

Carbon Mitigation Projects & Nature-based Solutions

Jamie MacKinnon
FNCI Information Sharing Sessions
January 16, 2020



About Bluesource

- Oldest and largest carbon offset developer in North America (19 years)
- Offer turnkey offset project development, marketing and sales.
- 200+ projects, 20+ project types, and 150+ million tonnes of emissions reductions
- 45+ forest carbon projects under management
- Dedicated forestry team: in-house finance, marketing, and legal experts, plus 9 professional foresters with unparalleled forest carbon experience
- Notable partnerships: The Nature Conservancy, Audubon, Environmental Defense Fund, Campbell Global, the Forestland Group, and more

Offset Supply and Demand in BC

□ Offset Demand Potential

- 4.0 million tCO₂e/yr. in 2025 (20% of compliance met with offsets)
- 8.0 million tCO₂e/yr. in 2030 (40% offset usage)
- 12.0 million tCO₂e/yr. in 2035 (60% offset usage)

□ Offset Supply Potential

- Between 4.7 and 5.5 million tCO₂e/yr. in 2025
- Between 16.6 and 20.0 million tCO₂e/yr. in 2030
- Between 22.9 and 28.0 million tCO₂e/yr. in 2035

□ Balance –

- The potential exists for domestic offsets to supply a significant part of compliance for BC industry and export to other provinces.
- Maximizing this potential keeps investment and co-benefits in BC.



Offset Supply and Demand in BC

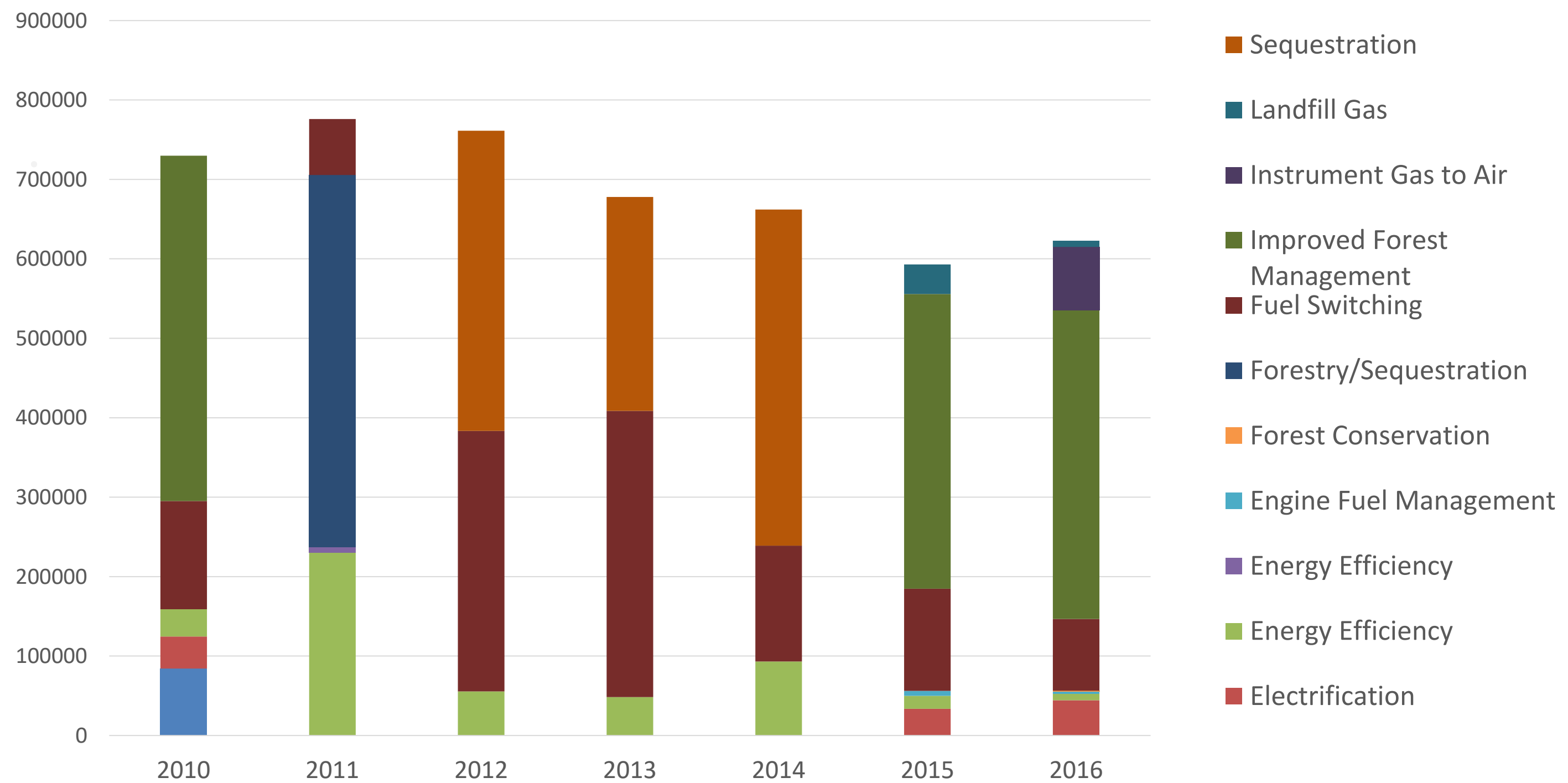
Considerations for Offset Market Development

- CleanBC Plan development and ‘change of heart’ in accepting offsets for compliance with industrial performance standards.
- Acceptance of BC offsets in federal, other provincial, and international offset systems (CORSIA).
- Timing and resource required to adopt new offset protocols.
- Complimentary policies such as BC Low Carbon Fuel Standard and federal Clean Fuel Standard.



Offset Supply

Historical Supply to BC Climate Investment Branch



Offset Supply

BC Climate Branch offset protocol development

Completed

- Fuel Switching

High priority

- Pneumatics venting
- Forestry (improved forest management, and afforestation)
- Anaerobic wastewater treatment and manure management
- Organic waste diversion
- Landfill gas
- Low carbon cement

Low priority

- Tillage System Management
- Recovery and Destruction of Ozone Depleting Substances
- Coastal/ Tidal Wetland Restoration and Creation
- Carbon Capture and Utilization or Storage



Offset Supply

Estimated supply from market tested protocols with high potential in BC

- Conversion of diesel power generators to renewables in remote communities – from 46 ktCO₂e/yr. in 2025 to 105 ktCO₂e/yr. in 2035
- Fuel switching from gas to renewables in running compressors in upstream gas production – from 800 ktCO₂e/yr. in 2025 to 1,800 ktCO₂e/yr. in 2035
- Reduction of methane venting from pneumatics in gas production – from 300 ktCO₂e/yr. in 2025 to 562 ktCO₂e/yr. by 2035
- Improved Forest Management
 - ✓ Private lands – 1,000 ktCO₂e/yr. in 2025 to 2,000 ktCO₂e.yr in 2035
 - ✓ Crown land and Traditional Territory – 2,200 ktCO₂e/yr. in 2025 to 16,500 ktCO₂e.yr in 2035



Offset Supply

Estimated supply from market tested protocols with low potential in BC

- ❑ Carbon capture from LNG Canada and geological storage – 500 ktCO₂e/yr. in 2030 but at significantly higher cost than the BC carbon tax.
- ❑ Carbon capture and storage from other industrial sources – best potential is enhanced oil recovery and capture from pulp mills due to lower cost of capture.
- ❑ Destruction of Ozone Depleting Substances – from 77 ktCO₂e/yr. in 2025 to 1,800 ktCO₂e/yr. by 2035
- ❑ Direct air capture – 1,000 ktCO₂e/yr. from 1 commercial-scale facility but at a cost well above \$100/t.



Natural Climate Solutions

Protection/Conservation

- Improved Forest Management
- Avoided Conversion of Forests
- Avoided Conversion of Grasslands
- Avoided Conversion of Peat Swam Forest

Restoration

- Aforestation and Reforestation
- Coastal and Tidal Wetland Creation and Restoration
- Peatlands restoration
- Grasslands Forage Restoration



Natural Climate Solutions

☐ Climate smart agriculture and land management

- Nitrogen fertilizer management
- Increase soil organic content
- Increase agricultural productivity



Contact



JAMIE MACKINNON

Vice President
Bluesource



T. 416-427-4888

E. jamiem@bluesourcecan.com