Methane Emission Reductions: Driving to Scale

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Cap-Op Energy is a Canadian energy sustainability company whose mission is to make sustainability profitable. Cap-Op provides technological solutions and professional consulting services to innovative clients across the energy spectrum. We enable our clients, their sustainability projects and corporate sustainability programs through monetization of environmental attributes. Cap-Op has experience in all the major environmental credit markets across North America. Our software platforms help our clients multiple effectiveness and scale project yield.
How to Address?

**MEASURE:**
Research (2013/2014)
- PTAC Alberta Upstream Asset Inventory Study
- Report on Determining Pneumatic Device Emission Factors

**PLAN:** Policy/Tech Dev (2014-2016)
- Industry-sponsored development of carbon monetization pathway
- Software development
- Clean technology development

**DO:** Scale-Up (2017-2023)
- Vast field deployment across Western Canada, 10x reductions 2017-2019
- 60%+ of market participating in voluntary methane abatement

Yes, it can work – but we need faster cycle times!
Over 70 Companies participate in Alberta’s carbon market
Carbon pricing revenues raised by governments in 2017 were US$33 billion, higher compared to US$22 billion in 2016.

Annual value of carbon pricing initiatives in 2018 is US$82 billion, higher than the value of US$52 billion for 2017.

IETA
Tackling Pneumatic Methane Emissions at Scale

- 14,000 + facilities surveyed
- 50,000 + inventoried pneumatic equipment
- 20 + producers participating, representing 60%+ of relevant AB facilities
- Reductions approaching 1M t CO$_2$e/year
Requires a collaborative approach among industry, regulators, academics, service/tech providers
Methane Research Programs 2018/2019

Who?

- **Management Team:**
  - Cap-Op Energy
  - DXD Consulting

- **Academic Team:**
  - Stanford University
  - Harrisburg University
  - University of Calgary

- **OGI Field Teams:**
  - Davis Safety
  - GreenPath Energy

- **Regulators:**
  - BC OGC
  - AER
  - AEP
  - ECCC

Where?

- **BC MEFS**
- **AMFC**
- **FEMP EA**
- **Alt FEMP**

*British Columbia Oil and Gas Equipment and Component Field Survey
Fugitive Emission Management Program Effectiveness Assessment
Alternative Technologies for Fugitive Methane Emissions Management
Alberta Methane Field Challenge*
What Do We Hope to Achieve?

- **Immediate emission reductions during and after programs**
  - Pneumatic reductions likely exceed mega-tonne/year scale in AB
  - >1,500 fugitive surveys conducted to date
  - Vast majority of fugitive results delivered to producers for abatement, repair timelines typically measured in days

- **Sustainable, effective policies**
  - Industry, regulators, and academics sitting at the same table
  - Calibrate regulatory approach by characterization of emission sources, available technologies
  - In near-real-time!

- **Dramatic cost reductions**
  - Targeting 75%+ reduction in fugitive emission management program cost at equivalent effectiveness
  - Net-profitable methane abatement via AB carbon market
How to Drive Scale?

Research Areas
- Detection and Quantification Technologies
- Cost and Efficacy of Control Technologies
- Costs and Efficacy of Proposed Regulations
- Characterization of Emission Sources

Policy Development
- Co-design regulatory approaches with regulators, academics, and industry at same table
- Use existing tools (e.g. carbon market) where possible to align quickly
- Forward-looking regulations balancing prescriptive vs. flexible

Certainty & Support
- Carbon market mechanisms (e.g. carbon-backed financing)
- Gov't Funding Programs (e.g. Energy Efficiency Alberta)
- Royalty credit programs (e.g. BC Clean Infrastructure Royalty Credit Programs)
- Clear, certain regulatory backstop
- Data eco-system to streamline
Thank You

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