cost for required new transmission as well as the price spread between gas and electricity favours the use of gas.

The representatives noted that there can be capital and operating cost savings with the use of electric as opposed to gas drives for liquefaction. However, those savings depend on when the decision to go electric is made. The later in the design process that the decision is made, the less will be the capital cost savings because of sub-optimal facility configurations. And, the mixing of electric with existing gas drives in multi-phase projects will diminish the operating and maintenance savings because of duplication in stores and specialized maintenance personnel.

s.16; s.17

Gas companies will contract with third parties to construct the required lines and facilities, and while they generally would prefer to transfer the connector lines to BC Hydro once built, they reportedly can face resistance from BC Hydro to accept them. BC Hydro will not accept responsibility for distribution lines and will only take responsibility for transmission lines if they are built to BC Hydro standards. Gas companies can also face delays in securing electric service (and risks of significant additional costs) because of the system impact studies requests for

service can entail. s.16; s.17 s.16; s.17

3.0 Electrification Potential

The potential electric load from new downstream, midstream (pipeline) and upstream gas industry activity is very large.

s.17

Beyond the question of which projects get built, there is the issue of the extent to which they would rely on purchased electricity as opposed to gas drive or 'inside the fence' gas-fired combined cycle generation. While there is great interest in electrification, avoiding the GHG emissions that would result from gas drive or gas-fired generation, the economics of accessing and using electricity as opposed to gas are challenging.

Key factors governing the relative costs of purchasing electricity versus gas are:

- the BC Hydro tariff (including rate rider) charged for the electricity use;
- the cost of connecting to the grid;
- the cost of required transmission system upgrades;
- the cost of gas at the point of use;
- carbon taxes paid on gas use;
- facility cost savings for purchased electricity as opposed to gas drive or 'inside the fence' gas-fired generation.

It is beyond the scope of this study to develop site-specific estimates for all of these factors. However, a simple model (submitted along with this report) was developed to provide some perspective on the economics of electricity versus gas use from the point of view of customers and BC Hydro. The assumptions in the model, which should be recognized as illustrative only, are based on: i) BC Hydro forecasts of industrial tariffs, load resource balance, and the costs of supply when in surplus and when new resources are required; ii) a range of gas price forecasts consistent with information provided by Ministry staff and industry; iii) government estimates of carbon emission rates in stationary natural gas combustion; and iv) estimates of grid connection and transmission system upgrade costs and of impacts on customer facility costs generally consistent with information provided by BC Hydro and industry.

s.17

s.17

Page 71 of 79 to/à Page 72 of 79

Withheld pursuant to/removed as

s.17

It is important to recognize that the model results reported and discussed in this section should be treated with caution. The transmission upgrade, connection and impact on facility cost estimates are all very rough. Gas price forecasts are subject to considerable uncertainty. There is uncertainty about BC Hydro surplus sale opportunity costs and the incremental costs of new supply. The discount rate that firms apply in their financial analyses would in all likelihood be different from (most likely higher than) the 4% real rate used in this analysis. Different assumptions with respect to any of these factors could significantly impact the results.

As stated earlier, the model is used to provide perspective and specific numbers should be interpreted as illustrative only. Nevertheless, the model results clearly indicate the challenging incremental costs of electrification, fully consistent with the conclusions that industry representatives consulted in the course of this study also reached based on their own financial

² Based on an estimated long run marginal cost of energy (delivered to the Lower Mainland) of \$70/MWh and long run marginal cost of capacity of \$90/kw-yr.

analyses. There are measures government and BC Hydro can take to address the challenges but they in turn impose significant their own costs and risks – a taxpayer and ratepayer contribution that would be needed to support electrification of new gas industry developments.

4.0 Northwest First Nation Participation in Electricity Supply

A number of First Nations in the northwest have expressed strong interest and expectation in participating in power project developments that could serve new LNG or other gas industry loads. And gas industry representatives have indicated their interest in acquiring renewable energy from power projects developed by or in partnership with First Nations in order to maximize regional benefits, minimize GHG emissions and support First Nation accommodation efforts.

The question, however, is how new renewable supply would affect the economics of electrification, which as noted in the previous section is already challenging. And if feasible and desirable, how best could this new renewable supply be developed – with independent power projects (IPPs) led or supported by individual First Nations or IPPs developed by a broad regional First Nation Power Authority.

The economic problem with new IPP projects, however developed, is that in the short term at least, BC Hydro does not need additional resources to meet new loads. Even the lowest cost, most efficient renewable projects will be more expensive than the opportunity cost of supplying new loads with BC Hydro surplus that would otherwise be exported. If BC Hydro were directed to acquire new resources before its surplus was fully absorbed by growing domestic requirements, that would increase its cost of supplying new gas loads.

As shown in Table 5 below, increasing the cost of supplying new gas loads like, for example, the methanol project, would increase the implicit cost of carbon – the value one would have to assign to the avoidance of GHG emissions for there to be no net costs from electrification. \$.16; s.16; s.17

One of the problems for customers purchasing IPP wind supply is that it would displace energy purchases from BC Hydro but not peak capacity requirements. As a result, it would only reduce the energy but not the demand charges, resulting in a lower load factor, relatively high average cost per MWh for their BC Hydro supply.³

This impact could be mitigated if BC Hydro were to offer a shaping and back-up service for the block of power supplied by wind IPPs, with its supply of energy priced on the basis of wholesale market prices (adjusted for transmission costs and losses). That would maintain the low average cost of the high load factor firm supply the customer acquired from BC Hydro, and provide a relatively low cost complement to the wind supply. BC Hydro would be kept whole for this back-up service with the customer absorbing the wholesale market price risk, a risk a customer like a methanol plant could mitigate because of its ability to turn down production if market prices spiked at a time when the wind supply was not available.

This would be a type of retail access to wholesale energy markets that BC Hydro does not currently offer and a number of factors would have to be carefully considered before its implementation. There is the question of eligibility – who would be able to access this service and under what conditions. There would be concerns about the circumstances under which a customer receiving this service could revert back to the standard industrial service. The nature of the financial and physical risks would have to be assessed. However, subject to much more detailed study, this type of service or something like that may enable renewable IPP projects to be developed in the northwest in a manner that does not exacerbate the economic challenge already facing electrification.

s.16

³ Also, it is assumed in the model calculations that the reduction in purchases from BC Hydro does not reduce the total transmission upgrade charges the methanol plant would incur. Its allocated cost of a new line is assumed to be based on its total requirement.

Page 77 of 79

Withheld pursuant to/removed as

s.16

Page 78 of 79 to/à Page 79 of 79

Withheld pursuant to/removed as

s.16; s.17