TACKLING THE METHANE CHALLENGE

Innovation in Financing Distributed Methane Reductions in the Oil & Gas Sector

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April 17, 2018
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
Bluesource Canada Client Snapshot
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

Canada’s 2014 Total Methane Emissions (110 megatonnes [Mt] of carbon dioxide equivalent [CO₂e])

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 fugitives, 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 | The Canadian Oil & Gas Methane Opportunity
Canadian Oil & Gas Methane Opportunity

• 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
03 | 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
Program Structure

Program Lead

Primary Equipment Supplier

Finance Partners

Logistics and Data Management

E&I Contractors

E&I Contractors

E&I Contractors

E&I Contractors

Producers

Producers

Producers

Producers

Producers

Producers
Process

• Bluesource coordinates all aspects of program
• Best-in-class team at each step of process
• Alignment of compensation model structured around delivery, efficiency and execution
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
04 | Key Take Aways
Key Take Aways

• Tackling methane challenge in the oil & gas sector is about silver buckshot, not a single silver bullet approach

• 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

• We need the oil & gas sector in the tent
  • Carrots help secure buy-in, not opposition from the sector