Valorisation Carbone Québec
A unique CO_2 **capture** and **utilization** project

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Louis Fradette

FORWARD LOOKING STATEMENTS

- All statements in this presentation that are other than statements of historical facts are forward-looking statements which contain our current expectations about our future results. Forward-looking statements involve numerous risks and uncertainties. We have attempted to identify any forward-looking statements by using words such as “anticipates”, “believes”, “could”, “expects”, “intends”, “may”, “should” and other similar expressions.

- Although we believe that the expectations reflected in all of our forward-looking statements are reasonable, we can give no assurance that such expectations will prove to be correct. A number of factors may affect our future results and may cause those results to differ materially from those indicated in any forward-looking statements made by us or on our behalf. Such factors include our early stage of technology development; our need for capital to finance necessary research and product development; our ability to attract and retain key employees and strategic partners; our ability to achieve and maintain profitability; fluctuations in the trading price and volume of our stock; competition from other providers of similar products and services; and other unanticipated future events and conditions. For further information concerning risks and uncertainties that may affect our future results, please review the disclosures as may be contained from time to time in our filings with SEDAR. Other than as required by applicable securities laws, we undertake no obligation to publicly update or revise any of our forward-looking statements, whether as a result of changed circumstances, new information, future events, or for any other reason occurring after the date of this presentation. This presentation does not constitute an offer to sell or solicitation of an offer to buy securities in any jurisdiction.

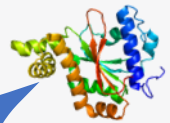
WHO ARE WE?

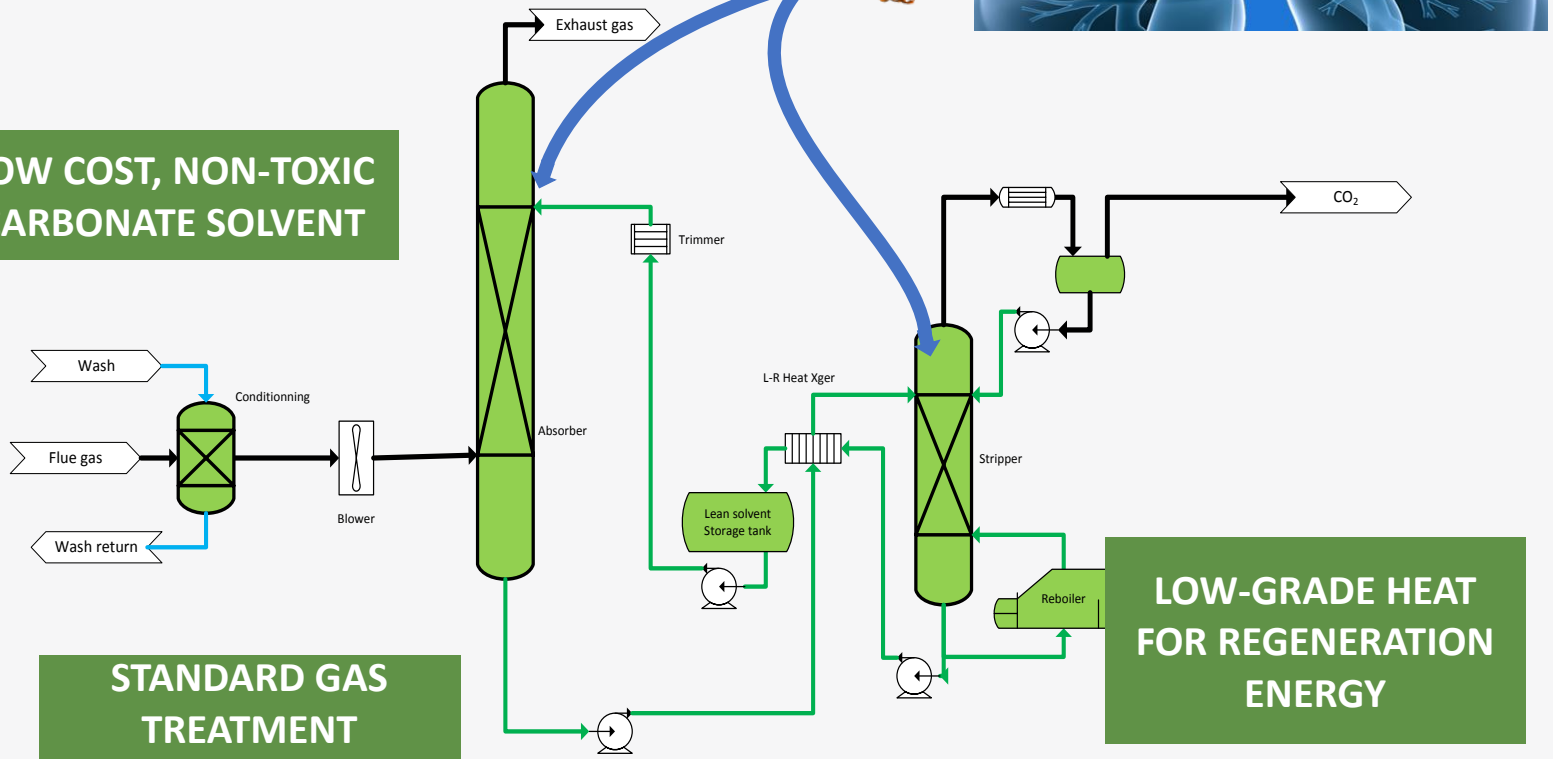
- **Canadian company**, head office in Québec City
- 23 employees, high tech (7 PhD's)
- CSI is the provider of a **patented** (80+ patents) **CO_2 capture technology** based on the use of *Carbonic Anhydrase* (CA)
  - ✓ Can capture any level of CO_2 emitted from stationary sources, at any rate
  - ✓ Delivers extremely pure CO_2, dry or wet
- The process offers the **lowest capture cost** among existing technologies
- The process is the only **commercially available** capture process that doesn't generate **toxic by-products**
- Potential applications:
  - ✓ Direct utilization of captured CO_2 as industrial gas
  - ✓ Sequestration of CO_2 for carbon mitigation
- Publicly traded on TSX-V (CST)

THE TECHNOLOGY

- Biomimicking
  - ✓ **Industrial lung** using the **enzyme** *Carbonic Anhydrase* (CA)

- The process





Robust Patent Portfolio

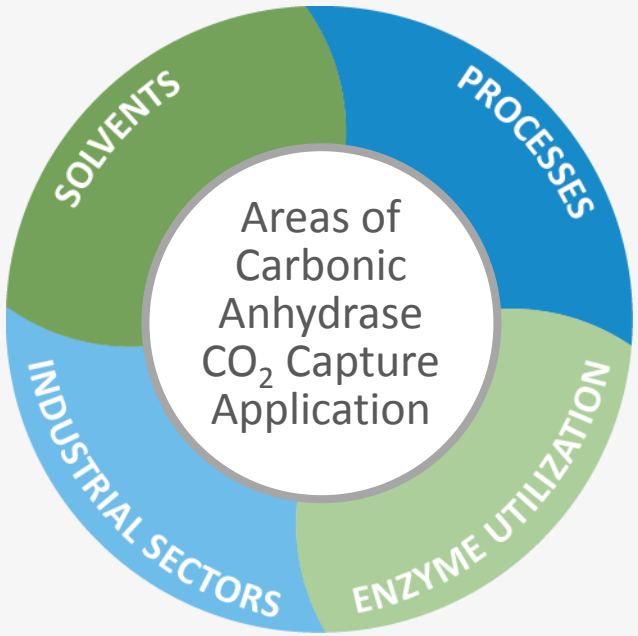
BROAD PATENT PORTFOLIO FOR USE OF **CARBONIC ANHYDRASE** IN CANADA, U.S., EU, CHINA, AUSTRALIA AND OTHER MARKETS

46 ISSUED **37** PENDING*

vs. 13 and 19 respectively in 2008

SOLVENTS
Amines
Carbonates
Amino Acids
Combinations

INDUSTRIAL SECTORS
Power
Steam
'Drop-in' Applications



PROCESSES
Packed Tower
Spray Scrubber
Bubble Column
Universal

ENZYME UTILIZATION
Soluble
Particle-Based
Analogs

*as at June 30, 2015

Commercial Progress – Capture and Utilization

30 tpd project, Can$7.4 M
- Preliminary engineering completed.
- Detailed engineering underway.
- To be commissioned in 2018.

Up to 300 tpd, Can$30 M
- In negotiatiion with industrial and financial partners.

<2014
Lab and
Bench-Scale:
0.5 tpd

2014-2015
Pilot:
1 tpd

2015
Demonstration:
10 tpd

2016+
Commercial:
10-300 tpd; $37M
CAPEX in Canada

CO2 SOLUTIONS

Capture Technology Demonstrated

- 5 times less enzyme than the design basis
- CO_2 produced is at 99.95%+ purity
- No solvent degradation observed
- No solvent makeup required
- No toxic waste products generated
  - **Solvent sent to the municipal sewer**
- Operation with day shift operators only
- 3rd party validation of performance (Tetratech Inc.)

CURRENT COMMERCIAL PROJECT – 30 TPD SCALE

- Toundra Greenhouses (ST) – Resolute Forest Products (RFP)
- Commercial Contract
  - ✓ August 2016
- Detailed engineering underway

SERRES TOUNDRA (ST)
Saint-Félicien, QC

- Capture of up to 30tpd CO_2 from Resolute Forest Products' (RFP) pulp mill
- Utilize mill's low-grade / waste heat for process
- Reduce CO_2 output form mill
- Share carbon credits
- Supply of captured CO_2 to neighboring ST greenhouse complex through binding offtake agreement

Full CO_2 value chain enabled by CO_2 Solutions' technology

SOLUTIONS

Current CO_2 Utilization Project – 30 tpd Scale

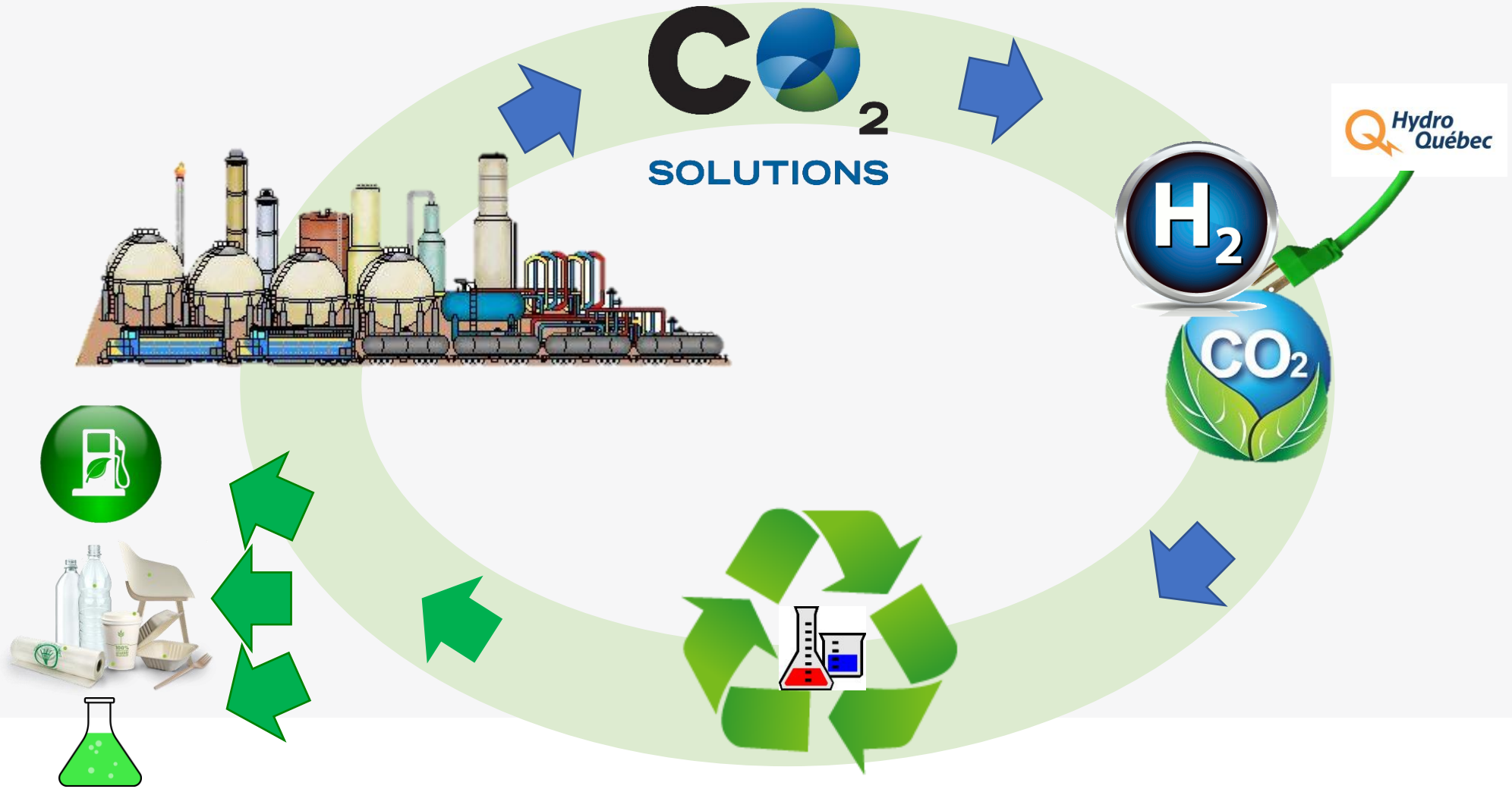
- Startup in Q3 of 2018

resolute
Forest Products

TOUNDRA
GREENHOUSE
SERRES

The Valorisation Carbone Québec Project

- The province of Québec has a 100% renewable power portfolio



VCQ Overview – a Unique Partnership

- Led by CO_2 Solutions in partnership with Laval University and Hatch
- $15 million grant from the Government of Québec (Green Fund) / $5 million in-kind contribution from the partners
- Goals
  - ✓ Industrially demonstrate (tpd scale) processes for CO_2 utilization into value-added products coupled to CO_2 Solutions' capture technology
  - ✓ Help industry reduce GHG emissions without damaging its ability to compete on economic terms
- Reviewing 100+ potential CO_2 utilization processes for demo
- Particular interest in processes that can use Québec's renewable/hydro electricity
- Parachem site selected as the VCQ demonstration site

VCQ Overview – Two Parallel Tracks

- Demonstration
  - Quickly setup capture and utilization demonstration, before end of 2017, combining:
    - The 10 tpd capture unit from CO_2 Solutions
    - Attach at least one CO_2 utilization unit to demonstrate
      - Technical feasibility
      - Economic viability
      - Generate data to support both
- Development
  - Assemble a multidisciplinary scientific team to accelerate the development of processes close to maturity
  - Solve issues related to scale-up
  - Establish development path to allow for demonstration before March 2019

VCQ Parachem Site in Montréal East

- Parachem (Former Gulf Refinery)
  - ✓ 51% owned by Suncor Energy;
  - ✓ Producer of paraxylene
- Available at site
  - ✓ Large site (6 000 sq. ft.)
  - ✓ H_2
  - ✓ Water: cooling, fresh, hot, and treatment
  - ✓ Compressed air
  - ✓ Offices, operators
  - ✓ Electrical power

CO2 SOLUTIONS

VCQ – CSI CO_2 Capture Technology Improvements

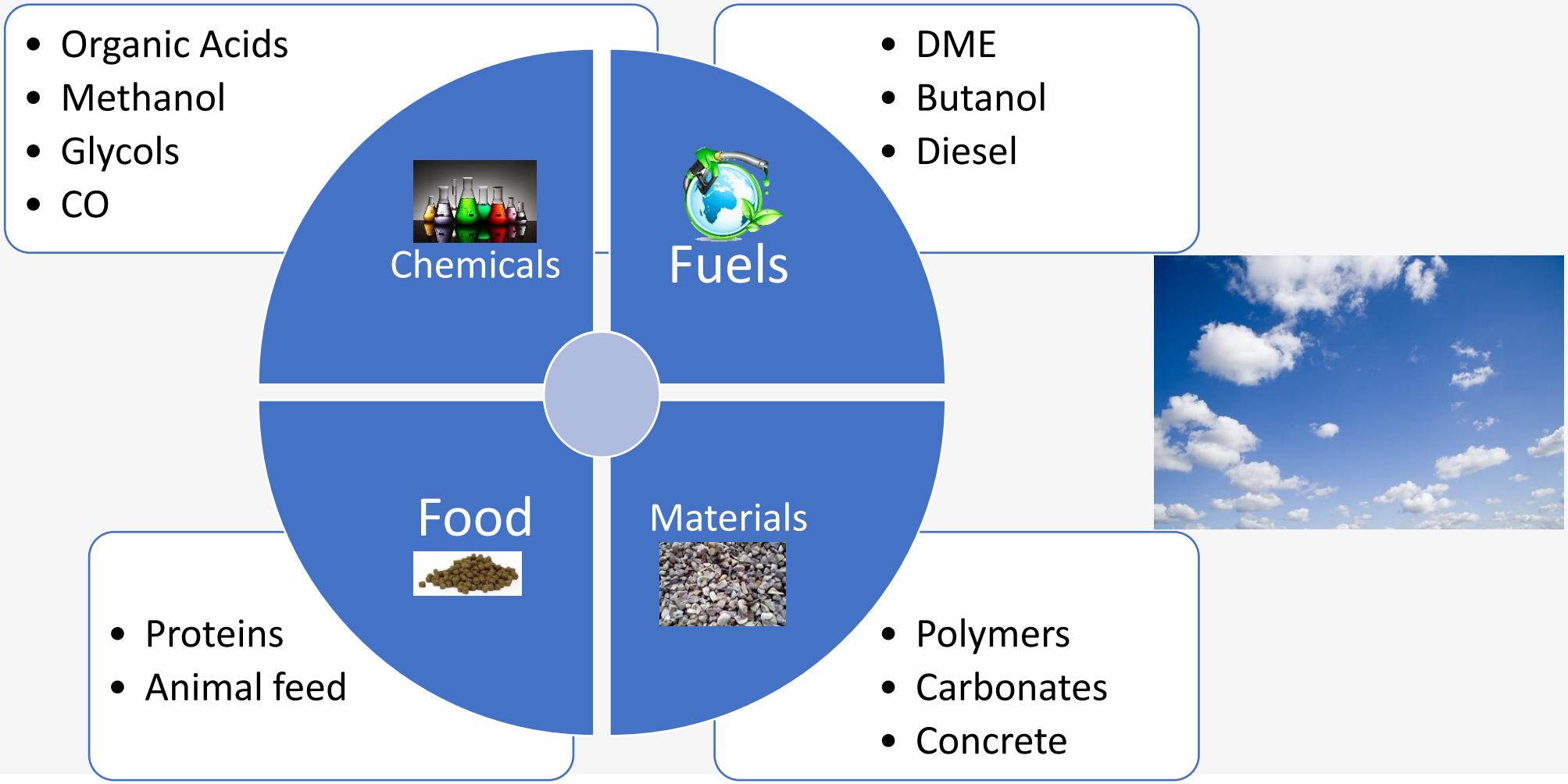
- Stripping
  - ✓ Reduce energy consumption further
  - ✓ Determine best-suited equipment and configuration
- Advance the application of high-intensity contactors
  - ✓ Test RPB at 10 tpd scale
  - ✓ Design container-sized capture unit
  - ✓ Accumulate process experience from many months of operation

A THOROUGH REVIEW OF UTILIZATION TECHNOLOGIES

- 100+ technologies reviewed (Laval University)
- Comprehensive list of criteria, double rating

Technology	Conversion type (Bio, chemical, hybrid) Efficiency of CO_2 conversion Number of reactions involved (complexity) Catalyst used (cost, lifespan) Product (output)
Process	Capacity demonstrated so far (tpd) Complexity of the separation process required Process conditions (P, T, …) Feeds required (H2, CH4, …) Energy involved (GJ/tonne CO_2) Energy type/quality (electricity, stream, …) Conversion costs using inputs ($/tonne CO_2)

VCQ - CO_2 Utilization Product Families

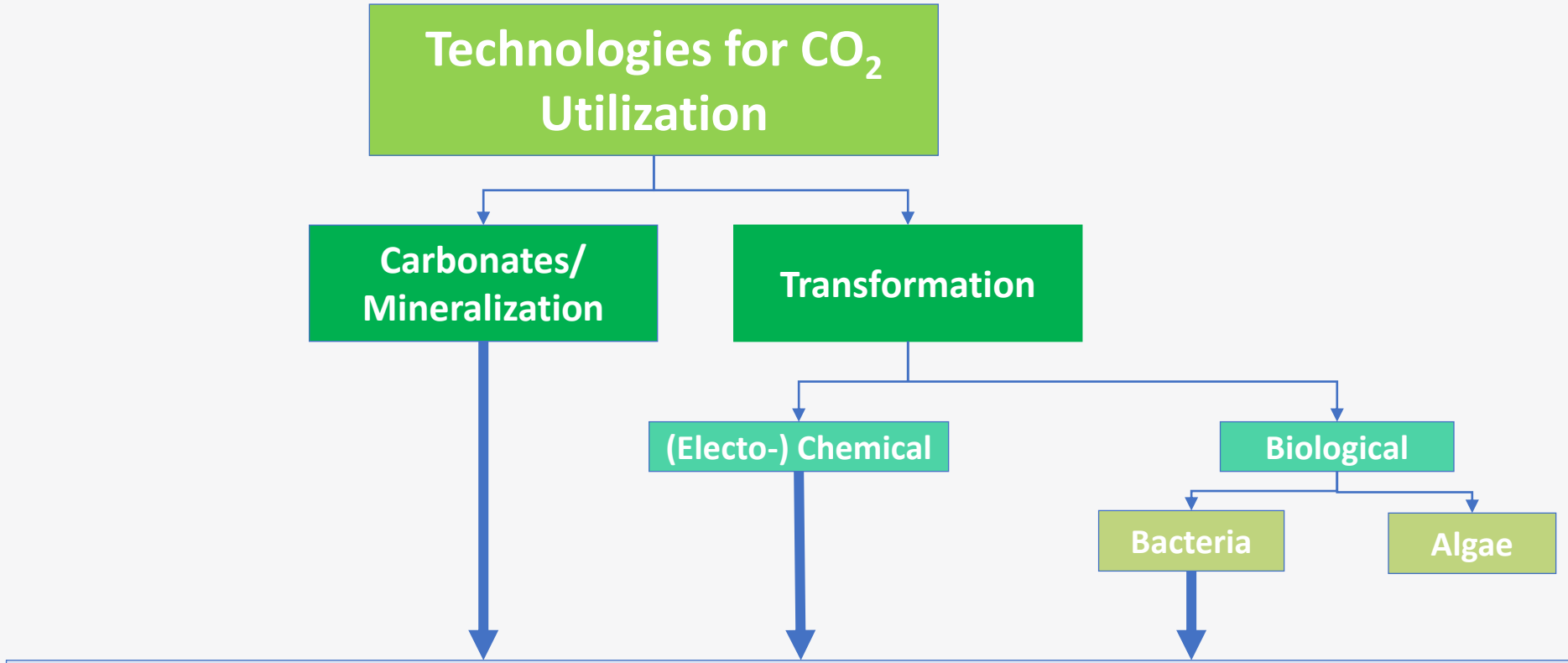


CO2 SOLUTIONS

ACETIC ACID – FIRST UTILIZATION TECHNOLOGY **SELECTED**

- Industrial ecology in Montreal East
  - ✓ Complete **Poly Ester Chain** already exists
  - ✓ Addition of CO_2 capture and utilization into Acetic Acid strengthens existing relationships

CO_2 Utilization – Routes and Impacts on Investments – Some Learnings



Scale	Commercial	Lab^{++}	Lab^{+}
CO_2 uptake (/wt)	<10%	50-80%	50-100%
Electricity	-	80% of the cost	50% of the cost
CAPEX to convert 20 tpd	<$5M	>$20M	>$20M

VCQ – Timeline Summary

- Since January 2017
  - ✓ Signature
  - ✓ Hatch Inc. officially named as the engineering partner
  - ✓ Laval University technology review
  - ✓ Scientific advisory committee launched
  - ✓ Acetic acid confirmed as first CO_2 utilization product
  - ✓ Completed relocation of CO_2 capture unit to Parachem site
  - ✓ Agreement under review with three more CO_2 utilization technologies
- August
  - ✓ Capture unit restarts at Parachem
- October
  - ✓ First CO_2 utilization unit installed and running
  - ✓ Agreements with up to three more CO_2 utilization technologies

CSI Summary

- Process performance confirmed
  - ✓ Enzyme stable in process
  - ✓ No toxic waste generation
  - ✓ No aerosol issues
  - ✓ No solvent degradation
  - ✓ Solvent
    - Can be eliminated in standard water treatment plant
    - Can be converted into fertilizers when spent
- Capture cost confirmed
  - ✓ **<30$/tonne @ 1250 tpd scale**
- Commercialization on its way
  - ✓ 30 tpd project is on its way, engineering completed
  - ✓ Up to 300 tpd project in Alberta – at negotiation stage
  - ✓ VCQ has started and will provide access to the most advanced CO_2 utlization technologies in the coming months

CO2 SOLUTIONS

VCQ – Seeking CO_2 Utilization Techs and Strategic Partners

- Fully paid demonstration site
- Providers of CO_2 utilization technologies get access to demonstration site
  - ✓ Funds available to support technology evolution
- Operation for up to 24 months to develop and mature technologies
  - ✓ Full access to performance evaluation for each technology, at all levels of maturity
- Access to first class engineering and expertise in H_2 production
- Privileged relationship with providers of CO_2 utilization technologies
  - ✓ Strategic positioning in the carbon market
- Visibility as leaders in the field
- **Still seeking additional strategic partners and technologies for demonstration**

CO2 SOLUTIONS

SOLUTIONS

Contact:

Louis Fradette VCQ Director
louis.fradette@co2solutions.com
www.co2solutions.com