
Summary on Digital Technologies



Digital Innovation in the Energy Industry

16 Technology Companies that are
Climate and AI Forward

1 Akinê Inc



Problem Focus

Real time identification of underperforming wells and AI automation enhances production, reduces operational costs, enables remote leak detection and enhances safety of personnel.

Technology Value

Following 18 months of deployment on 24 brownfield wells, Akinê's technology:

- **Lowered direct energy** consumption by over **37%**
- **Generated a 14% improvement** in cumulative oil production
- **Enabled operating by exception**, boosting field staff effectiveness, cutting labor costs, fuel usage, and personnel mobility energy intensity by **50%**

[Click here to learn more about this deployment.](#)

<http://akine.ca>

2 AltaML



Problem Focus

Safety is a top priority. Applying AI/ML creates unprecedented opportunities to flag safety and maintenance issues, streamline safety inspection, and save lives on the job site.

Technology Value

- **3D scans for fireproofing** within refineries were collected and deficiencies were tagged. **ML was used to identify anomalies** so that damage could be repaired before becoming hazardous.
- **\$1.2 million annual savings** in maintenance, inspection, replacement, and contractor costs.
- **Zero safety incidents** were reported, and 7,400 maintenance hours were saved.

[Click here to learn more about this deployment](#)

<https://altaml.com/>

3 Validere



Problem Focus

Validere is a platform to collect, manage, and act on data about emissions and operations. It provides powerful tools that streamline workflows such as field data collection, emissions quantification, volumetrics, regulatory reporting, scenario modeling, and more - all using trusted data that provides traceability from executive roll-ups down to source data and calculations.

Technology Value

- Establishes a **source of truth for operations and emissions data** (e.g. assets, operating conditions, volumes, quality/samples)
- **Streamlines emissions and operations workflows** across the organization (e.g. field data collection, regulatory reporting, voluntary initiatives and disclosures)
- Supports **strategic analysis, decision making, and action** (e.g. scenario modeling, tracking emissions vs targets, operational optimization)

[http://https://www.validere.com/](https://www.validere.com/)

4 BMO Radicle



Problem Focus

BMO Radicle focuses on carbon markets and emissions solutions, helping organizations measure, reduce, and offset their carbon footprint to achieve environmental goals and regulatory compliance.

Technology Value

- Support energy companies in creating **carbon credits** from methane emission reductions in Alberta. Also create new pathways for carbon credits in Alberta and internationally.
- **Software and technical advisory services** to help energy companies generate revenue for their methane abatement projects, including pneumatic pump electrification, instrument air implementation, tank venting solutions, gas conservation equipment, and enclosed combustor projects.

[http://https://capitalmarkets.bmo.com/en/services/cr-edit-development/](https://capitalmarkets.bmo.com/en/services/cr-edit-development/)

5 Carbon Ai OttoMate



Problem Focus

A Carbon Ai Client was tasked with switching 12,500 high-bleed pneumatic devices to low-bleed devices within 1 year and had to collaborate with 37 oil producers. Annual inspections start within 2 years of installation.

Technology Value

- Initially managed in Excel, data collection for 3,000 installations was cumbersome, requiring extensive administrative effort and field coordination.
- Transition to OttoTasks significantly reduced data handling and coordination times, **cutting administrative tasks to 10 minutes** and collection to under a minute per task.
- Adoption of OttoTasks expedited project deployment and achieved an **estimated \$1.1 million in resource savings**.

<https://ottomate.carbonai.ca/>

6 Carbon Assessors



Problem Focus

Specializes in carbon footprint analysis and sustainability consulting to help entities reduce GHG emissions and enhance sustainability practices.

Technology Value

- Detailed Emissions Analysis:** Provides in-depth carbon emissions assessments for precise environmental impact understanding.
- Emissions Reduction Guidance:** Offers strategies for effective emissions reduction and sustainability improvements.
- Compliance and Reporting Support:** Aids in sustainability reporting and ensures compliance with environmental standards, promoting transparent sustainability communications.

[Learn about carbon markets applicable to you](#)

<https://www.carbonassessors.com/>

7 Drishya AI Labs



Problem Focus

Drishya AI Labs targets inefficiencies in energy operations with a focus on enhancing energy outcomes and providing intelligent performance analytics through artificial intelligence and digital twins.

Technology Value

- Digital transformation of energy operation** documents and simulations facilitates better data accessibility, collaboration, and safety.
- Real-time data access** improves communication and hazard awareness, leading to cost and manpower reductions.
- Drishya's solutions **amplify production capacities without increasing emissions**, as evidenced by successful large-scale projects and pilot programs that significantly cut downtime and extended asset lifespans.

<https://www.drishya.ai/>

8 Highwood Emissions Management



Problem Focus

Highwood solves methane reconciliation, helping companies navigate the complexity of methane data and get to the truth.

Technology Value

- Clarity on **true methane emissions**.
- Defensibility against third-party claims**.
- Consistent**, up-to-date knowledge and training

[Check out Highwood Emissions free public reports on voluntary emissions, alternative methane technology initiatives and other evaluation reports](#)

<https://highwoodemissions.com/>

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Kuva Systems

KUVA
GAS CLOUD IMAGING

Problem Focus

Specializes in managing reputational risk for industrial emissions, offering solutions that identify and quantify methane and VOC emissions for the energy sector, so they can be quickly rectified.

Technology Value

- **90% Faster Root Cause Analysis:** Eliminates unnecessary site visit or handheld OGI follow up.
- **Trustworthy Alarms:** Provides actionable alarms with zero false positives or alarm fatigue.
- **ROI in Under 6 Months:** Offers the lowest total cost of ownership for emission monitoring technology.

[Review Kuva's whitepaper on emissions quantification here](https://www.kuvasystems.com/)

<https://www.kuvasystems.com/>

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LCO Technologies



Problem Focus

LCO Technologies specializes in green technology innovations with their products aim at reducing or completely eliminating methane emissions from pneumatic instrumentation at well heads.

Technology Value

- **The CROSSFIRE platform** can serve various functions (Chemical Injection Pump, Instrument Air Compressor, Vapor Recovery Unit)
- **Designed and developed in Canada** as a cost-effective green technology
- **Exceptionally energy efficient**, CROSSFIRE can be powered by minimal solar infrastructure, emphasizing its sustainability and low operational costs.

<https://lcotechnologies.com/>

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Process Ecology



Problem Focus

Organizations struggle with the effective tracking and management of greenhouse gas emissions, often due to delayed data and the complexity of regulatory compliance.

Technology Value

Process Ecology's Real Time GHG tracker was built to reduce the struggles of tracking and compliance:

- **RT-GHG** offers real-time tracking of emission reductions, enabling timely progress assessment.
- Provides **reliable data for all stakeholders**, enhancing trust and decision-making.
- **Cloud-based solution** ensures access anytime, anywhere, and reduces costs associated with regulatory compliance.

<https://processecology.com/product/rt-ghg>

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OptiSEIS



Problem Focus

Delivers high-resolution subsurface imaging to enable better resource planning and management for the traditional (i.e., oil & gas) and new energy (i.e., critical mineral mining, CCUS, and geothermal) sectors.

Technology Value

- **Enhances exploration precision** and resource management through advanced subsurface data quality.
- **Patented seismic imaging** by OptiSeis offers comprehensive subsurface analysis for improved resource identification.
- EcoSeis (TM) methodology by OptiSeis enables more **efficient exploration with significantly lower environmental and GHG impact**.

<https://optiseis.com/>

Problem Focus

Qube offers continuous monitoring technology that detects, localizes, and quantifies emissions to enable real-time identification and reductions of emission events.

Technology Value

- **IoT Emissions Monitoring:** Uses IoT devices for continuous, real-time environmental monitoring, improving leak detection.
- **Insights for Emission reduction:** Analyzes emissions and environmental data to provide actionable insights for operators to reduce emissions effectively.
- **Supports Regulatory Compliance:** Provides a method to perform LDAR and meet regulatory compliance through emissions measurement and reporting, aiding sustainability efforts.

<https://www.qubeiot.com/>

Problem Focus

Oxy faced the challenge of **scaling LDAR** (Leak Detection and Repair) programs to manage methane emissions across multiple assets, necessitating the optimization of these programs and the fusion of various sensor data for accurate source inventory and measurement reconciliation.

Technology Value

- **Streamlined data integration and workflows** were achieved **within months**, enhancing operational efficiencies, regulatory compliance, and **real time emissions visibility**.
- Reducing GHGs led to **notable financial gains** and environmental benefits, supporting **revenue recapture and sustainability initiatives**.
- The platform's flexibility facilitated collaborative partnership with Oxy, promoting rapid **value realization and supporting certifications and environmental initiatives like OGMP 2.0 and MIQ**.

<https://www.sensorup.com/>

Visit the Innovation Showcase for more exciting technologies solving climate change

[CLICK HERE](#)