

### **NAI Go-Live Note**

BP Products North America Inc (BPPNA) – IST, Global Oil Americas Low Carbon Trading (GOA LCT)

BP Energy Company (BPEC) – Gas & Power Trading Americas (G&PTA)

BP Canada Energy Group ULC (BPCEG) - Gas & Power Trading Americas (G&PTA)

BP Canada Energy Marketing Corp. (BPCEMC) - Gas & Power Trading Americas (G&PTA)

IGI Resources, Inc. (IGI) - Gas & Power Trading Americas (G&PTA)

### **Differentiated Natural Gas**

## **Background**

The NAI Request and associated go-live requirements were discussed in the Feb 2<sup>nd</sup> G&PTA DGB for G&PTA, GOA LCT and BPX to pursue a joint opportunity to monetize Differentiated Natural Gas (DNG) produced by BPX in the US. Natural gas will be sold with the obligation for GOA LCT to retire low-methane intensity certificates on behalf of G&PTA's customer, as a single offer to be marketed by all G&PTA entities (similar to Carbon Offset Natural Gas). These certificates are verified environmental attributes relating to gas produced from operations, and are currently created pursuant to the IES Trustwell Low Methane Intensity Verified Attribute program. The bundled offering will be tailored to G&PTA's current customers that are voluntarily seeking low methane natural gas supply.

This new product offer fits with our sustainability goal of reducing (target methane intensity of .2%), improving, and creating low carbon business strategies. bp is committed to playing a lead role in addressing the methane challenge with gas produced and delivered in an environmentally responsible manner. To that end, bp has announced that by 2023 it will complete installation of measuring and monitoring equipment that cover 98% of its methane emissions.

There is currently interest from utilities, who are increasingly seeking cleaner energy to satisfy growing consumer demand. For example, Southern Company, Dominion, DTE and Northwest Natural Gas Company have expressed interest in this type of product. LNG demand is beginning to emerge via Chenierre and Pavillion. Multiple trading platforms and reporting agencies including the CME, Platts, Rocky Mountain Institute and S&P are developing products, indices, and ESG reporting that track methane intensity of natural gas. NGOs such as ONE FUTURE, the Natural Gas Sustainability Initiative, and OGCI are organizing producers, midstream, and consumers on this front.

bp has made an investment in Xpansiv (now XCHG), a commodity-intelligence platform, whose distributed ledger technology (blockchain) ensures the environmental integrity of the underlying data and enables scalability of the product.

bpX is supportive of this product and over the the course of 2018, bpX approved and delivered testing in Haynesville for approx. 104,000 MMBtu / day. This work was done in collaboration with the Digital Innovation Organization (DIO) and LCT. The activity to create these "version 1.0" pilot volumes was funded by the New Energy Frontiers Committee (NEF).

The v1.0 pilot was commissioned to test bp's ability to deliver a marketable product, and to test the market for such product. While unknown, possible commercial outcomes include a) premium per MMBtu b) access to preferred tenders c) more credible marketing of products such as CONG & RNG d) elimination of bespoke process required to participate in preferred tenders and e) ability to optimize environmental attributes from bp's gas portfolio via displacement, rather than producer-specific deals.

It is envisioned that the Differentiated Natural Gas Product will evolve and scale with new 3<sup>rd</sup> party methodologies, measurement & monitoring technology, and big data. For example, the envisioned v2.0 product uses the same methodology but digital advances present the possibility for exponential scale delivering 60 wells / 0.45 BCF per day / 365 days / 2019 vintage.

Following the February DGB in which support was expressed, the NAI was paused to address legal considerations. Legal and reputational risks have now been more fully understood and to the extent possible addressed with supporting principles to re-launch the product.

### Request

The G&PTA and LCT teams are requesting approval to Go-Live with the NAI to support the execution of Differentiated Natural Gas transactions in the US and Canada. This paper summarizes the Go-Live activities that have been completed to support this NAI. As part of this go live LCT is also seeking GOA RBL approval to open BPPNA's registry account with XCHG. LCT has been working closely with BPX, Upstream HSE, Group Technology, and XCHG to design a pathway consistent with internally and externally accepted best practices. The v1.0 product is an "EPA+ methodology" consisting of EPA methodology to determine mass of methane emissions + OGCI methodology to calculate methane intensity + Trustwell certification of data and calculations + registry/blockchain by XCHG (formerly Xpansiv) to retire the certificates. Data that bp submits annually (well design, equipment, age, how equipment is energized, etc.) to the EPA is input into the EPA methodology to calculate bp's implied methane emissions.

### Readiness for Go Live

- Support has been received from functions for this NAI to Go-live with condition that all go-live requirements will be completed prior to deal execution.
- The SLA and Commercial Operating Agreement between BPPNA and the following G&PTA legal entities (BPEC, BPCEMC, IGI and BPCEG) and BPX will be completed prior to the first transaction.
- Differentiated Natural Gas follows a similar process to Carbon Offset; "front-to-back testing was conducted with Commodity Risk, Accounting & Reporting, Settlements and Confirmations.
- Documentation of business processes, inclusive of new/unique activities have been reviewed with impacted stakeholders in G&PTA and LCT.
- The existing monthly Governance meeting for Carbon Offset Natural Gas will incorporate Differentiated Natural Gas to ensure alignment across the teams, discuss joint strategy and to review performance, markets and internal processes.

### Financial Evaluation

Scenario	Volume (bcf/d)	Price (\$/MMBtu)	Gross Margin (\$/year)
Low Case	0.25	\$0.02	\$1.8M
High Case	0.25	\$0.10	\$9.1M

- Potential volumes (based on ability to capture 25% of the Differentiated Gas demand, which is approx. 1bcf/d) = 0.25 bcf/d

- E&Y benchmarking survey noted respondents are will to pay a premium of as much as 20% to consume responsibly produced gas
- Demand upside based on high growth and a successful bp offer such that bp can sell all its production from the Texas and Louisiana assets as Differentiated Gas: **\$7.3m - \$36m per annum** (This assumes 1 Bcf/d).

### Boundary Conditions

- Clear definition of product to ensure it is clearly and accurately described in the transaction confirmation. The transaction confirmation, all communications and any marketing materials need to be fully transparent, including the fact that produced molecules are not being consumed by the buyer.
- bp (G&PTA, LCT, and BPX) must approve any press release or public statement on the product.

## Redacted - Privilege

- XCHG is both a repository and an exchange. Any proposal to use the Exchange functionality with XCHG will be subject to a separate Business Assurance process.
- New agreements between BPPNA and BPX (for the purchase of certificates) and BPPNA and G&PTA (for value share) are required. They should cover intercompany pricing mechanism.
- New environmental low methane certificates should have unit of measure in metric tonnes (MT), not in MMBtu
- Similar to Carbon Offset Natural Gas (CONG), the transaction confirmation needs to separately identify the price for gas and the price for the certificate.
- To ease accounting complexity, the certificate should be retired when the customer pays for the gas/certificate (should be the same invoice). This boundary condition can be revisited when the commercial desire to change retirement timing is present
- Based on the current NAI, G&PTA would execute the customer contract, but BPPNA would hold the obligation to retire the certificate. Accounting Policy (AP) would need to understand how this transfer of obligation will occur. Any SLAs executed to outline this obligation transfer process must be reviewed by AP.
- If BPX transfers internally generated certificates to GOA LCT and compensation is in form of profit share vs. an intercompany purchase, Accounting Policy will need to review for appropriate accounting treatment over zero cost inventory.

### Other Significant Points

- Market Risk: This is a new product, and it is not entirely certain how the market will respond. However, we have already seen transactions being executed for “responsible gas”, indicating there is customer appetite for an offer like this. We plan to test this product using several proof of concept wells, and if successful, scale up the business to additional wells.
- System Capabilities: This will be bp’s first use of the XCHG registry to generate, store, and retire credits. bp’s Group Technology team has been working with XCHG extensively, and the full digital security review for IST is in progress. bp invested \$5M in XCHG in 2018 to develop a blockchain tool for LCT’s biogas business (this delivery currently in progress).
- Legal and Reputational Risk: The product is being created by bp, as opposed to by a regulatory agency, and there is potential risk of litigation by regulators and/or customers over product design and marketing. To mitigate this risk bp will be very clear in contractual language to define what the credits represent, and what is being produced & sold. Legal and reputational risks have now been

more fully analyzed (see Appendix 2) and to the extent possible mitigants have been identified to re-launch the product, but the legal and reputational risk remains and cannot be fully mitigated.

- To minimize the possibility of new processes, where possible the Commercial and Functional teams will use existing processes that have been established for Carbon Offset Natural Gas activity.

### **Appendix 1: Product Description for the Pilot**

**Product:** Differentiated Natural Gas. Physical Natural Gas deliveries coupled with commitment to retire Environmental Attributes equal to a specific Methane Intensity.

**Methane Intensity** is expressed as a percentage equaling the mass of methane emitted, per mass of methane produced, derived via Oil & Gas Climate Initiative (OGCI) Methane Intensity protocols, utilizing data bp reported to the United States Environmental Protection Agency (US EPA) and marketable natural gas mass produced.

**Methane Intensity:** 0.029%

**Volume:** 6.36M MMBtu total / 104,000 MMBtu per day

**Pricing Units:** USD cents per MMBtu

**Origin:** BPX Haynesville, Bossier Reservoir, Texas, US

**Production Vintage:** 2018 (1<sup>st</sup> November – 31<sup>st</sup> December)

**Program Developer and Verifier:** Independent Energy Standards Corporation

**Registry & Distributed Ledger:** Xchange Holding Group

**Marketed by:** G&PTA, per Carbon Offset Natural Gas Framework

**Retirement:** LCT to hold inventory and Retire certificates

### **Appendix 2: Legal and Reputational Risks**

#### Reputational Risk:

The primary reputational concerns are that this product could damage bp's credibility and impact its relationships with stakeholders. This in turn could have a negative impact on bp's ambition—particularly the ambition to “help the world get to Net Zero.” If bp is not regarded as an honest and transparent player in providing lower carbon products, it could adversely impact future products and efforts to work with stakeholders.

#### Legal Risk:

**Redacted - Privilege**

Mitigants to Legal and Reputational Risks	Comments
September 2020	Page 4 of 12



**Redacted - Privilege**

	<b>Redacted - Privilege</b>
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### Appendix 3: Go-Live Requirements

Area	Go-Live Requirements / Action Item	Completed
Legal/Compliance	<b>Redacted - Privilege</b>	✓
Legal		✓
Legal		In Progress
Legal		In Progress
Legal / Commercial		In Progress
Legal / Commercial		In Progress
Compliance		✓
Commodity Risk	<ul style="list-style-type: none"> <li>New heavily manual control process is required. Similar to CONG it will be centered around a control sheet linking information from 2 Regions covering individual commitments on monthly basis through the duration of each deal.</li> </ul>	✓
Accounting Policy / Legal	<b>Redacted - Privilege</b>	✓
Accounting Policy	<ul style="list-style-type: none"> <li>Accounting Policy would need to understand how the transfer of obligation will occur. Any SLAs executed to outline this obligation transfer process must be reviewed by AP.</li> </ul>	✓
Accounting Policy	<ul style="list-style-type: none"> <li>A UPI process will need to be established in the event BPPNA holds internally generated certificate inventory</li> </ul>	✓
Regulatory Reporting	<ul style="list-style-type: none"> <li>Develop process for retiring certificates in the registry and provide evidence of retirement</li> </ul>	In Progress

### Appendix 4: Assurances (Refreshed Sept, 2020)

Region / SPU	GOA GEP & NAGP
Project Name	Differentiated Natural Gas

September 2020

Page 6 of 12

<b>Primary Contact for Queries</b>	<b>Anna Simon / John Postlethwaite</b>
<b>Business SPA</b>	<b>Zach Scott / Andy Jardine</b>
<b>Approval level &amp; name of DOA Approver</b>	<b>Janet Kong, IST RBL / Orlando Alvarez, T&amp;S SVP</b>
<b>A&amp;A Document - Governance Approval Level</b>	<b>NAI Business Case RBL</b>

## Functional Risk Radar

The Functional Risk Radar diagram illustrates the risk levels across eight functional areas. The functions are arranged in a circle: Legal, Tax, Compliance, Reg Reporting, Accounting, Acctg, Rptg, & Controls, AML, and Commodity Risk. The radar chart uses concentric rings to represent risk levels, with the outermost ring indicating the highest risk. The chart shows varying levels of risk across the functions, with Legal and Tax showing the highest risk levels.

Radar only highlights consulted functions

## Classification of risks/ issues:

0	Not consulted - note: does not appear on radar
1	No material issues or risks incremental to core business
2	Material issues or risks, which can be mitigated or resolved
3	Material issues or risks, with no mitigation or resolution identified
4	Recommendation to not proceed based on area of functional expertise

## Guidelines for Functional commentary:

- If no material risks/ issues are identified, score 1 and leave comments blank
- Brief description of each risk/issue
- State potential monetary, legal or reputational impact should the risk materialise (\$ or other quantification)
- State mitigations possible or required and the resulting cost to the business

<b>CFO Summary</b>	<b>Comments</b>
<b>GOA CFO</b> <b>SPA: Bill Bolton</b> Date:	
Does this new product include a liquidity risk (if yes, please explain)?	

<b>CFO Summary</b>	<b>Comments</b>
<b>NAGP CFO</b> <b>SPA: John Jimenez</b> Date:	
Does this new product include a liquidity risk (if yes, please explain)?	

<b>CRO Summary</b>	<b>Comments</b>
<b>SPA: Gary Taylor</b> <b>Will the new product materially alter BPEC's overall risk profile?</b>	
No	
Yes and BPEC Board pre-approval is required before transactions are effectuated	

<b>Function</b>	<b>Comments</b>	<b>FTE Impact</b>
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**Legal**  
**SPA: Ted Tian (GOA)**  
**/ Rebecca Batchelder**  
**(NAGP)**  
Date: 30/1/2020  
Risk Category: 3

N/A
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## Redacted - Privilege

	<b>Redacted - Privilege</b>	
<b>Tax/Indirect Tax</b> <b>SPA: Ivan Thomann (GOA) / Eric Ensminger (NAGP) / Andrew Porter (BPX)</b> Date: 31/10/2019 Risk Category: <b>1</b>	Tax supports this NAI.	N/A
<b>Compliance</b> <b>SPA: Jeff Chalem (GOA) / Larry Tanner (NAGP)</b> Date: 22/9/2020 Risk Category: <b>2</b>	<b>Boundaries</b> <ul style="list-style-type: none"> <li>As understood in the Info Memo and in discussions, Xpansive is both a repository and an exchange. This assurance is for the use of Xpansive registry / repository only. Any proposal to use the Exchange functionality with Xpansive will be subject to a separate Business Assurance process.</li> </ul> <b>Key risks and mitigations</b> <ul style="list-style-type: none"> <li>The voluntary offset certificate will be a new product for which there is not a clear product specification. Mitigated with sharing sample product specs including price per unit, volume, tenor with a third-party verifier.</li> </ul> <div><b>Redacted - Privilege</b></div> <b>Other issues</b>	N/A
<b>Commodity Risk</b> <b>SPA: Alexey Beliakov (GOA) / Kristin Huff, Mukhtadar Khan (NAGP)</b> Date: 31/10/2019 Risk Category: <b>2</b>	<b>Boundaries</b> <ul style="list-style-type: none"> <li>New environmental credits should have unit of measure in MT, not in MMBtu.</li> <li>New SLA's between BPPNA and BPX (for the purchase of credits) and BPPNA and BPEC (for value share) are required. They should cover intercompany pricing mechanism.</li> </ul> <b>Key risks and mitigations</b> <ul style="list-style-type: none"> <li>New heavily manual control process is required. Similar to CONG it will be centered around a control sheet linking information from 2 Regions covering individual commitments on monthly basis through the duration of each deal. The risk can be reduced by automating the sheet using IT&amp;S resources to build an appropriate solution.</li> <li>Assuming fee transfer process from BPEC to BPPNA will also be similar to CONG, review and approval of the fee amounts will be done at the CONG monthly meeting between NAGP and GOA CR.</li> </ul>	0

	<ul style="list-style-type: none"> <li>Until market for such credits develops it is recommended to retire them upon the fee payment from BPEC to BPPNA (a month after gas delivery).</li> </ul>	
<b>Accounting Policy</b> <b>SPA: Jennifer Mariscalco (GOA) / John Bayne (NAGP)</b> Date: DD/MM/YYYY Risk Category: <b>2</b>	<ul style="list-style-type: none"> <li>Similar to the CONG product offering, the differentiated gas product offering contains two components – delivery of gas and service to retire a gas certificate. Recognition of revenue associated with the delivery of gas and the service to retire a gas certificate are two separate performance obligations.</li> <li>The revenue associated with the delivery of gas will follow BAU processes. The revenue associated with the retirement of a gas certificate will occur when the certificate is retired.</li> <li>If BPPNA purchases the certificates from BPX: <ul style="list-style-type: none"> <li>the own use purchase volumes will be accrual accounted</li> <li>A UPII process will need to be established in the event BPPNA holds internally generated certificate inventory</li> <li>Depending on the CR valuation basis for these credits, manual workarounds for inventory valuations may be necessary.</li> </ul> </li> </ul> <p><b>Boundaries</b></p> <ul style="list-style-type: none"> <li>Similar to CONG, the transaction confirmation needs to separately identify the price for gas and the price for the certificate.</li> <li>Commercial has indicated that initially they are indifferent as to when the certificate is retired. To ease accounting complexity, the certificate should be retired when the customer pays for the gas/certificate (should be the same invoice). This boundary condition can be revisited when the commercial desire to change retirement timing is present</li> <li>Based on the current NAI, BPEC would execute the customer contract, but BPPNA would hold the obligation to retire the certificate. Accounting Policy would need to understand how this transfer of obligation will occur. Any SLAs executed to outline this obligation transfer process must be reviewed by AP.</li> <li>If BPX transfers internally generated certificates to GOA and compensation is in form of profit share vs. an intercompany purchase, AP will need to review for appropriate accounting treatment over zero cost inventory.</li> </ul>	Select
<b>Accounting, Reporting, &amp; Controls</b> <b>SPA: Mark Moore (GOA) / John Bayne (NAGP)</b> Date: 29/10/2019 Risk Category: <b>2</b>	ARC to follow AP guidance in the recording of this transaction.	Select
<b>AML</b> <b>SPA: Kwok Man Law (GOA) / Chris Bennett (NAGP)</b>	<p><b>Boundaries</b></p> <ul style="list-style-type: none"> <li>Low-Methane Intensity Certificates (Differentiated Gas) to be sold to US based counterparties.</li> <li>Certificates are not be further re sold onto different counterparties.</li> </ul>	

<p>Date: 31/1/2020 Risk Category: <b>2</b></p>	<ul style="list-style-type: none"> <li>• ABC, AML and sanctions clauses to be included in agreements as appropriate.</li> <li>• Adequate controls in place to track entire workflow i.e. NAGP and GOA systems and when to retire the certificates, amount of certificates generated and used.</li> <li>• The external counterparty to provide- commodity intelligence platform and monitoring services- once selected shall be subject to CDD clearance.</li> </ul> <p><b>Key risks and mitigations</b></p> <ul style="list-style-type: none"> <li>• Risks- The product is not-regulated, therefore no formal registry body to discourse the certificates.</li> <li>• Risks- The certificates can be re sold onto different 3rd parties, therefore mitigation will have a clause within the contract to not permit the counterparty to further re sell our certificates, from a control standpoint.</li> <li>• Jurisdictional risk – United States is currently has TI CPI score of 69 and which is moderate risk from an ABC, AML and financial crime perspective. United States is ranked 23 of 180 countries.</li> <li>• Mitigation- Jurisdiction- Low-Methane Intensity Certificates are generated in the US via BPX (Upstream) and are only sold to US based counterparties.</li> <li>• Mitigation- The Low-Methane Intensity Certificates will be monitored via external service provider working in conjunction with BP.</li> <li>• Accountability/responsibility- multiple entities and business (BPX, NAGP and GOA/GEP) involved from end 2 end, which could raise potential gaps in confront procedures. This can be mitigated through clearly defined roles and responsibility via an adequate SLA.</li> </ul>	
<p><b>Regulatory Reporting</b> SPA: Alyson Jowers/Diana Moody (GOA) / Laura Blue (NAGP) Date: 22/09/2020 Risk Category: <b>1</b></p>	<p><b>Key risks and mitigations</b></p> <ul style="list-style-type: none"> <li>• BAU from GOA perspective</li> </ul>	Select
<p><b>HSSE &amp; S&amp;OR</b> SPA: Tim Thompson Date: 30/1/2020 Risk Category: <b>1</b></p>	<ul style="list-style-type: none"> <li>• HSSE supports this transaction. The physical gas transport is via existing regulated &amp; commingled pipeline relationships resulting in minimal HSSE and reputational risk for BP in the event of a leak or release.</li> </ul>	
<p><b>IT&amp;S</b> SPA: Kim Vertucci, Imad Nabli (GOA) / Sarita Das (NAGP) Date: 31/10/2019 Risk Category: <b>1</b></p>	<p><b>Boundaries</b></p> <ul style="list-style-type: none"> <li>• No integration between Xpansiv platform and BP transaction pipelines. If integration is needed this will need additional evaluation.</li> <li>• Interactions between Xpansiv and IST core systems managed via business process</li> </ul>	Select
<p><b>Functions advised:</b> Credit, Settlements, IT&amp;S, Regulatory Affairs, CDD</p>		

