

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

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**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.

Title – Sujet	
Lithium Battery Testing Study	
Solicitation No. – N° de l'invitation	Date
T8080-200004	April 17, 2020
Client Reference No. – N° référence du client	
T8080-200004	
GETS Reference No. – N° de référence de SEAG	
Solicitation Closes L'invitation prend fin	Time Zone Fuseau horaire
at – à 02 :00 PM – 14h00	Eastern Daylight Time (EDT)
on – le July 3, 2020	Heure Avancé de l'Est (HAE)
F.O.B. - F.A.B.	
Plant-Usine: <input type="checkbox"/>	Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>
Address inquiries to – Adresser toute demande de renseignements à :	
Natasha Blackstein	
Area code and Telephone No. Code régional et N° de téléphone	Facsimile No. / e-mail N° de télécopieur / courriel
343-550-2321	natasha.blackstein@tc.gc.ca
Destination – of Goods, Services, and Construction: Destination – des biens, services et construction	
National Capital Region	

Instructions: See Herein

Instructions : Voir aux présentes

Delivery required -Livraison exigée	Delivery offered -Livraison proposée
See Herein – Voir aux présentes	
Jurisdiction of Contract: Province in Canada the bidder wishes to be the legal jurisdiction applicable to any resulting contract (if other than as specified in solicitation)	
Compétence du contrat : Province du Canada choisie par le soumissionnaire et qui aura les compétences sur tout contrat subséquent (si différente de celle précisée dans la demande)	
Vendor/firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone	
e-mail - courriel	
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)	
Signature	Date

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 risks posed by power tool Replacement Batteries during shipping by air 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, by telephone at 1-866-734-5169, or by web at 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 only to Transport Canada (TC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

Due to the nature of the bid solicitation, bids transmitted by facsimile to PWGSC 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 separately bound sections as follows:

- Section I: Technical Bid (1 soft 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 Test Plan which must include the following components:

A Summary of Understanding of approximately one (1) page, addressing:

1. Transportation logistics and handling dangerous goods in the Study Area;
2. UN 38.3 testing (A-1 Section 3.4);
3. Scope of Work (A-1 Sections 3.2, 3.3 and 3.4);

As well as addressing;

4. The Approach/Methodology proposed for completing the work;
5. A Quality Control plan detailing data accuracy and reproducibility;
6. A Gantt chart displaying work breakdown structure which includes dates, activities and milestones.
7. A resource plan of a detailed summary of all types of resources required to complete project task. Resource could be human, equipment and materials needed to complete a project
8. Anticipated risks of the project, including those that lead to incomplete or delayed testing as per the original schedule
9. Contingency plan to minimize the risks of the project
10. Suspension criteria and resumption requirements – Describe any criteria that may result in suspension of testing and the requirements to resume testing

1.2 Project / Work Experience Description Requirements

For all Project/Work 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 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

Bidder must provide details on the Project Team proposed to carry out the study, complete with Resumes and Project Descriptions for each Project Team member.

1.4 Definitions

- 1.4.1. Battery (Batteries) – A Battery is a single unit that is inserted directly into the power tool Battery housing in order to function
- 1.4.2. Set – One (1) Set equals twenty-five (25) single Battery units
- 1.4.3. OEM – Original Equipment Manufacturer
- 1.4.4. Replacement Battery – A Battery pack that is not manufactured by the OEM, but is designed to replace the OEM model of Battery to power the same model of power tool as the OEM Battery.

1.5 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.

For clarity, a Battery (as defined in Section 1.4.1) is one individual Battery unit as purchased, and a Set is twenty-five (25) individual Battery units as purchased as defined in Section 1.4.2.

Criterion	Mandatory Criteria	Met / Not Met	Cross Reference in Proposal
MT-1	The Bidder must submit a Work Plan in accordance with the Bid Preparation Instructions (Section 1.1).		
MT-2	The Bidder must have a minimum of 3 years of experience in conducting UN 38.3 testing of lithium Batteries.		
MT-3	The Bidder must demonstrate it has a qualified and experienced team of researchers/staff for carrying out the testing. Key proposed project resources are responsible for training of personnel, as well as for supervision and/or operation of testing and reporting. The Bidder must provide a Curriculum Vitae (CV) for the Key Project Resources.		
MT-4	The Bidder must demonstrate that they are able to ship and receive dangerous goods (including lithium-ion Batteries, UN 3480) in large amounts up to 1000 Watt-hour (Wh) by providing a copy of the Transport of Dangerous Goods Training Certificate of the receiver.		
MT-5	The bidder must be able to ship damaged and undamaged lithium Batteries for further testing to Ottawa, ON or Vancouver, BC, Canada.		
MT-6	The Bidder must have, or provide details on how and where it will assemble all the necessary equipment/analytical tools to carry out the following prescribed testing, as detailed in Annex A-1 Section 3.4: <ul style="list-style-type: none"> - State of Charge; - Altitude Simulation (UN 38.3.4.1); - Thermal Test (UN 38.3.4.2); - Vibration (UN 38.3.4.3); - Shock (UN 38.3.4.4); - External Short Circuit (UN 38.3.4.5); - Impact (UN 38.3.4.6); - Overcharge (UN 38.3.4.7); and - Forced Discharge (UN 38.3.4.8). 		
MT-7	The Bidder must submit as part of its bid an outline/example of the Test Report		
MT-8	The Bidder must demonstrate that the laboratory has been accredited by the International Organization for Standardization (ISO) to ISO 17025 or ISO 9001.		
MT-9	The Bidder must confirm that any files or documents will be sent to Transport Canada by Transport Canada's secure file transport site (https://sfta-tfsa.tc.gc.ca/eng/login)		

1.6 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 249 points.

Each point rated technical criterion should be addressed separately.

Point Rated Technical Criteria		Maximum points available	Cross Reference in Proposal
R-1	<p>The Bidder should include, as part of its proposal, a full and complete draft work plan which demonstrates that it has:</p> <ul style="list-style-type: none"> - A complete and detailed understanding of the Requirements and how to achieve them; and <p>A high probability of successfully completing the contract.</p> <p>Criterion is worth one of the following fixed values up to 20 points based on the rating scale below.</p> <p>2 points will be awarded for each bullet point addressed in Section 1.1, up to a maximum total of 20 points.</p>	20	
R-2	<p>The Bidder should identify key project resources with experience in performing UN 38.3 testing.</p> <p>2 points for each technician who is available to perform work on this study as per 6.13.1 to a maximum of 8 points.</p>	8	
R-3	<p>The Bidder should identify the total number of Sets of 25 Lithium-ion Batteries to be purchased (as per Annex A-1, Section 3.2) and tested (as per Annex A-1, Section 3.4) (both OEM (as defined in Section 1.4.3) and Replacement Batteries (as defined in Section 1.4.4)). The total number of Sets to be purchased/tested will be assigned a point value based upon the discrete values below:</p> <p>0 points – 2 OEM Sets of 25 Batteries and 8 Sets of 25 Replacement Batteries</p> <p>6 points – 2 OEM Sets of 25 Batteries and 10 Sets of 25 Replacement Batteries</p> <p>12 points – 2 OEM Sets of 25 Batteries and 12 Sets of 25 Replacement Batteries</p>	12	
R-4	<p>The Bidder should identify how the packages will be received and the resources available for photographing and documenting the packages (Annex A-1, Section 3.3).</p> <p>5 points for including a plan to document and photograph the packages upon arrival that demonstrates the Set-up including camera positioning, limiting variability amongst multiple measurements, and lighting as well as demonstrating a knowledge of the criteria in Annex A-1 Section 3.3.</p>	5	

	<p>3 points for only demonstrating a knowledge of the criteria in Annex A-1 Section 3.3.</p> <p>1 point for only demonstrating a plan for photographing the packages.</p>		
R-5	<p>The Bidder should demonstrate how the timeframe for the project will be met, including the testing schedule.</p> <p>10 points for including a project plan that demonstrates with very high probability the ability to acquire the lithium-ion Batteries for testing, documenting the package, performing UN 38.3 testing and reporting the results within the timeframe listed including buffer time.</p> <p>5 points for including a project plan that demonstrates with good probability the ability to acquire the lithium-ion Batteries for testing, documenting the package, performing UN 38.3 testing and reporting the results within the timeframe.</p> <p>1 point for including a project plan that demonstrates with low probability the ability to acquire the lithium-ion Batteries for testing, documenting the package, performing UN 38.3 testing and reporting the results within the timeframe.</p>	10	
R-6	<p>The Bidder should demonstrate how the results will be reported to Transport Canada (Annex A-1, Sections 4.2 - 4.4).</p> <p>5 points for including an example of the test report for UN 38.3 testing, agreeing to send the reports in Word format and agreeing to send the raw data in Excel format.</p> <p>3 points for including an example of the test report for UN 38.3 testing.</p> <p>1 point for including a description of what the test report would contain, but no copy of an example test report.</p>	5	
R-7	<p>The Bidder should demonstrate how they can identify reasons for the failure of lithium-ion Batteries in UN 38.3 testing.</p> <p>10 points for giving a previous report on the reasons for lithium-ion Battery failure in UN 38.3 testing including descriptions of how the testing was conducted as well as showing that the Bidder has the necessary equipment to conduct the investigation.</p> <p>5 points for descriptions of how failure testing would be conducted as well as showing that the Bidder has the necessary equipment to conduct the investigation.</p> <p>1 point for describing how failure testing would be conducted</p>	10	
Point Rated Technical Score (Maximum = 249)			

ATTACHMENT 2 TO PART 4 – FINANCIAL EVALUATION – PRICING SCHEDULE

1.1 Financial Evaluation

Bids must meet the mandatory financial criteria specified in the table inserted below.

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

Mandatory Financial Criteria (MF)		
Number	Mandatory Financial Criterion	MET/NOT MET
MF1	The Bidder's financial proposal must be within the budget of \$150,000 CAD excluding all applicable taxes.	

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.

Bidders must submit their financial bid in Canadian funds

Pricing Schedule	
	Firm Lot Price
PRICE for work detailed in Annex A-1 (excluding taxes)	\$C[Insert amount]
PRICE for Option detailed in Annex A-2 (excluding taxes)	\$C[Insert amount]
Taxes (insert tax amount, as applicable):	\$C[Insert amount]
Total Cost:	\$C[Insert amount]

1.2 Financial Point Score

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

$$(Price L/Price Bid) \times 30$$

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

1.2 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

Highest Combined Rating of Technical Merit and Price

1. 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 a minimum technical Score of 175 points.**
2. Bids not meeting (a) (b) or (c) will be declared non-responsive.
3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 70% for the technical merit and 30 % for the price.
4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 70%.
5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 30 %
6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.
7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.

The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 70/30 ratio of technical merit and price, respectively. The total available points equals 135 and the lowest evaluated price is \$45,000 (45).

Basis of Selection - Highest Combined Rating Technical Merit (70%) and Price (30%)

		Bidder 1	Bidder 2	Bidder 3
Overall Technical Score		115/135	89/135	92/135
Bid Evaluated Price		\$55,000.00	\$50,000.00	\$45,000.00
Calculations	Technical Merit Score	$115/135 \times 70 = 59.62$	$89/135 \times 70 = 46.14$	$92/135 \times 70 = 47.70$
	Pricing Score	$45/55 \times 30 = 24.54$	$45/50 \times 30 = 27.00$	$45/45 \times 30 = 30$
Combined Rating		84.16	73.14	77.70
Overall Rating		1st	3rd	2nd

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

6.2.1 The Contractor shall carry out a study into and report on the risks posed by power tool Replacement Batteries during shipping by air in accordance with Annex A-1

6.2.2 Transport Canada reserves the right to exercise its option for an expanded study into the risks posed by replacement batteries in accordance with Annex A-2. The type of batteries to be tested will be identified at time of exercising the option. This option is exercisable at any time on or before March 15, 2021

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

Supplemental Conditions, Title to Intellectual Property Arising under Crown Procurement Contracts, Crown Owns, attached as Annex C, 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 May 31, 2021, inclusive. In the event that Transport Canada should exercise the option of Article 6.2.2 above, the period of performance of the contract shall be from date of Contract Award to March 31, 2022.

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,
Ottawa ON K1A 0N5
Phone: 613-990-7632
E Mail: 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

6.7.2.1 For the work detailed under this contract, Canada will make milestone payments in accordance with the Milestone Payment Schedule detailed in the Table in sub paragraph 6.7.2.1.2 below and the payment provisions of the Contract:

- 6.7.2.1.1 following receipt of an accurate and complete claim for payment using Contractor's invoice and any other document required by the Contract, submitted in accordance with the payment provisions of the Contract, and containing the description and value of the milestone claimed, and
- 6.7.2.1.2 following completion and acceptance of the corresponding deliverable, to the satisfaction of the TC Technical Authority. Refer to Annex 1 (A-1) for deliverable details.

Milestone	Deliverable	Target Date	Payment
1	<ul style="list-style-type: none">▪ Kickoff Meeting (A-1 Section 3.6.1)▪ Communications (A-1 Section 3.6.4)▪ Test Plan (A-1 Section 4.1)	TBD	20% of contract value

	<ul style="list-style-type: none"> ▪ Ordering Batteries (A-1 Section 3.2) 		
2	<ul style="list-style-type: none"> ▪ Receiving Batteries (A-1 Section 3.3) ▪ Completing checklists (A-1 Section 3.3) ▪ Completion of UN 38.3 testing (A-1 Section 3.4) for half the Batteries ordered ▪ Preliminary Test Report (A-1 Section 4.2) 	TBD	30% of contract value
3	<ul style="list-style-type: none"> ▪ Completion of UN 38.3 testing (A-1 Section 3.4) ▪ Draft Test Report (A-1 Section 4.3) ▪ Disposal or reshipment of Batteries (A-1 Section 3.5) 	TBD	30% of contract value
4	<ul style="list-style-type: none"> ▪ Final Test Report (A-1 Section 4.4) 	TBD	20% of contract value

6.7.2.2 Should Canada exercise its option as detailed in Article 6.2.2, Canada will make milestone payments in accordance with the Milestone Payment Schedule detailed in the Table in sub paragraph 6.7.2.2.2 below and the payment provisions of the Contract:

6.7.2.2.1 following receipt of an accurate and complete claim for payment using Contractor's invoice and any other document required by the Contract, submitted in accordance with the payment provisions of the Contract, and containing the description and value of the milestone claimed, and
6.7.2.2.2 following completion and acceptance of the corresponding deliverable, to the satisfaction of the TC Project Technical Authority. Refer to Annex 2 (A-2) for deliverable details.

Milestone	Deliverable	Target Date	Payment
1	<ul style="list-style-type: none"> ▪ Kickoff Meeting (A-2 Section 8.6.1) ▪ Communications (A-2 Section 8.6.4) ▪ Test Plan (A-2 Section 9.1) ▪ Ordering Batteries (A-2 Section 8.2) 	TBD	20% of contract value
2	<ul style="list-style-type: none"> ▪ Receiving Batteries (A-2 Section 8.3) ▪ Completing checklists (A-2 Section 8.3) ▪ Completion of UN 38.3 testing (A-2 Section 8.4) for half the Batteries ordered ▪ Preliminary Test Report (A-2 Section 9.2) 	TBD	30% of contract value
3	<ul style="list-style-type: none"> ▪ Completion of UN 38.3 testing (A-2 Section 8.4) ▪ Draft Test Report (A-2 Section 9.3) ▪ Disposal or reshipment of Batteries (A-2 Section 8.5) 	TBD	30% of contract value
4	<ul style="list-style-type: none"> ▪ Final Test Report (A-2 Section 9.4) 	TBD	20% of contract value

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 Ontario.

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 (2016-04-04) - General Conditions - Professional Services (Medium Complexity);
- (d) Annex A-1, Statement of Work
- (e) Annex A-2, Statement of Work for Option
- (f) Annex B Basis of Payment
- (g) The Contractor's bid dated _____

**ANNEX A-1 STATEMENT OF WORK
For
TESTING POWER TOOL REPLACEMENT LITHIUM BATTERIES
IN THE CANADIAN TRANSPORTATION SYSTEM**

1. Introduction, Background and Definitions

1.1 Introduction

The Transportation of Dangerous Goods Directorate (TDG), as part of the Safety and Security Group at Transport Canada (TC) serves as the major source of regulatory development, information, and guidance on dangerous goods transport for the public, industry, and government employees. The transportation of lithium-ion Batteries in Canada is regulated under the Transportation Dangerous Goods Act, 1992 and its Regulations (TDG Regulations).

1.2 Background

A recent Pipeline and Hazardous Materials Safety Administration (PHMSA) investigation found that more 80 percent of shippers were unable to provide valid test reports as required under the United Nations Manual of Tests and Criteria Section 38.3. TDG via UN regulations require testing of lithium Batteries under this standard. Substandard Batteries are also a growing concern as stated by PHMSA, in part, because substandard Batteries are emerging in the transport system. IATA has also suggested many of the worst abuses of substandard Batteries originate in China (<https://www.prba.org/general/prba-urges-crackdown-on-non-compliant-lithium-ion-Battery-manufacturers-in-china-1143/>).

Substandard lithium-ion cells and Batteries transported as cargo are a significant risk during air transportation; a fire in the cargo hold of an aircraft can rapidly spread resulting in damage to the aircraft (including total losses) and fatalities. Fire suppression systems in aircraft are limited in their ability to extinguish lithium-ion Batteries, making a lithium-Battery fire onboard an aircraft difficult to fight.

1.3 Definitions

The definitions are as defined in Attachment 1 Section 1.4, and are shown below:

- 1.3.1. Battery – Battery (Batteries) – A Battery is a single unit that is inserted directly into the power tool Battery housing in order to function
- 1.3.2. Set – One (1) Set equals twenty-five (25) single Battery units
- 1.3.3. OEM – Original Equipment Manufacturer (such as, but not limited to, Makita, Dewalt, Milwaukee or Bosch).
- 1.3.4. Replacement Battery – A Battery pack that is not manufactured by the OEM, but is designed to replace the OEM model of Battery to power the same model of power tool as the OEM Battery.

2. Objective

Transport Canada's TDG Directorate implements a lithium Battery safety assessment study of Canadian lithium Battery manufacturers, importers and distributors. This assessment examines packaging, labelling and verifies compliance to the UN Manual of Tests and Criteria Subsection 38.3 (UN 38.3). In this project, Transport Canada is looking to understand the risks posed by power tool Replacement Batteries during shipping by air, as they are common Replacement Batteries by volume.

The objective of this project is to:

- 2.1. Order several common Replacement Batteries for power tools that are shipped rapidly via the express air mode.
- 2.2. Receive and document the arrival of lithium-ion Batteries according to the checklist in Section 3, looking for compliance with TDG regulations.
- 2.3. Perform testing to UN 38.3 (UN Manual of Tests and Criteria) for several common Replacement Batteries for power tools that are shipped rapidly.

3. Scope of Work

In this study, The Contractor shall purchase two (2) Sets of Original Equipment Manufacturer (OEM) Batteries and eight to twelve (8-12) Sets of Replacement Batteries shipped rapidly from marketplaces such as Aliexpress, Amazon and eBay. A Set is defined as twenty-five (25) individual identical Battery units, where each one (1) Battery is inserted directly into the power tool Battery housing in order to function. Upon receipt, the packages will be checked for compliance with Transportation of Dangerous Goods Regulations (TDGR). The Contractor will measure the State of Charge (SOC) of the Batteries to ensure compliance with IATA Packaging Instruction 965 (SOC<30%). The Contractor will request the UN 38.3 test summary report from the seller, which are required to be provided when shipping lithium-ion Batteries.

Once the package has been checked for compliance with TDGR, UN 38.3 testing will be performed by The Contractor to check that the test report from the supplier (if supplied) is accurate and true. Select Batteries which fail will be sent for further analysis at the National Research Council Canada (NRC) in Ottawa, ON, Canada or Vancouver, BC, Canada.

The selected bidder, hereinafter referred to as the "Contractor" shall carry out the study as detailed below.

3.1. Task 1: Test Plan

The contract shall provide a test plan detailing how the testing in section 3.4 will be conducted along with timeframes for Sections 3.2, 3.3 and 3.4.

3.2. Task 2: Purchase of Lithium-ion Batteries

The Contractor shall purchase two (2) OEM power tool Battery Sets and eight to twelve (8-12) Replacement Battery power tool Battery Sets (of 25 Batteries). This gives a total amount of ten to fourteen (10-14) Sets of Batteries, or two hundred and fifty to three hundred and fifty (250-350) Batteries. The Replacement Batteries are designed to replace the OEM model of Battery to power the same make and model of power tool.

From the twenty-five (25) Batteries purchased, sixteen (16) Batteries will be tested, according to UN 38.3. The remaining nine (9) Batteries will be stored and used in case any of the Batteries used for testing are not suitable or shipped to the NRC in Vancouver, BC or Ottawa, ON, Canada. The Battery purchases should follow the steps detailed below

3.2.1 The contractor shall

- i. Purchase one (1) Sets of twenty-five (25) OEM power tool Batteries of Transport Canada's choice (such as, but not limited to, Makita, Dewalt, Milwaukee or Bosch). A Set is defined as 25 Batteries.
- ii. Purchase four to six (4-6) Sets of twenty-five (25) Replacement Batteries of Transport Canada's choice (to fit the same model of power tool as the OEM model in 3.2.1 (i))
- iii. All Batteries will be shipped by the fastest possible option available during ordering.
- iv. The Batteries will be purchased from marketplaces such as, but not limited to, Amazon, eBay and Aliexpress
- v. The UN 38.3 test summary will be requested from the manufacturer

vi. Screenshot of Battery purchased which includes the name of the marketplace, the description including capacity [look for energy rating (in Watt-hour, Wh) and lithium content (in grams)], the brand name, the tests that it passed (if applicable) and the price

3.2.2 The Contractor shall repeat 3.2.1(i) to 3.2.1 (vi) once with a second power tool Battery model of Transport Canada's choice

3.3 Task 3: Receiving and Documenting Lithium-ion Batteries

The Contractor shall ship and receive dangerous goods (lithium-ion Batteries) and shall document the package following the steps detailed below. Photographs should be clear and taken with sufficient lighting, such that any markings/labels are clearly legible and damage is clearly visible. A reference object (such as a ruler) should also be included in the photograph.

- 3.3.1 Take a screenshot of the shipment tracking screen, if available
- 3.3.2 Photograph of the shipping document attached to the parcel
- 3.3.3 Photograph of each of the 6 sides of the outer package with sufficient lighting, taken from an appropriate distance from the package, so that any damage to the package is clearly visible.
- 3.3.4 A photo of each marking/label on the outer package so that the words on the markings/labels are legible
- 3.3.5 After opening the outer package, and before taking out the Batteries, a photograph of the inside of the outer package showing how the Batteries were packaged inside the container
- 3.3.6 A photo of the Battery terminals showing how they were protected during shipping
- 3.3.7 A photo to the inner package (the individual package containing that Battery)
- 3.3.8 After unwrapping the Battery, a photograph of one of the Batteries from each side, the top and the bottom
- 3.3.9 A photo of any markings on the Battery or any damage that the Battery sustained during transport so that the words on the markings/labels are legible, if applicable
- 3.3.10 The contractor shall also complete the following receiving checklist

Item	
What is the weight of the whole package	Kg
What are the dimensions of the outer package (L x W x H)	X X cm
Name of carrier company	
Is the labelling of the outer package correct according to the TDGR?	Yes/No
Is the shipping document correct according to the TDGR?	Yes/No
Is the outer package damaged?	Yes/No
Is the outer packaging appropriate according to the TDGR?	Yes/No
Do the Batteries have sufficient protection within the outer package according to the packaging instructions?	Yes/No
How many Batteries were contained in the outer package	
What is the weight of an individual Battery	g
Do the Batteries show any signs of deformation, physical damage, dents, apparent breakage, leakage, default or other abnormalities?	Yes/No
Was the UN38.3 test results provided by manufacturer?	Yes/No
Are there any other issues with the packaging? (explain below)	Yes/No

3.4 Task 4: UN 38.3 Testing

The Contractor shall perform service life testing and summarize the results following the steps detailed below. A total of 16 Batteries out of the 25 purchased should be tested, with the remainder stored in case some Batteries are faulty upon arrival or for sending for further analysis at the NRC in Vancouver, BC, Canada or Ottawa, ON, Canada. The UN Manual of Tests and Criteria Subsection 38.3 (UN 38.3) is available from https://www.unece.org/fileadmin/DAM/trans/danger/ST_SG_AC.10_11_Rev6_E_WEB_-_With_corrections_from_Corr.1.pdf.

- 3.4.1 State of Charge testing of as-received Batteries
- 3.4.2 Capacity testing of Battery
- 3.4.3 Altitude simulation test (UN 38.3.4.1)
- 3.4.4 Thermal test (UN 38.3.4.2)
- 3.4.5 Vibration test (UN 38.3.4.3)
- 3.4.6 Shock test (UN 38.3.4.4.)
- 3.4.7 External short circuit test (UN 38.3.4.5)
- 3.4.8 Impact/crush test (UN 38.3.4.6)
- 3.4.9 Overcharge test (UN 38.3.4.7)
- 3.4.10 Forced discharge test (UN 38.3.4.8)
- 3.4.11 Describe methodology and pass/fail criteria of each test.

3.5 Task 5: Disposal and Reshipping Lithium-ion Batteries

The contractor shall either dispose of the lithium-ion Batteries or reship at the request of Transport Canada the lithium-ion Batteries (new and/or Batteries which have failed UN 38.3 testing) to the NRC in Vancouver, BC or Ottawa, ON, Canada, according to instructions from Transport Canada.

3.6 Task 6: Performance Reporting

3.6.1 Kick-off Meeting

Contractor shall schedule a meeting with Transport Canada within 2 weeks of contract award to discuss the work required and timeframes for the project as well as presenting their test plan (Section 4.1)

3.6.2 Monthly Update Meetings

Contractor shall provide Monthly Update Meetings by teleconference or in person with the technical authority for the duration of the project in order to:

- i. Clarify needs, including purchasing of lithium-ion Batteries required, hurdles to obtaining lithium-ion Batteries, and potential dates of testing.
- ii. Inform TC on the progress of the project and identify any new problems and proposed workarounds, as well as problems that have been resolved.

3.6.3 Progress Reports

The Contractor must provide monthly written or oral progress reports at the request of TC. The Progress Reports must include the following to ensure that the project is progressing in accordance with the agreement:

- i. The status of the project,
- ii. Proposed approach(es),
- iii. Implementation, and
- iv. Results of work.

3.6.4 Communications

In addition to the timely submission of all deliverables and fulfillment of obligations specified in the agreement, the Contractor must facilitate and maintain regular communication with TC and to immediately notify the TC of any issues, problems, or areas of concern (e.g. delays) in relation to any work completed under the agreement, as they arise. Communication may include: phone calls, electronic mail, faxes, mailings, and ad-hoc meetings.

4. Deliverables

The Contractor shall prepare and provide the following deliverables to Transport Canada

- 4.1. Test Plan, as described in Task 1 above.
- 4.2. Preliminary Test Report at 50% of UN 38.3 Battery test completion. The test report must contain all of the parameters requested in Section 3.2, Section 3.3 and Section 3.4.
- 4.3. Final Draft Test Report, for review and comment or approval by the Project Authority at 100% of UN 38.3 Battery testing completion. The test report must contain all of the parameters requested in Section 3.2, Section 3.3 and Section 3.4.
- 4.4. Final Test Report at 100% of UN 38.3 Battery test completion. The test report must contain all of the parameters requested in Section 3.2, Section 3.3 and Section 3.4

All reports and test data must be delivered in electronic format using the most appropriate format of a) through e), listed below:

- a) Adobe Acrobat (PDF),
- b) Microsoft Word (including photos of testing and/or test results),
- c) Microsoft Excel,
- d) Microsoft PowerPoint, and
- e) Mutually agreed-upon format for multimedia (e.g. videos, photos).

5. Inspection and Acceptance

All deliverables and services rendered under any contract are subject to inspection by the TC Project Authority defined in the Contract. Should any deliverables not be to the satisfaction of the TC Project Authority, as submitted, the TC Project Authority shall have the right to reject it or to require correction before payment will be authorized.

TC reserves the right to observe lithium-ion Battery testing in progress at contractor facilities.

This Contract shall not be considered to have been completed until the Contractor has demonstrated to the satisfaction of the Project Authority that the Final Test Report meets the requirements detailed in this Scope of Work.

**ANNEX A-2 STATEMENT OF WORK
For
OPTIONAL TESTING OF CONSUMER PRODUCT REPLACEMENT LITHIUM BATTERIES
IN THE CANADIAN TRANSPORTATION SYSTEM**

6. Introduction and Background

6.1 Introduction

The Transportation of Dangerous Goods Directorate (TDG), as part of the Safety and Security Group at Transport Canada (TC) serves as the major source of regulatory development, information, and guidance on dangerous goods transport for the public, industry, and government employees. The transportation of lithium-ion Batteries in Canada is regulated under the Transportation Dangerous Goods Act, 1992 and its Regulations (TDG Regulations).

Should Transport Canada exercise its option detailed in Article 6.2 of the Contract, the Contractor shall carry out the work detailed in this document, Annex A-2.

6.2 Background

A recent Pipeline and Hazardous Materials Safety Administration (PHMSA) investigation found that more 80 percent of shippers were unable to provide valid test reports as required under the United Nations Manual of Tests and Criteria Section 38.3. TDG via UN regulations require testing of lithium Batteries under this standard. Substandard Batteries are also a growing concern as stated by PHMSA, in part, because substandard Batteries are emerging in the transport system. IATA has also suggested many of the worst abuses of substandard Batteries originate in China (<https://www.prba.org/general/prba-urges-crackdown-on-non-compliant-lithium-ion-Battery-manufacturers-in-china-1143/>).

Substandard lithium-ion cells and Batteries transported as cargo are a significant risk during air transportation; a fire in the cargo hold of an aircraft can rapidly spread resulting in damage to the aircraft (including total losses) and fatalities. Fire suppression systems in aircraft are limited in their ability to extinguish lithium-ion Batteries, making a lithium-Battery fire onboard an aircraft difficult to fight.

6.3 Definitions

6.3.1. Battery (Batteries) – A Battery is a single unit that is inserted directly into the consumer Battery housing in order to function

6.3.2. Set – One (1) Set equals twenty-five (25) single Battery units

6.3.3. OEM – Original Equipment Manufacturer

6.3.4. Replacement Battery – A Battery pack that is not manufactured by the OEM, but is designed to replace the OEM model of Battery to power the same model of consumer product as the OEM Battery.

6.3.5. Consumer Battery – A single unit that is inserted directly into the consumer product Battery housing in order to function, with a capacity range of 10-200 Wh.

7. Objective

Transport Canada's TDG Directorate implements a lithium Battery safety assessment study of Canadian lithium Battery manufacturers, importers and distributors. This assessment examines packaging, labelling and verifies compliance to UN tests. In this project, Transport Canada is looking to understand the risks posed by consumer Replacement Batteries during shipping by air.

The objective of this project is to:

- 7.1. Order several common Replacement Batteries for consumer products that are shipped rapidly to via the express air mode.
- 7.2. Receive and document the arrival of lithium-ion Batteries according to the checklist in Section 8, looking for compliance with TDG regulations.
- 7.3. Perform testing to UN 38.3 (UN Manual of Tests and Criteria) for several common Replacement Batteries that are shipped rapidly.

8. Scope of Work

In this study, The Contractor shall purchase two (2) Sets of Original Equipment Manufacturer (OEM) Batteries and eight to twelve (8-12) Sets of Replacement Batteries shipped rapidly from marketplaces such as Aliexpress, Amazon and eBay. The type of Consumer Battery will be decided by Transport Canada. A Set is defined as twenty-five (25) individual identical Battery units, where each one (1) Battery is inserted directly into the consumer product Battery housing in order to function. Upon receipt, the packages will be checked for compliance with Transportation of Dangerous Goods Regulations (TDGR). The Contractor will measure the State of Charge (SOC) of the Batteries to ensure compliance with IATA Packaging Instruction 965 (SOC<30%). The Contractor will request the UN 38.3 test summary report from the seller, which are required to be provided when shipping lithium-ion Batteries.

Once the package has been checked for compliance with TDGR, UN 38.3 testing will be performed by The Contractor to check that the test report from the supplier (if supplied) is accurate and true. Select Batteries which fail will be sent for further analysis at the National Research Council Canada (NRC) in Ottawa, ON, Canada or Vancouver, BC, Canada.

The selected bidder, hereinafter referred to as the "Contractor" shall carry out the study as detailed below.

8.1. Task 1: Test Plan

The contract shall provide a test plan detailing how the testing in section 8.4 will be conducted along with timeframes for Sections 8.2, 8.3 and 8.4.

8.2. Task 2: Purchase of Lithium-ion Batteries

The Contractor shall purchase two (2) OEM Consumer Battery Sets and eight to twelve (8-12) Replacement Battery Sets (of 25 Batteries). This gives a total amount of ten to fourteen (10-14) Sets of Batteries, or two hundred and fifty to three hundred and fifty (250-350) Batteries. The Replacement Batteries are designed to replace the OEM model of Battery to power the same make and model of the consumer product.

From the 25 Batteries purchased, 16 Batteries will be tested according to UN 38.3. The remaining Batteries (9) will be stored and used in case any of the Batteries used for testing are not suitable or shipped to the NRC in Vancouver, BC, Canada or Ottawa. The Battery purchases should follow the steps detailed below

8.2.1 The contractor shall

- i. Purchase one (1) Set of twenty-five (25) OEM consumer Batteries of Transport Canada's choice (such as, but not limited to e-cigarette Batteries, cell phone Batteries and power banks)
- ii. Purchase four to six (4-6) Sets of twenty-five (25) Replacement Batteries of Transport Canada's choice (to fit the same model of consumer product as the OEM model in 3.2.1 (i))
- iii. These Batteries will be shipped by air. Express shipping must be selected.
- iv. The Batteries will be purchased from marketplaces such as, but not limited to, Amazon, eBay and Aliexpress

- v. The UN 38.3 test summary will be requested from the manufacturer
- vi. Screenshot of Battery purchased which includes the name of the marketplace, the description including capacity [look for energy rating (in Watt-hour, Wh) and lithium content (in grams)], the brand name, the tests that it passed (if applicable) and the price

8.2.2 The Contractor shall repeat 8.2.1(i) to 8.2.1 (vi) once with a second consumer product Battery model of Transport Canada’s choice

8.3 Task 3: Receiving and Documenting Lithium-ion Batteries

The Contractor shall ship and receive dangerous goods (lithium-ion Batteries) and shall document the package following the steps detailed below. Photographs should be clear and taken with sufficient lighting, such that any markings/labels are clearly legible and damage is clearly visible. A reference object (such as a ruler) should also be included in the photograph.

- 8.3.1 Take a screenshot of the shipment tracking screen, if available
- 8.3.2 Photograph of the shipping document attached to the parcel
- 8.3.3 Photograph of each of the 6 sides of the outer package with sufficient lighting, taken from an appropriate distance from the package, so that any damage to the package is clearly visible.
- 8.3.4 A photo of each marking/label on the outer package so that the words on the markings/labels are legible
- 8.3.5 After opening the outer package, and before taking out the Batteries, a photograph of the inside of the outer package showing how the Batteries were packaged inside the container
- 8.3.6 A photo of the Battery terminals showing how they were protected during shipping
- 8.3.7 A photo to the inner package (the individual package containing that Battery)
- 8.3.8 After unwrapping the Battery, a photograph of one of the Batteries from each side, the top and the bottom
- 8.3.9 A photo of any markings on the Battery or any damage that the Battery sustained during transport so that the words on the markings/labels are legible, if applicable
- 8.3.10 The contractor shall also complete the following receiving checklist

Item	
What is the weight of the whole package	Kg
What are the dimensions of the outer package (L x W x H)	X X cm
Name of carrier company	
Is the labelling of the outer package correct according to the TDGR?	Yes/No
Is the shipping document correct according to the TDGR?	Yes/No
Is the outer package damaged?	Yes/No
Is the outer packaging appropriate according to the TDGR?	Yes/No
Do the Batteries have sufficient protection within the outer package according to the packaging instructions?	Yes/No
How many Batteries were contained in the outer package	
What is the weight of an individual Battery	g
Do the Batteries show any signs of deformation, physical damage, dents, apparent breakage, leakage, default or other abnormalities?	Yes/No
Was the UN38.3 test results provided by manufacturer?	Yes/No
Are there any other issues with the packaging? (explain below)	Yes/No

8.4 Task 4: UN 38.3 Testing

The Contractor shall perform service life testing and summarize the results following the steps detailed below. A total of 16 Batteries out of the 25 purchased should be tested, with the remainder stored in case some Batteries are faulty upon arrival or for sending for further analysis at the NRC in Vancouver, BC, Canada or Ottawa, ON, Canada. The UN Manual of Tests and Criteria Subsection 38.3 (UN 38.3) is available from

[https://www.unece.org/fileadmin/DAM/trans/danger/ST_SG_AC.10_11_Rev6_E_WEB -
With corrections from Corr.1.pdf](https://www.unece.org/fileadmin/DAM/trans/danger/ST_SG_AC.10_11_Rev6_E_WEB_-_With_corrections_from_Corr.1.pdf) .

- 8.4.1 State of Charge testing of as-received Batteries
- 8.4.2 Capacity testing of Battery
- 8.4.3 Altitude simulation test (UN 38.3.4.1)
- 8.4.4 Thermal test (UN 38.3.4.2)
- 8.4.5 Vibration test (UN 38.3.4.3)
- 8.4.6 Shock test (UN 38.3.4.4.)
- 8.4.7 External short circuit test (UN 38.3.4.5)
- 8.4.8 Impact/crush test (UN 38.3.4.6)
- 8.4.9 Overcharge test (UN 38.3.4.7)
- 8.4.10 Forced discharge test (UN 38.3.4.8)
- 8.4.11 Describe methodology and pass/fail criteria of each test.

8.5 Task 5: Disposal and Reshipping Lithium-ion Batteries

The contractor shall either dispose of the lithium-ion Batteries or reship at the request of Transport Canada the lithium-ion Batteries (new and/or Batteries which have failed UN 38.3 testing) to the NRC in Vancouver, BC, Canada or Ottawa, ON, Canada, according to instructions from Transport Canada.

8.6 Task 6: Performance Reporting

8.6.1 Kick-off Meeting

Contractor shall schedule a meeting with Transport Canada within 2 weeks of contract award to discuss the work required and timeframes for the project as well as presenting their test plan (Section 9.1)

8.6.2 Monthly Update Meetings

Contractor shall provide Monthly Update Meetings by teleconference or in person with the technical authority for the duration of the project in order to:

- i. Clarify needs, including purchasing of lithium-ion Batteries required, hurdles to obtaining lithium-ion Batteries, and potential dates of testing.
- ii. Inform TC on the progress of the project and identify any new problems and proposed workarounds, as well as problems that have been resolved.

8.6.3 Progress Reports

The Contractor must provide monthly written or oral progress reports at the request of TC. The Progress Reports must include the following to ensure that the project is progressing in accordance with the agreement:

- i. The status of the project,
- ii. Proposed approach(es),
- iii. Implementation, and
- iv. Results of work.

8.6.4 Communications

In addition to the timely submission of all deliverables and fulfillment of obligations specified in the agreement, the Contractor must facilitate and maintain regular communication with TC and to immediately notify the TC of any issues, problems, or areas of concern (e.g. delays) in relation to any work completed under the agreement, as they arise. Communication may include: phone calls, electronic mail, faxes, mailings, and meetings.

9. Deliverables

The Contractor shall prepare and provide the following deliverables to Transport Canada

- 9.1. Test Plan, as described in Task 1 above.
- 9.2. Preliminary Test Report at 50% of UN 38.3 Battery test completion. The test report must contain all of the parameters requested in Section 8.2, Section 8.3 and Section 8.4.
- 9.3. Final Draft Test Report, for review and comment or approval by the Project Authority at 100% of UN 38.3 Battery testing completion. The test report must contain all of the parameters requested in Section 8.2, Section 8.3 and Section 8.4.

9.4. Final Test Report at 100% of UN 38.3 Battery test completion. The test report must contain all of the parameters requested in Section 8.2, Section 8.3 and Section 8.4.

All reports and test data must be delivered in electronic format using the most appropriate format of a) through e), listed below:

- a) Adobe Acrobat (PDF),
- b) Microsoft Word (including photos of testing and/or test results),
- c) Microsoft Excel,
- d) Microsoft PowerPoint, and
- e) Mutually agreed-upon format for multimedia (e.g. videos, photos).

10. Inspection and Acceptance

All deliverables and services rendered under any contract are subject to inspection by the TC Project Authority defined in the Contract. Should any deliverables not be to the satisfaction of the TC Project Authority, as submitted, the TC Project Authority shall have the right to reject it or to require correction before payment will be authorized.

TC reserves the right to observe lithium-ion Battery testing in progress at contractor facilities.

This Contract shall not be considered to have been completed until the Contractor has demonstrated to the satisfaction of the Project Authority that the Final Test Report meets the requirements detailed in this Scope of Work.

ANNEX B

BASIS OF PAYMENT

Bidders must submit their financial bid in Canadian funds

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.

1. In consideration of the Contractor satisfactorily completing all of its obligations under this Contract, the Contractor will be paid a firm lot price of \$ _____,
GST/HST (if applicable) \$ _____
Total estimated contract value (taxes included) \$ _____.

Option Period

2. In the event that Transport Canada should exercise the option of Article 6.2.2, the Contractor will be paid for all work described in Annex A-2, a firm lot price of \$ _____.
GST/HST (if applicable) \$ _____.
Total estimated contract value (taxes included) \$ _____.