RETURN BIDS TO: RETOURNER LES SOUMISSIONS À:

Bid Receiving - Environment Canada / Réception des soumissions - Environnement Canada

Environment Canada (BIDS) Mailroom 171 Jean-Proulx Gatineau, Quebec J8Z 1W5

BID SOLICITATION DEMANDE DE SOUMISSONS

PROPOSAL TO: ENVIRONMENT CANADA

We offer to perform or provide to Canada the services detailed in the document including any attachments and annexes, in accordance with the terms and conditions set out or referred to in the document, at the price(s) provided.

SOUMISSION À: ENVIRONNEMENT CANADA

Nous offrons d'effectuer ou de fournir au Canada, aux conditions énoncées ou incluses par référence dans le document incluant toutes pièces jointes et annexes, les services détaillés dans le document, au(x) prix indiqué(s).

Title – Titre CHARACTERIZATION OF COAL AND UNCOMBUSTED CARBON FROM ELECTRIC POWER GENERATION FOR THE PURPOSE OF UPDATING CARBON DIOXIDE EMISSION FACTORS

EC Bid Solicitation No. /SAP No. – Nº de la demande de soumissions EC / Nº SAP K8A42-14-0013

Date of Bid solicitation (YYYY-MM-DD) – Date de la demande de soumissions (AAAA-MM-JJ) 2014-11-24

Bid Solicitation Closes (YEAR-MM-DD) - La demande de soumissions prend fin (AAAA-MM-JJ)

Time Zone – Fuseau horaire

EDT

at – à 2:00 P.M. on – le 2014-12-15

F.O.B - F.A.B

Address Enquiries to - Adresser toutes questions à

Josée Francoeur josee.francoeur@ec.gc.ca

 Telephone No. – № de téléphone
 Fax No. – № de Fax

 819-938-4855
 819-938-4848

Delivery Required (YEAR-MM-DD) – Livraison exigée (AAAA-MM-JJ)

Destination - of Services / Destination des services

Frank Neitzet.

Chief of Energy Section

Direction générale des sciences et de la technologie 200 Sacre-Cœur Blvd.

Gatineau, Quebec K1A 0H3

Canada

Security / Sécurité

N/A

Vendor/Firm Name and Address - Raison sociale et adresse du fournisseur/de l'entrepreneur

Telephone No. – N° de téléphone

Fax No. – N° de Fax

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

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CHARACTERIZATION OF COAL AND UNCOMBUSTED CARBON FROM ELECTRIC POWER GENERATION FOR THE PURPOSE OF UPDATING CARBON DIOXIDE EMISSION FACTORS

PART 1 – GENERAL INFORMATION

1. Security Requirement

1.1 There is no security requirement associated with this requirement.

2. Statement of Work

The Work to be performed is detailed in Annex "A" Statement of Work.

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 of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 – BIDDER INSTRUCTIONS

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 PWGSC *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 (2014-09-25) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

The standard instructions 2003 are modified as follows:

Under "Text" at 02:

Delete: "Procurement Business Number"

Insert: "Deleted"

At Section 02 Procurement Business Number

Delete: In its entirety **Insert:** "Deleted"

At Section 05 Submission of Bids, Subsection 05 (2d):

Delete: In its entirety

Insert: "send its bid only to Environment Canada (EC) as specified on page 1 of the bid

solicitation or to the address specified in the bid solicitation;"

At Section 06 Late Bids:

Delete: "PWGSC"

Insert: "Environment Canada"

At Section 07 Delayed Bids:

Delete: "PWGSC"

Insert: "Environment Canada"

At Section 08 Transmission by Facsimile, Subsection 08 (1):

Delete: In its entirety

Insert: "Bids may be submitted by facsimile if specified in the bid solicitation."

At Section 12 Rejection of Bid, Subsection 12 (1) a. and b.:

Delete: In their entirety

Insert: "Deleted"

At Section 17 Joint Venture, Subsection 17 (1) b.:

Delete: "the Procurement Business Number of each member of the joint venture,"

Insert: "Deleted"

At Section 20 Further Information, Subsection 20 (2):

Delete: In its entirety **Insert:** "Deleted"

At Section 05 Submission of Bids, Subsection 05 (4)

Delete: "sixty (60) days"

Insert: "one hundred and twenty (120) days"

2. Submission of Bids

2.1 Bids must be submitted to Environment Canada (EC) at the address and by the date, time and place indicated on page 1 of the bid solicitation.

3. Former Public Servant – Competitive Bid

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 FPS, 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:

a. an individual;

- b. an individual who has incorporated;
- c. a partnership made of former public servants; or
- d. 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 FPS 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:

- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;

- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. 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.

4. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than five (5) 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.

5. 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.

6. Ownership of Intellectual Property

The Crown has determined that any intellectual property arising from the performance of the Work under the Contract will vest in Canada, on the following grounds:

- 6.4 Where the main purpose of the Crown Procurement Contract, or of the deliverables contracted for, is:
- 6.4.1 To generate knowledge and information for public dissemination;

PART 3 – BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

	Canada requests that bidders	provide their bid in se	parately bound sections	as follows:
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Section I: Technical Bid (__3__ hard copies)

Section II: Financial Bid (___1_ hard copies)

Section III: Certifications (__1__ hard copies)

Section IV: Additional Information (_1__hard copies)

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

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement (http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html). To assist Canada in reaching its objectives, bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders; and
- (3) print on both sides of the paper.

Section I: Technical Bid

In their technical bid, bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will carry out the Work

Section II: Financial Bid

1. Bidders must submit their financial bid in accordance with the Basis of Payment in Annex B. The total amount of Applicable Taxes must be shown separately.

1.1 Price Breakdown

In their financial bid, the bidders are requested to provide a detailed breakdown of the price for

each task to complete the work, as applicable:

- (a) Professional fees: For each individual and (or) labour category to be assigned to the Work, the bidders should indicate: i) the firm hourly rate or the firm daily rate, inclusive of overhead and profit; and ii) the estimated number of hours or days, as applicable. The bidders should indicate the number of hours in one working day.
- (b) Equipment (if applicable): The bidders should specify each item required to complete the Work and provide the pricing basis of each one, Canadian customs duty and excise taxes included, as applicable.
- (c) Materials and Supplies (if applicable): The bidders should identify each category of materials and supplies required to complete the Work and provide the pricing basis. The Bidder should indicate, on a per category basis, whether the items are likely to be consumed during the performance of any resulting contract.
- (d) Travel and Living Expenses (if applicable): The bidders should indicate the number of trips and the number of days for each trip, the cost, destination and purpose of each journey, together with the basis of these costs without exceeding the meal, private vehicle and incidental expenses provided in Appendices B, C and D of the *National Joint Council Travel Directive* and with the other provisions of the directive referring to "travellers", rather than those referring to "employees".
- (e) Subcontracts (if applicable): The bidders should identify all of the proposed subcontractors and provide in their financial bid for each one a price breakdown.
- (f) Other Direct Charges (if applicable): The bidders should identify all of the categories of other direct charges anticipated, such as long distance communications and rentals, providing the pricing basis for each and explaining the relevance to the work described in the resultant contract in part 6 of the bid solicitation.
- (g) Applicable Taxes: The bidders should indicate the Applicable Taxes separately.
- **1.2** Bidders should include the following information in their financial bid:
- (a) Their legal name; and
- (b) The name of the contact person (including this person's mailing address, phone and facsimile numbers and email address) authorized by the Bidder to enter into communications with Canada with regards to their bid; and any contract that may result from their bid.

Section III - Certifications

1. Certifications Required Precedent to Contract Award

Bidders must provide the required certifications Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures

Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.

1.1 Technical Evaluation

Except where expressly provided otherwise, the experience described in the bid must be the experience of the Bidder itself (which includes the experience of any companies that formed the Bidder by way of a merger but does not include any experience acquired through a purchase of assets or an assignment of contract). The experience of the Bidder's affiliates (i.e. parent, subsidiary or sister corporations), subcontractors, or suppliers will not be considered.

1.2 Technical Evaluation

1.2.1 Mandatory Technical Criteria

Each bid will be reviewed to determine whether it meets the mandatory requirements of the bid solicitation. Any element of the bid solicitation that is identified specifically with the words "must" or "mandatory" is a mandatory requirement. Bids that do not comply with each and every mandatory requirement will be considered non-responsive and be disqualified. The Mandatory evaluation criteria are described below - Bid Evaluation Criteria.

1.2.2 To be awarded points, a project description must contain at a minimum the following information:

- Project title, client name and industry sector;
- Planned and actual dollar values;
- Planned start and finish dates;
- Nature of services provided for the project or study, methodologies and approaches employed;
- Project team members involved and their roles;
- Summary of the project; and
- Name of contact who may be contacted as a reference.

Mandatory Criteria

Item	Description	Met	Not Met
M1	The Project Manager must demonstrate, or provide certification of, a relevant engineering or science degree. Relevant degree is defined to mean one in the following disciplines - mechanical engineering, chemical engineering, environmental engineering, civil engineering, mining engineering, geological engineering, earth science, or environmental science from a recognized university.		
M2	The Project Manager must demonstrate 2 projects relevant to the statement of work within the past 10 years. Relevant projects are those that pertain to greenhouse gases and/or air pollutants, emission factors, oxidation factors, emission inventories and data collection.		

Project	Team	
M3	All members of the project team must have a relevant engineering or science degree. Relevant degree is defined to mean a university degree in one of the following disciplines - mechanical engineering, chemical engineering, environmental engineering, civil engineering, earth science, or environmental science.	
M4	At least one member of the team must demonstrate a minimum of 5 years' experience assessing and collecting fuel properties; developing emission factors, Greenhouse Gas (GHG) emissions, or other air emissions and knowledge of combustion technologies.	
M5	At least one member of the team must demonstrate 2 additional projects relevant to the analysis of coal or fuel combustion in the power industry.	

1.2.3 Point Rated Technical Criteria

Each bid will be rated by assigning a score to the rated requirements, which are identified in the bid solicitation by the word "rated" or by reference to a score. Bidders who fail to submit complete bids with all the information requested by this bid solicitation will be rated accordingly. The rated requirements are described below - Bid Evaluation Criteria.

For a proposal to be technically acceptable it must receive a minimum score of 75%.

	Criteria	Max Score
The expe	PERIENCE OF FIRM AND PROPOSED RESOURCES proposal should identify resources to be assigned to the project, erience in relevant work, relevant company experience, and diarity with and established contacts in regulatory, industry-based mer organizations required for execution of the project.	
<u>R 1</u>	- Contractor Experience	40
a.	Development of emission inventory or emission factors methodology – the contractor should briefly describe any emission inventory methodology or emission factors developed by the firm for any fuel (3 points per method, maximum of 18 points)	18
b.	Number of projects related to fuel analysis – the contractor should provide a list of the projects with a brief description of the work that was done (6 points for coal combustion projects and 3 points for other fuel combustion projects, maximum of 12 points)	12
C.	Number of projects related to GHGs, or other air emissions – the contractor should provide a list of the projects with a brief description of the work that was done (2 points for each project, maximum of 10 points)	10

	 Proposed Resources' Collective Experience 	22
a.	Experience in developing an emissions inventory – the contractor should identify emissions inventories that the proposed resources for this project have worked on (6 points for GHG inventories and 3 points for other air emissions inventories, maximum of 12 points)	12
b.	Experience in quantifying uncertainty – the contractor should identify any experience of the proposed resources in quantifying uncertainty of industrial data such as emission factors, fuel consumption information, combustion equipment, etc. (5 points per instance, maximum of 10 points)	10
The (Rat	 Understanding of Work Description Contractor should demonstrate their expert understanding of: ing guide: 0-unsatisfactory, 3-poor, 6-satisfactory, 9-good, 12-ellent) 	48
a.	coal fuel characteristics	12
b.	Region-specific coal data	12
c.	data collection	12
d.	uncertainty analysis	12
MFT	THODOLOGY PROPOSED	
The meth the t	proposal will be evaluated based upon the technical approach and nodology presented to achieve the identified project objectives within timelines indicated.	
The meth the the the the the the the the the	proposal will be evaluated based upon the technical approach and nodology presented to achieve the identified project objectives within	48
The meth the the the the the the the the the	proposal will be evaluated based upon the technical approach and nodology presented to achieve the identified project objectives within timelines indicated. - Emission Factor Methods methodology will be evaluated based on its potential to fulfill the y objectives and obtain the required information as follows: ing guide: 0-unsatisfactory, 3-poor, 6-satisfactory, 9-good, 12-	48
The meth the the the the the the the the the	proposal will be evaluated based upon the technical approach and nodology presented to achieve the identified project objectives within timelines indicated. - Emission Factor Methods methodology will be evaluated based on its potential to fulfill the y objectives and obtain the required information as follows: ing guide: 0-unsatisfactory, 3-poor, 6-satisfactory, 9-good, 12-tellent) suitability of method to gather relevant information from industry sources and government agencies, including proposed data	
The meth the t	proposal will be evaluated based upon the technical approach and nodology presented to achieve the identified project objectives within timelines indicated. — Emission Factor Methods methodology will be evaluated based on its potential to fulfill the y objectives and obtain the required information as follows: ing guide: 0-unsatisfactory, 3-poor, 6-satisfactory, 9-good, 12-tellent) suitability of method to gather relevant information from industry sources and government agencies, including proposed data sources suitability of sources of information for use in data collection and	12

The cont (Rat	— Quality Management proposal will be evaluated based on the quality assurance and rol measures to be implemented. ing guide: 0-unsatisfactory, 2-poor, 5-satisfactory, 7-good, 9- ellent)	18
a.	Quality Control The program will be evaluated based on its potential in reducing errors as well as finding and correcting any errors throughout the data analysis.	9
b.	Quality Assurance The program will be evaluated based on its potential in ensuring that accurate and up-to-date information will be obtained. The extent of the program must be consistent with the importance and complexity of issues.	9
The pres	- Work Breakdown Structure proposal will be evaluated upon the work breakdown structure sented. ing guide: 0-unsatisfactory, 0.25-poor, 0.75-acceptable, 1.25-good excellent)	12
a.	work plan identified	1.5
b.	proposed resources allocation, role and level of effort	1.5
c.	schedule identified	1.5
d.	major milestones addressed	1.5
e.	identification of key steps in the project	1.5
f.	identification of key activities	1.5
g.	prioritization of key activities	1.5
h.	deliverables identified	1.5

Scoring

A minimum score of **141** points **(75%)** is required for the Point Rated Criteria. The maximum available score is **188** points.

1.3 Financial Evaluation

1.3.1 Evaluation of Price

The price of the bid will be evaluated in Canadian dollars, the Applicable Taxes excluded, Canadian customs and excise taxes included.

Basis of Selection (Lowest evaluated price per point)

To be declared responsive, a bid must:

- (a) Comply with all the requirements of the bid solicitation; and
- (b) Meet all mandatory technical evaluation criteria; and
- (c) obtain the required minimum of **141** points **(75%)** as an overall score for the Point Rated Criteria. The maximum available score is **188** points.

Bids not meeting (a) or (b) or (c) will be declared non-responsive. Neither the responsive bid that receives the highest number of points nor the one that proposed the lowest price will necessarily be accepted. The responsive bid with the lowest evaluated price per point will be recommended for award of a contract.

The firm obtaining the lowest compliant cost per point proposal (determined by dividing the bid price by the total points achieved in the evaluation of the bidder's proposal) will be recommended for award of a contract.

In the event of a tie, the proposal receiving the highest score for the technical evaluation will be selected.

PART 5 - CERTIFICATIONS

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

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default in carrying out any of its obligations under the Contract, 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 may render the bid non-responsive or constitute a default under the Contract.

- 1. Certifications Required Precedent to Contract Award
- 1.1 Integrity Provisions Associated Information

By submitting a bid, the Bidder certifies that the Bidder and its Affiliates are in compliance with the provisions as stated in Section 01 Integrity Provisions - Bid of Standard Instructions 2003. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

1.2 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 (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Employment and Social Development Canada (ESDC) - Labour's website.

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.

2. Additional Certifications Required Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid but may be submitted afterwards. If any of these required certifications 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 comply with the request of the Contracting Authority and to provide the certifications within the time frame provided will render the bid non-responsive.

2.1 Status and Availability of Resources

The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/her availability. Failure to comply with the request may result in the bid being declared non-responsive.

2.2 Education and Experience

SACC Manual clause A3010T (2010-08-16) Education and Experience.

PART 6 - RESULTING CONTRACT

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

Title: CHARACTERIZATION OF COAL AND UNCOMBUSTED CARBON FROM ELECTRIC POWER GENERATION FOR THE PURPOSE OF UPDATING CARBON DIOXIDE EMISSION FACTORS

1.1 There is no security requirement associated with this requirement.

2. Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex "A".

3. Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the PWGSC *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.

3.1 General Conditions

2010B (2014-09-25) General Conditions - Professional Services (Medium Complexity), as modified below, apply to and form part of the Contract.

General conditions 2010B is modified as follows:

At Section 12 Transportation Costs

Delete: In its entirety **Insert:** "Deleted"

At Section 13 Transportation Carriers" Liability

Delete: In its entirety. **Insert:** "Deleted"

At Section 18, Confidentiality:

Delete: In its entirety **Insert:** "Deleted"

Insert Subsection: "35 Liability"

"The Contractor is liable for any damage caused by the Contractor, its employees, subcontractors, or agents to Canada or any third party. Canada is liable for any damage caused by Canada, its employees or agents to the Contractor or any third party. The Parties agree that no limitation of liability or indemnity provision applies to the Contract unless it is specifically incorporated in full text in the Articles of Agreement. Damage includes any injury to persons (including injury resulting in death) or loss of or damage to property (including real property) caused as a result of or during the performance of the Contract."

4. Term of Contract

4.1 Period of the Contract

The period of the Contract is from date of Contract to March 31st, 2015 inclusive

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Josée Francoeur Title: Contracting Officer Environment Canada NCR Procurement and Contracting Finance Branch 351 St-Joseph Blvd. Gatineau, Quebec

Telephone: 819-938-4855

E-mail address: josee.francoeur@ec.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.

5.2 Technical Authority (To be disclosed upon contract award)

The Technical Authority for the Contract is:

Name:					
Title:	_				
Organization: _			_		
Address:			_		
Telephone: _				_	
Facsimile:		-			
E-mail address:				_	

The Technical Authority named above 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. Technical matters may be discussed with the Technical Authority, however the Technical 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.

5.3 Contractor's Representative

Name:	
Title:	
Organization:	

Addre	ss <i>:</i>	
Teleph Facsin E-mail		 s:
6.	Proac	tive Disclosure of Contracts with Former Public Servants
a Publ inform disclos	ic Servi ation wi sure rep	Information on its status, with respect to being a former public servant in receipt of ce Superannuation Act (PSSA) pension, the Contractor has agreed that this II be reported on departmental websites as part of the published proactive ports, in accordance with Contracting Policy Notice: 2012-2 of the Treasury Board Canada.
7.	Paymo	ent
7.1	Basis	of Payment
perfori to a lin	mance on the mance of the mance	or will be reimbursed for the costs reasonably and properly incurred in the of the Work as determined in accordance with the Basis of Payment in Annex B, of expenditure of \$(insert the amount at contract award). Customs uded and Applicable Taxes are extra.
7.2	Limita	tion of Expenditure
(a)		ida's total liability to the Contractor under the Contract must not exceed \$ oms duties are included and Applicable Taxes are extra.
(b)	design the Co approv Work. in Can Contra	rease in the total liability of Canada or in the price of the Work resulting from any changes, modifications or interpretations of the Work, will be authorized or paid to intractor unless these design changes, modifications or interpretations have been red, in writing, by the Contracting Authority before their incorporation into the The Contractor must not perform any work or provide any service that would result ada's total liability being exceeded before obtaining the written approval of the acting Authority. The Contractor must notify the Contracting Authority in writing as adequacy of this sum:
	(i)	when it is 75 percent committed, or
	(ii)	four (4) months before the contract expiry date, or
	(iii)	as soon as the Contractor considers that the contract funds provided are inadequate for the completion of the Work,
wl	nicheve	r comes first.

(c) If the notification is for inadequate contract funds, the Contractor must provide to the Contracting Authority a written estimate for the additional funds required. Provision of such information by the Contractor does not increase Canada's liability.

7.3 PWGSC SACC Manual clauses

A9117C (2007-11-30) T1204 - Direct Request by Customer Department.

7.4 Method of Payment

7.4.1 H3010C (2010-01-11) Milestone payments

7.4.2 Milestone Payments

- (a) Canada will make milestone payments in accordance with the Schedule of Milestones detailed below and the payment provisions of the Contract if:
 - (i) an accurate and complete claim for payment and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
 - (ii) all such documents have been verified by Canada;
 - (iii) all work associated with the milestone and as applicable any deliverable required have been completed and accepted by Canada.
- (b) The schedule of milestones for which payments will be made is as follows:

Item	Communication/Deliverable	Schedule
1.	Kick-off Meeting via Conference Call	No later than ten (10) business days after award of this contract.
2.	<u>Deliverable #1</u> : Draft Outline of Project Report and Progress Report on Data Collection (20% of the total professional fees)	4 weeks from date of contract award
3.	<u>Deliverable #2</u> : Draft report and draft data tables (30% of the total professional fees)	14 weeks from date of contract award
4.	<u>Deliverable #3</u> : Final Report & Final Data Tables (50% of the total professional fees)	16 weeks from date of contract award

8. Certifications

8.1 Compliance

Compliance with the certifications provided by the Contractor in its bid is a **condition** of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

9. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

10. 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) Modified 2010B General Conditions Professional Services (Medium Complexity) (2014-09-25)
- (c) Annex A, Statement of Work;
- (d) Annex B, Basis of Payment;
- (e) the Contractor's bid dated ______, (insert date of bid) (If the bid was clarified or amended, insert at the time of contract award: "as clarified on _____" or "as amended on _____" and insert date(s) of clarification(s) or amendment(s)).

ANNEX A

STATEMENT OF WORK

CHARACTERIZATION OF COAL AND UNCOMBUSTED CARBON FROM ELECTRIC POWER GENERATION FOR THE PURPOSE OF UPDATING CARBON DIOXIDE EMISSION FACTORS

OBJECTIVE

The purpose of this study is to determine the percentage of un-oxidized carbon left as solids as from the combustion of coal in electric power plants. The results of this study will be used for updating Canada-specific combustion emission factors. The work is to include the collection of fuel properties of the input coal; specifically, carbon content, higher heating value (HHV) and lower heating value (LHV). It also includes determining the carbon content of the residual ash and emitted soot associated the combustion of these coals. These should be provided by coal rank, plant size and provincial breakdowns, as appropriate. The contractor will collect the data using an approach that is consistent with the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas (GHG) Inventories. The aim is to use the best information available and to be as rigorous as practicable within the budgeted level of effort.

BACKGROUND

The Government of Canada is required under the United Nations Framework Convention on Climate Change (UNFCCC) to report annually an accurate inventory of emissions and removals of GHGs (the 'Inventory'). There is also a mandate to implement continuous improvements to the methodologies associated with this inventory. This study will update the fuel properties of all coals combusted and its emission factors to reflect current use in Canada.

Coal combustion CO₂ emissions account for about 10% of the emissions in Canada's National Inventory Report (NIR) [EC 2014]¹. Emissions from fossil fuel combustion are estimated in the Inventory by applying emission factors to the fuel data reported in the national energy balance by consuming sectors (as recorded in Statistics Canada's Report on Energy Supply and Demand (RESD) [SC 2014]). Carbon contents of fuels are variable over both time and region due to changes in raw materials (i.e. coal sources) and CO₂ emissions are dependent upon the percentage of carbon oxidized through combustion. A study is needed to determine the amount of un-combusted carbon (in the form of ash and soot) for the purpose of updating the coal emission factors in the NIR.

STATEMENT OF WORK

The tasks set out in the following Statement of Work will proceed as outlined below. The work is presented in a sequential fashion herein; however, the Contractor is free to suggest in the project proposal any sequence of steps that would be most efficient.

It should be noted that this Statement of Work is intended to be detailed enough to ensure that the Department receives, as a minimum, the information requested but, at the same time,

¹ Note that the NIR is a comprehensive document including full emission tables (Annexes 11 and 12), combustion emission methodologies (Annex 2) and current emission factors (Annex 8).

flexible enough to permit innovation and initiative by the candidate firms in the interests of the Department. The project proposal should therefore outline detailed methods and solutions aimed at fully satisfying more-generally-stated information goals.

Task 1 – Project Management and Client Liaison

Management of this contract will reside with Environment Canada (EC), but will be done in close consultation with the Contractor. Open communication will be maintained with EC technical experts throughout the project with scheduled progress/review meetings and informal consultations as needed. Brief monthly progress reports shall be submitted to EC technical representatives.

A meeting shall be conducted at the start of the project and another following the submission of the final draft report. The early meeting will introduce the study team to EC staff, raise any initial concerns or issues, and identify specific assistance that EC technical experts can offer. The later meeting will include a full presentation of the study results, a review of key elements of the draft report, and responses to any related questions by EC.

It is assumed that all meetings will either be conducted by teleconference or held in Gatineau, Quebec. Costs of any other travel or incremental expenses shall be included as part of the project costs.

Task 2 – Data Collection Plan

The contractor will develop a detailed data collection plan outlining the facilities, coal rank and number of data points to be collected. Current data can be obtained from facility records or direct sampling. Historical data (1990-2013) should be collected from facility records, where available. This data will be utilized to form a basis for the development of more accurate estimates of CO₂ emissions from coal combustion. As such, the contractor will need to develop a defensible plan to furnish estimates of un-combusted carbon (in the form of soot and fly ash) from the various types of coal use at a cross-section of coal-fired electric power plants in Canada, both for the historic and current periods.

The contractor will submit the data collection plan to EC for approval prior to the commencement of field activities. A sufficient number of samples from each province and each coal rank (as indicated below) should be collected to ensure statistical significance at the national level at least, but where possible, at the provincial level as well.

Task 3 – Data Collection

Fuel Data

Although EC is in possession of the carbon content of coals produced by province in Canada, it will be important to evaluate characteristics of specific coals consumed at electric power plants to develop an association with corresponding ash and soot production. The contractor, in consultation with EC, will collect detailed provincial fuel consumption information for power plants; including, but not limited to:

- Carbon content; and,
- Energy content (Higher Heating Value (HHV) and Lower Heating Value (LHV))

Canadian specific fuel properties should be collected individually for each rank and each province, as follows:

- Lignite
- Foreign Bituminous
- Canadian Bituminous (identification of coal origin required)
- Foreign Sub-bituminous (identification of coal origin required)
- Canadian Sub-bituminous

The contractor should identify in their proposal which coal ranks are consumed in each province.

Ash and Soot Data

The contractor, in consultation with EC, will collect detailed carbon contents of bottom ash, fly ash and soot produced by the power plants, using the same coal ranks listed above under Task 3. The collection of fuel data, and ash and soot data should occur simultaneously. This data will be used to develop estimates of the percent of un-combusted carbon per unit mass of coal burned.

Task 4 - Quantification of Data Uncertainties

This task requires compiling uncertainty estimates for all data collected using international standards such as the 2006 IPCC Guidelines for National GHG Emissions Inventories (http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html) procedures for combining data uncertainties calculations.

It is assumed that a Tier 1 uncertainty analysis will be undertaken and inputs shall be provided, as well as the results of the uncertainty calculation. In general, and not withstanding any confidentiality agreements, all raw data used in this study will be provided to EC.

Task 5 - Preparation of Preliminary, Draft and Final Report

Deliverables, including reports and database application, are described in the Guidelines, Section 3. The reports will contain the required information, responses, findings, data, analysis, observations, and professional opinions.

GUIDELINES

Using data from direct measurement, surveys and the Scientific Authority, and without limiting the scope of work, the Contractor shall follow the subsequent guidelines as they apply and as described herein:

NATIONAL AND INTERNATIONAL STANDARDS

The collection or determination of fuel properties information shall be based on (but not limited to) analytical techniques specified by the Canadian General Specifications Board and the American Society of Testing Materials.

The emission factors developed shall be prepared in accordance with the 2006 IPCC Guidelines for National GHG Emissions Inventories (http://www.ipcc-

nggip.iges.or.jp/public/2006gl/index.html), and the United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines Inventories (http://unfccc.int/national_reports/reporting_and_review_for_annex_i_parties/items/5689.php).

Notwithstanding this, it is recognized that some methodological refinements may be required to deal with specific data gaps and data quality issues that become apparent as the actual work is performed. All assumptions and approximations shall be clearly documented.

QUALITY CONTROL/ QUALITY ASSURANCE (QC/QA)

During the development of the inventory the Contractor shall undertake quality control checks in accordance with international guidelines such as that described in the 2006 IPCC Guidelines for National GHG Emissions Inventories (http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html). This will include efforts to minimize uncertainties in data and emission factors by focusing resources on the areas of greatest potential contribution to uncertainty.

REPORT PREPARATION AND PRESENTATION

The contractor shall include a report documenting, in detail, the methodology, assumptions, data sources, emission factors, uncertainty estimates, references and QA/QC procedures used to produce all deliverables. The report shall include a table of contents, a list of figures, a list of tables, a summary of methodology, and a discussion of results. The results shall include estimates of un-combusted carbon per unit coal burned, aggregated at the coal-type, facility-type or province, depending on the nature of the data and the results obtained. The reasoning for the level of aggregation (along with supporting information) shall be included. If the results are aggregated by facility-type, a summary of facility-types by province shall be provided. The report shall include an assessment of the completeness and accuracy of the data and emission factors, as well as conclusions and recommendations for future improvements. The report shall also include a glossary of key terms and acronyms, QA/QC and a complete bibliography.

All graphics, charts and figures shall be embedded directly in the report wherever practical to do so. This will allow easy distribution and use of the document by e-mail.

The final report will be submitted to EC in English, in hard copy (four copies, double sided and printed on recycled paper certified by the Environmental Choice Program) and in electronic form in Microsoft Word and in Adobe PDF.

In addition, the contractor will submit MS Access database that will include all raw data in a format approved by EC. EC will provide a database table structure once the data collection plan is finalized.

RECORD KEEPING

As part of record keeping activities the Contractor shall maintain, except where precluded by confidentiality or proprietary-ownership restrictions, all relevant inventory information, including fuel and ash compositions and documentation on how these data were generated. This information shall be detailed and organized and provided to Environment Canada.

UNCERTAINTY

A quantitative assessment of the uncertainties in the data proposed shall be prepared in accordance with the approach specified in the 2006 IPCC Guidelines for National GHG Emissions Inventories (http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html). This will include efforts to minimize uncertainties by focusing the budgeted resources on the areas of greatest potential contribution to this uncertainty.

GENERAL INSTRUCTIONS

All reports shall be written in English, and both draft and final reports shall be written in a clear and logical fashion and shall be submitted in a format compatible with Microsoft Word 2010. The consultant shall report all the sources of information. Key uncertainties should be identified and the source explained.

The tasks above are not necessarily exhaustive. The consultant is encouraged to provide any additional information discovered during the course of this work that is deemed relevant in fulfilling the objectives of this contract.

SCHEDULE & DELIVERABLES

All deliverables and successful completion of the project are subject to the acceptance and/or approval of the project authority. Table 1 outlines the schedules and deliverables required for completion of this contract.

PROGRESS REPORTS

Throughout the duration of the contract, the Contractor shall advise the Scientific Authority via email or telephone, on a monthly basis, of the status of the work currently underway. This may include the progress to date on the elements of the Statement of Work, any expected or unforeseen delays, challenges encountered, and ability to meet the timelines and schedule proposed.

TELECONFERENCE CALLS

After each deliverable identified below in Table 1, a conference call will be arranged for the Contractor and the Departmental Representative to discuss the information provided and the questions and feedback provided by the Scientific Authority. The teleconference call should occur within ten (10) calendar days of the delivery of a document.

PROJECT DELIVERABLES

<u>Deliverable #1:</u> Draft Outline of Project Report and Progress Report on Data Collection

This deliverable includes a proposed outline of the project report, and draft structure of the final database. The progress report is to include preliminary data collection results; areas needing more work should be highlighted. The report is to be provided in English and in electronic form in Microsoft Word; it is to be reviewed and commented on by EC.

<u>Deliverable #2:</u> Draft Report and Draft Data Tables

A draft report and a draft database are required which include <u>all</u> elements of the Statement of Work for review and comment by EC. Comments will be prepared and delivered to the Contractor for inclusion in final documentation within 3 weeks of receipt of the drafts.

Deliverable #3: Final Report and Final Data Tables

The final report and final database will be submitted to EC, in a format described in the Guidelines, Section 3.

PROJECT SCHEDULE

Table 1 - Schedule for Completion of Project

Item	Communication/Deliverable	Schedule
1.	Kick-off Meeting via Conference Call	No later than ten (10) business days after award of this contract.
2.	<u>Deliverable #1</u> : Draft Outline of Project Report and Progress Report on Data Collection	4 weeks from date of contract award
3.	<u>Deliverable #2</u> : Draft report and draft data tables	14 weeks from date of contract award
4.	<u>Deliverable #3</u> : Final Report & Final Data Tables	16 weeks from date of contract award

ACCEPTANCE

All reports, presentations and correspondence produced by the Contractor will be subject to review by the Departmental Representative. All work is to be completed to the satisfaction of the Departmental Representative.

REFERENCES

[EC 2014] Environment Canada. National Inventory Report 1990-2012: Greenhouse Gas Sources and Sinks in Canada. April 2014

[SC 2014] Statistics Canada. Report on Energy Supply-Demand in Canada. Catalogue #57-003-XIB

PERIOD OF CONTRACT

The period of the Contract will be from date of Contract award to March 31st, 2015 inclusive.

PROJECT BUDGET

Environment Canada has established funding for this project at a maximum amount of \$45,000 excluding GST or HST. This budget covers the period from date of contract award to a contract completion date of March 31, 2015.

PROPOSAL INSTRUCTIONS

MANDATORY AND RATED REQUIREMENT

To be considered, a proposal must respect all of the following requirements:

Evaluation of proposals

The proposals should describe in sufficient detail the technical qualifications and relevant experience of the Contractor and key professional staff (as applicable), and sources of reference data/information cited in the proposal.

<u>Understanding of the project</u>

The proposal must clearly demonstrate an understanding of the work to be undertaken, why it has been requested and its possible challenges.

Approach and methodology

A description of the technical approach, methodology and data sources to be used should be included. The proposed approach, methodology and specific steps undertaken to meet each output in the Statement of Work must be presented in detail, and must state which key personnel will be assigned to each task. The proposed approach and methodology must be technically feasible.

Advantages of the proposed approach should be presented.

Possible problems and challenges that could arise that would impact the quality and/or delivery of the project should be presented, with realistic solutions.

Costs component

The price proposal must define the level of effort and the estimated cost associated with each task in the work plan, the estimated cost of professional staff, support staff, materials, equipment, communications and supplies.

Professional Services:

The table below provides a detailed breakdown of the cost of professional services (the fee schedule shall include any profit margin or fixed costs):

Staff Category	Daily Rate	Number o	umber of working days Total		
		\$	(transfer	total under a) belo	w)

ANNEX B

BASIS OF PAYMENT

During the period of the Contract, the Contractor will be paid as specified below, for Work performed in accordance with the Contract.

In accordance with Part 4 Evaluation Procedures and Basis of Selection, Bidders must provide a maximum firm all inclusive rate. The Firm all-inclusive rate must include all costs associated with the services including the costs associated with the resource's preparation time, the administrative overhead and the profit. The firm all-inclusive per diem rate must be exclusive of all applicable taxes.

a) Total costs for completion of the work described	d in Annex "A": \$
b) Administrative Expenses: (Courier, long distance calls, reproduction, set-up fees, shipping cost, etc.).	\$
c) TOTAL PROPOSAL PRICE (Canadian Currency)	\$ (Total of a + b above)
	+ G.S.T. \$
	ΤΟΤΔΙ · \$