# American Public Power Association
## Accounting and Finance Spring Meeting

## Natural Gas Prepayments
## Potential O&M Savings

**April 26, 2019**

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# Questions About A Gas Prepay Transaction

1. Are Prepayments Legitimate Transactions?
2. Are Savings Real?
3. Are Prepayments Risky?
4. Are Prepayments Worth the Time and Effort?
5. How can I participate?

# Are Prepayments a Legitimate Transaction?

- Between 1994 and 1999, 21 deals totaling $2.2 billion with an average term of 10 years were done under an interpretation of IRS rules
- August 1999, IRS raised concerns, proposed new regulations, closing down market
  - 2003, the IRS issued rules expressly permitting deals
  - 2005, Congress protected these deals in legislation
    National Energy Policy Act of 2005 (Section 1327)
- From 2005-2008, the bulk of gas prepay transactions were completed, as clear rules and a conducive market drove the volume of deals
- Since the 2008 financial crisis, new transactions have not been common as market interest rate levels and risk factors were not conducive to new deals for suppliers

| Year | Number of Deals | Volume |
|---|---|---|
| 2003-2005 | 5 | $1.2 billion |
| 2006 | 13 | $10.3 billion |
| 2007 | 14 | $9.1 billion |
| 2008 | 3 | $1.7 billion |
| 2009 | 3 | $2.4 billion |
| 2010 | 2 | $1.6 billion |
| 2011 | - | - |
| 2012 | 2 | $2.0 billion |
| 2013 | - | - |
| 2014 | 3 | $1.6 billion |
| 2015 | 2 | $1.5 billion |
| 2016 | 2 | $1.1 billion |

# 2019 Transactions

| Gas Prepay Transactions: 2014 - February, 2019 | | |
|---|---|---|
| Underwriting Firm | Par | # Issues |
| RBC | $ 7,523 | 11 |
| Goldman Sachs | $ 4,781 | 8 |
| Morgan Stanley | $ 4,085 | 5 |
| JP Morgan | $ 695 | 1 |

| | | |
|---|---|---|
| **Prepay Bond Issuer** | Tennergy | |
| **Underwriter** | RBC | |
| **Par** | $545 million | |
| **Structure** | Segmented | |
| | $3.7 million in 5 year, fixed rate put bonds | |
| | $541 30 year fixed | |
| **Participants** | Brownsville Energy Authorrity (TN) | 6% |
| | Municipal Energy Acquisition Corp (TN) | 4% |
| | The Board of Public Utilities of Humboldt (TN) | 17% |
| | Jackson Energy Authority (TN) | 34% |
| | Memphis Light, Gas and Water (TN) | 15% |
| | Middle Tennessee Natural Gas Utility District | 10% |
| | City of Monroe (NC) | 9% |
| | City of Murray (KY) | 5% |
| **Gas Supplier** | RBC | |
| **Commodity Swap Counterparty** | JP Morgan | |

# 2019 Transactions

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|---|---|---|
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| | |
|---|---|
| **Prepay Bond Issuer** | Main Street<br>(aka The Gas Authority aka MGAG) |
| **Underwriter** | JP Morgan and Wells Fargo |
| **Par** | $695 million |
| **Structure** | Fixed, 30 Year |
| **Participants** | The Gas Authority |
| **Gas Supplier** | Macquarie |
| **Commodity Swap Counterparty** | JP Morgan<br>RBC |

# 2018 Transaction

| Gas Prepay Transactions: 2014 - February, 2019 | | |
|---|---|---|
| **Underwriting Firm** | **Par** | **# Issues** |
| RBC | $ 7,523 | 11 |
| Goldman Sachs | $ 4,781 | 8 |
| Morgan Stanley | $ 4,085 | 5 |
| JP Morgan | $ 695 | 1 |

NEW ISSUE - BOOK-ENTRY ONLY

RATINGS: (SEE "RATINGS" HEREIN)

*In the opinion of Orrick, Herrington & Sutcliffe LLP, Bond Counsel to NCEA, based upon an analysis of existing laws, regulations, rulings and court decisions, and assuming, among other matters, the accuracy of certain representations and compliance with certain covenants, interest on the Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986 and is exempt from State of California personal income taxes. In the further opinion of Bond Counsel, interest on the Bonds is not a specific preference item for purposes of the federal alternative minimum tax. Bond Counsel expresses no opinion regarding any other tax consequences related to the ownership or disposition of, or the amount, accrual or receipt of interest on, the Bonds. See "TAX MATTERS" herein.*

**$539,615,000**
**NORTHERN CALIFORNIA ENERGY AUTHORITY**
**COMMODITY SUPPLY REVENUE BONDS, SERIES 2018**

**BONDS DATED:** Date of Delivery
**PRINCIPAL DUE:** As shown on the inside cover

**DENOMINATION:** $5,000
**FORM:** Book-Entry Only

Northern California Energy Authority ("*NCEA*") is issuing its Commodity Supply Revenue Bonds, Series 2018 (the "*Bonds*") under a Trust Indenture between NCEA and Wells Fargo Bank, National Association, as Trustee. NCEA is a joint powers authority organized and existing pursuant to the laws of the State of California (the "*State*") with the power to issue the Bonds and enter into the transaction described herein. Capitalized terms used on this cover page and not otherwise defined have the meanings set forth in this Official Statement.

The Bonds will be issued in authorized denominations of $5,000 or any integral multiple thereof in book-entry form through The Depository Trust Company ("*DTC*"). The principal, Redemption Price and Purchase Price of and interest on the Bonds are payable by the Trustee, which is also serving as authenticating agent, paying agent, registrar, calculation agent and tender agent for the Bonds. Purchasers of the Bonds will not receive physical delivery of bond certificates.

From their Initial Issue Date to and including June 30, 2024 (the "*Initial Interest Rate Period*"), the Bonds will bear interest in a Fixed Rate Period, as shown on the inside cover page and as described herein. During the Initial Interest Rate Period, interest on the Bonds is payable semiannually on each January 1 and July 1, commencing July 1, 2019. The Bonds are subject to optional and extraordinary mandatory redemption during the Initial Interest Rate Period, and the Bonds maturing on July 1, 2049 are subject to mandatory tender for purchase on July 1, 2024 (the "*Mandatory Purchase Date*").

Proceeds of the Bonds will be used to prepay the costs of the acquisition of fixed quantities of natural gas and electricity (the "*Commodities*") to be delivered over 30 years (the "*Commodity Project*") under a Prepaid Commodity Sales Agreement (the "*Commodity Purchase Agreement*"), between J. Aron & Company LLC ("*J. Aron*") and NCEA. NCEA will sell all of the Commodities acquired pursuant to the Commodity Purchase Agreement to the Sacramento Municipal Utility District (the "*Project Participant*") under a Commodity Supply Contract between NCEA and the Project Participant, which will use the gas to generate electricity and will use the electricity for distribution to retail customers located in its service area. Pursuant to the Commodity Purchase Agreement, J. Aron is obligated to deliver specified daily quantities of gas and electricity to NCEA, make certain payments for any Commodities not delivered, remarket Commodities not taken by the Project Participant and make a Termination Payment upon any early termination of the Commodity Purchase Agreement. Any such Termination Payment will be applied to the mandatory redemption of the Bonds. The payment obligations of J. Aron under the Commodity Purchase Agreement, the Receivables Purchase Agreement, the Investment Agreement and the J. Aron Commodity Swap (described herein) are unconditionally guaranteed by The Goldman Sachs Group, Inc. ("*GSG*"). The payment of the Bonds is not guaranteed by NCEA, J. Aron, GSG, the Underwriter, the Commodity Swap Counterparty, the members of NCEA (the "*Members*") or the Project Participant.

THE BONDS DO NOT CONSTITUTE A DEBT OR LIABILITY OF THE STATE OF CALIFORNIA OR OF ANY POLITICAL SUBDIVISION THEREOF (INCLUDING THE PROJECT PARTICIPANT), OTHER THAN NCEA, BUT SHALL BE PAYABLE SOLELY FROM THE FUNDS PROVIDED THEREFOR UNDER THE INDENTURE. NCEA SHALL NOT BE OBLIGATED TO PAY THE PRINCIPAL OR REDEMPTION PRICE OF OR INTEREST ON THE BONDS, EXCEPT FROM THE FUNDS PROVIDED THEREFOR UNDER THE INDENTURE AND NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE STATE OF CALIFORNIA OR OF ANY POLITICAL SUBDIVISION THEREOF, INCLUDING NCEA, OR OF THE PROJECT PARTICIPANT IS PLEDGED TO THE PAYMENT OF THE PRINCIPAL OR REDEMPTION PRICE OF AND INTEREST ON THE BONDS. THE ISSUANCE OF THE BONDS SHALL NOT DIRECTLY OR INDIRECTLY OR CONTINGENTLY OBLIGATE THE STATE OF CALIFORNIA OR ANY POLITICAL SUBDIVISION THEREOF (INCLUDING THE PROJECT PARTICIPANT) TO LEVY OR TO PLEDGE ANY FORM OF TAXATION OR TO MAKE ANY APPROPRIATION FOR THEIR PAYMENT. NCEA HAS NO TAXING POWER.

This Official Statement describes the Bonds only during the Initial Interest Rate Period and must not be relied upon if the Bonds are converted to any other interest rate period. The purchase and ownership of the Bonds involve investment risk and may not be suitable for all investors. This cover page is not intended to be a summary of the terms of or the security for the Bonds. Investors are advised to read this Official Statement in its entirety to obtain information essential to the making of an informed investment decision with respect to the Bonds, giving particular attention to the matters discussed under "INVESTMENT CONSIDERATIONS AND RISKS" herein.

The Bonds are offered, when, as and if issued by NCEA and accepted by the Underwriter, subject to the approval of validity by Orrick, Herrington & Sutcliffe LLP, Bond Counsel to NCEA, and certain other conditions. Certain legal matters will be passed upon for NCEA by its General Counsel; for the Commodity Supplier by Haynes and Boone, LLP; for GSG by Sullivan & Cromwell LLP; and for the Underwriter by Chapman and Cutler LLP. It is expected that the Bonds will be available for delivery through the facilities of DTC on or about December 19, 2018.

PFM Financial Advisors LLC, has acted as financial advisor to NCEA in connection with the Bonds.

**Goldman Sachs & Co. LLC**

December 10, 2018

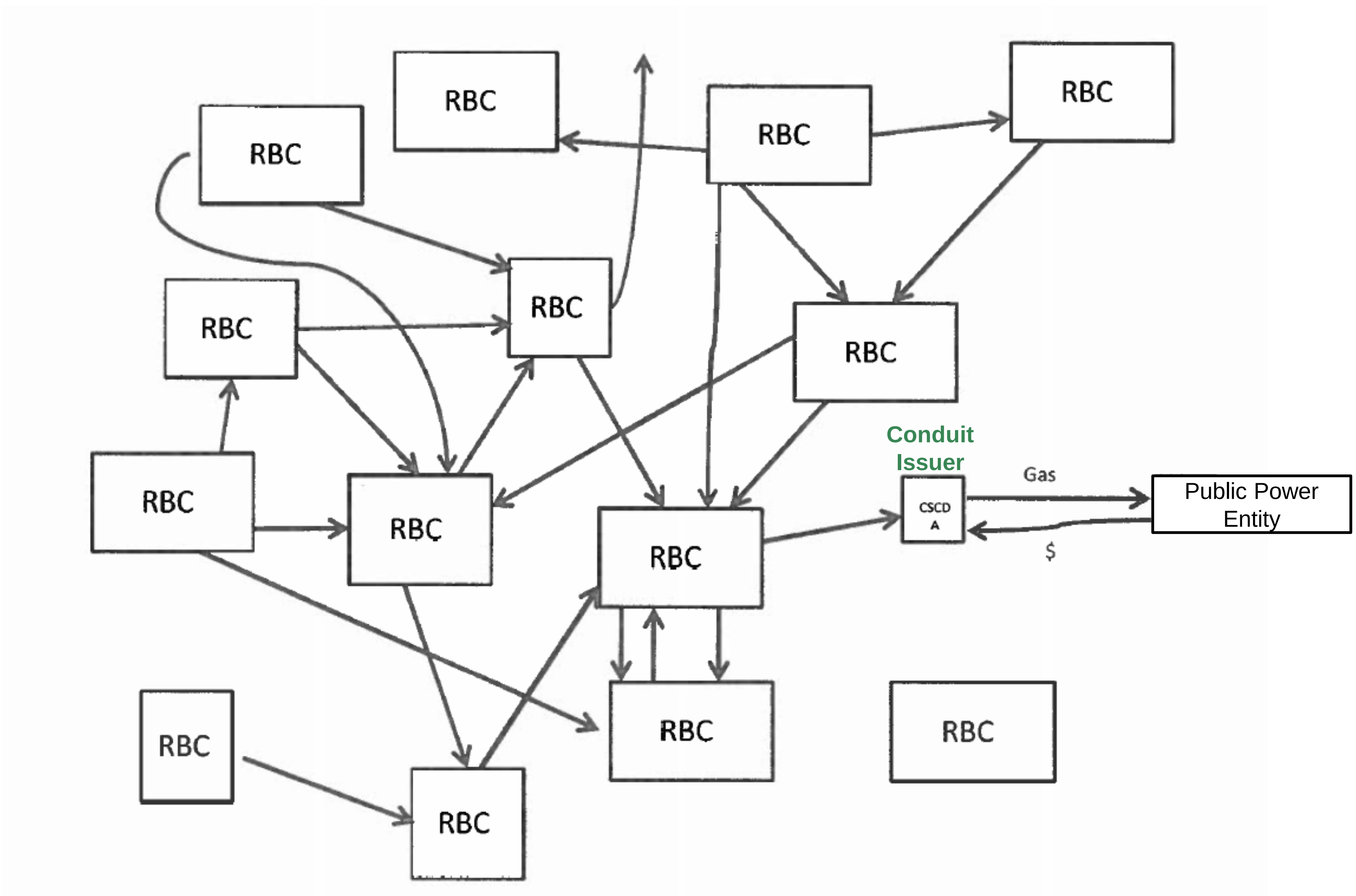
| | |
|---|---|
| **Prepay Bond Issuer** | Northern California Energy Authority (SMUD JPA) |
| **Underwriter** | Goldman Sachs |
| **Par** | $540 million |
| **Structure** | Segmented<br>$16.8 million Put Bond (3 and 4 year maturity)<br>$522.8 million 30 year fixed (Put back to NCEA in 5 years) |
| **Participants** | SMUD |
| **Gas Supplier** | J Aron (Goldman Sachs affiliate) |
| **Commodity Swap Counterparty** | RBC |

# Benefits of a Natural Gas Prepay Program

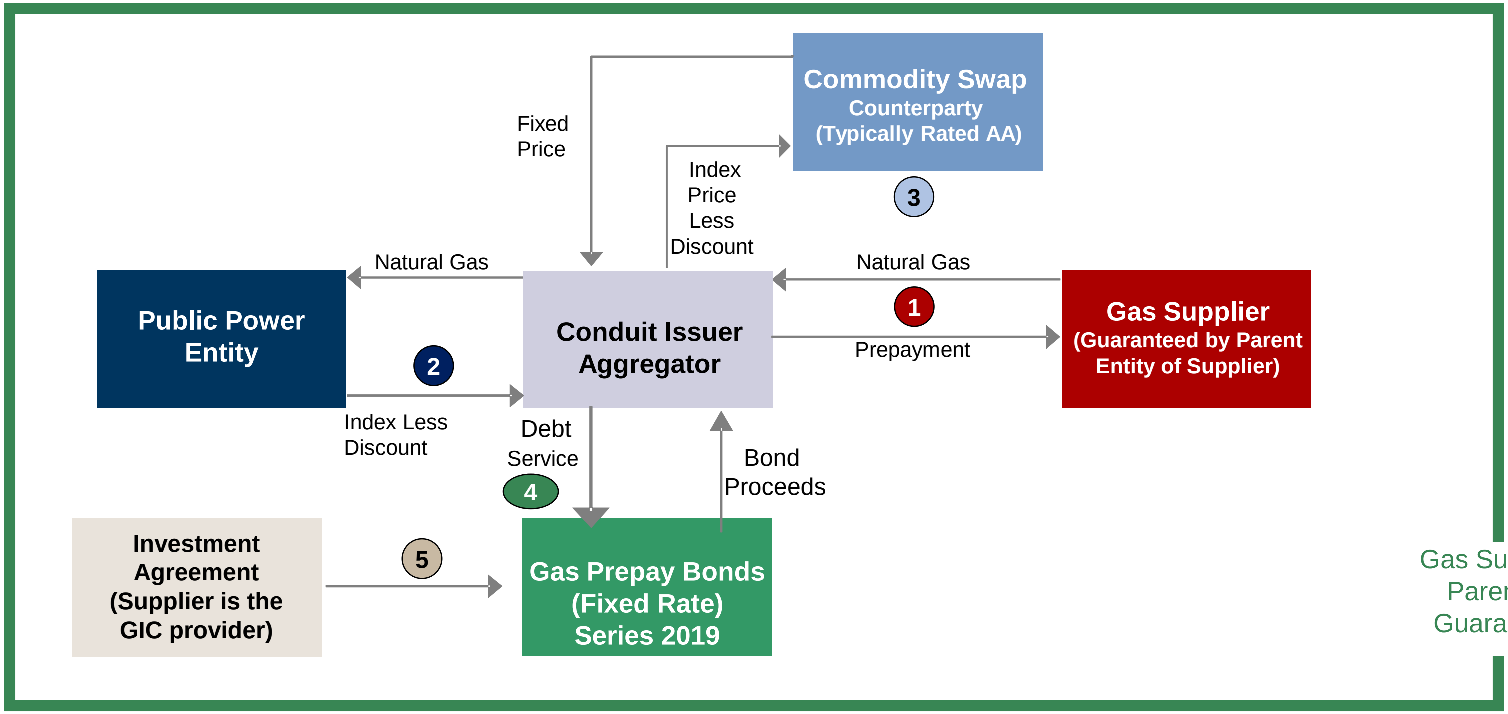
**Public Power Issuers can use participation in a natural gas prepayment transaction to provide savings to ratepayers with several significant benefits:**

- ✓ Provides savings over time: Participants could expect to generate ~10% on natural gas quantities delivered under the pre-pay structure compared to spot market purchases (similar to a bond refunding, this is market rate sensitive)
- ✓ Diversification of long term natural gas supply reliability by having long-term supply contracts at specified delivery points
- ✓ Provides for a favorable risk allocation: Participants obligation is generally limited to paying for natural gas that is delivered. In case of delivery default, participant has no legal obligation for the bond debt. Worst case is that the participant has to find replacement supply with index pricing.
- ✓ Recently, rating agencies have provided favorable reviews of natural gas prepay deals, and would exclude natural gas prepay bonds from the calculation of participants debt metrics since these transactions typically involve a conduit issuer
- ✓ **Several options: Can "lead" or "participate"**

# Sometimes this structure feels like…..



# Sample Natural Gas Prepayment Structure




1. **Prepayment**: Issuer prepays Supplier for approximately 30 years of natural gas deliveries, entering into a Prepaid Agreement.
2. **Public Power Entity**: Under a Gas Supply Contract, Supplier agrees to sell 100% of the gas delivered on a pay-as-you-go basis at a price equal to the applicable monthly market index less a discount (Discount is FIXED at closing of the bond transaction)
3. **Commodity Swap**: Issuer enters into a fixed-for-floating Commodity Swap with commodity swap counterparty to facilitate its ability to sell specified gas volumes required to be delivered to Holland BPW at market-referenced prices. Supplier enters into a mirror fixed-for-floating Commodity Swap with the swap counterparty.
4. **Debt Service** Issuer pays debt service semiannually on Series 2019 bonds issued to fund the prepayment for natural gas
5. **Investment Agreement:** Monthly, Issuer deposits revenues received into debt service account investment agreement. Semiannually, funds are withdrawn to meet debt service.



**Note**: QIR would need to advise on financial and commodity swaps

# Segmented Structure of Gas Prepay

- For this new wave of gas prepays, many of the same features, but with lessons learned from the impact of the credit crisis
- Final terms may go out thirty years, but most deal now reset every five years (segmented)
- Less reliance on third parties with less counterparty risk – no GIC provider (or provided by supplier), no surety provider, and more risk mitigation by supplier/guarantor
- Benefit is less, but still very substantial at up 10-15% per MMBtu first 5 years
  - Initial 5 year benefit “locked in” once bonds are issued and transaction closes
  - Subsequent periods could be higher or lower – but never lower than 15-20 cents (deal could come down) and this savings threshold is stipulated in the agreements;
  - Suppliers will guarantee minimum future savings, or allow participants to stop taking gas;
  - IMPORTANT STRUCTURING ELEMENT: in some deals, if Supplier cannot meet minimum discount at a remarketing point, Participant would be allowed to walk away permanently, allowing for Qualified Use to be used in optimal manner. In other deals, participant would still be obligated in future remarketings to take gas if minimum discount is reached again.
  - Ultimately, future discounts still dependent on different between corporate discount rate vs tax-exempt borrowing rate, whether at 5-year spot or longer term

# Tennergy versus Main Street

## “Segmented Deal”

Discount set at each segment - but a minimum threshold established

| Segment 1 | Segment 2 | Segment 3 | Segment 4 | Segment 5 | Segment 6 |
|---|---|---|---|---|---|

Issue Bonds

Final Gas Delivery

**Basically “Groundhog Day” at each segment**

## “Fixed Deal”

Discount set for 30 years

30 Year Fixed Rate Bond Transaction

Issue Bonds

Final Gas Delivery

**20 Year Participants**

**30 Year Participants**

# Economic Drivers of the Gas Prepay Savings

| Component | Definition | Impact on Gas Discount |
| --- | --- | --- |
| **Term of the Prepaid Gas Agreement** | Time period from the delivery date to final maturity of the Agreement | The longer the term, the greater the quantity of gas and the associated discount |
| **Natural Gas Price Curve** | A series of forward prices at which parties can purchase gas at fixed prices | The higher and/or steeper the gas price curve, the greater the gas discount |
| **Gas Supplier's Discount Rate** | Gas Supplier's cost of funds expressed as a spread over LIBOR swaps | The higher the funding spread, the greater the gas discount |
| **Tax-Exempt Bonds' Trading Levels** | Gas prepaid bonds trading levels expressed as a spread over MMD benchmark rates | The lower the credit spread, the greater the discount |
| **Yield spread between taxable (LIBOR) and tax-exempt (MMD) market** | Relationship between taxable and tax-exempt markets | The wider the spread in bps, the greater the discount |

# Favorable Risk Allocation - “Take-and-Pay”

**Under the “take-and-pay” legal structure of the gas prepay transaction and the assurances from the Supplier, Participant is protected against many of the risks / concerns associated with a gas prepay transaction**

| Risk | Mitigation |
|---|---|
| Supplier default on gas delivery | Participant only pays for gas if/when Supplier delivers the natural gas<br>Supplier/Guarantor assumes debt obligations in the event of Supplier default |
| Participant receives too much gas and is unable to have Qualified Use and/or has to meet renewable mandates in the future | Supplier/Guarantor will remarket the gas to qualified entities to ensure compliance with Qualified Use |
| Debt obligation could obligate Participant over long-term<br>Rating agency treatment of gas prepay debt | Debt is non-recourse to Participant, and the obligation is take and pay. Rating agencies do not count prepay transactions as debt or fixed costs of the Participant. |
| Commodity swap or investment GIC provider counterparty fails to perform | Documents allow for replacement of swap and GIC provider; Supplier is GIC provider (thus no add’l risk)<br>Supplier/Guarantor bears the risk of the counterparty’s performance and in the event of default, the swap “tears up”. Worst case is deal comes down with no ongoing risk for Participant. |

# The Gas Supply Portfolio

**Natural gas prepay transaction represents diversification and cost savings opportunity, while fitting into established natural gas (and hedging) programs:**

- Most Public Power Issuers purchase natural gas from a variety of suppliers, ranging in quantity and term now;

- Adding this transaction to address its overall gas needs could be appropriate – **ultimately the entity should identify a "comfortable level" of MMBtus for a prepay – baseload needs**

- Remaining supply represents:
  - Risk mitigation in the event of changes in carbon legislation
  - Represents additional opportunities over time to capture savings from future prepaid transactions
  - Hedge against emerging technologies and changes in customers' preferences

- Diversifying participation in natural gas prepay programs – both on suppliers and the discounts available in the transactions – fits within many public power's risk management guidelines

# Gas Pre-pay Considerations

**A natural gas prepay is a complicated transaction but given the currently low level of gas prices and the discount afforded, many issuers are considering these as a means to reduce O&M costs:**

- Level of complexity can be….significant
- Communication with the Board could be extensive
  - Moving from the realm of financial to operations (physical delivery)
  - More than a bond transaction
  - Commodity swap agreements, gas supply agreements, disclosure, legal…financial swaps if variable rate debt is used
- Given the complexity of transaction, many times, the counterparty is "sole sourced"
  - Enables the terms of the transaction to flow through all of the agreements and the entire structure
  - For example, the "tear up" nature of the transaction at certain points in time adds complexity and difficulties if other firms are used
  - The "sole source" nature essentially enables the credit rating of ***the gas supplier*** to be used for the bond transaction
- Constituents and ratepayers opinions and concerns (30 years of fossil fuel)
- Transaction is reactive to market conditions, similar to a bond refunding.
  - Could elect to proceed, but rates, spreads and commodity prices could move so that the pre-pay would be put on the shelf until market conditions improve.

# Gas Pre-pay Considerations

- Amount of Natural Gas Supply; Qualified Use of Gas
  - Qualified volumes for a prepay transaction require gas or energy to be used for existing historical service territory
  - Substantial additional qualified use on which to obtain savings and potential additional transaction
- Timing / amount of 5 year savings per MMBtu
  - Savings available is likely to vary over time, as we have seen in past ten years
  - Break-evens for long-term deals are already high, and strong reason to believe that Participants could capture higher discount to maturity at remarketing (if taxable / tax-exempt ratios change favorably)
- Choice of Supplier and Underwriter
  - Deals are getting done – “aggregators” are looking for volumes
  - New entrants more risky; proven form by the banks that have been doing these for the past decade
  - Participant may want gas at different delivery points; experience with various delivery points important
- “Switch” feature is an option to incorporate for some of the commodity suppliers.
  - Upon Participant providing notice, the pre-pay ***switches from gas to power***
  - Unclear what type of power (green vs brown) or timing (peak versus off-peak)

# *New* Variations of a Prepay Transaction:  Renewables

- **Modeled after natural gas prepay transactions:**
  Uses many of the same documents and structures of the natural gas prepay transactions

- **New Transaction for the market:**
  First mover in this space – although the natural gas prepay bonds are an established product

- **Can provide savings over time:**
  Expectation of 5-10% on existing and future renewable energy quantities delivered under the pre-pay structure compared to spot market purchases / current contracts

- **Can provide savings over time with current renewable PPAs:**
  Basis for the transaction is the ability to novate current PPAs to the Renewable Energy Supplier.  As these roll-off, participant could nominate other prepays or assume there is a consistent market energy need

- **Favorable risk allocation:**
  Obligation is generally limited to paying for P99 that is delivered at PPA price less a discount.  Risk generally related to lack of production and opportunity cost (future spot prices may be lower or future transactions may produce higher savings)

- **Rating Agency Treatment:**
  Recently, rating agencies provided favorable reviews of *natural gas* prepay deals, excluding renewable prepay bonds from the calculation of the offtaker's debt metrics **if using another issuer (conduit)**

# Questions About A Gas Prepay Transaction

1. Are Prepayments Legitimate Transactions?
   Yes.  IRS complaint…have to have a “need” for the commodity
2. Are Savings Real?
   Yes.  Pubic Power utilities have saved billions in fuel costs through the dozen+ prepay transactions.  However, must be comfortable with the level of savings and what happens after the first “segment”
3. Are Prepayments Risky?
   Manageably so.  Risk is that of lost opportunity – must be happy with current savings versus future savings
4. Are Prepayments Worth the Time and Effort?
   Yes if ~10% savings on natural gas is important
5. How can I participate?
   Can drive the train or ride in the train as a participant