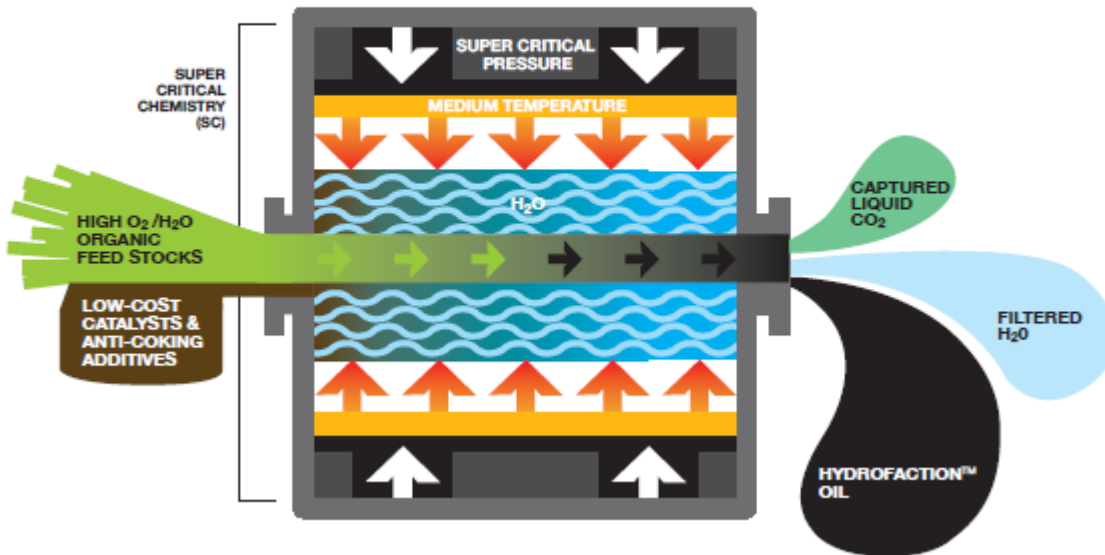


HYDROFACTION™ TECHNOLOGY

TRANSFORMING LOW-ENERGY DENSITY FEEDSTOCKS
INTO VALUABLE HIGH ENERGY LIQUID FUELS



*The 21st century world
is changing fast.*

*The way we produce
energy should change
with it.*

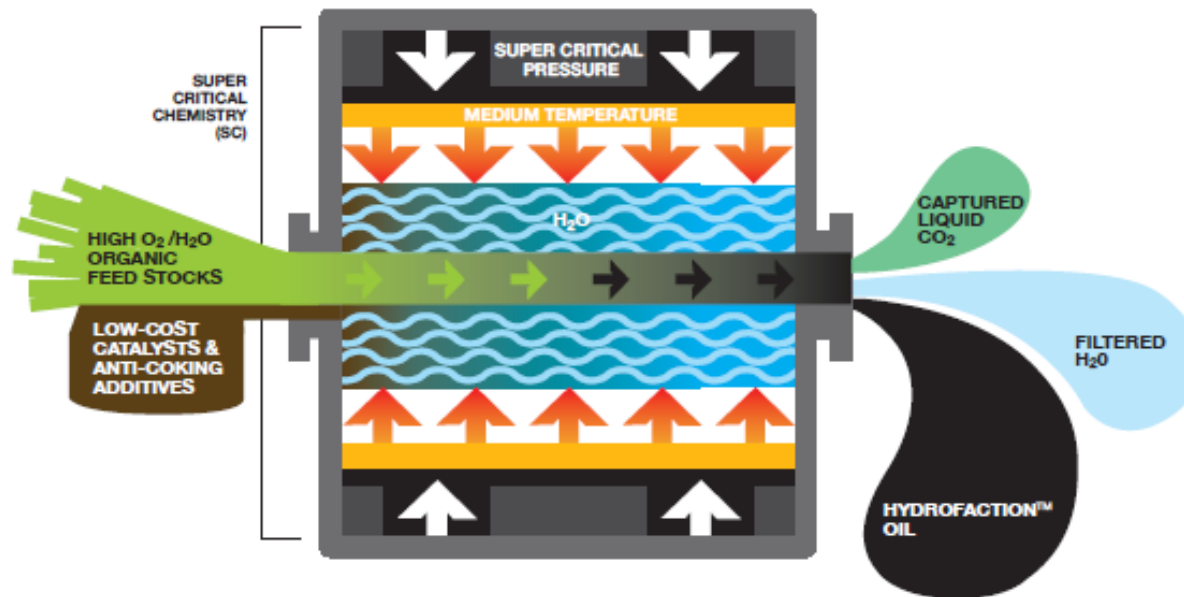
September 2013

Introduction

- **Steeper Energy Aps (“SEA”)** is a ***technology development*** company that has developed a proprietary supercritical hydrothermal upgrading technology platform known as Hydrofaction™
- **Steeper Energy Canada Ltd (“SEC”)** is a ***project development and commercialization*** company with projects under development that will utilize the Hydrofaction™
- The market opportunity for Hydrofaction™ is driven by 21st century concerns:
 - ✓ desire to source, integrate and consume more ‘*sustainable energy*’
 - ✓ the long-term cost of finding new ‘conventional’ petroleum
 - ✓ desire for energy security/diversification (source and scale)
- Hydrofaction™ technology unlocks massive undervalued resources at competitive costs.

Hydrofaction™ Technology

- **Hydrofaction™** uses 'super critical' (SC) chemistry ($\pm 400^{\circ}$ C and ± 5000 psi) to transform low-energy density feedstocks into valuable high-energy liquid fuels.

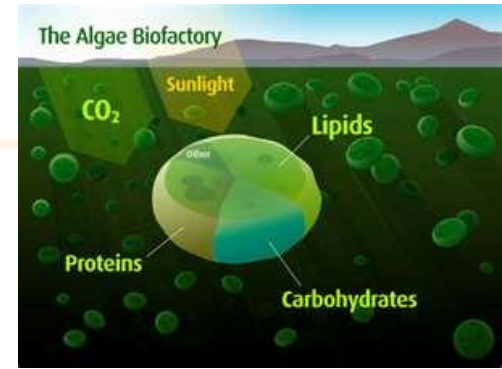


The **Hydrofaction™** process selectively removes O₂ from the lignite, peat or biomass molecular structure, increasing the H-C ratio and thus the energy density of the resulting Hydrofaction™ Oil.

Feedstock Flexibility



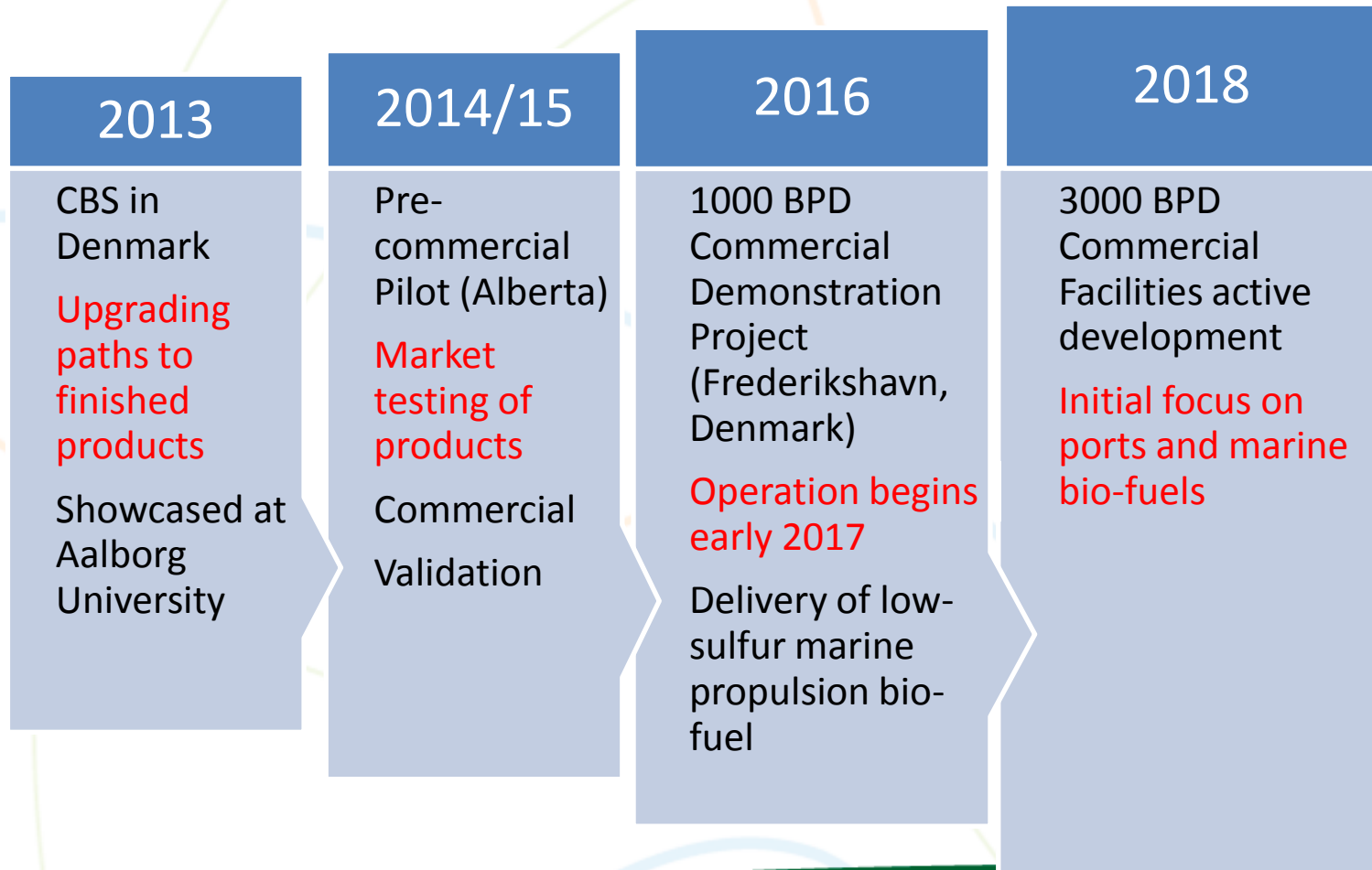
- 40 different feedstocks tested:
 - Forestry wastes & agricultural residues
 - Ancient biomass (lignite & peat)
 - Aquatic biomass (seaweed, algae & bacteria)
 - Other urban waste sources (MSW, SS and etc.)



Commercial Pathway

- **Hydrofaction™ Oil** is competitive with other non-conventional petroleum crude oils, such as Alberta oil sands, regarding:
 - ✓ Costs of conversion; and,
 - ✓ Scale of opportunity (when low value fossil resources considered).
- SEA was awarded grant from the Danish Department of Energy.
- The University of Aalborg (Denmark) Department of Energy Technology has purchased Steeper's 5-15 kg/hr scale Hydrofaction™ and Steeper has entered an active collaboration agreement with Aalborg for the next 5 years.
- SEA has applied for a further Danish Department of Energy grant (decision Oct/Nov 2013).
- SEC has signed an LOI with the Port of Fredrikshavn, Denmark, to design, build and operate the world's first bio-refinery for marine propulsion bio-fuel by 2017.

The Path to Commercial Success



Continuous Bench Scale or CBS1 (Denmark)

- Current Status
 - Commissioned/Decommissioned Copenhagen
 - Re-commissioned @ Aalborg University
 - Operating under 5-year collaborative agreement



Continuous Bench Scale or CBS1 (Denmark)

- Next Steps
 - Ongoing Commercial Biomass Characterization (incl. pulp streams)
 - Lignite Coal Testing
 - Other Fossil Testing – *bitumen derivatives?*
 - Other Organic Wastes
- Operating and Testing/Upgrading Oil
 - JDI with AITF for Testing of Oil and Feedstocks
 - CANMET-Devon Oil Upgrading

Pilot Scale Project (Alberta)

- Investigating various project sites and strategic partners
- Proposed pre-commercial pilot project will contribute significantly to reducing the perceived scale-up risks for the Commercial Demonstration Project in Denmark
- Design work underway

Frederikshavn Havn (Denmark)

Commercial Demonstration Project

- Letter of Intent signed with Port of Frederikshavn, Denmark, for 1000 BPD (scalable to 3000 BPD) marine propulsion bio-fuel refinery in August 2013
- In operation by 2017
- To help meet low-sulfur fuel requirements
- High-level design through Zeton (Engineering Inc.)
 - In conjunction with CPS design



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Biomass



Synthetic crude oil



September 2013