

**RETURN BIDS TO:  
RETOURNER LES SOUMISSIONS À :**

Transport Canada

[Natasha.blackstein@tc.gc.ca](mailto:Natasha.blackstein@tc.gc.ca)

**REQUEST FOR PROPOSAL  
DEMANDE DE PROPOSITION**

Comments – Commentaires

**Proposal To: Transport Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out thereof.

On behalf of the bidder, by signing below, I confirm that I have read the entire bid solicitation including the documents incorporated by reference into the bid solicitation and I certify that:

1. The bidder considers itself and its products able to meet all the mandatory requirements described in the bid solicitation;
2. This bid is valid for the period requested in the bid solicitation;
3. All the information provided in the bid is complete, true and accurate; and
4. If the bidder is awarded a contract, it will accept all the terms and conditions set out in the resulting contract clauses included in the bid solicitation.

**Proposition à : Transports Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexées, au(x) prix indiqué(s).

En apposant ma signature ci-après, j'atteste, au nom du soumissionnaire, que j'ai lu la demande de propositions (DP) en entier, y compris les documents incorporés par renvoi dans la DP et que :

1. le soumissionnaire considère qu'il a les compétences et que ses produits sont en mesure de satisfaire les exigences obligatoires décrites dans la demande de soumissions;
2. cette soumission est valide pour la période exigée dans la demande de soumissions ;
3. tous les renseignements figurant dans la soumission sont complets, véridiques et exacts; et
4. si un contrat est attribué au soumissionnaire, ce dernier se conformera à toutes les modalités énoncées dans les clauses concernant le contrat subséquent et comprises dans la demande de soumissions.

<b>Title – Sujet</b>	
Battery Supply Chain Study	
<b>Solicitation No. – N° de l'invitation</b>	<b>Date</b>
T8080-190812	April 1, 2020
<b>Client Reference No. – N° référence du client</b>	
T8080-190812	
<b>GETS Reference No. – N° de référence de SEAG</b>	
<b>Solicitation Closes L'invitation prend fin</b>	<b>Time Zone Fuseau horaire</b>
<b>at – à</b> 02 :00 PM – 14h00	Eastern Daylight Time (EDT)
<b>on – le</b> June 1, 2020	Heure Avancé de l'Est (HAE)
<b>F.O.B. - F.A.B.</b>	
<b>Plant-Usine:</b> <input type="checkbox"/>	<b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>
<b>Address inquiries to – Adresser toute demande de renseignements à :</b>	
<b>Natasha Blackstein</b>	
<b>Area code and Telephone No. Code régional et N° de téléphone</b>	<b>Facsimile No. / e-mail N° de télécopieur / courriel</b>
343-550-2321	<a href="mailto:natasha.blackstein@tc.gc.ca">natasha.blackstein@tc.gc.ca</a>
<b>Destination – of Goods, Services, and Construction: Destination – des biens, services et construction</b>	
National Capital Region	

**Instructions:** See Herein

**Instructions :** Voir aux présentes

<b>Delivery required -Livraison exigée</b>	<b>Delivery offered -Livraison proposée</b>
See Herein – Voir aux présentes	
<b>Jurisdiction of Contract:</b> Province in Canada the bidder wishes to be the legal jurisdiction applicable to any resulting contract (if other than as specified in solicitation) <b>Compétence du contrat :</b> Province du Canada choisie par le soumissionnaire et qui aura les compétences sur tout contrat subséquent (si différente de celle précisée dans la demande)	
<b>Vendor/firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b>	
<b>e-mail - courriel</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

## **PART 1 - GENERAL INFORMATION**

### **1.1 Security Requirements**

There are no Security Requirements for this RFP.

### **1.2 Statement of Work**

Transport Canada has a requirement for a study into and report on the Battery Supply Chain in Canada as detailed in Article 6.2 of the Resulting Contract Clauses.

### **1.3 Debriefings**

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

### **1.4 Enquiries and Communications**

When contacting Transport Canada concerning this requirement, Bidders must follow the procedures detailed in

- a) Enquiries or Questions in accordance with Article 2.4 below, and
- b) Communications with Transport Canada in accordance with Article 2.5 below

Failure to follow these provisions alone may result in a Bidder's proposal being rejected.

### **1.5 Office of the Procurement Ombudsman**

The Office of the Procurement Ombudsman (OPO) was established by the Government of Canada to provide an independent venue for Canadian bidders to raise complaints regarding the award of federal contracts under \$25,300 for goods and under \$101,100 for services. Should you have any issues or concerns regarding the award of a federal contract below these dollar amounts, contact OPO by e-mail at [boa.opo@boa-opo.gc.ca](mailto:boa.opo@boa-opo.gc.ca), by telephone at 1-866-734-5169, or by web at [www.opo-boa.gc.ca](http://www.opo-boa.gc.ca). For more information about OPO, including the available services, please visit the [OPO website](#).

### **1.6 Trade Agreements**

The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), the Canada-European Union Comprehensive Economic and Trade Agreement (CETA), and the Canadian Free Trade Agreement (CFTA).

## PART 2 - BIDDER INSTRUCTIONS

### 2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The [2003](#) (2019-03-04) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

### 2.2 Submission of Bids

Bids must be submitted to Natasha Blackstein at [Natasha.blackstein@tc.gc.ca](mailto:Natasha.blackstein@tc.gc.ca) by the date, time indicated on page 1 of the bid solicitation.

Due to the nature of the bid solicitation, bids transmitted by facsimile to Transport Canada will not be accepted.

### 2.3 Former Public Servant

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPSs, bidders must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

#### Definitions

For the purposes of this clause, "former public servant" is any former member of a department as defined in the Financial Administration Act, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- an individual;
- an individual who has incorporated;
- a partnership made of former public servants; or
- a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the Public Service Superannuation Act (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the Supplementary Retirement Benefits Act, R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the Canadian Forces Superannuation Act, R.S., 1985, c. C-17, the Defence Services Pension Continuation Act, 1970, c. D-3, the Royal Canadian Mounted Police Pension Continuation Act, 1970, c. R-10, and the Royal Canadian Mounted Police Superannuation Act, R.S., 1985, c. R-11, the Members of Parliament Retiring Allowances Act, R.S. 1985, c. M-5, and that portion of pension payable to the Canada Pension Plan Act, R.S., 1985, c. C-8..

#### Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? Yes ( ) No ( )

If so, the Bidder must provide the following information, for all FPSs in receipt of a pension, as applicable:

- a.name of former public servant;
- b.date of termination of employment or retirement from the Public Service.

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with Contracting Policy Notice: 2012-2 and the Guidelines on the Proactive Disclosure of Contracts.

Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive?  
Yes ( ) No ( )

If so, the Bidder must provide the following information:

- name of former public servant;
- conditions of the lump sum payment incentive;
- date of termination of employment;
- amount of lump sum payment;
- rate of pay on which lump sum payment is based;
- period of lump sum payment including start date, end date and number of weeks;
- number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.

**2.4 Enquiries - Bid Solicitation**

All enquiries must be submitted in writing to the Contracting Authority no later than 7 calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

**2.5 Communications - Solicitation Period**

To ensure the integrity of the competitive bid process, enquiries and other communications regarding the bid solicitation must be directed only to the Contracting Authority identified in the bid solicitation. Failure to comply with this requirement may result in the bid being declared non-responsive.

## **2.6 Applicable Laws**

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidders.

## **PART 3 - BID PREPARATION INSTRUCTIONS**

### **3.1 Bid Preparation Instructions**

**Canada requests that bidders provide their bid in separate sections as follows:**

Section I: Technical Bid (one softcopy copy)

Section II: Financial Bid (one soft copy)

Section III: Certifications (one soft copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders use a numbering system that corresponds to the bid solicitation in the preparation of their bid:

### **3.2 Section I: Technical Bid**

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work. This section must include the information required in Attachment 1 to Part 4

### **3.3 Section II: Financial Bid**

Bidders must submit their financial bid in accordance with the Basis of Payment detailed in Article 6.7 of the Resultant Contract Clauses. The Bidder's Financial Proposal must include the information required in Attachment 2 to Part 4

### **3.4 Section III: Certifications**

Bidders must submit the certifications and additional information required under Part 5.

**PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION**

**4.1 Evaluation Procedures**

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

## ATTACHMENT 1 TO PART 4 – TECHNICAL EVALUATION CRITERIA

### 1.0 Technical Evaluation Criteria

#### 1.1 Work Plan

The Bidder must submit a Work Plan which include the following components:

1. A Summary of Understanding of approximately one (1) page, addressing transportation logistics and handling dangerous goods in the Study Area;
2. The approach/methodology proposed for completing the work;
3. Quality control; and,
4. A Gantt chart showing activities and milestones.

#### 1.2 Project Description Requirements

For all Project Descriptions used to demonstrate experience, the Bidder shall provide the following information:

- 1) Name of the client(s) / employer(s);
- 2) The start and end dates of the project / work;
- 3) The total number of years' experience performing each mandatory and technical criteria;
- 4) Details about the work performed by the proposed resource including number of working months, tasks, technologies used, and deliverables
- 5) Copies of all diplomas, degrees and certificates referenced in the proposal; and,
- 6) Client / employer reference that can attest to the proposed resource's experience.  
(References are only contacted to validate the information provided in the bidder's proposal).

#### 1.3 Project Team

Details on the Project Team proposed to carry out the study, complete with resumes and Project Descriptions as described in paragraph 1.2 above for each Project Team member. The Project Team must consist of at least a Project Manager, a GIS Specialist and a Research Scientist/Engineer, although one person may fill more than one position.

**1.4 Mandatory Technical Criteria**

Proposals MUST give evidence of compliance to the following mandatory requirements, and present supporting documentation.

Bids which fail to meet the mandatory technical criteria will be declared non-responsive. Each mandatory technical criterion should be addressed separately.

Criterion	Mandatory Criteria	Met / Not Met	Cross Reference in Proposal
<b>MT-1</b>	The Bidder must submit a Work Plan (in accordance with the Bid Preparation Instructions, Article 1.1 of Attachment 1 to Part 4 for a study on the Supply Chain Analysis of All Batteries, Including Lithium Batteries* in Canada.		
<b>MT-2</b>	The Bidder must propose a Project Team (in accordance with Article 1.3 of Attachment 1 to Part 4 the Bid Preparation Instructions) consisting of at least a Project Manager, a GIS Specialist, and a Research Scientist/Engineer, and provide resumes for all Project Team Members. The Bidder may use the same person to fill more than one position in the Project Team.		
<b>MT-3</b>	<p>The Bidder must propose in their response to MT-2 a Project Manager as part of the Project Team who meets the following requirements:</p> <ul style="list-style-type: none"> <li>• Has a minimum of three (3) years cumulative experience (within the period from March 31, 2012 to date of Bid Closing)** of supply chain analysis for the transportation industry and/or for the transportation of dangerous goods; and,</li> <li>• Has experience in safety as it relates to the transportation of dangerous goods.</li> </ul> <p>The Bidder's response to this requirement shall as a minimum include the following as part of its proposal:</p> <ol style="list-style-type: none"> <li>a) A resume for the Project Manager; and</li> <li>b) A minimum of two (2) Project Descriptions that demonstrate the Project Manager's experience in accordance with the details identified in in Article 1.3 of Attachment 1 to Part 4.</li> </ol>		
<b>MT-4</b>	<p>The Bidder must propose as part of the Project Team a GIS Specialist who meets the following requirements using Project Descriptions as detailed in Article 1.3 of Attachment 1 to Part 4:</p> <ul style="list-style-type: none"> <li>• At a minimum, has a degree, diploma or certificate, from a recognized university or college in geography or Geographic Information Systems; and,</li> <li>• Has a minimum of three (3) years' experience, (within the period from March 31, 2012 to date of Bid Closing)**, working in the field of geography or GIS.</li> </ul> <p>Note: A copy of the degree/diploma/certificate must be included in the bidders technical submission</p>		

<p><b>MT-5</b></p>	<p>The Bidder must propose as part of the Project Team a Research Scientist/Engineer who meets the following requirements using Project Descriptions as detailed in Article 1.3 of Attachment 1 to Part 4:</p> <ul style="list-style-type: none"> <li>• At a minimum has a degree from a recognized university in science or engineering with a specialization in chemistry, physics, or related field.</li> <li>• Has a minimum of three (3) years' experience, (within the period from March 31, 2012 to date of Bid Closing)** working in the field of scientific research or engineering with a specialization in chemistry, physics, or related field.</li> </ul> <p>Note: A copy of the degree/diploma/certificate must be included in the bidders technical submission.</p>		

\* In this document, the term “batteries” or “battery” will refer to all batteries, including all lithium batteries.

\*\* The month(s) of experience listed for a project or experience whose timeframe overlaps that of another referenced project or experience will only be counted once.

For example: Project 1 timeframe is July 2015 to December 2015; Project 2 timeframe is October 2015 to January 2016; the total months of experience for these two project references is seven (7) months

**1.5 Point Rated Technical Criteria**

Bids which meet all the mandatory technical criteria will be evaluated and scored as specified below. The score calculated as shown below will be converted to a score out of 255 points.

Each point rated technical criterion should be addressed separately.

Point Rated Technical Criteria	Maximum points available	Cross Reference in Proposal
<p>The draft Work Plan submitted as part of Bidder's Proposal will be evaluated in accordance with the Bid Preparation Instructions, Article 1.1 of Attachment 1 to Part 4 and the following criteria:</p> <ol style="list-style-type: none"> <li>1. The proposal demonstrates a thorough understanding of the supply chain of all batteries, including all lithium batteries, in Canada*, with description of the following aspects:                             <ol style="list-style-type: none"> <li>1.1 Production (3 points);</li> <li>1.2 Packaging (3 points);</li> <li>1.3 Transportation and distribution (3 points);</li> <li>1.4 Retail handling (3 points); and,</li> <li>1.5 Disposal (3 points).</li> </ol> </li> <li>2. The proposal demonstrates a thorough understanding of reverse logistics, including the following elements:                             <ol style="list-style-type: none"> <li>2.1 Description of reverse logistics in general (5 points);</li> <li>2.2 Description of the re-manufacturing and refurbishing processes for batteries (5 points); and,</li> <li>2.3 Description of reverse logistics specific to the battery supply chain (5 points).</li> </ol> </li> <li>3. The methodology identifies potential problems and proposed solutions, including:                             <ol style="list-style-type: none"> <li>3.1 Identification and description of potential gaps or problems that may be encountered over the course of the study (5 points);</li> <li>3.2 Identification and description of work-around solutions to address gaps or potential problems (5 points); and,</li> <li>3.3 Identification and description of alternate resources to address potential problems (5 points).</li> </ol> </li> <li>4. The Work Plan addresses Hazardous Waste regulations with respect to the disposal of dangerous substances, including the following:                             <ol style="list-style-type: none"> <li>4.1 Clear definition of Hazardous Waste in the context of the battery supply chain (5 points);</li> <li>4.2 A brief overview of federal regulations related to hazardous waste (5 points); and,</li> <li>4.3 A brief overview of provincial regulations related to hazardous waste (5 Points).</li> </ol> </li> <li>5. The Work Plan addresses Quality Control as well as processes to ensure that the work can be delivered</li> </ol> <p><b>RT-1</b></p>	75	

	<p>successfully, including:</p> <ul style="list-style-type: none"> <li>5.1 A plan describing quality assurance processes (5 points);</li> <li>5.2 A description of quality control checks (5 points); and,</li> <li>5.3 A timetable of milestones (5 Points).</li> </ul> <p><i>Each major criterion is worth up to 15 points through assessment of the associated sub-criteria. For each sub-criterion that is addressed, full marks for that sub-criterion will be awarded. For each sub-criterion not addressed, 0 points will be awarded.</i></p>		
<p><b>RT-2</b></p>	<p>The Bidder should propose a Project Manager who has experience in the following elements as shown in Project Descriptions (in accordance with Article 1.2 of Attachment 1 to Part 4):</p> <ul style="list-style-type: none"> <li>1. Supply chain of batteries, including the production, manufacturing, packaging, transportation, distribution, final retail handling and disposal;</li> <li>2. Properties of DGs and/or specifically, substances involved in the battery supply chain including by-products and co-products;</li> <li>3. Canadian supply and demand data, transportation trade data (international and domestic) and forecast data;</li> <li>4. Reverse engineering approach to supply chain analysis; and,</li> <li>5. Reverse logistics.</li> </ul> <p><i>Each criterion is worth up to 15 points based on the rating scale below. A maximum of 75 points will be allotted.</i></p> <p><i>0 points = no previous experience</i>  <i>5 points = &lt; 2 years</i>  <i>10 points = 2-3 years</i>  <i>15 points = &gt; 3 years</i></p>	<p>75</p>	
<p><b>RT-3</b></p>	<p>Bidder should propose a GIS Specialist who has experience in the following GIS skills as shown in Project Descriptions (in accordance with Article 1.2 of Attachment 1 to Part 4):</p> <ul style="list-style-type: none"> <li>1. Experience in route analysis;</li> <li>2. Experience in spatial / statistical analysis; and,</li> <li>3. Experience in programing or scripting in a GIS environment.</li> </ul> <p><i>Each criterion is worth up to 15 points based on the rating scale below. A maximum of 45 points will be allotted.</i></p> <p><i>0 points = no previous experience</i>  <i>5 points = &lt; 2 years</i>  <i>10 points = 2-3 years</i>  <i>15 points = &gt; 3 years</i></p>	<p>45</p>	

<p><b>RT-4</b></p>	<p>The Bidder should propose a Research Scientist/Engineer who has experience in the following elements related to all batteries as shown in Project Descriptions (in accordance with Article 1.2 of Attachment 1 to Part 4) :</p> <ol style="list-style-type: none"> <li>1. Properties of the Dangerous Goods;</li> <li>2. The processes of cell and battery manufacturing and production;</li> <li>3. The processes involved in the disposal of batteries; and,</li> <li>4. Risks associated with handling and transportation of the DGs.</li> </ol> <p><i>Each criterion is worth up to 15 points based on the rating scale below. A maximum of 60 points will be allotted.</i></p> <p><i>0 points = no previous experience</i>  <i>5 points = &lt; 2 years</i>  <i>10 points = 2-3 years</i>  <i>15 points = &gt; 3 years</i></p>	<p>60</p>	
<p style="text-align: right;"><b>Technical Score (Maximum = 255)</b></p>			

## ATTACHMENT 2 TO PART 4 – FINANCIAL EVALUATION – PRICING SCHEDULE

### 1.1 Financial Evaluation

Only bids which meet all the mandatory technical criteria and obtain the minimum number of points specified for the point rated technical criteria in Attachment 1 to Part 4 – Technical Evaluation Criteria will be rated on their financial proposal.

The Bidder must complete this pricing schedule and include it in its financial bid. The price specified below, includes any travel expenses that may need to be incurred to satisfy the terms of any contract that may result from its bid.

Pricing Schedule	
	Firm Lot Price
EVALUATED PRICE (excluding taxes)	#[Insert amount]
Taxes (insert tax amount, as applicable):	#[Insert amount]
Total Cost:	#[Insert amount]

### 1.2 Financial Point Score

A financial point score will be calculated for each bid using the following formula

$$(\text{Price L}/\text{Price Bid}) \times 30$$

Where

Price L = the Total Bid Price of the lowest price responsive bid, and

Price Bid = the Total Bid Price of the bid being evaluated

### 1.3 Standard Clauses

SACC Manual Clause [A0220T](#) 2014-06-26, Evaluation of Price-Bid

SACC Manual Clause [A0222T](#) 2014-06-26, Evaluation of Price-Canadian/Foreign Bidders

## ATTACHMENT 3 TO PART 4 – BASIS OF SELECTION

### 1.1 Responsive Bids

To be declared responsive, a bid must:

- a) comply with all the requirements of the bid solicitation;
- b) meet all mandatory technical evaluation criteria; and
- c) **meet the minimum technical score of 178.5 points**

Bids not meeting (a) (b) or (c) will be declared non-responsive. Neither the responsive bid that receives the highest number of technical points nor the one that proposes the lowest price will necessarily be accepted.

### 1.2 Bid Score

The Bid Score for a proposal shall be the sum of the Point Rated Technical Score of Attachment 1 above and the Financial Point Score of Attachment 2 above.

### 1.3 Basis of Selection

The responsive bid with the highest Bid Score calculated in accordance with para 1.2 above will be recommended for award of a contract. In the event that two or more responsive bids have the same highest Bid Score, the responsive bid that obtained the highest overall score for all the point-rated technical criteria will be recommended for award of a contract. Only one contract will be awarded further to this solicitation.

In the event two or more responsive bids have the same highest combined rating of technical merit and price, these bids will be ranked in descending order of the overall scores obtained for all of the point rated technical criteria detailed in Attachment 1 to Part 4; the responsive bid obtaining the highest overall score being ranked the highest.

## PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

### 5.1 Certifications Required with the Bid

#### Integrity Provisions - Declaration of Convicted Offences

Bidders must submit the following duly completed certifications as part of their bid. In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the declaration form available on the [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

### 5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

#### 5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real property agreement of the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

#### 5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#) website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

#### 5.2.3 Status and Availability of Resources

SACC Clause A3005T (2010-08-16)

#### 5.2.4 Education and Experience

SACC Clause A 3010T (2010-08-16)

## PART 6 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

### 6.1 Security Requirements

There are no security requirements associated with the Work

### 6.2 Statement of Work

The Contractor shall carry out a study into and report on the Supply Chain for Batteries in Canada in accordance with the Statement of Work attached as Annex A.

### 6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

#### 6.3.1 General Conditions

[2010B](#) (2018-06-21) General Conditions - Professional Services (Medium Complexity) apply to and form part of the Contract.

#### 6.3.2 Supplemental General Conditions

4007 (2010-08-16) Supplemental Conditions – Canada to Own Intellectual Property Rights in Foreground Information apply to and form part of the Contract.

### 6.4 Term of Contract

The period of performance of the Contract is from date of Contract Award to March 31, 2021, inclusive.

### 6.5 Authorities

#### 6.5.1 Project Authority

Project Authority

TBD

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Matters may be discussed with the Project Authority; however, the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

#### 6.5.2 Immediate Project Representative and Contact

TBD

### 6.5.3 Contracting Authority

Natasha Blackstein  
Procurement Specialist  
275 Sparks Street, Floor 1  
Ottawa ON K1A 0N5  
Phone: 343-550-2321  
E Mail: [natasha.blackstein@tc.gc.ca](mailto:natasha.blackstein@tc.gc.ca)

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

### 6.5.4 Contractor's Representative

TBD

## 6.6 Proactive Disclosure of Contracts with Former Public Servants

By providing information on its status, with respect to being a former public servant in receipt of a Public Service Superannuation Act (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with Contracting Policy Notice: 2012-2 of the Treasury Board Secretariat of Canada.

## 6.7 Payment

### 6.7.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under this Contract, the Contractor will be paid in accordance with Annex B – Basis of Payment.

### 6.7.2 Method of payment

Contractor shall be paid in full following completion of the work and submission of satisfactory invoices, as detailed in Article 6.7.3 below.

### 6.7.3 Invoicing Instructions

SACC Clause H5001C (2008-12-12)

## **6.8 Compliance**

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

## **6.9 Applicable Laws**

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the Province of (To be inserted at time of Contract Award).

## **6.10 Qualifications**

Contractor shall meet, as a minimum, the mandatory requirements detailed in the RFP

## **6.11 Insurance – No specific requirement**

The Contractor is responsible for deciding if insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any insurance acquired or maintained by the Contractor is at its own expense and for its own benefit and protection. It does not release the Contractor from or reduce its liability under the Contract.

## **6.12 Termination on Thirty Days' Notice**

Canada reserves the right to terminate the Contract at any time in whole or in part by giving thirty (30) calendar days written notice to the Contractor.

In the event of such termination, Canada will only pay for costs incurred for services rendered and accepted by Canada up to the date of the termination. Despite any other provision of the Contract, there will be no other costs that will be paid to the Contractor as a result of the termination.

## **6.13 Continuity and Replacement of Personnel**

When specific persons have been named in the Contract as the persons who must perform the Work, the Contractor shall provide the services of the persons so named unless the Contractor is unable to do so for reasons beyond his control.

### **6.13.1 Replacement of Personnel**

If at any time the Contractor is unable to provide the services of any specific person named in the Contract, he shall provide a replacement person with similar qualifications and experience. The Contractor shall, within 3 calendar days, give notice to the Project Authority of:

- a) The reason for the removal of the named person from the Work;
- b) The name, qualifications and experience of the proposed replacement person; and
- c) Proof that the person has the required security clearance granted by Canada, if applicable.

### **6.13.2 Removal of Replacement Personnel**

The Project Authority may order the removal from the Work of any such replacement person and the Contractor shall immediately remove the person from the Work and shall, in accordance with subsection (2), secure a further replacement.

The fact that the Project Authority does not order the removal of a replacement person from the Work shall not relieve the Contractor from its responsibility to meet the requirements of the Contract.

### **6.14 Priority of Documents**

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) The Articles of Agreement;
- (b) 4007 (2010-08-16) - Canada to Own Intellectual Property Rights in Foreground Information
- (c) 2010B (2018-06-21) - General Conditions - Professional Services (Medium Complexity);
- (d) Annex A, Statement of Work
- (e) Annex B, Basis of Payment
- (f) The Contractor's bid dated \_\_\_\_\_

## ANNEX A STATEMENT OF WORK For STUDY INTO THE BATTERY SUPPLY CHAIN IN CANADA

### 1. TITLE

Supply Chain Analysis of All Batteries, including Lithium Batteries, in Canada

### 2. BACKGROUND

The Transportation of Dangerous Goods Directorate (TDG), based on risks, develops safety standards and regulations, conducts oversight, and provides expert advice on dangerous goods (DGs) incidents to promote public safety in the transportation of DGs by all modes of transport in Canada.

The number of battery air shipments has increased in the past decade and continues to rise due to increased global demand in many electrical applications. Although not all batteries are considered DGs, the production and disposal of batteries involves several DGs (such as acid, lead, nickel, lithium, cadmium, alkaline, mercury, and nickel metal hydride)<sup>1</sup> that are transported across Canada and globally. A better understanding of the supply chain for all batteries (including all lithium batteries), as well as the production supply chain, reverse logistics and disposal logistics is necessary to help assess the risk posed to safety during the shipping cycle. This will enable effective risk mitigation strategies for all transportation of DGs by all modes in various segments of the supply chain.<sup>2</sup>

In this document, the term “batteries” or “battery” will refer to all batteries, including all lithium batteries.

Presently, the TDG Program is interested in expanding its knowledge base regarding the production, packaging, transportation, distribution, and final retail handling of all batteries, in Canada. The study will reverse engineer<sup>3</sup> the supply chain of batteries to identify the respective modes of transport and routing, as well as identify all types of facilities involved in the supply chain for the battery industry. Furthermore the study will examine the reverse logistics<sup>4</sup> supply chain and analyze battery disposal logistics, including identification of disposal facilities and mode of transport. An analysis from a safety perspective of the supply chain for all batteries will provide a complete overview of DG activity within Canada, from production to retail sale, through to disposal. The study will also determine the supply and demand of batteries in Canada and look at international trade to determine trends that may have implications in Canada.

---

<sup>1</sup> AZO Cleantech. Recycling Batteries and the Toxic Hazards of Battery Disposal. <https://www.azocleantech.com/article.aspx?ArticleID=132>

<sup>2</sup> NRC-CNRC. Lithium Battery Transport Research Program: review of environmental conditions during freight transportation. <https://nrc-publications.canada.ca/eng/view/object/?id=f9e3fb8a-13ee-4052-aa52-7f3c419fcc45> and <https://publications-cnrc.canada.ca/fra/voir/objet/?id=f9e3fb8a-13ee-4052-aa52-7f3c419fcc45>

<sup>3</sup> **Reverse engineer:** The process by which a man-made object is deconstructed to reveal its designs, architecture, or to extract knowledge from the object; it is only an analysis in order to deduce design features from products with little or no additional knowledge about the procedures involved in their original production. (Source: [https://en.wikipedia.org/wiki/Reverse\\_engineering](https://en.wikipedia.org/wiki/Reverse_engineering))

<sup>4</sup> **Reverse logistics:** Any process or management after the delivery of the product involves reverse logistics. If the product is defective, the customer would return the product. Reverse logistics is defined as the process of moving goods beyond their typical final destination for things like re-use, capturing value, or proper disposal. (Source: [https://en.wikipedia.org/wiki/Reverse\\_logistics](https://en.wikipedia.org/wiki/Reverse_logistics))

### 3. OBJECTIVE

The objective of this project is to analyze and describe the supply chain for all batteries as it pertains to Canada, from production, packaging and distribution through to final retail sale and disposal. The findings of this study will contribute to inform policy decisions regarding safety regulations.

The objective of this project is to analyze and describe the supply chain for all batteries (including all lithium batteries) as it pertains to Canada, from production, packaging and distribution through to final retail sale and disposal. The findings of this study will contribute to inform policy decisions regarding safety regulations.

### 4. SCOPE OF WORK

The scope of this study will include the identification of all batteries transported in Canada by all modes, as well as describing the supply chains from production, packaging, distribution through to final retail sale and disposal. The scope includes the identification of all DGs that support this supply chain, including inputs, by-products and waste products for batteries manufactured in Canada.

The project scope includes the identification of locations of production, packaging, sale, consumption and disposal / recycling facilities and locations of distribution, transportation and handling facilities. The study will identify routes and modes used to transport batteries to Canada from international markets, as well as describe internal distribution within Canada, Canadian battery import, export and re-export<sup>5</sup>. Impacts to safety will also be described by identifying incidents involving battery handling, packaging and transportation.

The work will include an analysis of the following five parts of the battery supply chain and safety:

1. International and domestic battery supply chain for all batteries: utilizing a reverse engineering approach to supply chain analysis, describe the supply chain of batteries and associated DGs, from production facilities through the Canadian market to end retail and consumption sites, including distribution, transportation and warehouse facilities;
2. Canadian supply, demand and international trade: determine the supply and demand of all batteries in Canada, (including Canadian imports, exports and re-exports), in addition to an analysis of international trade in order to determine trends that may have implications in Canada;
3. Reverse logistics of the battery supply chain: Describe the supply chain from consumers to repair, remanufacturing, refurbishing and/or disposal facilities;
4. Disposal logistics of the battery supply chain: Describe the supply chain from consumers / consumption facilities to disposal and recycling sites; and
5. Identification and description of Canadian incidents involving battery production, handling, packaging and transportation.

For each stage of the supply chain, the Contractor shall identify the DGs involved, describe the industry for the identified DGs, identify facilities, identify significant DG inputs, co-products, by-products, waste and operational DGs, identify transportation routes between facilities and supply chains, describe transportation modes and identify quantities of transported commodities.

The Contractor shall identify and map the Canadian transportation routes of DGs and associated commodities throughout the supply chain, from Canadian entry points, to packaging, storage and distribution, through to consumer distribution and disposal facilities, as well as through reverse logistics.

---

<sup>5</sup> **Re-export:** Exports of a country can be distinguished as exports of domestic goods and exports of foreign goods. The second class, exports of foreign goods, are generally referred to as re-exports. (Source: <https://unstats.un.org/unsd/tradecb/Knowledgebase/Reexports-and-Reimports>)

Collected data will be presented in tabular and geospatial formats including maps (details on data formatting is in Section 6.6). The data collected shall cover a period of at least one (1) recent full year (2016 or later). The year covered will be determined at the kick-off meeting.

The consultant is responsible for assembling all socio-economic and geospatial transportation data necessary to complete the study. TC will make available, subject to agreed limitations, the transportation statistics and geospatial data that it holds, providing the data in formats and aggregations that will be agreed upon at the kick off meeting. The consultant will ensure that its handling of confidential, proprietary and market sensitive data obtained from TC and other sources protects the interests of the sources.

## **5. TASKS/REQUIREMENTS**

The Contractor must fulfill the following tasks to satisfy the requirements of the study:

1. Provide an in-depth analysis of the supply chains for all batteries:
  - a) Use a reverse engineering approach to determine the supply chains of all batteries, from production (international and domestic), through the Canadian market to end retail and consumption sites, including import, export, re-export, distribution, storage and transportation;
  - b) Identify distinct commodities by common name, shipping name, dangerous goods UN Number and other applicable commodity codes (ex. HS, STCC, SCTG, NAPCS, etc.) for batteries;
  - c) Identify facilities and locations of facilities (international<sup>6</sup> and domestic), involved in the battery supply chain;
    - i. International and Canadian production and/or manufacturing locations; Canadian storage, warehousing and distribution facilities; packaging and handling facilities, disposal facilities, and consumer/wholesale retail facilities.
    - ii. Facility identification to include name and location of the facility, including geographic coordinates.
  - d) Comprehensively describe the processes of cell and battery manufacturing where dangerous goods are involved in the production, including an overview of the DGs involved (identified by common name, shipping name, dangerous goods UN Number and other applicable commodity codes);
  - e) Identify transportation routes, both International and domestic, by mode and paired origin-destination; and
  - f) Identify quantities being moved on an annual basis along International and domestic transportation routes.
2. Provide an in-depth analysis of the supply and demand of all batteries in Canada, including analysis of international trade in order to determine trends that may have implications in Canada:
  - a) Comprehensively describe the industry in Canada for each identified commodities from Task 1b, including an overview of transportation and handling in Canada;
  - b) Determine the supply and demand of all batteries in Canada; and
  - c) Provide an analysis of international trade to identify trends that may have implications in Canada, including an analysis of Canadian import, export and re-export.
3. Provide an in-depth Reverse Logistics analysis of the supply chain for batteries in Canada:
  - a) Comprehensively describe the industry in Canada for the reuse, refurbishing, remanufacturing, return, dismantling and/or disposal of commodities identified in Task 1b;
  - b) Identify any DGs involved in the process by common name, shipping name, dangerous goods UN Number and other applicable commodity codes, including any DGs produced as by-products and waste;
  - c) Identify facilities and locations of facilities involved in the reverse logistics process of the batteries supply chain;

---

<sup>6</sup> International locations to be described by city and country, if more detailed location information is unavailable.

- i. Repair, refurbishing, remanufacturing and/or dismantling facilities; storage, warehousing and distribution facilities; packaging and handling facilities and disposal facilities.
      - ii. Facilities identification to include name and location of the facility, including geographic coordinates.
    - d) Identify transportation routes, by mode and paired origin-destination; and
    - e) Identify quantities transported on an annual basis along transportation routes.
- 4. Provide an in-depth analysis of the Disposal Logistics for all batteries:
  - a) Comprehensively describe the industry in Canada for the disposal of commodities identified in Task 1a;
  - b) Identify any DGs involved in the process by common name, shipping name, dangerous goods UN Number and other applicable commodity codes, including any DGs produced as by-products and waste;
  - c) Identify facilities and locations of facilities in Canada, and internationally, involved in the battery disposal supply chain;
    - i. Disposal and waste facilities/locations; storage, warehousing and distribution facilities associated with Battery disposal; and packaging and handling facilities for disposal.
    - ii. Facilities identification to include name and location of the facility, including geographic coordinates.
  - d) Identify transportation routes, by mode and paired origin-destination; and
  - e) Identify quantities transported on an annual basis along transportation routes.
- 5. Provide an in-depth description and identification of incidents involving battery production, handling, packaging and/or transportation in Canada, including those involving lithium batteries:
  - a) Utilize various sources and records, such as Occupational Health and Safety (OHS) data, Dangerous Goods Incident data as well as other resources for incident and spill information; and
  - b) For all incidents, identify locations, date of incident, name of commodity / commodity identifier codes, quantity of spill / release and impact of incident.

## **6 DELIVERABLES AND REPORTING**

### **6.1 Kick-off Meeting:**

A kick-off meeting will be held between the contractor and the TC project authority. This meeting is intended to review the proposed work plan submitted as part of the Contractor's proposal and finalize the requirements for the study, including:

- a) Proposed work plan, including the schedule of work product delivery and scope of work.
- b) Proposed Table of Contents for the report which will define the scope and organization of the report;
- c) Description of data and metadata formatting, naming conventions, and organization of data;
- d) Proposed methodologies to be used for data collection, data analysis and GIS analysis; and
- e) Proposed reference list, including preliminary sources for data, internal data sources TDG must provide, as well as external datasets that TDG may assist in acquiring.

The Contractor will be responsible for obtaining all external data, except for that which can ONLY be obtained by TC. If internal TC data is required and available, the Contractor will advise, at the kick-off meeting, details of this data, including name of datasets, fields of interest and time period.

The kick-off meeting will be held within one (1) week after date of Contract award.

## 6.2 Final Work Plan:

The final work plan will be based on the draft submitted with the Contractor's proposal. Edits and changes will be incorporated from discussions held during the kick-off meeting and other consultations with the client. The final work plan must specify:

- a) The specific activities anticipated;
- b) Timelines, milestones and deliverables;
- c) The level of effort and resource for each activity; and
- d) A project plan using a Gantt chart or equivalent format.

Once accepted, the contracted work shall begin. All tasks shall be completed within the timeframe specified. The Contractor shall seek approval from the TC Project Authority with regard to all updates or revisions to the project plan or schedule throughout the life cycle of the project.

Completion Date: Final work plan to be submitted within one (1) week after the kick-off meeting.

## 6.3 Bi-weekly Meeting:

The Contractor must provide bi-weekly (every two weeks) written updates, in English, which will include a status update and/or progress report for the duration of that period. This frequency may be changed if deemed necessary and approved by TC.

Completion Date: Mid-day on an agreed upon day for each two-week period following the date of Contract award.

## 6.4 Mid-project Report & Sample of GIS work:

The Contractor must provide TC with a mid-project report. The mid-project report must include:

- a) A detailed description of the work completed, status of work underway and description of work remaining;
- b) An explanation of the results to date;
- c) Contacts and references as applicable for sources of data;
- d) Data samples, as well as sample maps and GIS products in ESRI-compatible formats, as identified during the kick-off meeting of subsequent bi-weekly meetings; and
- e) Data limitations.

The Contractor must implement TC's questions and comments in subsequent work.

Completion Date: Mid-project report and samples of GIS work must be completed by mid-day on the Friday of the twelfth (12<sup>th</sup>) week following the kick-off meeting, or any other completion date to be agreed to at the kick-off meeting.

Completion Date: On or before mid-day on the contract end date.

## 6.5 Draft Report

The Contractor must provide TC with a draft final report in English. The reports will document the research, analysis and final conclusions of the study, and must include:

- a) Title Page;
- b) Executive Summary of Report;
  - Summary of dominant UNs and DG Classes, modes, volumes, geospatial patterns, market, trade and safety issues, as well as data limitations.
- c) Table of Contents;
- d) Glossary, List of Tables and List of Figures;
- e) Introduction;
  - Overview of the study
  - Background and the objective of the study
- f) Detailed Results and Analysis;
  - Supply chain analysis of all batteries, utilizing a reverse engineering approach
    - Details as per Section 5.1
  - Analysis of supply and demand in Canada and analysis of international trade of all batteries
    - Details as per Section 5.2
  - Reverse logistics analysis of the battery supply chain
    - Details as per Section 5.3
  - Disposal logistics analysis for all batteries
    - Details per Section 5.4
  - Incidents involving all battery production, handling, packaging and transportation in Canada;
    - Details per Section 5.5
- g) Conclusions, Next Steps, and Data Limitations;
  - Overall conclusions and recommendations on next steps;
  - Limitations of study, data gaps, and areas for further research;
  - Identification of possible resources and/or options for narrowing knowledge gaps associated within the study of the supply chain analysis of all battery commodities.
- h) Technical Memorandum;
  - Description of all geospatial work and modelling, including a discussion where applicable about the models chosen and why
  - Glossary of terms and data dictionary
- i) References; and
  - Sources of data
  - List of companies and stakeholders that are identified in the course of the study, with address and geographic coordinates
- j) Data Annexes, including but not limited to GIS maps and data tables for transportation modes, routes, and volumes for each DG or DG groupings (all including complete metadata), as well as any additional data tables graphics or information relevant to the study.

The Draft Report will be created using a word-processing program agreed to by TC and the Contractor at the start of the project, such as Microsoft Word (Office 2007 or more recent versions) and Adobe Acrobat (most recent version).

Completion Date: Mid-day fifteen (15) days prior to the contract end date.

## 6.6 Electronic Data - Draft Tabular Data and GIS Data

- a) The Contractor must provide TC with a draft of the final tabular data. The draft spreadsheets must be created using Microsoft Excel (2013 or more recent versions). The data deliverable must include the following for DGs transported within Canada and within the study period:
  - i. Each DG identified within the scope of the study with attributes including (but not limited to):
    - Unique identifier for each record;
    - Names, class, and UN Number of DG;
    - Volumetric data of each DG;
    - Mode of transport used for distribution;
    - Type of route used for transportation including seasonal nature;
    - Latitude and Longitude coordinates of paired origin/destination locations; and
    - Province names of paired origin/destination locations.
  - b) The Contractor must also provide TC with draft GIS data and draft map products accompanied by complete data dictionaries, application and usage documentation, and metadata. Mapping must be conducted on, or produced to be compatible with ESRI ArcGIS suite of products. The record layout of geospatial data must meet the requirements as agreed to in the kick-off meeting. GIS data deliverables must include:
    - i. Point location feature classes or shapefiles of facilities in Canada and internationally involved in the battery supply chain, the battery production supply chain, the reverse logistics supply chain and disposal logistics. Attributes should include, but are not limited to:
      - Unique identifier for each record (each records represents a location);
      - Address information of the facilities (street number, street name, province, postal code, and country in separate columns);
      - Name of facilities of facility;
      - Type of facility (i.e. production facilities /distribution facilities /transportation and handling facilities /disposal and waste facilities/ repair and refurbishing facilities, etc.);
      - Coordinates (latitude and longitude in separate columns);
      - Names, classes and UN Numbers of DGs handled at the facilities;
      - Names, classes and UN Numbers of DG by-products and DG wastes produced at the facilities;
      - Names, classes and UN Numbers of DGs used in manufacturing at the facilities, as well as DGs used in the operation of the facility;
      - Volumetric data of DGs handled within the study period (estimates of volumes are acceptable when actual volumetric data is unavailable);
      - Data dictionary or use documentation; and
      - Complete metadata
    - ii. Line feature classes or shapefiles for each mode showing the commodity flows for all DG of interest with attributes including (but not limited to):
      - Unique identifier; each record represents a route in the supply chain;
      - UN Number, primary class, and subsidiary class(es) if applicable;
      - Volume and weight data of each DG;
      - Paired origin/destination locations;
      - Aggregated volume of the DG that traverses over each segment of the network;
      - Data dictionary or use documentation; and
      - Complete metadata.
    - iii. A map product (i.e. ArcGIS map document '.mxd') of all the commodity flows for each DG of interest, symbolized to show the aggregated volumes of DGs that traverses over each segment of the network, including the following map elements:

- Title clearly conveying the data being mapped;
- Scale bar;
- Legend that is legible and clearly reflects the presented data;
- Date (month and year) when map was produced; and
- Source(s) of the data being mapped.

Mapping must be conducted on, or produced to be compatible with ESRI ArcGIS suite of products. The record layout of geospatial data must meet the requirements as discussed during the kick-off meeting.

The Draft Report and GIS Data will be reviewed by TC, with all questions and comments recorded on a disposition of comments document provided by the Contractor. The Contractor shall answer and implement TC's questions and comments when preparing the final report.

Complete Date: Mid-day fifteen (15) days prior to the contract end date.

## **5.0 FINAL REPORT AND FINAL TABULAR AND GIS DATA**

The Contractor must provide TC with

- a) Four (4) copies of the final project report;
  - i. One (1) copy in English and one (1) copy in French for internal dissemination, and;
  - ii. One (1) copy in English and one (1) copy in French for public dissemination.

The final report for internal dissemination will consist of the same deliverables outlined in Section 6.5 as in the Draft Report but with the implementation of all comments and feedback provided by TC during draft consultations.

The final report for public dissemination will be the same as the final report for internal use, but with the removal, reformatting and aggregation of data so that commercial sensitivity is protected.

The Contractor must also provide TC with the final tabular data and GIS data, in an electronic format as specified in Section 6.6, in English.

## **8.0 PRESENTATION**

The contractor shall provide and deliver a presentation in English to TC. The presentation will be presented via webinar based on the Final Report. The Contractor must provide TC with two (2) versions as an electronic copy of the presentation, one (1) for internal dissemination, and one (1) to be made for public dissemination. The final presentation for public dissemination will be the same as the final presentation for internal use, but with the removal, reformatting and aggregation of data so that commercial sensitivity is protected. The presentation will be given in Microsoft Power Point format. In addition, the contractor shall include a recording made during the presentation, as well as permission to use the material in whole or in part.

Completion Date: On or before mid-day on the contract end date.

## **9.0 LANGUAGE REQUIREMENTS**

The principal language of communication with Transport Canada will be English. Draft reports should be in English.

## 10.0 TRAVEL

Any travel costs incurred by the Contractor are included in the price.

## 11.0 DATA / REFERENCES / MATERIAL

### Data

Any cost associated with obtaining data outside of what resources Transport Canada (TC) currently has is included in the price.

The Contractor is responsible for assembling all scientific, economic, transportation and any other data necessary to complete the study. TC will make available, subject to agreed limitations, the transportation statistics and geospatial data that it holds, providing the data in formats and aggregations that will be agreed upon at the kick-off meeting.

### Documentation

The Contractor will document and provide metadata for all sources of data and information used during this contract.

## 12.0 WORK LOCATION

The work will be completed at the Contractor's facilities; however, the Contractor's primary contact will be required to participate in bi-weekly teleconference meetings with the TC Project Authority and a webinar presentation.

## 13.0 RESPONSIBILITIES OF THE PROJECT AUTHORITY

The TC Project Authority is responsible for the following:

- 13.1 Monitor contract progress and provide feedback to the contractor as required within two weeks; and
- 13.2 Make available all required data using formats and aggregations that will be agreed upon in the kick-off meeting.

**RESULTANT CONTRACT CLAUSES  
 ANNEX A – STATEMENT OF WORK**

**APPENDIX A - LIST OF DG COMMODITIES ASSOCIATED WITH BATTERY SUPPLY CHAIN (TO  
 BE SUPPLEMENTED BY CONSULTANT RESEASCH)**

<b>UN Number</b>	<b>Shipping Name and Description</b>	<b>Class</b>
UN2794	BATTERIES, WET, FILLED WITH ACID, electric storage	8
UN2795	BATTERIES, WET, FILLED WITH ALKALI, electric storage	8
UN2796	BATTERY FLUID, ACID; SULFURIC ACID with not more than 51 per cent acid; or SULPHURIC ACID with not more than 51 per cent acid	8
UN2796	SULFURIC ACID	8
UN2797	BATTERY FLUID, ALKALI	8
UN2800	BATTERIES, WET, NON-SPILLABLE, electric storage	8
UN3028	BATTERIES, DRY, CONTAINING POTASSIUM HYDROXIDE SOLID, electric storage	8
UN3090	LITHIUM BATTERIES	9
UN3091	LITHIUM BATTERIES CONTAINED IN EQUIPMENT; or LITHIUM BATTERIES PACKED WITH EQUIPMENT	9
UN3171	BATTERY-POWERED EQUIPMENT, regulated by aircraft only; or BATTERY-POWERED VEHICLE, regulated by aircraft only	9
UN3292	BATTERIES, CONTAINING SODIUM; or CELLS, CONTAINING SODIUM	4.3
UN3480	LITHIUM ION BATTERIES (including lithium ion polymer batteries)	9
UN3481	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT (including lithium ion polymer batteries);	9
UN3496	BATTERIES, NICKEL-METAL HYDRIDE	9

**RESULTANT CONTRACT CLAUSES  
ANNEX A – STATEMENT OF WORK**

**APPENDIX B**

**SAMPLE LOCATIONS INVOLVED IN THE BATTERY SUPPLY CHAIN (TO BE SUPPLEMENTED BY CONSULTANT)**

Top 12 Global Li-ion Battery Manufacturers <sup>7</sup>			
Rank	Company	2017 Installed Manufacturing Capacity	Country
1	LG Chem	17 GWh	Korea
2	BYD	16 GWh	China
3	Panasonic	8.5 GWh	Japan
4	AESC	8.4 GWh	Japan
5	CATL	7.5 GWh	China
6	Guoxuan High-Tech	6 GWh	China
7	Samsung SDI	6 GWh	Korea
8	Lishen	3 GWh	China
9	CBAK	2.5 GWh	China
10	CALB	2.4 GWh	China
11	LEJ	2.3 GWh	Japan
12	Wanxiang	2.1 GWh	China

<sup>7</sup>ThomasNet. Top US and International Battery Suppliers and Manufacturers. <https://www.thomasnet.com/articles/top-suppliers/battery-manufacturers-suppliers/>

Key Global Non-Li-ion Battery Manufacturers <sup>8</sup>			
Rank	Company	Non-Li-ion Battery Technology	Country
1	Gridtential	Lead Acid	USA
2	Sumitomo Electric	Vanadium Redox	Japan
3	Enerox	Vanadium Redox	Germany
4	UniEnergy	Vanadium Redox	USA
5	Vionx Energy Inc.	Vanadium Redox	USA
6	Primus Power	Zinc Bromide Flow	USA
7	NGK Insulators	Sodium Sulfur	Japan
8	FIAMM	Lead Acid	Italy

<sup>8</sup>ThomasNet. Top US and International Battery Suppliers and Manufacturers. <https://www.thomasnet.com/articles/top-suppliers/battery-manufacturers-suppliers/>

## ANNEX B BASIS OF PAYMENT

In consideration of the Contractor satisfactorily completing all of its obligations under this Contract, the Contractor will be paid a firm lot price of \$ **XX**, plus GST/HST estimated at \$ **XX** for a total estimated contract value (taxes included) of \$ **XX**.

This firm lot price includes all costs associated with obtaining data, as detailed in paragraph 6.1 of the Statement of Work

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.