

UNLOCKING THE VALUE OF ENERGY EFFICIENCY IN THE OIL & GAS SECTOR

Cap-Op GHG Offset Aggregation Platform

CAP-OP ENERGY

Calgary, Alberta, Canada

Company: Cap-Op Energy Inc.

Location: Various oil & gas processing facilities across British Columbia and Alberta, Canada

Sector of the Oil & Natural Gas Industry: Upstream production

The Methane Emission Reduction Opportunity:

Cost Effective Quantification of Greenhouse Gas Credits Via Automation and Aggregation

Our customers are already profiting from the following project types:

- High to low bleed pneumatic conversion (instrumentation and pumps)
- Vent gas capture for engines with SlipStreams
- Vent gas capture at the well site
- Engine Fuel Management Systems on Compressors and Generators



ESTIMATED ANNUAL EMISSION REDUCTIONS: 1,000,000 tCO₂e

PROJECT DETAILS

Cap-Op is pioneering the development of the Distributed Energy Efficiency Project Platform (DEEPP) to enable methane emission mitigation activities in the oil & gas industry by lowering the risk and cost of monetizing their offsets.

The platform enables:

1. Reduced risk and effort with standardized quantification methods and aggregation.
2. Viable energy efficiency projects with reduced cost of GHG offset quantification by up to 50%.
3. Certainty of project financial returns due to a disruptive pricing model.

Proven Successes:

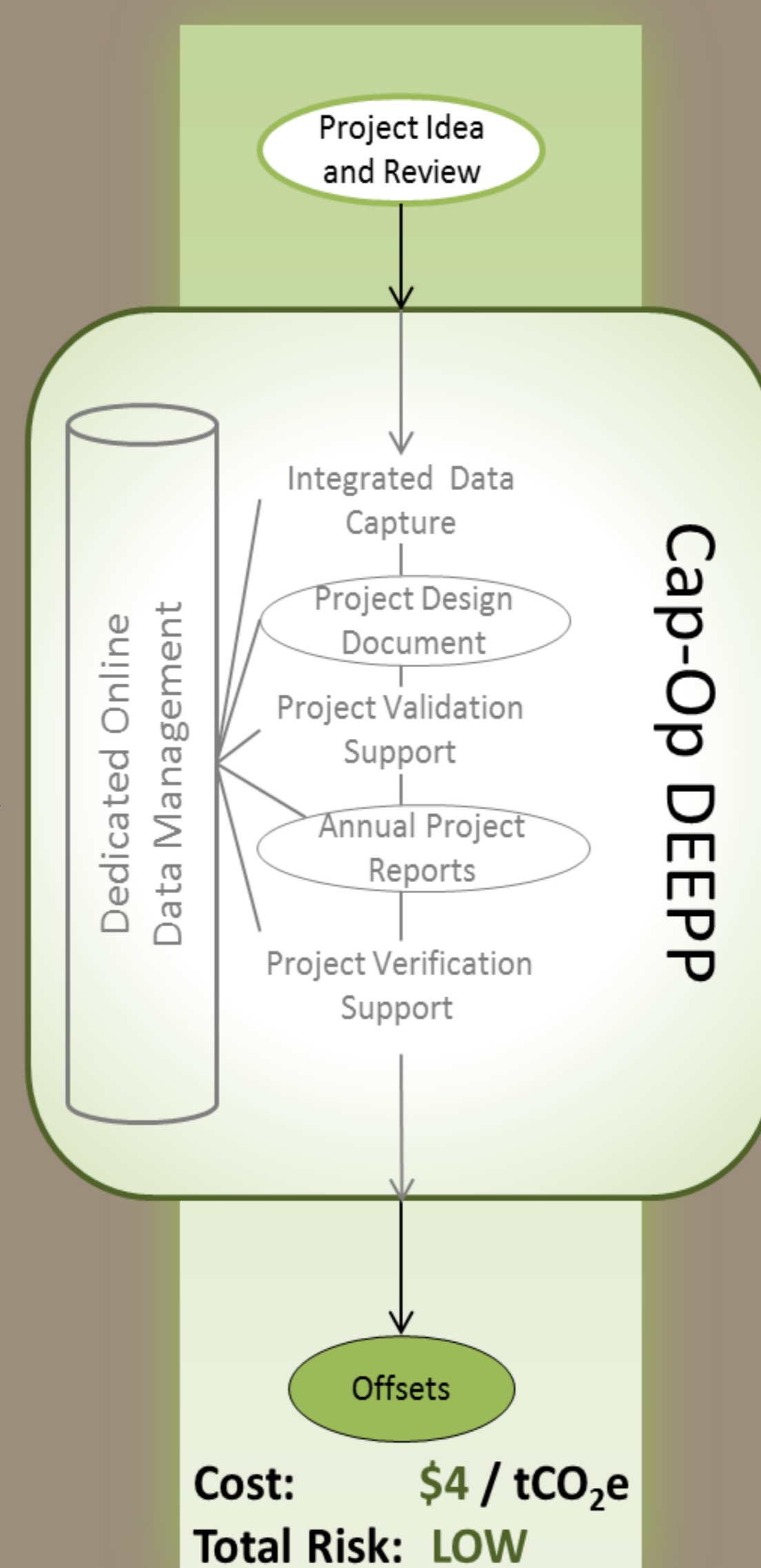
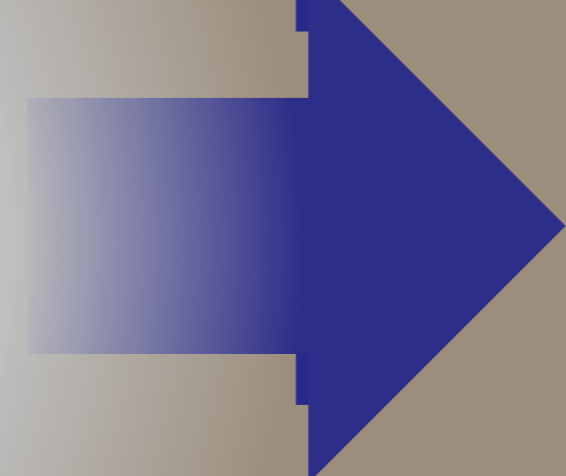
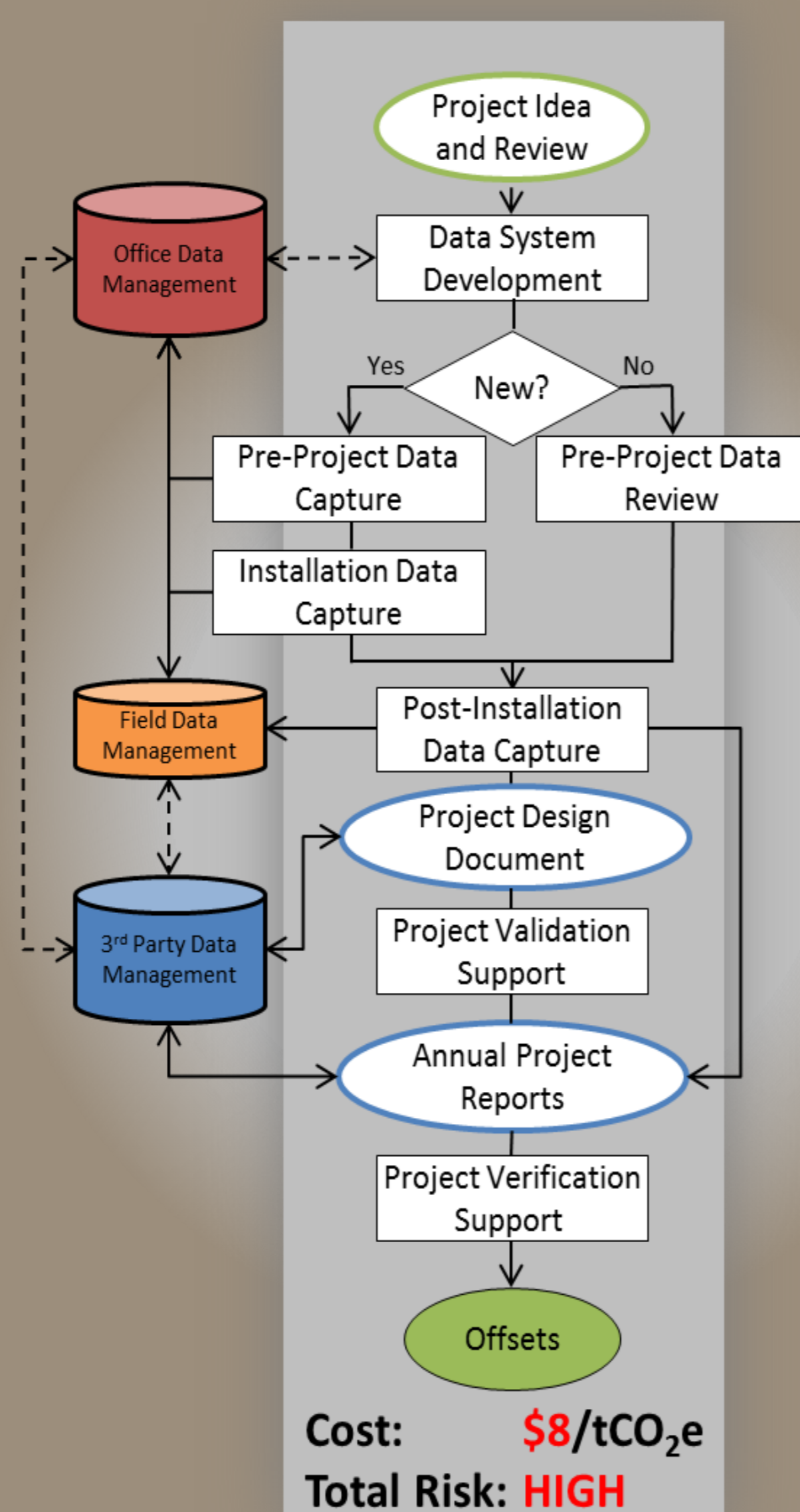
- Cap-Op successfully quantified the first 18,000 tonnes of aggregated Oil & Gas offsets verified and serialized in Canada under the Alberta Offset System using the Engine Fuel Management and Vent Gas Capture Quantification Protocol.
- Cap-Op recently validated it's first aggregation project in British Columbia for pneumatic device upgrades.

QUANTIFICATION 2.0

Current Process for Quantifying GHG

Optimized Process with Cap-Op

- ✗ Inefficient
- ✗ Expensive
- ✗ High Risk



- ✓ Streamlined
- ✓ Cost Effective
- ✓ Low Risk

PROJECT DEVELOPMENT PLAN

Phase 1 (Complete): Proof of Concept

- Develop the engine fuel management module in Alberta.
- Sign major clients such as Devon, TAQA North, ConocoPhillips, Cenovus and Husky.
- Receive project support from PTAC and IRAP
- Verify 25,000 tonnes of offsets.

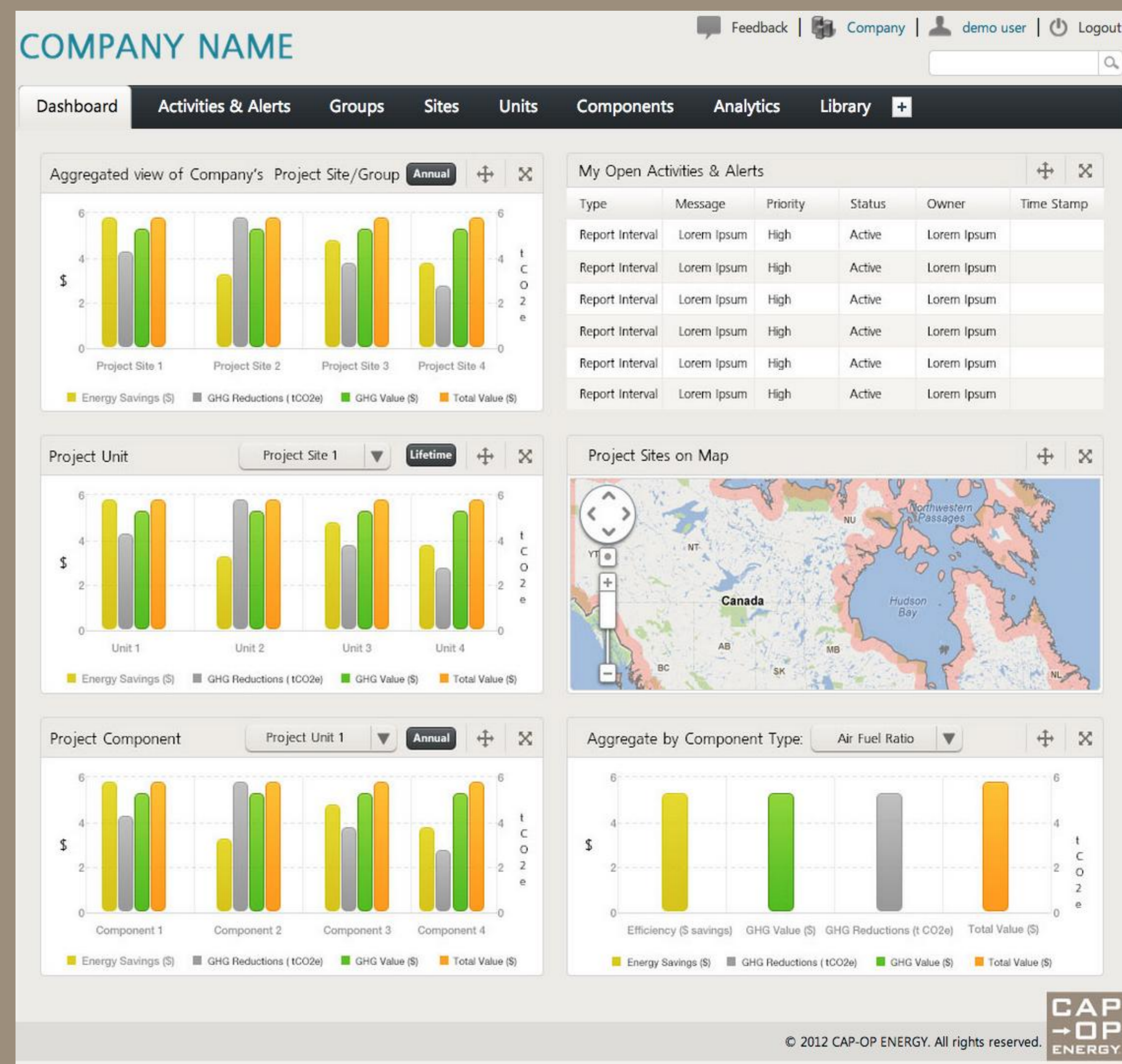
Phase 2 (2013): Platform Build Out

- Develop high to low bleed pneumatics project module in British Columbia.
- Develop waste heat recovery project module in Alberta.
- Develop solar chemical pump module.
- Verify 150,000 tonnes of offsets.

Phase 3 (2014): Market Expansion

- Develop additional modules for carbon markets.
- Become the leading offset project developer for distributed energy efficiency projects in the oil & gas sector.
- Verify 350,000 tonnes of offsets.

Cap-Op Platform Dashboard



LESSONS LEARNED FROM PHASE 1

- Customers lost expected offsets by 50% due to data capture issues.
 - ✓ Solution: Cap-Op has worked together with Spartan Controls to develop an upgraded GHG data logger that allows for USB transfer and more secure data storage.
- Ownership issues: Facilities have complicated ownership structures which results in complex asset management, tracking and document management
 - ✓ Solution: Cap-Op generates ownership reports and compiles necessary documentation for offset verification
- Offset Registration: The costs of registering offsets for minority owners outweigh the value due to small volumes.
 - ✓ Solution: bundle the offsets & provide a sales mechanism to the minority owners

ECONOMIC BENEFITS WITH CAP-OP

If you have 5 or more engines with Air Fuel Ratio Controllers and/or Vent Gas Capture (Slipstream) systems, by joining Cap-Op you will:

- ✓ See an ROI up to 40% within the first year (with 10 or more systems the ROI is up to 115% in the first year).
- ✓ Receive verified offsets from the environmental benefits from your methane reduction projects.
- ✓ Gain insight into the performance of your distributed energy efficiency assets.

TYPES OF ASSISTANCE SOUGHT

Platform Members

If you are a producer that has installed an energy efficiency technology or are planning on it and are interested in quantifying the GHG offsets, please join our platform.

Collaboration

Please contact Cap-Op if you are a technology provider and have an energy efficiency / methane reduction technology to see how we can quantify the GHG savings and increase the ROI of your equipment.

FOR MORE INFORMATION

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