

From: Simard, Vallier (EC)
To: [Gensey, Guy EMPR:EX](#)
Cc: [Simard, Vallier \(EC\)](#); [Snider, Andrew \(EC\)](#); [Lefebvre, Marie \(EC\)](#); [Normand, François \(EC\)](#)
Subject: FW: Chemical Regs
Date: Monday, February 5, 2018 1:16:23 PM
Attachments: [image001.png](#)

Dear Mr. Gensey,

I wish the answer to your question on toluene be easy but it is not the case.

As you may know already, in Canada, the management of hazardous waste and hazardous recyclable material is a shared responsibility between the federal government and the provinces/territories. The federal government is responsible for hazardous wastes and hazardous recyclable materials crossing an international boundary, or for movements between provinces or territories in Canada, that are destined for disposal or recycling. The provinces have jurisdiction over the transportation of hazardous wastes within its provinces as well as the licensing and permitting of authorized facilities undertaking disposal or recycling operations and authorizing carriers.

Canada is a signatory to a number of international agreements which include: The United Nations, Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal; The OECD (Organization for Cooperation and Economic Development) Decision of Council on the Control of Transfrontier Movements of Wastes Destined for Recovery Operations; and the Canada - USA Agreement on the Transboundary Movement of Hazardous Waste.

The Waste Reduction and Management Division (WRMD) of Environment and Climate Change Canada implements the *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations* (EIHWHRMR) by which Canada implements its obligations under the international agreements mentioned above. The EIHWHRMR apply to movements of hazardous wastes and hazardous recyclable materials crossing an international border when destined for disposal or recovery.

The following are some links that may be of use:

- Actual text of the EIHWHRMR:
<http://laws-lois.justice.gc.ca/eng/regulations/SOR-2005-149/>
- Generic and more specific information related to the EIHWHRMR:
<https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/permit-hazardous-wastes-recyclables.html>

At this point we would like to suggest consulting the definitions for "hazardous waste" and "hazardous recyclable material" as set out in sections 1(1) and 2(1) of the EIHWHRMR respectively as well as the Schedules. In brief, the definitions means anything that is intended to be disposed of or recycled using one of the disposal or recycling operations set out in schedules 1 or 2 of the

EIHWHRMR, and that meets at least one of seven conditions, each set in sections 1 and 2. The seven conditions are the following: (we tentatively answered the responds to the conditions in red)

1. The material is listed in schedule 3 of the EIHWHRMR: (not a concern for toluene)
2. The material is included in at least one of class 2 to 6, 8 or 9 of the *Transportation of Dangerous Goods Regulations* (TDGR): (It may be the case because toluene is the UN1294, it's a class 3. Please validate within the TDGR all the toluene definition and compounds that may trigger your substance, i.e. nitrotoluene, chlorotoluene, fluorotoluene, etc. for similar classes)
3. The material is included in at least one of class 2 to 6, 8 or 9 of the TDGR and is listed in schedule 4 of the EIHWHRMR: (It may be the case because toluene is the UN1294, it's a class 3. Please validate within the TDGR all the toluene definition and compounds that may trigger your substance, i.e. nitrotoluene, chlorotoluene, fluorotoluene, etc. AND see code F005, some k-codes in schedule 4 of the EIHWHRMR)
4. The material contains a substance listed in schedule 5 of the EIHWHRMR in a concentration greater than or equal to the applicable concentration set out in column 3 of that schedule: (toluene is listed in schedule 5 for concentration of 100 mg/kg)
5. The material produces a leachate containing a constituent in a concentration equal or greater than the applicable concentration set in schedule 6 of the EIHWHRMR, determined in accordance with the leachate test TCLP: (toluene is not listed in schedule 6)
6. The material is listed in schedule 7 of the EIHWHRMR, and is "pure" or the only active ingredient: (toluene is listed in schedule 7 as U220 – check for any related compound that may also be listed)
7. The material is considered or defined as "hazardous" under the legislation of the country receiving them and are prohibited by that country from being imported or conveyed in transit: (check the information for the receiving country. In USA, toluene is listed as F005, and probably in some k-codes)

We wish to advise you that it is the responsibility of the Canadian exporter (or importer) to determine whether a particular waste stream or recyclable material intended for recycling or final disposal meets the definition of hazardous waste or hazardous recyclable material under the EIHWHRMR. The Canadian exporter (or importer) must be assured that they have taken the necessary steps to determine the classification of the hazardous waste or hazardous recyclable material and whether the Regulations would apply. The User Guide on the Classification will provided you detail on the classification, which is available in the link provided above. We are suggesting to consult expert on the transportation of your material (or Transport Canada directly) in order to validate is they exhibit a characteristic related to a transportation class (or a UN number) in particular for items b) and c) above. Questions to Transport Canada may be send to: TDGTraining-FormationTMD@tc.gc.ca

With the information we received from you at this point, it's not clear if the toluene is to be export for a disposal or recycling operation. While it is ultimately the responsibility of the Canadian exporter to determine whether the EIWHRMR would apply, it seems likely that the toluene would be considered as hazardous waste or as hazardous recyclable material under the EIWHRMR when destined for one of the operation of schedule 1 or 2 of the EIWHRMR. Please read the above comments in italic red related to toluene in the EIWHRMR definitions.

We would like also to advise you that under the EIWHRMR, it is the responsibility of the Canadian exporter (or importer if the case maybe) to notify Environment and Climate Change Canada of any proposed export from (or import into) Canada. The parties involved in the proposed movement need to be identified on the notification form, including all carriers. The notice serves as an application for an export (or import) permit. No international shipments of hazardous waste or hazardous recyclable material may take place without first receiving a permit from the Minister of Environment.

Regards,

Vallier Simard, M.Sc., ing./P.Eng

Chef, Mobilisation nationale sur les produits chimiques, Direction générale de la protection de l'environnement

Environnement et Changement climatique Canada / Gouvernement du Canada

vallier.simard@canada.ca / Tél.: 819-938-4345 / Tél. cell.: s.22

Unit Head, Domestic Engagement on Chemicals, Environmental Protection Branch

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Disclaimer

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Please note that the above-stated information is provided for information purposes only, and is only applicable with respect to the EIWHRMR with the information that you made available to Environment and Climate Change Canada at this current time. Should the situation you describe changes, the response restrictions in regard to the EIWHRMR may be different. The information provided should not be considered legal advice, and does not reflect all legal requirements to which you may be subjected. If there is any inconsistency or conflict between the information contained in this document and the Canadian Environmental Protection Act, 1999, or the EIWHRMR, the Act or Regulations take precedence.

De : Hubbard, Terence (NRCan/RNCan)
Envoyé : 2 février 2018 15:19
À : Gensey, Guy EMPR:EX
Cc : Ryan, Helen (EC)
Objet : RE: Chemical Regs

Hi Guy. Thanks for reaching out. Chemicals are managed by our ECCC colleagues, so linking into my colleague Helen who may be able to point you to the right person over there.

Terry

From: Gensey, Guy EMPR:EX [<mailto:Guy.Gensey@gov.bc.ca>]
Sent: February 2, 2018 13:48
To: Hubbard, Terence (NRCan/RNCan) <terence.hubbard@canada.ca>
Subject: Chemical Regs

Hi Terry, Fazil suggested you might be good start to figuring out a question we have.

It might be easier to discuss, but essentially is would be whether Canada has any export/shipping restrictions on a chemical called toluene, which I understand can be used as a diluent in bitumen.

Would you happen to know – or could you point me to a person in the GoC who might?

Regards,
Guy

Guy Gensey, Ph.D.
Director, Energy and Industry Decarbonization
Electricity and Alternative Energy Division
Ministry of Energy, Mines and Petroleum Resources
Government of British Columbia (Victoria, BC)
e-mail: guy.gensey@gov.bc.ca
phone: (778) 698-7144
cell: (250) 415-2132



Ministry of
Energy, Mines and
Petroleum Resources

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From: Geoffrey Budd
To: [Gensey, Guy EMPR:EX](#)
Subject: FW: Press Conference Question
Date: Friday, February 2, 2018 9:37:03 AM
Attachments: [image001.png](#)

Guy,
This is evidence for your records of the acceptance of Mitsui.
Geoff.

From: "Takezawa,RyosukeTKNYSTKNZS" <R.Takezawa@mitsui.com>
Date: Wednesday, January 31, 2018 at 19:08
To: Stephen Jones <sj@itm-power.com>, Geoffrey Budd G&S
<geoff@gsbuddconsulting.com>, Tadashi Ito <ito.tadashi@chiyodacorp.com>
Cc: Jackie Lee <Jac.Lee@mitsui.com>, "schneider.robert@chiyodacorp.com"
<schneider.robert@chiyodacorp.com>
Subject: RE: Press Conference Question

Geoff-san,

Thank you for your following up.

Mitsui is also OK with being described in the press conference.
It is good to hear that the funding for F/S is to be announced soon!

Kind regards,
Takezawa

From: Stephen Jones [mailto:sj@itm-power.com]
Sent: Thursday, February 1, 2018 9:10 AM
To: Geoffrey Budd <geoff@gsbuddconsulting.com>; Tadashi Ito <ito.tadashi@chiyodacorp.com>;
Takezawa,RyosukeTKNYSTKNZS <R.Takezawa@mitsui.com>
Cc: Lee,JackieCGYNR <Jac.Lee@mitsui.com>; schneider.robert@chiyodacorp.com
Subject: Re: Press Conference Question

ITM are ok with being included - good news for the project!

Please ask for draft wording to be sent

Thank you

Steve Jones
ITM Power
714.453.8141
Sj@itm-power.com

On Wed, Jan 31, 2018 at 3:47 PM -0800, "Geoffrey Budd" <geoff@gsbuddconsulting.com> wrote:

Dear Tadashi-san, Takezawa-san and Steve,

Please see the note below. Please provide your approval for the BC Government (Minister Ralston) to submit a press release that the Minister visited the Chiyoda organization and met as well with Mitsui during his meeting recently in Japan.

If you have specific language please let me have your input as soon as possible.

Second question directed at Tadashi-san asked by Guy Gensey in my call a few minutes ago. Do you have any on land and ocean studies or papers in spills that relate to both toluene and methylcyclohexane. Superficially in the context of large quantities for ocean freight.

Many thanks gentlemen for your prompt replies.

With best regards.

Geoff.

From: Guy Gensey <Guy.Gensey@gov.bc.ca>

Date: Wednesday, January 31, 2018 at 17:11

To: Geoffrey Budd G&S <geoff@gsbuddconsulting.com>

Subject: Press Conference Question

Hi Geoff: as discussed, I am being asked by the Ministry of Jobs, Trade and Tourism (JTT) whether the consortium partners (Chiyoda, Mitsui, ITM) would be comfortable with the hydrogen export project being included and/or described in a press conference with JTT Minister Bruce Ralston. The press conference would be a follow up to the BC Government's recent Asian Mission. The press conference may include the Premier, but I cannot confirm that at this time.

Could you please check on this?

I understand they are looking for direction on this quickly.

Regards,
Guy

Guy Gensey, Ph.D.
Director, Energy and Industry Decarbonization
Electricity and Alternative Energy Division
Ministry of Energy, Mines and Petroleum Resources
Government of British Columbia (Victoria, BC)

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From: Simard, Vallier (EC)
To: [Gensey, Guy EMPR:EX](#)
Cc: [Simard, Vallier \(EC\)](#); [Castellarin, Shannon \(EC\)](#); [Lefebvre, Marie \(EC\)](#)
Subject: FW: Chemical Regs
Date: Friday, February 9, 2018 8:20:47 AM
Attachments: [image002.png](#)

Hi Guy,

Thanks for sharing with us the information about your project and as promised, find below information that might be of help.

We are recommending you that you contact Transport Canada to see if any rules included in the [Transportation of Dangerous Good Act](#) apply to your project. Toluene may fall under Class 3 products. You may wish to contact Monique Lavoie to investigate more this requirement (monique.lavoie@tc.gc.ca, s.22).

As well, you may also verify with the Canadian Coast Guard of any requirements.

Toluene is on the Schedule 1 of the [Environmental Emergency Regulations](#). If the proponent of your project owns or has the charge, manage or control of the substance that is located at a place in Canada, must submit information include in this regulations. You may wish to contact Laureen Chung (Laureen.chung@canada.ca s.22 or more information.

Any substances not part of the [Domestic Substance List](#) must first be assessed before entering in Canada. The [New Substance Program](#) is responsible for administering the New Substances Notification Regulations (Chemicals and Polymers) [NSNR (Chemicals and Polymers)] and the New Substances Notification Regulations (Organisms) [NSNR (Organisms)] of the [Canadian Environmental Protection Act, 1999](#).

Find also information on Industry, Science and Economic Development Canada's Canada Business Network. The Network provides government services for Canadian businesses. The Network appears to have replaced what was formerly known as the Small Business Office.

- The Network provides resources and information to help Canadians get their businesses going and growing.
 - The following is the link that leads to the Network's Website:
<https://canadabusiness.ca/>
 - Additional broad-reaching information can be found at the following site:
http://www.ic.gc.ca/eic/site/icgc.nsf/eng/h_07064.html?Open&src=mm2
- Coordinates to contact the Network in British Columbia are found at the following site: <https://canadabusiness.ca/about/contact/british-columbia/>
 - They will be in a good position to provide the kind of business advice that may be required.

Hope this information will be helpful for you,

Sincerely,

Vallier Simard, M.Sc., ing./P.Eng

Chef, Mobilisation nationale sur les produits chimiques, Direction générale de la protection de l'environnement

Environnement et Changement climatique Canada / Gouvernement du Canada

vallier.simard@canada.ca / Tél.: 819-938-4345 / Tél. cell.: 514-283-1111

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From: Gensey, Guy EMPR:EX [<mailto:Guy.Gensey@gov.bc.ca>]

Sent: February 7, 2018 11:39 AM

To: Simard, Vallier (EC) <vallier.simard@canada.ca>

Subject: RE: Chemical Regs

Hi Vallier: I'm wondering if we could schedule a phone call? It seems the shipping of toluene I am referring to would not be considered either waste or recyclable material, but more of a product used in an industrial process. I'd like to describe the project and ask what other Acts or regulations might apply. I'm free today if you have time before 2:00 EST, or 4pm or later EST.

Thanks,

Guy

From: Simard, Vallier (EC) [<mailto:vallier.simard@canada.ca>]

Sent: Monday, February 5, 2018 1:16 PM

To: Gensey, Guy EMPR:EX

Cc: Simard, Vallier (EC); Snider, Andrew (EC); Lefebvre, Marie (EC); Normand, François (EC)

Subject: FW: Chemical Regs

Dear Mr. Gensey,

I wish the answer to your question on toluene be easy but it is not the case.

As you may know already, in Canada, the management of hazardous waste and hazardous recyclable material is a shared responsibility between the federal government and the provinces/territories. The federal government is responsible for hazardous wastes and hazardous recyclable materials crossing an international boundary, or for movements between provinces or territories in Canada, that are destined for disposal or recycling. The provinces have jurisdiction over the transportation of hazardous wastes within its provinces as well as the licensing and permitting of authorized facilities undertaking disposal or recycling operations and authorizing carriers.

Canada is a signatory to a number of international agreements which include: The United Nations, Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal; The OECD (Organization for Cooperation and Economic Development) Decision of Council on the Control of Transfrontier Movements of Wastes Destined for Recovery Operations; and the Canada - USA Agreement on the Transboundary Movement of Hazardous Waste.

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- Generic and more specific information related to the EIHWHRMR:
<https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/permit-hazardous-wastes-recyclables.html>

At this point we would like to suggest consulting the definitions for "hazardous waste" and "hazardous recyclable material" as set out in sections 1(1) and 2(1) of the EIHWHRMR respectively as well as the Schedules. In brief, the definitions means anything that is intended to be disposed of or recycled using one of the disposal or recycling operations set out in schedules 1 or 2 of the EIHWHRMR, and that meets at least one of seven conditions, each set in sections 1 and 2. The seven conditions are the following: (we tentatively answered the responds to the conditions in red)

1. The material is listed in schedule 3 of the EIHWHRMR: (not a concern for toluene)
2. The material is included in at least one of class 2 to 6, 8 or 9 of the *Transportation of Dangerous Goods Regulations* (TDGR): (It may be the case because toluene is the UN1294, it's a class 3. Please validate within the TDGR all the toluene definition and compounds that may trigger your substance, i.e. nitrotoluene, chlorotoluene, fluorotoluene, etc. for similar

classes)

3. The material is included in at least one of class 2 to 6, 8 or 9 of the TDGR and is listed in schedule 4 of the EIWHRMR: (It may be the case because toluene is the UN1294, it's a class 3. Please validate within the TDGR all the toluene definition and compounds that may trigger your substance, i.e. nitrotoluene, chlorotoluene, fluorotoluene, etc. AND see code F005, some k-codes in schedule 4 of the EIWHRMR)
4. The material contains a substance listed in schedule 5 of the EIWHRMR in a concentration greater than or equal to the applicable concentration set out in column 3 of that schedule: (toluene is listed in schedule 5 for concentration of 100 mg/kg)
5. The material produces a leachate containing a constituent in a concentration equal or greater than the applicable concentration set in schedule 6 of the EIWHRMR, determined in accordance with the leachate test TCLP: (toluene is not listed in schedule 6)
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We wish to advise you that it is the responsibility of the Canadian exporter (or importer) to determine whether a particular waste stream or recyclable material intended for recycling or final disposal meets the definition of hazardous waste or hazardous recyclable material under the EIWHRMR. The Canadian exporter (or importer) must be assured that they have taken the necessary steps to determine the classification of the hazardous waste or hazardous recyclable material and whether the Regulations would apply. The User Guide on the Classification will provided you detail on the classification, which is available in the link provided above. We are suggesting to consult expert on the transportation of your material (or Transport Canada directly) in order to validate is they exhibit a characteristic related to a transportation class (or a UN number) in particular for items b) and c) above. Questions to Transport Canada may be send to: TDGTraining-FormationTMD@tc.gc.ca

With the information we received from you at this point, it's not clear if the toluene is to be export for a disposal or recycling operation. While it is ultimately the responsibility of the Canadian exporter to determine whether the EIWHRMR would apply, it seems likely that the toluene would be considered as hazardous waste or as hazardous recyclable material under the EIWHRMR when destined for one of the operation of schedule 1 or 2 of the EIWHRMR. Please read the above comments in italic red related to toluene in the EIWHRMR definitions.

We would like also to advise you that under the EIWHRMR, it is the responsibility of the

Canadian exporter (or importer if the case maybe) to notify Environment and Climate Change Canada of any proposed export from (or import into) Canada. The parties involved in the proposed movement need to be identified on the notification form, including all carriers. The notice serves as an application for an export (or import) permit. No international shipments of hazardous waste or hazardous recyclable material may take place without first receiving a permit from the Minister of Environment.

Regards,

Vallier Simard, M.Sc., ing./P.Eng

Chef, Mobilisation nationale sur les produits chimiques, Direction générale de la protection de l'environnement
Environnement et Changement climatique Canada / Gouvernement du Canada
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De : Hubbard, Terence (NRCan/RNCan)
Envoyé : 2 février 2018 15:19
À : Gensey, Guy EMPR:EX
Cc : Ryan, Helen (EC)

Objet : RE: Chemical Regs

Hi Guy. Thanks for reaching out. Chemicals are managed by our ECCC colleagues, so linking into my colleague Helen who may be able to point you to the right person over there.

Terry

From: Gensey, Guy EMPR:EX [<mailto:Guy.Gensey@gov.bc.ca>]
Sent: February 2, 2018 13:48
To: Hubbard, Terence (NRCan/RNCan) <terence.hubbard@canada.ca>
Subject: Chemical Regs

Hi Terry, Fazil suggested you might be good start to figuring out a question we have.

It might be easier to discuss, but essentially is would be whether Canada has any export/shipping restrictions on a chemical called toluene, which I understand can be used as a dilutent in bitumen.

Would you happen to know – or could you point me to a person in the GoC who might?

Regards,
Guy

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From: Geoffrey Budd
To: [Gensey, Guy EMPR:EX](#)
Subject: Re: Chiyoda
Date: Tuesday, February 13, 2018 10:10:04 AM
Attachments: [image001.png](#)

Hi Guy,

Thanks for the reminder. The Chiyoda folk were going to do some work on the question. I will follow up and get back to you.

Best regards.
Geoff.

From: Guy Gensey <Guy.Gensey@gov.bc.ca>
Date: Tuesday, February 13, 2018 at 09:53
To: Geoffrey Budd G&S <geoff@gsbuddconsulting.com>
Subject: Chiyoda

Hi Geoff, I'm just following up to see if you have had any luck in tracking down materials or analysis from the consortium partners around the environmental considerations for shipping toluene/methylcyclohexane?

Regards,
Guy

Guy Gensey, Ph.D.
Director, Energy and Industry Decarbonization
Electricity and Alternative Energy Division
Ministry of Energy, Mines and Petroleum Resources
Government of British Columbia (Victoria, BC)
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cell: (250) 415-2132



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From: Geoffrey Budd
To: [Gensey, Guy EMPR:EX](#)
Subject: Re: Chiyoda
Date: Wednesday, February 14, 2018 12:06:12 PM
Attachments: [image001.png](#)

Hi Guy,

I received an answer from Chiyoda. In essence there is little out there on environmental info for both toluene and MCH, when handled in bulk.

Can we set up a call to review this important aspect of the technology and opportunity as such. We most probably will need to include this as an additional scope of the proposed funded feasibility study.

I am on the road today. Would tomorrow afternoon be good. Or first thing on Friday?

Thanks.
Geoff.

From: Guy Gensey <Guy.Gensey@gov.bc.ca>
Date: Tuesday, February 13, 2018 at 09:53
To: Geoffrey Budd G&S <geoff@gsbuddconsulting.com>
Subject: Chiyoda

Hi Geoff, I'm just following up to see if you have had any luck in tracking down materials or analysis from the consortium partners around the environmental considerations for shipping toluene/methylcyclohexane?

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From: Geoffrey Budd
To: [Gensey, Guy EMPR:EX](#); [Littler, Kristen EMPR:EX](#)
Subject: FW: Chiyoda
Date: Friday, February 16, 2018 9:23:58 AM
Attachments: [GESAMP hazard evaluation procedure.pdf](#)
Importance: High

Hi Guy and Kristen,

Good talking to you this morning. As mentioned Tadashi Ito at Chiyoda did some homework on the topic and has provided some initial reading material on the subject of marine environmental protection.

Toluene and MCH are included. I have done as discussed, a cursory scan of the links.

Let me know if you have any questions.

Best regards.

Geoff.

From: <Ito>, Tadashi Ito <ito.tadashi@chiyodacorp.com>
Date: Thursday, February 15, 2018 at 20:53
To: Geoffrey Budd G&S <geoff@gsbuddconsulting.com>
Cc: Stephen Jones <sj@itm-power.com>, Ryosuke Takezawa <R.Takezawa@mitsui.com>, Jackie Lee <jac.lee@mitsui.com>, "Schneider, Robert" <schneider.robert@chiyodacorp.com>, <Endo>, HIDEKI /遠藤英樹 ENDO <endo.hideki@chiyodacorp.com>, <Nagai>, Masashi / 長井 雅史 <nagai.masashi@chiyodacorp.com>
Subject: RE: Chiyoda

Dear Geoff-san,

Thank you for your email.

I am writing in connection with the marine environmental protection for toluene / MCH spill off.

There is an organization named GESAMP (Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection).

<http://www.gesamp.org/>

GESAMP is an advisory body to UN about the marine environmental protection.

GESAMP has a procedure of hazard evaluation as attached.

Attached p.1 shows the outline of the hazard evaluation procedure.

Aquatic environment, Human health, Interference with other uses of the sea are evaluated quantitatively.

P.2 shows the hazard profiles of materials.
MCH is highlighted by pink.

P.3 shows the same of toluene.

P.4 shows the ship type according to the hazard evaluation as above.
MCH requires Type 2 tanker.
Toluene requires Type 3 tanker.

Thus, according to the risk, the chemical tanker type is legislated.

Further detail is available at below.

http://www.gesamp.org/site/assets/files/1841/object_2649_large.pdf

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However we may had better study the local effect in BC when spill off occurs.

I appreciate it if we can hear the advice of Mr. Gunsey from local viewpoints.
Any counter questions / comments are welcome.

Tadashi

The Revised GESAMP hazard evaluation procedure

Columns A & B Aquatic environment					
Numerical Rating	A Bioaccumulation and Biodegradation			B Aquatic Toxicity	
	A 1 Bioaccumulation		A 2 Biodegradation	B 1 Acute Toxicity LC/EC/IC ₅₀ (mg/l)	B 2 Chronic Toxicity NOEC (mg/l)
	log Pow	BCF			
0	<1 or > ca. 7	not measurable	R: readily biodegradable NR: not readily biodegradable	>1000	>1
1	≥1 - <2	≥1 - <10		>100 - ≤1000	>0.1 - ≤1
2	≥2 - <3	≥10 - <100		>10 - ≤100	>0.01 - ≤0.1
3	≥3 - <4	≥100 - <500		>1 - ≤10	>0.001 - ≤0.01
4	≥4 - <5	≥500 - <4000		>0.1 - ≤1	<0.001
5	≥5	≥4000		>0.01 - ≤0.1	
6				<0.01	

Columns C & D Human Health (Toxic Effects to Mammals)						
Numerical Rating	C Acute Mammalian Toxicity			D Irritation, Corrosion & Long term health effects		
	C 1 Oral Toxicity LD ₅₀ (mg/kg)	C 2 Dermal Toxicity LD ₅₀ (mg/kg)	C 3 Inhalation Toxicity LC ₅₀ (mg/l)	D 1 Skin irritation & corrosion	D 2 Eye irritation & corrosion	D 3 Long-term health effects
0	>2000	>2000	>20	not irritating	not irritating	C – Carcinogen M – Mutagenic R – Reprotoxic S – Sensitising A – Aspiration haz. T – Target organ systemic toxicity L – Lung injury N – Neurotoxic I – Immunotoxic
1	>300 - ≤2000	>1000 - ≤2000	>10 - ≤20	mildly irritating	mildly irritating	
2	>50 - ≤300	>200 - ≤1000	>2 - ≤10	irritating	irritating	
3	>5 - ≤50	>50 - ≤200	>0.5 - ≤2	severely irritating or corrosive 3A Corr. (≤4hr) 3B Corr. (≤1hr) 3C Corr. (≤3m)	severely irritating	
4	≤5	≤50	≤0.5			

Column E Interference with other uses of the sea			
E 1 Tainting	E 2 Physical effects on Wildlife & benthic habitats	Numerical rating	E 3 Interference with Coastal Amenities
NT: not tainting (tested) T: tainting test positive	Fp: Persistent Floater F: Floater S: Sinking Substances	0	no interference no warning
		1	slightly objectionable warning, no closure of amenity
		2	moderately objectionable possible closure of amenity
		3	highly objectionable closure of amenity

~~BLG, I/Circ 28~~

ANNEX 6 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

EHS 50/8

19 April 2013
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EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Methyl amyl ketone	959	1	NI	1	NI	1	NI	1	0	0	1	1			FED	2
Methyl amyl ketone	442		RTECS No		MJ5075000				CAS No		110-43-0					
N-Methyl aniline	961	1	NI	1	(NR)	3	1	1	1	(2)	(1)	1			FD	2
N-Methylaniline	3107		RTECS No		BY4550000				CAS No		100-61-8					
alpha-Methylbenzyl alcohol with acetophenone (15% or less)	2399	1	NI	1	(R)	(1)	NI	(1)	(0)	(3)	(2)	(3)	R		Fp	3
alpha-Methylbenzyl alcohol with acetophenone (15% or less)	3634		RTECS No						CAS No		98-85-1					
2-Methyl-2-butanol	964	1	1	1	(R)	(1)	0	1	1	1	3	2			D	3
tert-Amyl alcohol	685		RTECS No		SC0175000				CAS No		75-85-4					
3-Methyl-1-butanol	965	1	1	1	(R)	1	0	1	0	(2)	2	2			FED	2
Isoamyl alcohol	396		RTECS No		EL5425000				CAS No		123-51-3					
3-Methyl-1-butanol	965	1	1	1	(R)	1	0	1	0	(2)	2	2			FED	2
Amyl alcohol, primary	126		RTECS No		EL5425000				CAS No		123-51-3					
Methyl butenol	967	0	NI	0	R	2	NI	1	0	(2)	2	2			D	2
Methylbutenol	458		RTECS No		EM9472500				CAS No		556-82-1					
Methyl tert-butyl ether	969	1	NI	1	NR	1	0	0	0	0	2	1		T	ED	2
Methyl tert-butyl ether	454		RTECS No		KN5250000				CAS No		1634-04-4					
Methyl butyl ketone	970	1	NI	1	(R)	1	(0)	0	0	0	1	1	RN		FED	3
Methyl butyl ketone	443		RTECS No		MP1400000				CAS No		591-78-6					
Methylbutynol	968	0	NI	0	NR	1	NI	1	1	0	0	2			D	2
2-Methyl-2-hydroxy-3-butyne	52		RTECS No		ES0810000				CAS No		115-19-5					
Methylbutynol	968	0	NI	0	NR	1	NI	1	1	0	0	2			D	2
Methylbutynol	459		RTECS No		ES0810000				CAS No		115-19-5					
Methyl butyrate	973	1	NI	1	NI	(2)	NI	0	0	2	2	(2)			ED	2
Methyl butyrate	444		RTECS No		ET5500000				CAS No		623-42-7					
Methyl cyclohexane	976	3	3	3	NR	3	1	0	0	1	1	1	A		E	2
Methylcyclohexane	460		RTECS No		GV6125000				CAS No		108-87-2					
Methyl cyclopentadiene, dimer	977	4	NI	4	(NR)	(3)	NI	0	(0)	(2)	(2)	(2)			F	2
Methylcyclopentadiene dimer	461		RTECS No		PC1075000				CAS No		26472-00-4					
Methyl cyclopentadienyl manganese tricarbonyl (60-70%) in mineral oil	2213	3	NI	3	NR	4	NI	2	3	4	1	1			S	3
Methylcyclopentadienyl manganese tricarbonyl	2692		RTECS No						CAS No							

ANNEX 6 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

EHS 45/9

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	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Titanium dioxide slurry	2080	Inorg	1	1	Inorg	1	NI	0	0	0	1	1			NI	1
	2259	RTECS No						CAS No			13463-67-7					
Toluene	330	2	2	2	R	3	0	0	0	0	2	2	ANR	NT	E	3
	693	RTECS No			XS5250000			CAS No			108-88-3					
Toluenediamine	1317	0	2	2	NR	3	0	2	2	4	1	2	CMS		Fp	3
	695	RTECS No			XS9625000			CAS No			96-80-7					
Toluene diisocyanate	1315	(3)	1	1	NR	2	NI	0	(0)	4	3	3	SCL		S	3
	694	RTECS No			CZ6300000			CAS No			584-84-9					
o-Toluidine	1316	1	1	1	R	4	2	1	0	(2)	2	2	CM		FD	3
	537	RTECS No						CAS No								
Tolyl triazole	2292	1	NI	1	NR	2	0	1	0	(2)	(1)	2			S	2
	696	RTECS No						CAS No								
Tributyl phosphate	1319	4	2	2	R	3	0	1	0	2	2	2	S		F	3
	697	RTECS No			TC7700000			CAS No			126-73-8					
1,2,3-Trichlorobenzene (molten)	2191	4	4	4	NR	4	2	1	0	(2)	2	2			S	2
	2288	RTECS No						CAS No								
1,2,4-Trichlorobenzene	1323	4	5	5	NR	4	1	1	0	(2)	2	2	M		S	3
	7	RTECS No			DC2100000			CAS No			120-82-1					
1,1,1-Trichloroethane	1326	2	NI	2	NR	2	NI	0	0	0	2	2			SD	2
	1	RTECS No			KJ2975000			CAS No			71-55-6					
1,1,2-Trichloroethane	1327	2	1	1	NR	2	0	1	0	1	2	1			SD	2
	3	RTECS No			KJ3150000			CAS No			70-00-5					
Trichloroethylene	329	2	2	2	NR	3	NI	0	0	0	2	2	CM		SD	3
	698	RTECS No			KX4550000			CAS No			79-01-6					
1,2,3-Trichloropropane	1329	2	2	2	NR	2	0	2	2	3	2	2	C		SD	3
	6	RTECS No			TZ9275000			CAS No			96-18-4					
1,1,2-Trichloro-1,2,2-Trifluoroethane	1330	3	2	2	NR	3	0	0	0	0	1	1			S	1
	2	RTECS No			KJ4000000			CAS No			76-13-1					
Tricresyl phosphate (containing 1% or more ortho-isomer)	1332	5	3	3	R	4	4	0	1	0	1	1	N		S	2
	699	RTECS No			TD0175000			CAS No			1330-78-5					
Tricresyl phosphate (containing less than 1% ortho-isomer)	1331	5	(3)	(3)	(R)	(4)	(4)	0	1	0	1	1	N		S	2

P.3

21.4.5 Column e - Ship Type

21.4.5.1 The basic criteria for assigning Ship Types based on the GESAMP Hazard Profile are shown in the table below. An explanation of the details in the columns is provided in appendix 1 of MARPOL Annex II. Selected rules, identified in this table, are specified in section 21.4.5.2 for assigning specific Ship Types.

Rule Number	A1	A2	B1	B2	D3	E2	Ship Type
1			≥5				1
2	≥4	NR	4		CMRTNI		
3	≥4	NR			CMRTNI		2
4			4				
5	≥4		3				
6		NR	3				
7				≥1			
8						Fp	
9					CMRTNI	F	
10			≥2			S	
11	≥4						3
12		NR					
13			≥1				
14	All other category Y Substances						
15	All other category Z Substances All “Other Substances” (OS)						NA

21.4.5.2 The Ship Type is assigned according to the following criteria:

Ship Type 1:

Inhalation $LC_{50} \leq 0.5$ mg/l/4 h; and/or
 Dermal $LD_{50} \leq 50$ mg/kg; and/or
 Oral $LD_{50} \leq 5$ mg/kg; and/or
 Autoignition temperature $\leq 65^{\circ}\text{C}$; and/or
 Explosive range $\geq 50\%$ v/v in air and the flash point $< 23^{\circ}\text{C}$; and/or
 Rules 1 or 2 of the table shown in 21.4.5.1

Ship Type 2:

Inhalation $LC_{50} > 0.5$ mg/l/4 h - ≤ 2 mg/l/4 h; and/or
 Dermal $LD_{50} > 50$ mg/kg - ≤ 1000 mg/kg; and/or
 Oral $LD_{50} > 5$ mg/kg - ≤ 300 mg/kg; and/or
 WRI=2;
 Autoignition temperature $\leq 200^{\circ}\text{C}$; and/or
 Explosive range $\geq 40\%$ v/v in air and the flash point $< 23^{\circ}\text{C}$; and/or
 Any of the rules 3 to 10 of the table shown in 21.4.5.1

From: Geoffrey Budd
To: [Gensey, Guy EMPR:EX](#)
Subject: FW: Chiyoda
Date: Friday, February 16, 2018 9:29:50 AM
Importance: High

Hi Guy,

I would like to get a head start on understanding some of the requirements that we need to go through if we are successful with the funding.

Secondly if we need to do a more in-depth study of the environmental details of this study we may need to top up the budget to get this done. I would like to discuss this briefly as well.

I can probably do a meeting next week. I am on the mainland on Feb 21st and 22nd. A call would also work. I am in Victoria on Feb 26th and can do a meeting in the morning. Let me know what's best for you.

Thanks.

Geoff.

From: Geoffrey Budd G&S

Date: Friday, February 16, 2018 at 09:23

To: Guy Gensey , "Littler, Kristen EMPR:EX"

Subject: FW: Chiyoda

Hi Guy and Kristen,

Good talking to you this morning. As mentioned Tadashi Ito at Chiyoda did some homework on the topic and has provided some initial reading material on the subject of marine environmental protection.

Toluene and MCH are included. I have done as discussed, a cursory scan of the links. Let me know if you have any questions.

Best regards.

Geoff.

From: , Tadashi Ito

Date: Thursday, February 15, 2018 at 20:53

To: Geoffrey Budd G&S

Cc: Stephen Jones , Ryosuke Takezawa , Jackie Lee , "Schneider, Robert" , , HIDEKI /遠藤英樹 ENDO , , Masashi / 長井 雅史

Subject: RE: Chiyoda

Dear Geoff-san,

Thank you for your email.

I am writing in connection with the marine environmental protection for toluene / MCH spill off.

There is an organization named GESAMP(Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection).

<http://www.gesamp.org/>

GESAMP is an advisory body to UN about the marine environmental protection.

GESAMP has a procedure of hazard evaluation as attached.

Attached p.1 shows the outline of the hazard evaluation procedure.

Aquatic environment, Human health, Interference with other uses of the sea are evaluated quantitatively.

P.2 shows the hazard profiles of materials.

MCH is highlighted by pink.

P.3 shows the same of toluene.

P.4 shows the ship type according to the hazard evaluation as above.

MCH requires Type 2 tanker.

Toluene requires Type 3 tanker.

Thus, according to the risk, the chemical tanker type is legislated.

Further detail is available at below.

http://www.gesamp.org/site/assets/files/1841/object_2649_large.pdf

As a result, I can say that the risk by spill off in general was already evaluated by the authority, GESAMP.

However we may had better study the local effect in BC when spill off occurs.

I appreciate it if we can hear the advice of Mr. Gunsey from local viewpoints.

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From: [Jang, Monica JTT:EX](#)
To: [MacLaren, Les EMPR:EX](#)
Cc: [Gensey, Guy EMPR:EX](#); [Brydon, Stephen EMPR:EX](#)
Subject: FW: ICE & Hydrogen
Date: Thursday, February 22, 2018 1:24:19 PM

Hi Les,

Fazil said that the Hydrogen feasibility study off your funding list. We can take it from here but would you be able to forward us your paperwork?

Thanks,

Monica.

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

From: Gensey, Guy EMPR:EX
Sent: Tuesday, February 6, 2018 11:59 AM
To: Mihlar, Fazil JTT:EX
Cc: MacLaren, Les EMPR:EX; Jang, Monica JTT:EX; Brydon, Stephen EMPR:EX
Subject: RE: ICE & Hydrogen

Fazil: we have heard nothing on the budget front regarding funding the Chiyoda feasibility study for BC.

I will follow up shortly on federal regulations around toluene. The consultant has also committed to getting me information on the environmental aspects of their other project in Asia.

Regards,
Guy

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

From: Mihlar, Fazil JTT:EX
Sent: Tuesday, February 6, 2018 11:41 AM
To: Gensey, Guy EMPR:EX
Cc: MacLaren, Les EMPR:EX; Jang, Monica JTT:EX
Subject: ICE & Hydrogen

Hi Guy: Any news on this front that you can share? Thx. Fazil

Sent from my iPhone

From: [MacLaren, Les EMPR:EX](#)
To: [Jang, Monica JTT:EX](#)
Cc: [Gensey, Guy EMPR:EX](#); [Brydon, Stephen EMPR:EX](#)
Subject: RE: ICE & Hydrogen
Date: Friday, February 23, 2018 4:22:22 PM
Attachments: [20171115_Centralised Renewable Hydrogen Production In BC Concept Paper.docx](#)

Hi Monica:

Thanks for your note. I appreciate the financial support from JTT for the Chiyoda project feasibility study. I've attached the feasibility study proposal, which is the extent of the paper work so far. Some further scope related to environmental impacts needs to be added.

On Monday morning, 10-11am, the Chiyoda project consultant will be in our offices to meet with EMPR project lead on this, Guy Gensey, to discuss the environmental aspects of this project. You are welcome to have someone from JTT attend if it is of interest. If so, please have them get in touch with Guy directly.

Les

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

From: Jang, Monica JTT:EX
Sent: Thursday, February 22, 2018 1:24 PM
To: MacLaren, Les EMPR:EX <Les.MacLaren@gov.bc.ca>
Cc: Gensey, Guy EMPR:EX <Guy.Gensey@gov.bc.ca>; Brydon, Stephen EMPR:EX <Stephen.Brydon@gov.bc.ca>
Subject: FW: ICE & Hydrogen

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Page 29 to/à Page 34

Withheld pursuant to/removed as

s.16;s.13;s.17

PROJECT BUDGET AND PRIVATE SECTOR IN-KIND FUNDS
s.17,s.21

Page 36

Withheld pursuant to/removed as

s.16;s.13;s.17

From: [Littler, Kristen EMPR:EX](#)
To: [Gensey, Guy EMPR:EX](#)
Cc: [Brydon, Stephen EMPR:EX](#)
Subject: Chiyoda Feasibility Study
Date: Monday, February 26, 2018 11:29:35 AM

Hi,

Just for reference, these are some of the agencies that Geoff Budd/consultant will probably need to outline in the roadmap/study (just off the top of my head):

Federal:

- Environment and Climate Change Canada (Toluene and MCH are classified as Volatile Organic Compounds (VOCs))
- Coast Guard (spill response)
- Transport Canada
- Oceans and Fisheries Canada

Provincial

- EMPR
- JTT - MIO
- ENV + EAO (*site specific and plant size trigger*)

Municipal (*site specific*)

- City of Vancouver (port access, air quality control, and site permitting)
- First Nations partners

Industry

- BC Hydro ***at this time***

International

- State of California/Washington/Oregon
- US Federal Government (inter-jurisdictional transportation via rail)
 - o EPA + Department of Energy
- IMO

Thanks,



Kristen F. Littler
Policy Analyst | Energy and Industry Decarbonization Branch
Electricity and Alternative Energy Division
BC Ministry of Energy, Mines and Petroleum Resources
Phone: 778-698-5650

Energizing BC—clean, sustainable and productive

From: Geoffrey Budd
To: [Gensey, Guy EMPR:EX](#)
Cc: sj@itm-power.com
Subject: Stephen Jones Contact Details and the LOHC Feasibility Study
Date: Thursday, March 1, 2018 12:44:26 PM
Attachments: [Stephen Jones.vcf](#)
[image001.png](#)

Hi Guy,

Thank you for the great news. That's wonderful to hear.

Thank you and your colleagues as well, in both ministries for supporting the fund application to conduct the LOHC feasibility study for BC.

I spoke to Steve shortly after our call this morning about ITM taking on the responsibility to be the lead and signatory Partner with your Ministry for this funded project. His response was positive.

As requested I have attached Steve Jones' contact vCard. Please use the information in this attachment for the agreement that you are finalizing. Please copy me as well when you send it out to Steve. If you have any questions let me know.

Many thanks again. We look forward to getting started.

With best regards.

Geoff.

cid:image001.png@01D35328.7D17B7E0



Geoff Budd

Principal

Mobile +1 (604) 617 5588 | Work +1 (250) 929 7619 | Fax +1 (250) 929 7619

geoff@gsbuddconsulting.com

s.22

From: Stephen Jones
To: [Gensey, Guy EMPR:EX](#); [Geoffrey Budd](#)
Subject: Re: Stephen Jones Contact Details and the LOHC Feasibility Study
Date: Friday, March 2, 2018 10:36:37 AM
Attachments: [image001.png](#)
[image002.png](#)

Hello Guy,

Great stuff. I can confirm ITM are happy to lead the project and we look forward to the draft.

Have a great weekend

Thanks

Steve Jones

ITM Power

+1 (714) 453 8141

From: Guy Gensey

Date: Thursday, 1 March 2018 at 14:55

To: Geoffrey Budd

Cc: ITM Power

Subject: RE: Stephen Jones Contact Details and the LOHC Feasibility Study

Geoff/ Steve: this is indeed good news! We're working on the contribution agreement as we speak and should have you a draft early next week.

Regards,

Guy

Guy Gensey, Ph.D.

Director, Energy and Industry Decarbonization

Electricity and Alternative Energy Division

Ministry of Energy, Mines and Petroleum Resources

Government of British Columbia (Victoria, BC)

e-mail: guy.gensey@gov.bc.ca

phone: (778) 698-7144

cell: (250) 415-2132



Energizing BC—clean, sustainable and productive

From: Geoffrey Budd [<mailto:geoff@gsbuddconsulting.com>]

Sent: Thursday, March 1, 2018 12:44 PM

To: Gensey, Guy EMPR:EX

Cc: sj@itm-power.com

Subject: Stephen Jones Contact Details and the LOHC Feasibility Study

Hi Guy,

Thank you for the great news. That's wonderful to hear.

Thank you and your colleagues as well, in both ministries for supporting the fund application to conduct the LOHC feasibility study for BC.

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Many thanks again. We look forward to getting started.

With best regards.

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geoff@gsbuddconsulting.com

s.22

From: Parmar, Ranbir S CSNR:EX
To: Gensey, Guy EMPR:EX
Cc: MacLaren, Les EMPR:EX; Brydon, Stephen EMPR:EX; Green, Dan L EMPR:EX
Subject: RE: (ITM Project) FW: EMPR ICE Fund & recovering from JTT
Date: Monday, March 5, 2018 3:26:23 PM
Attachments: image001.png

Thanks Guy and looks good.

It looks like the entire \$230K (\$200K for the undertaking plus the \$30K for evaluation) is conditional on the delivery of the detailed work plan and project budget. Gather ITM Power Inc. can deliver this prior to March 31st – correct?

PAYMENTS

1. The Province will pay the Recipient up to the total aggregate of \$230,000 for the Term of this Agreement based on the payment schedule below.

2. Payments will be made as follows:

- within 60 days of (but not before) the start of this Agreement upon receipt and acceptance by the Province of detailed work plan and project budget a payment of \$200,000 for the undertaking and completion of the techno-economic feasibility study and an additional \$30,000 dedicated to an evaluation of environmental regulatory approvals and compliance, and the spill implications on-land and in a marine environment relating to toluene and methyl cyclohexane.

From: Gensey, Guy EMPR:EX
Sent: Monday, March 5, 2018 3:18 PM
To: Parmar, Ranbir S CSNR:EX
Cc: MacLaren, Les EMPR:EX; Brydon, Stephen EMPR:EX; Green, Dan L EMPR:EX
Subject: RE: (ITM Project) FW: EMPR ICE Fund & recovering from JTT
Hi Ranbir: attached is the draft contribution agreement for the ITM project study. ITM has not seen this yet. Your advice on next steps is appreciated.
Regards,
Guy

From: Green, Dan L EMPR:EX
Sent: Thursday, March 1, 2018 11:08 AM
To: Gensey, Guy EMPR:EX; Brydon, Stephen EMPR:EX
Cc: Parmar, Ranbir S CSNR:EX; MacLaren, Les EMPR:EX
Subject: (ITM Project) FW: EMPR ICE Fund & recovering from JTT
Guy / Steve
Please draw up the contribution agreement for the ITM project as soon as you can
Thanks
Dan

From: Parmar, Ranbir S CSNR:EX
Sent: Thursday, March 1, 2018 10:04 AM
To: Green, Dan L EMPR:EX; Gonzalez, Selina FIN:EX
Cc: Critchley, Carla JTT:EX; Mortimer, David JTT:EX; Holly, Grant FIN:EX; MacLaren, Les EMPR:EX; De Champlain, Rhonda EMPR:EX
Subject: RE: EMPR ICE Fund & recovering from JTT
Hi.

Just so that we are all on the same page, I chatted with Selina and we will process this 1 pmt from the Ministry, sub vote Electricity and Alternative Energy and then recover the funds from JTT.

David, per our discussion, I believe this would be okay from your end as well in terms of tsf the relevant funding to us.

If any issues, let me know otherwise, we will proceed on this basis. thanks.

From: Parmar, Ranbir S CSNR:EX
Sent: Wednesday, February 28, 2018 5:21 PM
To: Green, Dan L EMPR:EX; Gonzalez, Selina FIN:EX
Cc: Critchley, Carla JTT:EX; Mortimer, David JTT:EX; Holly, Grant FIN:EX; MacLaren, Les EMPR:EX; De Champlain, Rhonda EMPR:EX
Subject: RE: EMPR ICE Fund & recovering from JTT
Hi

Thanks for this feedback. ICE fund special account description from the Estimates states the following, last sentence : "Costs may be recovered from ministries, Crown agencies, other levels of government ..."

Part c of the legislation states "any other amount received by the government for payment into the special account". Is there a concern government cannot pay into the account? I am thinking these 2 statements are in line but happy to hear other thoughts.

As a backup strategy, Electricity and Alternative Energy sub vote description includes "...provides for development of legislation, policies and programs to support all forms of electrical power generation, transmission, distribution, and marketing...alternative energy resource development, etc". I believe the project would fit and Dan can confirm so we could flow the payment out through the ministry and recover the funds from JTT outside the ICE fund.

From: Green, Dan L EMPR:EX
Sent: Wednesday, February 28, 2018 4:58 PM
To: Gonzalez, Selina FIN:EX; Parmar, Ranbir S CSNR:EX
Cc: Critchley, Carla JTT:EX; Mortimer, David JTT:EX; Holly, Grant FIN:EX; MacLaren, Les EMPR:EX; De Champlain, Rhonda EMPR:EX
Subject: RE: EMPR ICE Fund & recovering from JTT
I know where she's coming from.

From: Gonzalez, Selina FIN:EX
Sent: Wednesday, February 28, 2018 4:52 PM
To: Parmar, Ranbir S CSNR:EX; Green, Dan L EMPR:EX
Cc: Critchley, Carla JTT:EX; Mortimer, David JTT:EX; Holly, Grant FIN:EX
Subject: FW: EMPR ICE Fund & recovering from JTT
Importance: High
Hello Everyone,

s.12
s.14
s.13

Selina

From: Cretelli, Alice FIN:EX
Sent: Wednesday, February 28, 2018 2:58 PM
To: Gonzalez, Selina FIN:EX
Cc: Fong, Kim FIN:EX
Subject: RE: EMPR ICE Fund & recovering from JTT
Hello Selina,

I chatted with Kim and reviewed the Special Accounts Act

s.13
s.12

Here is the link of the Act for your information: http://www.bclaws.ca/civix/document/id/complete/statreg/96436_01#section9.5

Thanks,
Alice

From: Gonzalez, Selina FIN:EX
Sent: Wednesday, February 28, 2018 11:37 AM
To: Cretelli, Alice FIN:EX
Cc: Fong, Kim FIN:EX
Subject: EMPR ICE Fund & recovering from JTT
Hi Alice,

I'm the Treasury Board Analyst for EMPR. Kim suggested I contact you regarding a question on the Innovative Clean Energy (ICE) fund special account held under EMPR.

The ICE fund receives about \$5-5.5M in revenues each year but has appropriation room of only \$2.3M/year.

s.12
s.12

There is one project that would have been funded out of ICE from year end spend but now JTT has offered to fund it (from some of its savings). The amount is \$230K. The EMPR ICE fund staff would still be doing the paperwork, etc

s.12
s.12

Let me know if I can provide any further clarity and thanks in advance for your response.

We're hoping to get an answer sooner rather than later

Thanks,
Selina Gonzalez, MA Econ
Senior Treasury Board Analyst
Performance Budgeting Office
Ministry of Finance
P: 250-953-4429
C: 250-580-7438

From: Geoffrey Budd
To: [Gensey, Guy EMPR:EX](#)
Cc: [Stephen Jones](#)
Subject: Re: BC Project work plan and budget
Date: Wednesday, March 7, 2018 9:49:34 AM

Hi Guy,

As discussed Steve and I have drafted a document that has the following tables - a time plan and budget. Based on the scope of work line items originally developed. We will send you a draft for review before we finalize the document with your guidance.

Regards.

Geoff Budd
iPhone 604 617 5588

On Mar 6, 2018, at 12:19, Stephen Jones <sj@itm-power.com> wrote:

Thanks Guy,
Understood - Geoff and I talked about this last night - we will have something to you within a week.

Thank you

Steve Jones
ITM Power
+1 (714) 453 8141

On Tue, Mar 6, 2018 at 8:17 AM -0800, "Gensey, Guy EMPR:EX"
<Guy.Gensey@gov.bc.ca> wrote:

Steve/ Geoff: the \$230k needs to clear government books before the end of March 31, 2018, which is the end of our fiscal. As such, I will need a more detailed project work plan and budget before March 31 so we can disburse the funds. Once I receive the work plan and budget, the funds can be sent quickly (not 60 days as outlined in the standard contract language below). Below is the language from the contribution agreement relating to this.

I wanted to give you a heads up so you can start thinking about the work plan and budget. I should have the draft contribution agreement to you soon – it is just working its way through internal process.

Regards,

Guy

“Within 60 days of (but not before) the start of this Agreement upon receipt and acceptance by the Province of detailed work plan and project budget by March 31, 2018, a payment of \$200,000 for the undertaking and completion of the techno-economic feasibility study and an additional \$30,000 dedicated to an

evaluation of environmental regulatory approvals and compliance, and the spill implications on-land and in a marine environment relating to toluene and methyl cyclohexane.”

From: [Parmar, Ranbir S CSNR:EX](#)
To: [Gensey, Guy EMPR:EX](#)
Cc: [Green, Dan L EMPR:EX](#)
Subject: RE: ITM Power Shared Cost Arrangement
Date: Friday, March 9, 2018 9:25:36 AM

Yes you should go ahead and get the agreement signed by ITM. The payment would then be made once you have the project plan and budget for which this payment is tied to and please remind them it is due before March 31st. thanks.

From: Gensey, Guy EMPR:EX
Sent: Friday, March 9, 2018 8:15 AM
To: Parmar, Ranbir S CSNR:EX
Cc: Green, Dan L EMPR:EX
Subject: ITM Power Shared Cost Arrangement

Ranbir, Les has reviewed and given the go-ahead on these documents. Once we get the more detailed project plan and budget from the proponent, are we good to move to signing ASAP? Also, am I now OK to send the draft Shared Cost Arrangement to ITM for their review?

Guy

From: Geoffrey Budd
To: [Gensey, Guy EMPR:EX](#)
Cc: [Stephen Jones](#); [Littler, Kristen EMPR:EX](#)
Subject: Re: BC Project work plan and budget
Date: Friday, March 9, 2018 3:20:59 PM
Attachments: [ITM Draft Time Plan Budget 180309.docx](#)

Hi Guy,

As discussed a few minutes ago I have attached on behalf of ITM an updated project work plan and budget with the additional information that you had requested.

Let us know if this works for your requirements and if you have any questions about this draft. Once done we will send you a signed copy for this project and your records.

Regards.

Geoff.

From: Guy Gensey

Date: Wednesday, March 7, 2018 at 13:48

To: Geoffrey Budd

Cc: Stephen Jones , "Littler, Kristen EMPR:EX"

Subject: RE: BC Project work plan and budget

Hi Geoff: thanks for this. We will need to see some more detail on the budget item breakdown for both the \$200 and the \$30K work items. I know that Sabina Russell did some early work on a previous application around this project – perhaps you could pull some more detail from that work. Recall the attached.

As we discussed when you were last in our offices in Victoria, there will be \$30K for the environmental piece, and we'd like to see that broken down as well as to what will be done and by whom (i.e., what are the anticipated activities on the regulatory pathway and spill analysis, and budget for the environmental analysis?).

It would also be good to see what in-kind amounts BC Hydro and others will be contributing. Please revise this and we can have another look at a draft.

I think we are getting close, it just needs some filling out and accuracy around how the money will be utilized.

In the meantime, we are working hard on the financials paperwork internally.

Guy

From: Geoffrey Budd [mailto:geoff@gsbuddconsulting.com]

Sent: Wednesday, March 7, 2018 10:38 AM

To: Gensey, Guy EMPR:EX

Cc: Stephen Jones

Subject: Re: BC Project work plan and budget

Hi Guy,

Please have a look at the document that we have assembled for your review. It has both a general work plan and budget based on the scope line items that we had developed for our proposal.

Please review and let us have your feedback.

Many thanks.

Geoff.

From: Geoffrey Budd G&S <geoff@gsbuddconsulting.com>

Date: Wednesday, March 7, 2018 at 12:49

To: Guy Gensey <guy.gensey@gov.bc.ca>

Cc: Stephen Jones <sj@itm-power.com>

Subject: Re: BC Project work plan and budget

Hi Guy,

As discussed Steve and I have drafted a document that has the following tables - a time plan

and budget. Based on the scope of work line items originally developed. We will send you a draft for review before we finalize the document with your guidance.

Regards.

Geoff Budd
iPhone 604 617 5588

On Mar 6, 2018, at 12:19, Stephen Jones <sj@itm-power.com> wrote:

Thanks Guy,
Understood - Geoff and I talked about this last night - we will have something to you within a week.
Thank you
Steve Jones
ITM Power
+1 (714) 453 8141

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<Guy.Gensey@gov.bc.ca> wrote:

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I wanted to give you a heads up so you can start thinking about the work plan and budget. I should have the draft contribution agreement to you soon – it is just working its way through internal process.

Regards,

Guy

“Within 60 days of (but not before) the start of this Agreement upon receipt and acceptance by the Province of detailed work plan and project budget by March 31, 2018, a payment of \$200,000 for the undertaking and completion of the techno-economic feasibility study and an additional \$30,000 dedicated to an evaluation of environmental regulatory approvals and compliance, and the spill implications on-land and in a marine environment relating to toluene and methyl cyclohexane.”

Page 47 to/à Page 49

Withheld pursuant to/removed as

s.16;s.13;s.17

From: Stephen Jones
To: [Gensey, Guy](#) [EMPR:EX](#); [Geoffrey Budd](#)
Subject: FW: BC Feasibility Study Funding
Date: Tuesday, March 13, 2018 9:11:00 PM
Attachments: [image001.png](#)
[MBK&CYDcomment_18.03.XX ITM Study Evaluating The Export of Renewable H2.docx](#)

Hello Guy,

Please find attached draft wording for an announcement ITM would like to make after the contract is signed. As we are a public company we need to make sure we are transparent with our shareholders.

As you can see there is some placeholder language for you to fill in (quote and an 'about' section) Please review and send me any changes you would like to see.

Thanks

Steve Jones

Managing Director

ITM Power Inc.

Tel: +1 (714) 453 8141

www.itm-power.com

<https://www.linkedin.com/in/stephenjones001>

Connect with ITM Power:

[YouTube](#) [Flickr](#) [Twitter](#) [Facebook](#)

mailsignature



Page 51 to/à Page 52

Withheld pursuant to/removed as

s.21

From: Geoffrey Budd
To: [Gensey, Guy EMPR:EX](#); [Littler, Kristen EMPR:EX](#)
Cc: [Stephen Jones](#)
Subject: Updated project timeline and budget tables for the renewable hydrogen BC study.
Date: Wednesday, March 14, 2018 9:46:37 PM
Attachments: [ITM Draft Time Plan Budget 180314.docx](#)
[image001.png](#)

Hi Guy and Kristen,

Please find as attached an updated set of tables for the timeline and budget as discussed this morning.

Many thanks for the time taken to develop the requisite wording. Let me know if you have any further questions.

Best regards.

Geoff.



Geoff Budd

Principal

Mobile +1 (604) 617 5588 | Work +1 (250) 929 7619 | Fax +1 (250) 929 7619

geoff@gsbuddconsulting.com

s.22

Page 54 to/à Page 57

Withheld pursuant to/removed as

s.16;s.13;s.17

From: [Brophy, Brenda CSNR:EX](#)
To: [Parmar, Ranbir S CSNR:EX](#)
Cc: [Gensey, Guy EMPR:EX](#); [Littler, Kristen EMPR:EX](#)
Subject: RE: ITM Shared Cost Arrangement
Date: Friday, March 16, 2018 1:51:08 PM

Hi everyone,

This shouldn't be an issue, I have emailed my contact at RMB for approval.

Note – payment schedule has 60 days for first payment but that won't work for year-end and you need both payments to happen by the end of the March. Suggest, first upon signing on or before a date next week, the next no later than the 29th (or sooner) upon receipt of the workplan.

Call if any questions. Looks like an interesting agreement and study.

Thanks,

Brenda

From: Parmar, Ranbir S CSNR:EX
Sent: Friday, March 16, 2018 1:39 PM
To: Brophy, Brenda CSNR:EX
Cc: Gensey, Guy EMPR:EX; Littler, Kristen EMPR:EX
Subject: FW: ITM Shared Cost Arrangement
Hi Brenda.

Could you have a look and advise. I think we should be able to work with this change considering the circumstances of this work. thanks.

From: Gensey, Guy EMPR:EX
Sent: Friday, March 16, 2018 1:18 PM
To: Parmar, Ranbir S CSNR:EX
Cc: Littler, Kristen EMPR:EX
Subject: FW: ITM Shared Cost Arrangement
Hi Ranbir: is this a problem for us?

Guy

From: Stephen Jones [<mailto:sj@itm-power.com>]
Sent: Friday, March 16, 2018 12:22 PM
To: Gensey, Guy EMPR:EX
Cc: Geoffrey Budd
Subject: Re: ITM Shared Cost Arrangement
Hello Guy,

Sorry for the delay, our legal council has finished the review and we are happy with the agreement as it stands **except a request to drop the public liability from \$2million to \$1million.**

Our current coverage is 1 – so it would mean us changing our policy.

I think due to the fact it's a paper study a liability of 1m would be more than adequate.

If we progress to a real world demo we can up the figure accordingly.

Hope that is ok?

Thanks

Steve Jones

ITM Power

+1 (714) 453 8141

From: Guy Gensey <Guy.Gensey@gov.bc.ca>
Date: Friday, 9 March 2018 at 09:30
To: ITM Power <sj@itm-power.com>
Cc: Geoffrey Budd <geoff@gsbuddconsulting.com>

Subject: ITM Shared Cost Arrangement

Steve: attached is the funding contribution agreement, our standard template. Please review. If you are OK with this, please sign on page 11 and return to me. We are under a time crunch, so need to keep this moving. Once we receive the project and budget breakdown, we can then dispense the funds. All has to be done before March 31.

Cheers,

Guy

From: [Parmar, Ranbir S CSNR:EX](#)
To: [Brophy, Brenda CSNR:EX](#)
Cc: [Gensey, Guy EMPR:EX](#); [Littler, Kristen EMPR:EX](#)
Subject: RE: ITM Shared Cost Arrangement
Date: Friday, March 16, 2018 1:54:19 PM

Guy, note the feedback so please go ahead.

From: Brophy, Brenda CSNR:EX
Sent: Friday, March 16, 2018 1:51 PM
To: Parmar, Ranbir S CSNR:EX
Cc: Gensey, Guy EMPR:EX; Littler, Kristen EMPR:EX
Subject: RE: ITM Shared Cost Arrangement
Hi everyone,

This shouldn't be an issue, I have emailed my contact at RMB for approval.

Note – payment schedule has 60 days for first payment but that won't work for year-end and you need both payments to happen by the end of the March. Suggest, first upon signing on or before a date next week, the next no later than the 29th (or sooner) upon receipt of the workplan.

Call if any questions. Looks like an interesting agreement and study.

Thanks,

Brenda

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To: Brophy, Brenda CSNR:EX
Cc: Gensey, Guy EMPR:EX; Littler, Kristen EMPR:EX
Subject: FW: ITM Shared Cost Arrangement
Hi Brenda.

Could you have a look and advise. I think we should be able to work with this change considering the circumstances of this work. thanks.

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Cc: Littler, Kristen EMPR:EX
Subject: FW: ITM Shared Cost Arrangement
Hi Ranbir: is this a problem for us?

Guy

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Sent: Friday, March 16, 2018 12:22 PM
To: Gensey, Guy EMPR:EX
Cc: Geoffrey Budd
Subject: Re: ITM Shared Cost Arrangement

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Sorry for the delay, our legal council has finished the review and we are happy with the agreement as it stands **except a request to drop the public liability from \$2million to \$1million.**

Our current coverage is 1 – so it would mean us changing our policy.

I think due to the fact it's a paper study a liability of 1m would be more than adequate.

If we progress to a real world demo we can up the figure accordingly.

Hope that is ok?

Thanks

Steve Jones

ITM Power

+1 (714) 453 8141

From: Guy Gensey <Guy.Gensey@gov.bc.ca>

Date: Friday, 9 March 2018 at 09:30

To: ITM Power <sj@itm-power.com>

Cc: Geoffrey Budd <geoff@gsbuddconsulting.com>

Subject: ITM Shared Cost Arrangement

Steve: attached is the funding contribution agreement, our standard template. Please review. If you are OK with this, please sign on page 11 and return to me. We are under a time crunch, so need to keep this moving. Once we receive the project and budget breakdown, we can then dispense the funds. All has to be done before March 31.

Cheers,

Guy

From: Stephen Jones
To: [Gensey, Guy EMPR:EX](#); [Brophy, Brenda CSNR:EX](#)
Subject: Re: ITM Power SCM
Date: Monday, March 19, 2018 3:32:43 PM

Hello Brenda,

I have found out that the association does not cover us – we will however ensure that we obtain the appropriate coverage – our company secretary is working on this as we speak.

Thanks

Steve Jones

ITM Power

+1 (714) 453 8141

From: Guy Gensey

Date: Monday, 19 March 2018 at 13:49

To: ITM Power

Subject: FW: ITM Power SCM

Steve: Brenda apparently needs your answer on the coverage from an association.

Guy

From: Brophy, Brenda CSNR:EX

Sent: Monday, March 19, 2018 1:35 PM

To: Gensey, Guy EMPR:EX

Subject: RE: ITM Power SCM

I asked Steve what he had with the association and was waiting on him. If as he says here they are fine to go obtain it then I will get the Schedule D wording updated today for re-signing.

From: Gensey, Guy EMPR:EX

Sent: Monday, March 19, 2018 12:05 PM

To: Brophy, Brenda CSNR:EX

Subject: ITM Power SCM

Importance: High

Brenda: please see the question from ITM below. Also, did you get a chance to review the transfer of funds document – are we good to go for re-signing now?

Guy

From: Stephen Jones [<mailto:sj@itm-power.com>]

Sent: Monday, March 19, 2018 11:33 AM

To: Gensey, Guy EMPR:EX

Subject: Update

Hi guy

I'm checking on the errors and omissions insurance at the moment.

If we don't have it we will get it in place before the end of the month.

Do you need to alter the agreement wording before I sign?

Thank you

Steve Jones

ITM Power

+1 (714) 453 8141

From: [Janes, Darci EMPR:EX](#)
To: [CSNR EMPR Accounts Payable CSNR:EX](#)
Cc: [McNeil, Yvonne CSNR:EX](#); [Gensey, Guy EMPR:EX](#)
Subject: CA187MAN0086, ITM Power Inc, Centralized Hydrogen Production Techno-Feasibility Study, \$230,000.00
Date: Thursday, March 22, 2018 3:56:00 PM
Attachments: [image001.png](#)
[CA18MAN0086 RFGT ITM Power.docx](#)
[CA18MAN0086-ITM Shared Cost Agreement ITM Signed.pdf](#)
[Aprovals, Ranbir, Dan, Les.pdf](#)

Attached is the documentation along with the approval pdf (all done electronically via email and eApprovals) for PO Entry for \$230,000.00 for ITM Power Inc. Will Yeh has just submitted the "CSNR Supplier Request" for this company today.

The budget breakdown is as follows:

\$230,000 FY2017/2018

Please code to the following:

CLIENT (MINISTRY)	RESPONSIBILITY	SERVICE LINE	STOB	PROJECT
315	27316	26316	8001	2700000

Please let me know if you have any questions.

Darci Janes

Branch Coordinator

Alternative Energy Branch

Electricity & Alternative Energy Division

Ministry of Energy, Mines and Petroleum Resources

Phone 778-698-7249





Natural Resource Ministries

**GOVERNMENT TRANSFER –
SHARED COST ARRANGEMENT**

Agreement #: CA18MAN0086

Project Title: FEASIBILITY STUDY AND ASSESSMENT OF CENTRALIZED RENEWABLE HYDROGEN
PRODUCTION IN BC FOLOWED BY A PILOT PLANT DEVELOPMENT

THIS AGREEMENT dated for reference the **26TH** day of **MARCH, 2018**.

BETWEEN

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF
BRITISH COLUMBIA, represented by the Minister of Energy, Mines and
Petroleum Resources
Energy and Industry Decarbonization Branch

(the "Province")

AND

iTM Power inc.

(the "Recipient")

The parties to this Agreement (the "Parties") agree as follows:

SECTION 1 - DEFINITIONS

1. Where used in this Agreement

- (a) "Business Day" means a day, other than a Saturday or Sunday, on which Provincial government offices are open for normal business in British Columbia;
- (b) "Financial Contribution" means the total aggregate value stipulated in Schedule B;
- (c) "Material" means all findings, data, reports, documents, records and material, (both printed and electronic, including but not limited to, hard disk or diskettes), whether complete or otherwise, that have been produced, received, compiled or acquired by, or provided by or on behalf of the Province to, the Recipient as a direct result of this Agreement, but does not include:
 - i. Client case files or Personal Information as defined in the Freedom of Information and Protection of Privacy Act; or
 - ii. Property owned by the Recipient.
- (d) "Project" means the project described in Schedule A;
- (e) "Refund" means any refund or remission of federal or provincial tax or duty available with respect to any items that the Province has paid for or agreed to pay for under this Agreement.
- (f) "Services" means the services described in Schedule A;
- (g) "Term" means the duration of the Agreement stipulated in Schedule A.

SECTION 2 - APPOINTMENT

The Recipient must carry out and complete the Project described in Schedule A and may use the Province's funding only for the purpose (specified in Schedule A) of defraying Eligible Costs incurred by the Recipient in carrying out and completing the Project.

SECTION 3 – PAYMENT OF FINANCIAL CONTRIBUTION

Subject to the provisions of this Agreement, the Province will pay the Recipient in the amount, and at the times set out in Schedule B.

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

The Province has no obligation to make the Financial Contribution unless the Recipient has complied with the criteria set out in Schedule A.

Notwithstanding any other provision of this Agreement the payment of the Financial Contribution by the Province to the Recipient pursuant to this Agreement is subject to:

- (a) there being sufficient monies available in an appropriation, as defined in the *Financial Administration Act* ("FAA"), to enable the Province, in any fiscal year when any payment of money by the Province to the Recipient falls due pursuant to this Agreement, to make that payment; and
- (b) Treasury Board, as defined in the FAA, not having controlled or limited, pursuant to the FAA, expenditure under any appropriation referred to in subparagraph (a) of this paragraph.

The Recipient must:

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

The previous paragraph continues in force indefinitely, even after this Agreement expires or is terminated.

The Recipient is responsible for any Provincial Sales Tax (PST) and Goods and Services Tax (GST) and any other charges for which the Province has not expressly agreed to accept responsibility under the terms of this Agreement.

The Recipient must declare any amounts owing to the government under legislation or an agreement. Amounts due to the Recipient under this Agreement may be set-off against amounts owing to the government.

SECTION 4 - REPRESENTATIONS AND WARRANTIES

The Recipient represents and warrants to the Province, with the intent that the Province rely on it in entering into this Agreement, that

- (a) all information, statements, documents and reports furnished or submitted by the Recipient to the Province in connection with this Agreement are true and correct;
- (b) the Recipient has no knowledge of any fact that materially adversely affects, or so far as it can foresee, might materially adversely affect, the Recipient's properties, assets, condition (financial or otherwise), business or operations or its ability to fulfill its obligations under this Agreement; and

- (c) the Recipient is not in breach of, or in default under, any law of Canada or of the Province of British Columbia applicable to or binding on it.

All statements contained in any certificate, application, proposal or other document delivered by or on behalf of the Recipient to the Province under this Agreement or in connection with any of the transactions contemplated by it are deemed to be representations and warranties by the Recipient under this Agreement.

All representations, warranties, covenants and agreements made in this Agreement and all certificates, applications or other documents delivered by or on behalf of the Recipient are material, have been relied on by the Province, and continue in effect during the continuation of this Agreement.

SECTION 5 - INDEPENDENT RELATIONSHIP

No partnership, joint venture, agency or other legal entity will be created by or will be deemed to be created by this Agreement or by any actions of the Parties pursuant to this Agreement.

The Recipient will be an independent and neither the Recipient nor its servants, agents or employees will be the servant, employee, or agent of the Province.

The Recipient will not, in any manner whatsoever, commit or purport to commit the Province to the payment of money to any person, firm, or corporation.

The Province may, from time to time, give instructions to the Recipient in relation to the carrying out of the Services, and the Recipient will comply with those instructions but will not be subject to the control of the Province regarding the manner in which those instructions are carried out except as specified in this Agreement.

SECTION 6 – RECIPIENT’S OBLIGATIONS

The Recipient will:

- (a) carry out the Services in accordance with the terms of this Agreement during the Term stated in Schedule A;
- (b) comply with the payment requirements set out in Schedule B, including all requirements concerning the use, application and expenditure of the payments provided under this Agreement;
- (c) comply with all applicable laws;
- (d) hire and retain only qualified staff;
- (e) without limiting the provisions of subparagraph (c) of this Section carry out criminal record checks as required by the Criminal Records Review Act, in accordance with Schedule C;
- (f) unless agreed otherwise, supply, at its own cost, all labour, materials and approvals necessary to carry out the Services;

- (g) unless agreed otherwise, retain ownership to all assets acquired or intangible property created in the process of carrying out this Agreement;
- (h) co-operate with the Province in making public announcements regarding the Services and the details of this Agreement that the Province requests; and
- (i) acknowledge the financial contribution made by the Province to the Recipient for the Services in any Materials, by printing on each of the Materials the following statement:

"We gratefully acknowledge the financial support of the Province of British Columbia through the Ministry of Energy, Mines and Petroleum Resources."

SECTION 7 - RECORDS

The Recipient will:

- (a) establish and maintain accounting and administrative records in form and content satisfactory of the Province, to be used as the basis for the calculation of amounts owing;
- (b) establish and maintain books of account, invoices, receipts and vouchers for all expenses incurred in form and content satisfactory to the Province;
- (c) permit the Province, for monitoring and audit purposes, at all reasonable times, upon reasonable notice, to enter any premises used by the Recipient to deliver the Services or keep any documents or records pertaining to the Services, in order for the Province to inspect, audit, examine, review and copy any findings, data, specifications, drawings, working papers, reports, surveys, spread sheets, evaluations, documents, databases and material, (both printed and electronic, including, but not limited to, hard disk or USBs'), whether complete or not, that are produced, received or otherwise acquired by the Recipient as a result of this Agreement.
- (d) if applicable, obtain the consent of clients to allow provincial employees or designates access to client case files for the purposes of service monitoring and evaluation and research purposes, as outlined in Schedule E.

The Parties agree that the Province does not have control, for the purpose of the *Freedom of Information and Protection of Privacy Act*, of the records held by the Recipient.

SECTION 8 - NON EXPENDED FINANCIAL CONTRIBUTION

At the sole option of the Province, any portion of the Financial Contribution provided to the Recipient under this Agreement and not expended at the end of the Term shall be:

- (a) returned by the Recipient to the Minister of Finance; or
- (b) retained by the Recipient as supplemental funding provided for under an amendment to this Agreement; or
- (c) deducted by the Province from any future funding requests submitted by the Recipient and approved by the Province.

SECTION 9 - CONFLICT OF INTEREST

The Recipient will not, during the Term, perform a service for or provide advice to any person, or entity where the performance of such service or the provision of the advice may, in the reasonable opinion of the Province, give rise to a conflict of interest between the obligations of the Recipient to the Province under this Agreement and the obligations of the Recipient to such other person or entity.

SECTION 10 - CONFIDENTIALITY

The Recipient will treat as confidential all information and material supplied to or obtained by the Recipient, or any third party, as a result of this Agreement and will not, without the prior written consent of the Province, except as required by applicable law, permit its disclosure except to the extent that such disclosure is necessary to enable the Recipient to fulfill its obligations under this Agreement.

SECTION 11 - DEFAULT

Any of the following events will constitute an Event of Default,:

- (a) the Recipient fails to comply with any provision of this Agreement;
- (b) any representation or warranty made by the Recipient in accepting this Agreement is untrue or incorrect;
- (c) any information, statement, certificate, report or other document furnished or submitted by or on behalf of the Recipient pursuant to or as a result of this Agreement is untrue or incorrect;
- (d) the Recipient ceases, in the opinion of the Province, to operate;
- (e) a change occurs with respect to any one or more, including all, of the properties, assets, condition (financial or otherwise), business or operations of the Recipient which, in the opinion of the Province, materially adversely affects the ability of the Recipient to fulfill its obligations under this Agreement;
- (f) an order is made or a resolution is passed or a petition is filed for the liquidation or winding up of the Recipient;
- (g) the Recipient becomes insolvent or commits an act of bankruptcy or makes an assignment for the benefit of its creditors or otherwise acknowledges its insolvency;

- (h) a bankruptcy petition is filed or presented against, or a proposal under *the Bankruptcy and Insolvency Act* (Canada) is made by, the Recipient;
- (i) a receiver or receiver-manager of any property of the Recipient is appointed; or
- (j) the Recipient permits any sum which is not disputed to be due by it to remain unpaid after legal proceedings have been commenced to enforce payment thereof.

SECTION 12 – RESULTS OF AN EVENT OF DEFAULT

Upon the occurrence of any Event of Default and at any time thereafter that the Province may, despite any other provision of this Agreement, at its option, elect to do any one or more of the following:

- (a) terminate this Agreement, in which case the payment of the amount required under the last paragraph of Section 12 of this Agreement will discharge the Province of all liability to the Recipient under this Agreement;
- (b) require the Event of Default be remedied within a time period specified by the Province;
- (c) suspend any installment of the Financial Contribution or any amount that is due to the Recipient while the Event of Default continues;
- (d) waive the Event of Default;
- (e) require repayment of any portion of the Financial Contribution not spent in accordance with this Agreement;
- (f) pursue any other remedy available at law or in equity.

The Province may also, at its option, either:

- (a) terminate this Agreement on 30 days written notice, without cause; or
- (b) terminate this Agreement immediately if the Province determines that the Recipient's failure to comply places the health or safety of any person at immediate risk;

and in either case, the payment of the amount required under the last paragraph of Section 12 of this Agreement will discharge the Province of all liability to the Recipient under this Agreement.

Where this Agreement is terminated before 100% completion of the Project, the Province will pay to the Recipient that portion of the Financial Contribution which is equal to the portion of the Project completed to the satisfaction of the Province prior to termination.

SECTION 13 – DISPUTE RESOLUTION

Dispute resolution process:

In the event of any dispute between the Parties arising out of or in connection with this Agreement, the following dispute resolution process will apply unless the Parties otherwise agree in writing:

- (a) the Parties must initially attempt to resolve the dispute through collaborative negotiation;
- (b) if the dispute is not resolved through collaborative negotiation within 15 Business Days of the dispute arising, the Parties must then attempt to resolve the dispute through mediation under the rules of the British Columbia Mediator Roster Society; and
- (c) if the dispute is not resolved through mediation within 30 Business Days of the commencement of mediation, the dispute must be referred to and finally resolved by arbitration under the *Commercial Arbitration Act*.

Location of arbitration or mediation:

Unless the Parties otherwise agree in writing, an arbitration or mediation under the aforementioned dispute resolution process will be held in Victoria, British Columbia.

Unless the Parties otherwise agree in writing or, in the case of an arbitration, the arbitrator otherwise orders, the Parties must share equally the costs of a mediation or arbitration under the aforementioned dispute resolution process other than those costs relating to the production of expert evidence or representation by counsel.

SECTION 14 – INSURANCE AND INDEMNITY

During the Term of this Agreement, the Recipient will provide, maintain and pay for insurance as specified in Schedule D, which may be amended from time to time at the sole discretion of the Province.

Without limiting the provisions of subparagraph (c) of Section 6, the Recipient will comply with the Workers' Compensation Legislation for the Province of British Columbia.

The Recipient hereby agrees to indemnify and save harmless the Province, its successors, assigns and authorized representatives and each of them from and against losses, claims, damages, actions and causes of action (collectively referred to as "Claims") that the Province may sustain, incur, suffer or be put to at any time either before or after the expiration or termination of this Agreement, that arise out of errors, omissions or negligent acts of the Recipient or their subcontractors, servants, agents or employees under this Agreement, excepting always that this indemnity does not apply to the extent, if any, to which the Claims are caused by errors, omissions or the negligent acts of the Province, its other contractors, assigns and authorized representatives or any other person.

SECTION 15 – ASSIGNMENT AND SUB-CONTRACTING

The Recipient will not, without the prior, written consent of the Province:

- (a) assign, either directly or indirectly, this Agreement or any right of the Recipient under this Agreement; or
- (b) sub-contract any obligation of the Recipient under this Agreement.

No sub-contract entered into by the Recipient will relieve the Recipient from any of its obligations, including Section 6, under this Agreement or impose upon the Province any obligation or liability arising from any such sub-contract.

This Agreement will be binding upon the Province and its assigns and the Recipient, the Recipient's successors and permitted assigns.

SECTION 16 - REPAYMENT OR REDUCTIONS

An amount paid by the Province to the Recipient or which is treated as such pursuant to the terms of this Agreement, and to which the Recipient is not entitled according to the terms of this Agreement is repayable to the Province and until repaid constitutes a debt due to the Province.

SECTION 17 – OTHER FUNDING

If the Recipient receives funding for or in respect of the Services from any person, firm, corporation or other government or governmental body, then the Recipient will immediately provide the Province with full and complete details thereof.

SECTION 18 - NOTICES

Where in this Agreement any notice or other communication is required to be given by any of the Parties, it will be made in writing. It will be effectively given:

- (a) by delivery, to the address of the Party set out below, on the date of delivery;
- (b) by pre-paid registered mail, to the address of the Party set out below, on the fifth business day after mailing;
- (c) by facsimile, to the facsimile number of the Party mentioned in this Agreement, on the date the facsimile is sent; or
- (d) by e-mail, to the e-mail address of the Party mentioned in this Agreement, on the date the e-mail is sent.

The contact details of the Parties are

Province:

Dr. Guy Gensey
Director, Energy and Industry Decarbonization Branch
Ministry of Energy, Mines and Petroleum Resources
PO Box 9314 Stn Prov Govt
Victoria, BC V8W 9N1
Guy.Gensey@gov.bc.ca
Phone: 778-698-7144

Recipient:

Stephen Jones
Managing Director
ITM Power Inc.
101-155 N Riverview Dr.
Anaheim, CA 92808
sj@itm-power.com
Phone: +1 (714) 453-8141

The address, phone number, facsimile number, or email set out above may be changed by notice in the manner set out in this provision.

SECTION 19 - NON-WAIVER

No term or condition of this Agreement and no breach by the Recipient of any term or condition will be deemed to have been waived unless such waiver is in writing signed by the Province and the Recipient.

The written waiver by the Province of any breach by the Recipient of any term or condition of this Agreement will not be deemed to be a waiver of any other provision of any subsequent breach of the same or any other provision of this Agreement.

SECTION 20 – ENTIRE AGREEMENT

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

SECTION 21 - MISCELLANEOUS

All of the provisions of this Agreement in favour of the Province and all of the rights and remedies of the Province, either at law or in equity, will survive any expiration or sooner termination of this Agreement.

Nothing in this Agreement operates as a consent, permit, approval or authorization by the Province thereof to or for anything related to the Project that by law, the Recipient is required to obtain unless it is expressly stated herein to be such a consent, permit, approval or authorization.

SECTION 22 – EXECUTION AND DELIVERY OF AGREEMENT

This Agreement may be entered into by a separate copy of this Agreement being executed by, or on behalf of, each Party and that executed copy being delivered to the other Party by a method provided for in Section 18 or any other method agreed to by the Parties.

The Parties have executed this Agreement as follows:

SIGNED AND DELIVERED on behalf of the Recipient



Signature of Recipient's Signing Authority

Stephen Jones – Managing Director
Printed Name & Title of Recipient's Signing Authority

22nd
~~XXth~~ March 2018
Date

SIGNED AND DELIVERED on behalf of the Province,

~~XXth~~ March 2018



Signature of Province's Signing Authority

DANIEL GREEN, EXECUTIVE DIRECTOR
Printed Name & Title of Province's Signing Authority

March 22, 2018
Date

SCHEDULE A – SERVICES

The Project

TERM

Notwithstanding the date of execution of this Agreement, the Term of this Agreement starts on March 29, 2018 and ends on March 29, 2019

PROJECT

The purpose of this study is to examine the technical and economic feasibility of building a centralized hydrogen production plant in BC powered by clean electricity. The hydrogen would be converted into a liquid organic hydrogen carrier (LOHC) for export to Asia and California for energy use, and also used in BC for transportation or industrial use. The project will be split into two phases:

- Phase One: the collection of the necessary information as the inputs for the feasibility study;
- Phase Two: to undertake an economic and environmental evaluation for the potential of a business opportunity in British Columbia.

There is a growing demand for hydrogen in parts of the world that are leading the transition away from conventional energy sources, where clean energy is needed for both motive and stationary power applications. With BC's clean, low-cost electricity, the province is strongly positioned as a potential producer and exporter of renewable hydrogen generated via electrolysis.

British Columbia's coastal access to Asia and close proximity to US markets provide it with a unique opportunity for renewable hydrogen energy export. This project will look at the potential to export hydrogen from BC to two of regions of the world leading the adoption of fuel cell vehicles and other hydrogen powered technologies: California and Japan. The zero-emission vehicle (ZEV) mandate of California has been instrumental in spurring both battery and fuel cell technologies over the past 3 decades. The development of a hydrogen infrastructure in California has attracted vehicle test fleets from several major automotive OEMs and provides a real market for the commercialization of fuel cell vehicles. The Government of Japan released the Strategic Roadmap for Hydrogen and Fuel Cells in June 2014 and revised this in March 2016. It describes the target of fuel cell electric vehicle deployment of 40,000 vehicles by the year of 2020, 200,000 by 2025 and 800,000 by 2030, as well as the target number of hydrogen fueling stations of 320 by 2025. In addition to fueling cars, hydrogen could provide ancillary services and store excess intermittent renewable energy for the grid.

The Ministry of Energy, Mines and Petroleum Resources (EMPR) in partnership with the Ministry of Jobs, Trade and Technology, is providing a total of \$230,000 for the Project. All of this work is to be completed within 12 months.

PURPOSE & EXPECTED RESULTS

EMPR has a clearly defined mandate that establishes a number of priorities upon which the Ministry is to focus. A number of the Service Plan 2018/19-2020/21 priorities are congruent with the opportunity that this proposal supports. These include:

- The creation of a roadmap for the future of B.C. energy that will drive innovation, expand energy-efficiency and conservation programs, generate new energy responsibly and sustainably, and create lasting good jobs across the province.
- Develop an alternative energy strategy to put BC more firmly on the path to green, renewable energy that helps the province exceed its climate goals.
- Accelerate the market transformation in BC to zero-emission vehicles through effective delivery of government's Clean Energy Vehicle Program and associated policy development.
- Support global energy security and the reduction of greenhouse gas emissions.

The purpose of this study is two-fold. The inputs required for the economic modeling that will be gathered through Phase One will result in:

1. Required plant capital investment and operating parameters (electricity, water and other utility input requirements);
2. Siting and installation costs;
3. Potential site selection and footprint;
4. Public interest and local partner support; and
5. Environmental and regulatory line of sight.

(Note: BC Hydro has committed to \$60,000 in-kind support to examine the electricity demand and site requirements for this project.)

The economic modelling from Phase Two will result in:

1. A report summarizing potential benefits and impacts to British Columbians;
2. A decision on the economic and environmental feasibility of the project; and,
3. Next steps regarding a pre-commercial hydrogen production plant in BC.

OUTCOMES

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

1. Decarbonize BC's energy use to reduce our impact on climate change and establish a new diversified foundation for our economy.

The Parties acknowledge that the Recipient does not warrant that these outcomes will be achieved.

DELIVERABLES

The deliverables below will be completed within 12 months of the execution of this Agreement.

Project outputs include:

1. Submission of detailed work-plan and budget on or before March 29, 2018.

A Project plan will include but not be limited to:

2. Capital investment and operating parameters for three plant sizes, including;
 - i. 10 MW pilot scale plant
 - ii. 100 MW commercial plant
 - iii. 300 MW extended commercial plant
3. Selection of hydrogen production sites in British Columbia that best meet the criteria for economically viable production and distribution of hydrogen for both domestic and export markets;
4. Economic model and scenario analysis to determine the economics related to production of hydrogen at a centralized plant via water electrolysis, and the resultant price of hydrogen delivered to both the domestic market in the form of gaseous hydrogen, and export markets (Japan, California) in the form of liquid organic hydrogen carriers;
5. Market assessment to determine the size of domestic and export markets based on achievable delivered hydrogen pricing;
6. An evaluation of the social and economic impacts of the project including job creation, regional development and revenue generation;
7. An evaluation of the carbon dioxide reduction potential;
8. Identification of and engagement with local build-own-operate partners. A specific company may be established encompassing a number of the partner companies; and,
9. A go/no-go decision for a pilot production facility under Phase 3.

Further deliverables include:

- 10.i) A roadmap of the environmental regulatory approvals and compliance required at all levels of international, federal, provincial, local and First Nation governance to build and operate the pilot and commercial projects; and
- ii) a complete analysis of spill implications, response, prevention and recovery on land and at BC's coastline and ocean relating to toluene and methyl cyclohexane, including the Liquid Organic Hydrogen Carrier technology.

REPORTING REQUIREMENTS:

Financial Reporting:

Interim Reporting

The Recipient must provide an accounting for the use of advanced funds upon written request by the Province and based on the following reporting requirements: the Recipient will report to the Province quarterly following the start of this Agreement with a summary of the progress of the study and:

- a Project income and expenditure summary which identifies all sources and use of the total Project funds over the duration of the quarter;
- a statement detailing the use of the Province's Financial Contribution provided over the duration of the quarter, including an explanation of any financial variances or unexpected costs.

Final Reporting

Following completion of the Project the Recipient must, no later than 30 days after the end of the Term, provide a final financial report including:

- a Project income and expenditure summary which identifies all sources and use of the total Project funds over the duration of the entire Agreement;
- a statement detailing the use of the Province's Financial Contribution provided over the duration of the entire Agreement, including an explanation of any financial variances.

Certification / Attestation

All financial reports submitted by the Recipient must be certified by a senior officer of the Recipient's organization (such as a Chief Executive Officer or Chief Financial Officer) attesting to the correctness and completeness of the financial information provided.

Project Reporting

Ongoing Communication

The Recipient must make all reasonable efforts to respond to ad-hoc requests by the Province for information on Project progress. The Recipient must also advise the Province immediately of any substantial events that could impact the Project timeline.

Final Reporting

Following completion of the Project the Recipient must, no later than 30 days after the end of the Term, provide a Project performance report with Project highlights, description of outcomes with respect to results set out in this Schedule A, quantitative and qualitative description of the accomplishments / success of the Project, challenges faced and solutions found, information on results (negative or positive) that were not anticipated, and lessons learned.

SCHEDULE B - FINANCIAL CONTRIBUTION

PAYMENTS

1. The Province will pay the Recipient up to the total aggregate of \$230,000 for the Term of this Agreement based on the payment schedule below.
2. Payments will be made as follows:
 1. On or before March 23, 2018 upon receipt by the Province of a signed agreement the amount of \$30,000
 2. On or before March 29, 2018 upon receipt and acceptance of a detailed work plan and project budget a payment of \$200,000
3. Any future contributions by the Province under this Project are conditional upon the Recipient having complied with the terms and conditions of this Agreement.

SCHEDULE C - CRIMINAL RECORDS CHECKS

The purpose of the *B.C. Criminal Records Review Act* (the "Act") is to help protect children from physical and sexual abuse. The legislation applies to all organizations that work with children and are operated, licensed or receives operating funds from the provincial government of British Columbia.

The Act makes a criminal record check mandatory for anyone who works with children. In the Act, "works with children" means:

Working with children directly or having or potentially having unsupervised access to children in the ordinary course of employment or in the practice of an occupation.

The Act defines "child" as an individual under 19 years of age.

In consideration of the above, the Recipient will;

1. comply with all requirements and regulations of the Act;
2. ensure all new and existing employees, volunteers, and sub-contractors comply with the Act including those who have previously completed a criminal records review check; and
3. maintain and make available to the Province, upon request, documentation showing that the criminal record check requirement, as set out in this Schedule, has been met.

Schedule D - Insurance

1. The Recipient shall, without limiting its obligations or liabilities herein and at its own expense, provide and maintain the following insurances with insurers licensed in British Columbia and in forms and amounts acceptable to the Province.
 - (a) Automobile Liability on all vehicles owned, operated or licensed in the name of the Recipient, and if used for government business, in an amount not less than \$1,000,000.
 - (b) Comprehensive/Commercial General Liability in an amount not less than \$1,000,000 inclusive per occurrence, insuring against bodily injury, personal injury and property damage. The Province is to be an additional insured under this policy. Such insurance shall include, but not be limited to
 - Products and completed Operations Liability;
 - Owner's and Contractor's Protective Liability;
 - Blanket Written Contractor Liability;
 - Contingent Employer's Liability;
 - Personal Injury Liability;
 - Non-Owned Automobile Liability;
 - Cross Liability;
 - Employees as Additional Insured;
 - Broad Form Property Damage; and
 - If applicable, Tenant's Legal Liability in an amount adequate to cover a loss to premises of the Province occupied by the Recipient.
 - (c) Professional (Errors and Omissions) Liability Insurance protecting the Recipient, and if applicable their insurable Sub-Contractors and their respective servants, agents or employees, against any loss or damage arising out of the professional services rendered by any of them under this Agreement. Such insurance shall be for an adequate amount acceptable to the Province and shall in any event be not less than \$1,000,000
2. The foregoing insurance shall be primary and not require the sharing of any loss by any insurer of the Province.
3. The Recipient shall provide the Province with evidence of all required insurance prior to the commencement of the work or services. Such evidence shall be in the form of a completed Province of British Columbia Certificate of Insurance, duly signed by the Insurance Broker and the Insured. When requested by the Province, the Recipient shall provide certified copies of required policies.
4. All required insurance shall be endorsed to provide the Province with 30 days advance written notice of cancellation or material change.
5. The Recipient hereby waives all rights of recourse against the Province with regard to damage to the Recipient's property.

6. The Recipient will comply with the *Workers' Compensation Act* legislation for the Province of British Columbia.

SCHEDULE E - PRIVACY PROTECTION

Not Applicable.

From: [Parmar, Ranbir S CSNR:EX](#)
To: [Janes, Darci EMPR:EX](#)
Cc: [MacKenzie, Melissa CSNR:EX](#); [Roland, Michelle CSNR:EX](#)
Subject: RE: #2433 - FYI - CODING: FW: ITM Power Contribution Agreement# CA18MAN0086
Date: Wednesday, March 21, 2018 2:33:06 PM
Attachments: [image001.png](#)

Ok to proceed.

Melissa, once payment is processed we should recover the funds. Thanks.

From: Janes, Darci EMPR:EX
Sent: Wednesday, March 21, 2018 2:25 PM
To: Parmar, Ranbir S CSNR:EX
Subject: FW: #2433 - FYI - CODING: FW: ITM Power Contribution Agreement# CA18MAN0086

Hi Ranbir,

For your approval. CSNR approved below.

Thank you,

Darci

From: CSNR Transfer Payments CSNR:EX
Sent: Wednesday, March 21, 2018 12:24 PM
To: Gensey, Guy EMPR:EX
Cc: MacKenzie, Melissa CSNR:EX; Roland, Michelle CSNR:EX
Subject: Re: #2433 - FYI - CODING: FW: ITM Power Contribution Agreement# CA18MAN0086
Hello Guy.

Attached are the Request for Government Transfer (RFGT) and the Shared Cost Arrangement (SCA) with tracked changes and comments.

- Accept the tracked changes and delete any corresponding comments.
- For comments where your input is required, make any appropriate changes and delete those comments.
- Once the documents have been updated, there is no need to resubmit for further review.

I have reviewed the Request for Government Transfer (RFGT) and the Shared Cost Arrangement (SCA) for ITM Power Inc. (#CA18MAN0086) to receive \$230,000 CDN to examine the technical and economic feasibility of building a centralized hydrogen production plant in BC powered by clean electricity. The hydrogen would be converted into a liquid organic hydrogen carrier (LOHC) for export to Asia and California for energy use, and also used in BC for transportation and/or industrial use.

Based on the attached RFGT and the Electric Mobility Canada SCA., this **Government Transfer complies with Government Financial Policy** provided the required changes noted in the RFGT and SCA agreement have been made.

This review was completed based on the information / documents provided.

Thank you.

Gay Nejedly, PCMP Cert.

Senior Contract Procurement Specialist | Policy and Compliance | [Financial Services](#)

Phone (778) 698-3724

[Corporate Services for the Natural Resource Ministries](#)

Contract Inquiries mail to: CSNR Contract Policy Support CSNR:EX CSNR.ContractSupport@gov.bc.ca

Transfer Payment Inquiries mail to: [CSNR Transfer Payments](#)

The advice and/or recommendation in this message is based on information and documentation provided by your office. This communication, both the message and attachments, are intended

only for the use of the person(s) to whom it is addressed.

From: Brophy, Brenda CSNR:EX
Sent: Wednesday, March 21, 2018 10:17 AM
To: Gensey, Guy EMPR:EX; McNeil, Yvonne CSNR:EX; CSNR Transfer Payments CSNR:EX
Cc: MacKenzie, Melissa CSNR:EX; Scadding, Tanya CSNR:EX
Subject: RE: #2433 - FYI - CODING: FW: ITM Power Contribution Agreement# CA18MAN0086
Hi everyone,

It now comes to our group to review for compliance.

Once you get that confirmation back you can proceed to agreement signing and PO entry.

Thanks,

Brenda

From: Gensey, Guy EMPR:EX
Sent: Wednesday, March 21, 2018 10:13 AM
To: McNeil, Yvonne CSNR:EX
Cc: MacKenzie, Melissa CSNR:EX; Scadding, Tanya CSNR:EX; Brophy, Brenda CSNR:EX
Subject: RE: FYI - CODING: FW: ITM Power Contribution Agreement# CA18MAN0086
Importance: High

Hi Yvonne: I have completed the information in the forms. Do I now proceed to get ITM to sign the SCA first, then our folks (Dan and Les)?

Thanks,

Guy

From: McNeil, Yvonne CSNR:EX
Sent: Wednesday, March 21, 2018 8:04 AM
To: Gensey, Guy EMPR:EX
Cc: MacKenzie, Melissa CSNR:EX; Scadding, Tanya CSNR:EX
Subject: RE: FYI - CODING: FW: ITM Power Contribution Agreement# CA18MAN0086
Hi Guy,

The coding I provided below can be entered on the Request for Government Transfer (RFGT) form.

The program area emails the signed Shared Cost Arrangement document, the completed RFGT and all approvals (EA, ADM, CFO) to [CSNR EMPR Accounts Payable](#) for PO entry. The RFGT has all the pertinent information required for Accounts Payable to enter the agreement into the system.

When the PO has been approved and set up in the accounting system, Accounts Payable will advise the program area that the PO is ready to accept invoices for processing and payment. Does this help?

Feel free to contact me if you have any other questions or we could meet and discuss if you like.

Thanks,

Yvonne McNeil

Financial & Client Support Analyst | Financial Services Branch
Financial Planning & Reporting supporting MEM

Phone 778-698-3743 Email Yvonne.McNeil@gov.bc.ca

Corporate Services for the Natural Resource Ministries [CSNR Intranet](#)

From: Gensey, Guy EMPR:EX
Sent: Tuesday, March 20, 2018 4:04 PM
To: McNeil, Yvonne CSNR:EX
Cc: Scadding, Tanya CSNR:EX; MacKenzie, Melissa CSNR:EX
Subject: RE: FYI - CODING: FW: ITM Power Contribution Agreement# CA18MAN0086

Thanks Yvonne: can CSNR fill in the coding now that all the documents are sitting there?

Guy

From: McNeil, Yvonne CSNR:EX
Sent: Tuesday, March 20, 2018 3:54 PM
To: Gensey, Guy EMPR:EX
Cc: Scadding, Tanya CSNR:EX; MacKenzie, Melissa CSNR:EX
Subject: FYI - CODING: FW: ITM Power Contribution Agreement# CA18MAN0086

Hi Guy,

For the **ITM Power** contribution agreement **CA18MAN0086**, please use the following coding:

Client: **315**

Resp Centre: **27316**

Service Line: **26316**

STOB: **8001**

Project: **2700000**

Once the invoice has been submitted to accounts payable for processing and payment, I will do up the journal voucher to recover the funds from Ministry of Jobs, Trade & Technology (JTT). The fiscal yearend deadline date to process interminstry JV's is April 9 so I'll keep my eyes open for the invoice to be processed.

Please don't hesitate to contact me if you have any questions.

Thanks,

Yvonne McNeil

Financial & Client Support Analyst | Financial Services Branch

Financial Planning & Reporting supporting MEM

Phone 778-698-3743 **Email** Yvonne.McNeil@gov.bc.ca

Corporate Services for the Natural Resource Ministries [CSNR Intranet](#)

From: Scadding, Tanya CSNR:EX
Sent: Tuesday, March 20, 2018 2:36 PM
To: McNeil, Yvonne CSNR:EX
Cc: Gensey, Guy EMPR:EX
Subject: FW: ITM Power

Hi Yvonne,

Can you please advise where this should be coded to? The documents are included in the attachments.

Thank you

Tanya

From: Brophy, Brenda CSNR:EX
Sent: Tuesday, March 20, 2018 2:27 PM
To: Gensey, Guy EMPR:EX
Cc: Scadding, Tanya CSNR:EX
Subject: RE: ITM Power

I've copied in Tanya as well. Account coding is needed as well on the RFGT form. Documents attached to the attached!

Thanks.

From: Gensey, Guy EMPR:EX
Sent: Tuesday, March 20, 2018 2:25 PM
To: CSNR Transfer Payments CSNR:EX
Cc: Gensey, Guy EMPR:EX
Subject: ITM Power

Melissa/ Michelle, please review and let me know if you are OK with these.

I've attached the detailed budget and timeline for this project, on which disbursing the funds is dependent, as per Schedule B.

Regards,

Guy

Guy Gensey, Ph.D.

Director, Energy and Industry Decarbonization

Electricity and Alternative Energy Division

Ministry of Energy, Mines and Petroleum Resources

Government of British Columbia (Victoria, BC)


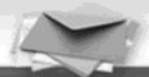
e-mail: guy.gensey@gov.bc.ca

phone: (778) 698-7144

cell: (250) 415-2132




Energizing BC—clean, sustainable and productive

MY ITEMS
MY ASSIGNEE'S ITEMS
WATCHED ITEMS
CREATE
SUPPORT
SETTINGS
SUPER USER

ITEM HISTORY

 Enter one of the Item Numbers for the history you want to view and then hit Enter on your keyboard.

ID Number

3623

Cliff Number

Other Number

Selected Item

Date Completed	ID	Cliff Number	Other Number	Subject
	3623		CA18MAN0086	CA18MAN0086 ITM Power

Approvals

Date Approved	User	Title
3/22/2018 8:46 AM	Janes, Darci EMPR:EX	Item Approved.
3/21/2018 5:03 PM	MacLaren, Les EMPR:EX	Item Approved.
3/21/2018 4:21 PM	Janes, Darci EMPR:EX	Item Approved.
3/21/2018 4:19 PM	Green, Dan L EMPR:EX	Item Approved.
3/21/2018 3:17 PM	Janes, Darci EMPR:EX	Item Approved.

Comments

Comment Date	User	Title
3/22/2018 8:55 AM	Gensey, Guy EMPR:EX	I accepted Les' changes and re-attached. Guy.
3/22/2018 8:46 AM	Janes, Darci EMPR:EX	Les approved but please see his comments. Please send back to me when final and I will save and send you a pdf to send out to the proponent.
3/21/2018 5:03 PM	MacLaren, Les EMPR:EX	Approved with tracked changes in the CA. Please confirm that I have characterized the deliverables on p.14 correctly. Item 1 is this month, with the balance of the deliverables over the next year. If that is incorrect, please fix.
3/21/2018 4:21 PM	Janes, Darci EMPR:EX	For your approval.
3/21/2018 4:19 PM	Green, Dan L EMPR:EX	Approved
3/21/2018 3:17 PM	Janes, Darci EMPR:EX	For your approval.

Path

Path Date	User	Title
3/22/2018 8:55 AM	Gensey, Guy EMPR:EX	Item sent to Janes, Darci.
3/22/2018 8:46 AM	Janes, Darci EMPR:EX	Item sent to Gensey, Guy.
3/21/2018 5:03 PM	MacLaren, Les EMPR:EX	Item sent to Janes, Darci.
3/21/2018 4:21 PM	Janes, Darci EMPR:EX	Item sent to MacLaren, Les.
3/21/2018 4:19 PM	Green, Dan L EMPR:EX	Item sent to Janes, Darci.
3/21/2018 3:17 PM	Janes, Darci EMPR:EX	Item sent to Green, Dan.
3/21/2018 2:40 PM	Janes, Darci EMPR:EX	Item Created.

DocumentPath

Upload Date	User	Title
3/22/2018 8:54 AM	Gensey, Guy EMPR:EX	Document [180320-ITM Shared Cost Agreement ITM1-DRAFT-IFR] Uploaded.
3/21/2018 3:16 PM	Janes, Darci EMPR:EX	Document [CA18MAN0086 ITM Power Contribution Ranbir's Approval] Uploaded.
3/21/2018 3:15 PM	Janes, Darci EMPR:EX	Document [CA18MAN0086 RFGT_ITMPower] Uploaded.
3/21/2018 3:15 PM	Janes, Darci EMPR:EX	Document [CA18MAN0086-ITM Shared Cost Agreement ITM1-DRAFT-IFR] Uploaded.



For support, email ICollaborate@gov.bc.ca.

From: Stephen Jones
To: [Gensey, Guy](#) [EMPR:EX](#); [GEOFF BUDD](#)
Subject: match funding
Date: Tuesday, March 27, 2018 11:02:11 AM
Attachments: [image001.png](#)
[Match funding evidence.docx](#)

Hello Guy,

I wanted to run a document by you (see attached). This is the typical format we use for funded projects in the UK and California to show the match funding expenses.

Would this be OK to use for our current project?

Thanks

Steve Jones

Managing Director

ITM Power Inc.

Tel: +1 (714) 453 8141

www.itm-power.com

<https://www.linkedin.com/in/stephenjones001>

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mailsignature



PLACE ON COMPANY LETTERHEAD

INSERT DATE HERE

Agreement # CA 18MAN0086

Project title: Feasibility study and assessment of centralized renewable hydrogen production in BC followed by a pilot plant development

Dear Sir/Madam,

Please accept this as proof of expenditure by INSERT COMPANY NAME during the period XX/XX/XX to XX/XX/XX.

These costs represent a match funding contribution towards the project named above

Staff labor (fully loaded rates inclusive of overheads, fringe benefits etc)

Month	Employee	Qty	Units	Pay Rate	Total Pay
March 2018	s.21,s.22				
XXXX	XXXXXX	XX	Hours	\$ XX	\$ XX
XXXX	XXXXXX	XX	Hours	\$ XX	\$ XX
XXXX	XXXXXX	XX	Hours	\$ XX	\$ XX
XXXX	XXXXXX	XX	Hours	\$ XX	\$ XX
XXXX	XXXXXX	XX	Hours	\$ XX	

Other expenses

Month	Expense type	Description	Amount
March 2018	Flight	Flight to travel to project meeting	\$ XX
March 2018	Hotel	XXXX	\$ XX

Kind regards,

Steve Jones
Managing Director
ITM Power Inc.
+1 (714) 453 8141
sj@itm-power.com

From: Geoffrey Budd
To: [Gensey, Guy EMPR:EX](#)
Subject: Re: Feasibility Study for Large Hydrogen Production in BC. Project Kick Off Meeting.
Date: Wednesday, March 28, 2018 8:06:50 AM
Attachments: [image001.png](#)

Morning Guy.

Okay to confirm that Chiyoda (Tadashi Ito) and Mitsui (Ryosuke Takezawa and Jackie Lee) have confirmed attendance in person for the meeting on April 11th. Robert Schneider of Chiyoda, based in the US cannot attend unfortunately. We will update him in a separate meeting/call.

Best regards.

Geoff.

From: Geoffrey Budd
Date: Monday, March 26, 2018 at 12:49
To: Guy Gensey
Subject: Re: Feasibility Study for Large Hydrogen Production in BC. Project Kick Off Meeting.
Hi Guy,

Both the Chiyoda and Mitsui folk will attend in person. Including Jackie Lee from Mitsui based in Calgary.

The Doodle Poll is showing at this point that all can attend almost all days except Sachie Morii of BC Hydro who can only attend on April 9th. She's checking on the attendance of Chris Heminsley and Sam Jones.

We have been offered the use of the Vancouver Mitsui office boardroom for the meeting.

I will keep you posted.

Geoff.

From: Guy Gensey
Date: Monday, March 26, 2018 at 12:41
To: Geoffrey Budd
Subject: RE: Feasibility Study for Large Hydrogen Production in BC. Project Kick Off Meeting.
Hi Geoff, are the Japan-based people expected to fly to Vancouver for this meeting, or call in?
Guy

From: Geoffrey Budd [<mailto:geoff@gsbuddconsulting.com>]
Sent: Sunday, March 25, 2018 3:56 PM
To: Tadashi Ito; Jackie Lee; Ryosuke Takezawa; Stephen Jones; Gensey, Guy EMPR:EX; Littler, Kristen EMPR:EX; Chris Heminsley; sam.jones@bchydro.com; Sachie Morii; Schneider, Robert; Geoffrey Budd
Subject: Feasibility Study for Large Hydrogen Production in BC. Project Kick Off Meeting.

Dear All,

Please open the link below, a Doodle Poll, that provides some date proposals for the project kick-off meeting. Please check all the dates that work best for you.

I have chosen Vancouver as the venue at this point in time. This is not fixed yet. I need to do some work on a meeting facility.

If none of the dates work for you, please let me have your alternatives.

<https://doodle.com/poll/y7m4mbtyxgbznrpn>.

Many thanks.

Geoff.



Geoff Budd

Principal

Mobile +1 (604) 617 5588 | Work +1 (250) 929 7619 | Fax +1 (250) 929 7619

geoff@gsbuddconsulting.com

s.22

From: [Brydon, Stephen EMPR:EX](#)
To: [Green, Dan L EMPR:EX](#); [Gensey, Guy EMPR:EX](#); [Frye, Chris EMPR:EX](#)
Subject: Hydrogen Study NR
Date: Thursday, March 29, 2018 8:12:21 AM

<https://news.gov.bc.ca/releases/2018EMPR0008-000523>

Stephen Brydon,

Director

Innovative Clean Energy (ICE) Fund

B.C. Ministry of Energy, Mines and Petroleum Resources

Phone: (778) 698 7252 | Fax: (250) 952-0258

www.gov.bc.ca/innovativecleanenergyfund

From: [Brydon, Stephen EMPR:EX](#)
To: [Platts, Robin GCPE:EX](#); [Gensey, Guy EMPR:EX](#)
Cc: [Beaupre, Darren GCPE:EX](#)
Subject: RE: Media request - hydrogen
Date: Thursday, March 29, 2018 9:16:32 AM

Canadian hydrogen and fuel cell metrics are available in the CHFCA 2016 sector report here:

[http://www.chfca.ca/media/CHFC%20Sector%20Profile%202016%20-%20FINAL\(1\).pdf](http://www.chfca.ca/media/CHFC%20Sector%20Profile%202016%20-%20FINAL(1).pdf)

BC based hydrogen related activities include Powertech Labs:

<https://www.powertechlabs.com/hydrogen-fueling-stations/> HTEC <https://www.htec.ca/> Hydra

Energy <http://hydra-energy.ca/> Quadrogen <http://www.quadrogen.com/>

BC Universities are centres of excellence: examples include UBC

<http://cerc.ubc.ca/research/hydrogen/> UVIC

<https://www.uvic.ca/research/centres/iesvic/research/energy-systems/index.php> SFU

<http://www.sfu.ca/~ekjeang/research.html#Hydrogen-Storage>

From: Platts, Robin GCPE:EX
Sent: Thursday, March 29, 2018 8:58 AM
To: Gensey, Guy EMPR:EX; Brydon, Stephen EMPR:EX
Cc: Beaupre, Darren GCPE:EX
Subject: Media request - hydrogen

Hi,

Canadian Press has a question in response to this morning's news release – can you provide an answer:

Is there already a hydrogen-energy industry established in B.C., or is this project would the first of its kind here?

Robin Platts

Government Communications and Public Engagement

Ministry of Energy, Mines and Petroleum Resources

250 213-6451

From: [Brydon, Stephen EMPR:EX](#)
To: [Green, Dan L EMPR:EX](#); [Gensey, Guy EMPR:EX](#)
Cc: [Beaupre, Darren GCPE:EX](#); [Platts, Robin GCPE:EX](#); [MacLaren, Les EMPR:EX](#); [Dalal, Suntanu GCPE:EX](#)
Subject: RE: For Review: MEDIA REQUEST: CP on hydrogen production study...
Date: Thursday, March 29, 2018 10:12:32 AM

We had flagged HTEC in earlier material shared with Robin.

Good to include a reference to HTEC – they do produce <https://www.htec.ca/h2-production> (gas clean up) and of course the partnership with Shell for fueling stations is something EMPR has supported.

https://docs.wixstatic.com/ugd/364a5b_3609fa40eb1a424eb15d980d4fee3c1f.pdf

From: Green, Dan L EMPR:EX
Sent: Thursday, March 29, 2018 10:08 AM
To: Gensey, Guy EMPR:EX; Brydon, Stephen EMPR:EX
Cc: Beaupre, Darren GCPE:EX; Platts, Robin GCPE:EX; MacLaren, Les EMPR:EX; Dalal, Suntanu GCPE:EX
Subject: RE: For Review: MEDIA REQUEST: CP on hydrogen production study...

Guy/Steve

I think this is pretty close...can we also point to HTEC? Are they producing or just dispensing...?

Dan

From: Dalal, Suntanu GCPE:EX
Sent: Thursday, March 29, 2018 10:03 AM
To: MacLaren, Les EMPR:EX
Cc: Beaupre, Darren GCPE:EX; Platts, Robin GCPE:EX; Green, Dan L EMPR:EX
Subject: For Review: MEDIA REQUEST: CP on hydrogen production study...

For your review Les.

Approved by Steve Brydon.

Reporter: Amy Smart, The Canadian Press (Vancouver)

Deadline: ASAP today.

Request: I wasn't clear from this release (about the hydrogen production study) if there's already a hydrogen-energy industry established in B.C., or if this project would be the first of its kind here. Can you help me clarify that? I'm really just trying to figure out if this is newsworthy or not. Is this an announcement about new funding for a company doing what lots of companies are already doing in the province, or is it breaking new ground in some way (either in hydrogen production/R&D/etc.)? What's significant about it? It sounds like there's no hydrogen production in B.C. yet and this would lead the way for it to happen, is that accurate?

Recommendation: Have GCPE provide information on background by email.

Response:

If the study results are positive, and ITM Power proceeds, it could lead to the first-ever large-scale production of hydrogen in B.C. There is already some small-scale production happening – Vancouver-based Powertech Labs (a subsidiary of BC Hydro) currently produces a small amount, but not for broad consumption. Also, Squamish-based Carbon Engineering is also producing hydrogen through electrolysis as part of its synthetic fuel production. However, the ITM project would be a first in terms of large-scale hydrogen production.

From: Brydon, Stephen EMPR:EX
To: Platts, Robin GCPE:EX; MacLaren, Les EMPR:EX; Green, Dan L EMPR:EX; Gensey, Guy EMPR:EX
Cc: Beaupre, Darren GCPE:EX; Dalal, Suntanu GCPE:EX
Subject: RE: For Review: MEDIA REQUEST: CP on hydrogen production study...
Date: Thursday, March 29, 2018 10:28:40 AM

Good idea.

I chatted with Guy. How about:

The scale and strength of the study consortium speaks to the global opportunity to build a hydrogen supply chain from production in British Columbia through to transport and consumption in Japan, the United States and elsewhere

From: Platts, Robin GCPE:EX
Sent: Thursday, March 29, 2018 10:25 AM
To: MacLaren, Les EMPR:EX; Brydon, Stephen EMPR:EX; Green, Dan L EMPR:EX; Gensey, Guy EMPR:EX
Cc: Beaupre, Darren GCPE:EX; Dalal, Suntanu GCPE:EX
Subject: RE: For Review: MEDIA REQUEST: CP on hydrogen production study...
Thanks – we may also have a line to add around the international-investment angle.

From: MacLaren, Les EMPR:EX
Sent: Thursday, March 29, 2018 10:24 AM
To: Platts, Robin GCPE:EX; Brydon, Stephen EMPR:EX; Green, Dan L EMPR:EX; Gensey, Guy EMPR:EX
Cc: Beaupre, Darren GCPE:EX; Dalal, Suntanu GCPE:EX
Subject: RE: For Review: MEDIA REQUEST: CP on hydrogen production study...
OK

From: Platts, Robin GCPE:EX
Sent: Thursday, March 29, 2018 10:16 AM
To: Brydon, Stephen EMPR:EX <Stephen.Brydon@gov.bc.ca>; Green, Dan L EMPR:EX <Dan.Green@gov.bc.ca>; Gensey, Guy EMPR:EX <Guy.Gensey@gov.bc.ca>
Cc: Beaupre, Darren GCPE:EX <Darren.Beaupre@gov.bc.ca>; MacLaren, Les EMPR:EX <Les.MacLaren@gov.bc.ca>; Dalal, Suntanu GCPE:EX <Suntanu.Dalal@gov.bc.ca>
Subject: RE: For Review: MEDIA REQUEST: CP on hydrogen production study...
Could we tweak it like this?

If the study results are positive, and ITM Power proceeds, it could lead to the first-ever large-scale production of hydrogen in B.C. There is already some small-scale production happening – Vancouver-based Powertech Labs (a subsidiary of BC Hydro) currently produces a small amount, as does HTEC, another Vancouver-based company. Also, Squamish-based Carbon Engineering is also producing hydrogen through electrolysis as part of its synthetic fuel production. However, the ITM project would be a first in terms of large-scale hydrogen production.

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Sent: Thursday, March 29, 2018 10:13 AM
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Cc: Beaupre, Darren GCPE:EX; Platts, Robin GCPE:EX; MacLaren, Les EMPR:EX; Dalal, Suntanu GCPE:EX
Subject: RE: For Review: MEDIA REQUEST: CP on hydrogen production study...
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Sent: Thursday, March 29, 2018 10:08 AM
To: Gensey, Guy EMPR:EX; Brydon, Stephen EMPR:EX
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Subject: RE: For Review: MEDIA REQUEST: CP on hydrogen production study...
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I think this is pretty close...can we also point to HTEC? Are they producing or just dispensing...?

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Sent: Thursday, March 29, 2018 10:03 AM

To: MacLaren, Les EMPR:EX

Cc: Beaupre, Darren GCPE:EX; Platts, Robin GCPE:EX; Green, Dan L EMPR:EX

Subject: For Review: MEDIA REQUEST: CP on hydrogen production study...

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Approved by Steve Brydon.

Reporter: Amy Smart, The Canadian Press (Vancouver)

Deadline: ASAP today.

Request: I wasn't clear from this release (about the hydrogen production study) if there's already a hydrogen-energy industry established in B.C., or if this project would be the first of its kind here. Can you help me clarify that? I'm really just trying to figure out if this is newsworthy or not. Is this an announcement about new funding for a company doing what lots of companies are already doing in the province, or is it breaking new ground in some way (either in hydrogen production/R&D/etc.)? What's significant about it? It sounds like there's no hydrogen production in B.C. yet and this would lead the way for it to happen, is that accurate?

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