PRIVATE SECTOR, MARKETS & METHANE

Observations from the Field on Getting Results in the Oil & Gas Sector

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About Bluesource

Carbon Project Investment, Development, Marketing

• Leader in carbon project finance, development, marketing since 2001
• >100M t portfolio, >30M t sold to date
• All key regulatory/voluntary registries (Alberta, CAR, VCS, ACR, CSA) in North America
• Market presence: ~17-22% of all offsets in Alberta on yearly basis and ~15% in California/Quebec market to date
• Selected as top North American Project Developer for the past 3 years by Environmental Finance

Advisory Services

• Corporate carbon mitigation and offset strategies, compliance plans & education
• Technical services including emission reduction quantification and valuation
• Protocol development: methodologies for over 25 project types
• Facility GHG/emission reporting
• Project finance and other funding/grant applications

Calgary  Salt Lake City  San Francisco  Toronto
Canadian Oil & Gas Methane Challenge

- ~15% of Canada’s Total Emissions are from Methane
- 44% of those emissions from the oil & gas sector
- Large share of emissions in oil & gas from small sources

Source: Environment and Climate Change Canada
Canadian Oil & Gas Methane Challenge

• Federal and Provincial Gov’t goal to meet 40-45% reduction in methane emissions from oil and gas sector
  • Regulations include more stringent performance standards on fugititives, venting, compressors and pneumatic devices
  • For pneumatic controllers and pumps
    • Low/no bleed devices on new equipment in 2020
    • High bleed pneumatic controllers need to be replaced on existing equipment by 2023
• Low commodity prices are putting extreme pressure on Canadian oil & gas producers
  • AECO/NGX May 2018 Gas: CAD $0.85/GJ
  • NYMEX May 2018 Gas: USD $2.82/MMBTU
  • Limited CapEx budgets focused on core investments, companies in survival mode
Canadian Oil & Gas Methane Challenge

• Distributed and small-scale nature of emission reductions
• The Province of Alberta alone has 174,000 operating wells, with the majority having pneumatic devices, although many newer sites have newer low/no-bleed devices
• Emissions range from <5 to >150 tonnes/year per pneumatic controller
• Significant administrative burden and logistics involved in identifying controllers that need to be replaced, and executing the replacement
• Not the core business for producers
02 | Bluesource Methane Program Solution
Bluesource Methane Reduction Program

- Bluesource has designed and is executing a program to solve this challenge for producers
  - Carbon finance-based, with offsets generated from the swap out of controllers providing the economic rationale to support project financing
  - Full turnkey solution for producers from identification of controllers, through the installation of new controllers and carbon credit creation and monetization
  - Project management services enabling efficient scheduling, deployment and installation of controllers
  - No capital outlay from producer
  - Payback of program costs to Bluesource from sale of carbon offsets
  - Profit share post payback with participating producers
Current Status and objectives

- Program began changing out controllers in mid November, 2017
- Swap out of controllers for 7 oil & gas producers either complete or now underway
  - In various stages of discussions with over 50 producers
- Program goal is to replace 7,000 controllers prior to January, 2020
- If successful, will generate over 4 million tonnes of high-quality GHG reductions prior to 2023.
- Significant and material reduction in GHG intensity of upstream gas production for participating producers
Current Status
03 | Key Take Aways
Policy Design and Markets Matter

• Federal Regulations allow for early action crediting
  • Creates powerful incentive for producers to act early and pull forward reductions

• Alberta has well-designed and functioning carbon market
  • Output-Based Allocation (OBA) framework for facilities that emit above 100,000 tonnes CO$_2$e/year
  • Compliance flexibility options include offsets from ~30 different eligible protocols
  • Protocol for GHG emission reductions from pneumatic devices
    • Crediting period aligned with federal regs and 2023 deadline
  • Robust demand and pricing (>CAD $20/tonne) for offsets in Alberta market
Key Take Aways

1. Combination of smart regulations and well designed carbon market tools can be extremely powerful to mobilize and pull forward oil & gas sector reductions
   • Government’s role is to get the framework right, provide clarity and certainty, let the market do what it does best

2. We need the oil & gas sector in the tent
   • Carrots help secure buy-in, not opposition from the sector
   • With right incentives, industry can deploy capital and deliver results

3. The type of carbon pricing matters
   • Not just about price, quality and resiliency of the signal matters
   • Positive price signals (markets) can be more effective than negative price signals (taxes) at mobilizing the power of entrepreneurship and innovation
THANK YOU. QUESTIONS?

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