

December 18th, 2019

**Director General**

Trade and Anti-dumping Programs Directorate  
Canada Border Services Agency  
100 Metcalfe Street, 11<sup>th</sup> floor  
Ottawa ON K1A 0L8

**RE: Application for Scope Review – Enerkem Inc. (FISC 2016 IN)**

On behalf of Enerkem Inc. (Enerkem), we are requesting a scope ruling for industrial Specialized Prefabricated Process Units (SPPU) used in building a biofuel facility.

Due to commercially sensitive and proprietary information, both a public and confidential application have been prepared. Release of information that is marked as confidential may cause significant injury to Enerkem and its associates if disclosed.

Cole International is representing Enerkem in this matter and we are authorized to communicate with you directly on their behalf.

Best regards.



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## **IDENTITY OF THE APPLICANT**

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Enerkem Inc. is a private company, founded in the year 2000. It is headquartered in Montreal, Canada and is majority-owned by institutional, clean technology and industrial investors. Enerkem Inc. implements facilities that utilize municipal solid waste to produce clean fuels and renewable chemicals. In addition to licensing its technology, the company provides fully fabricated Specialized Prefabricated Process Units, equipment and handles assembly on site.

Enerkem Varennes will be the first facility in Quebec that will produce cellulosic biofuels from non-recyclable residual materials (RDF). The facility will produce liquid methanol by converting RDF waste materials from the institutional, commercial and industrial sectors, as well as construction and demolition debris. The future facility will take into account the best practices and learnings following the construction and operation of the world's first commercial facility, Enerkem Alberta Biofuels, located in Edmonton, Alberta.

## **APPLICABLE MEASURE**

The purpose for requesting a scope ruling is to determine if Specialized Prefabricated Process Units (SPPU) made up of fabricated steel components and process equipment are subject to the decision and duties as outlined in the Fabricated Industrial Steel Components case.

### **Fabricated Industrial Steel Components (FISC 2016 IN)**

"Fabricated structural steel and plate-work components of buildings, process equipment, process enclosures, access structures, process structures, and structures for conveyancing and material handling, including steel beams, columns, braces, frames, railings, stairs, trusses, conveyor belt frame structures and galleries, bents, bins, chutes, hoppers, ductwork, process tanks, pipe racks and apron feeders, whether assembled or partially assembled into modules, or unassembled, for use in structures for:

1. oil and gas extraction, conveyance and processing;
2. mining extraction, conveyance, storage, and processing;
3. industrial power generation facilities;
4. petrochemical plants;
5. cement plants;
6. fertilizer plants;
7. industrial metal smelters;

originating in or exported from the People's Republic of China, the South Korea, and the Kingdom of Spain."

## **GOODS FOR WHICH THE RULING IS REQUESTED**

We are requesting a scope ruling to determine whether Specialized Prefabricated Process Units (SPPU) intended to be imported by Enkern, will be considered subject goods as per the Canadian International Trade Tribunal's finding for Inquiry No. NQ-2016-004.

The Enkern Varennes Facility will convert non-recyclable residual materials to methanol, a biofuel. Raw material (waste) includes wood residue of bark, construction and demolition wood, mixed plastics and fiber, and sorting center rejects.

The facility will be complex and modularized. Facility SPPU consist of fabricated steel support frameworks and basic processing equipment such as heat exchangers, valves, strainers, pumps, towers, pressure vessels, reactors and demisters. Once imported, the SPPU will be inter-connected together onsite to form the complete facility. Equipment, steel components, piping, instrumentation, electrical and insulation will be potentially sourced in multiple countries, for incorporation into SPPU. At the time of import into Canada, SPPU will have been assembled by bolting and/or welding together fabricated steel with the processing equipment specifically designed for installation at the facility.

Enkern is considering sourcing the SPPU from various countries including South Korea, China, or Spain. Process equipment may be shipped to the fabricator in one of these countries for incorporation into a module built from steel sourced in that same country of fabrication.

Approximately 107 SPPU will be required in building the biofuel facility. SPPU will be built in a fabrication yard by assembling a structural steel framework and incorporating process equipment, piping, steel, instrumentation, electrical and insulation. Interconnection of the SPPU occurs at the facility site.

It is estimated that the total FISC value for the plant represents 7% of the entire project value.

The total steel weight potentially sourced from South Korea, China, or Spain, represents approximately 19% of the entire project value.

The biofuel facility will be constructed of the following equipment:

**1) Structural components** of Specialized Prefabricated Process Units (SPPU) include the following:

- Main structural columns and beams
- Secondary structure for pipe supports
- Temporary structure for transport
- Shipped loose structure
- Lifting lugs
- Structural bracing
- Stairs
- Platforms
- Handrails
- Ladders and safety cages
- Grating
- Trolley beams
- Bases plates and bracing connections

Approximately 31,000 feet of piping ranging from 0.5 inches to 30 inches in diameter will be used to connect Specialized Prefabricated Process Units (SPPU).

**2) Piping** includes the following:

- Carbon steel piping
- Stainless steel piping
- Super Duplex stainless steel
- Copper piping
- Tubing
- All fittings (flanges, elbows, tees, reducers, gaskets, nuts, bolts, blinds, plug, pipe supports)

**3) Valves**

Approximate Quantity

- |                          |       |
|--------------------------|-------|
| ▪ Manual valves          | 3,000 |
| ▪ Control valves         | 500   |
| ▪ Pressure safety valves | 100   |

All valves are composed of:

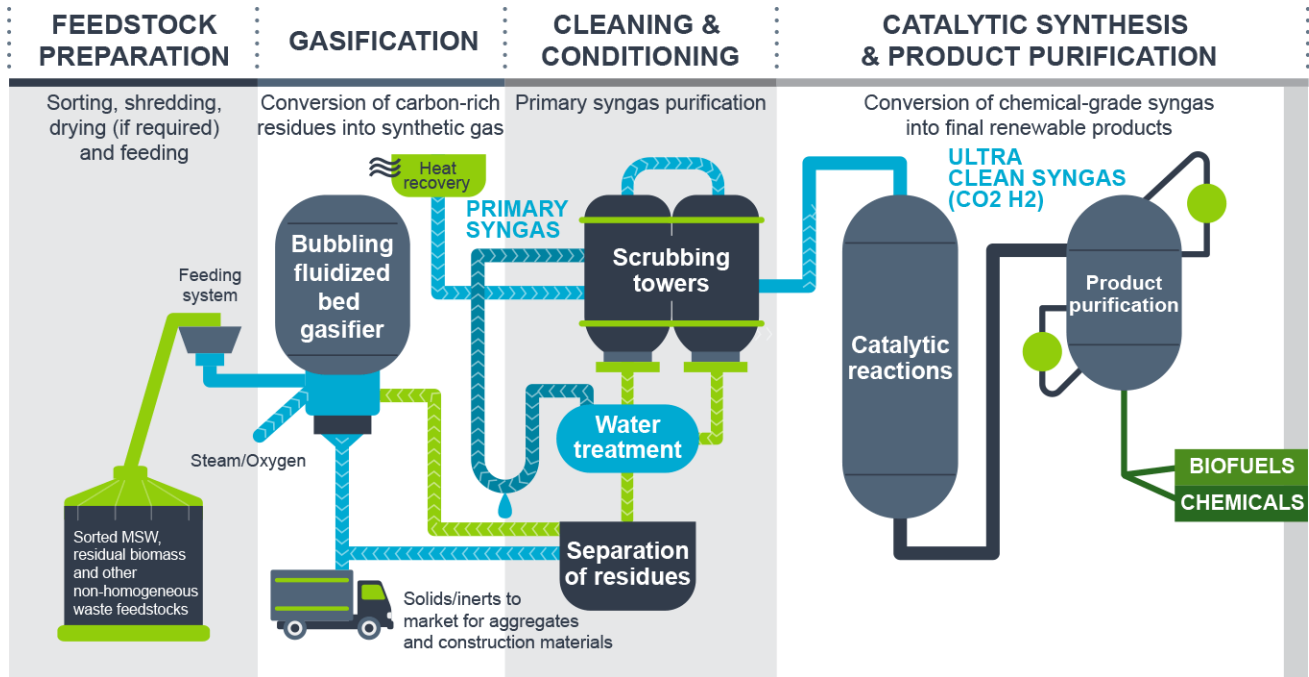
- Carbon steel valves
- Stainless steel valves
- Super Duplex stainless steel valves
- From 0.5 inch to 30inch diameter valves

**4) Major Equipment**

- Heat Exchangers
- Columns
- Vessels
- Pumps
- Demisters
- Strainers
- Scrubbers

The process overview for the facility is provided below in detail.

Fig.1)



Enerkem's patented technology chemically recycles the carbon contained in non-recyclable, non-compostable waste. In less than 5 minutes, Enerkem's process first converts this carbon into a pure synthesis gas (also called syngas), which is then turned into biofuels and chemicals, using commercially available catalysts.

Enerkem's 4-step thermochemical process (fig. 1):

- **1. Feedstock preparation:** The waste used as feedstock is first sorted to remove recyclable materials and inert materials. The waste is then shredded for use.
- **2. Advanced Gasification:** The resulting material is fed to proprietary bubbling fluidized bed gasification vessel to break down the shredded waste into its constituent molecules, a process that is called thermal cracking. In the same reactor, these broken-down molecules are then blended with steam to produce syngas. This is a patented technology that is capable of breaking down chemically and structurally dissimilar waste and plastic materials and converting them into a pure, chemical-grade, stable and homogeneous syngas. The resulting syngas is rich in hydrogen and carbon monoxide, which are key building block molecules used in modern chemical processes.
- **3. Cleaning and conditioning of the syngas:** The crude syngas, composed mainly of carbon monoxide, carbon dioxide and hydrogen, is fed into a proprietary syngas cleaning and conditioning process which upgrades the crude syngas to chemical-grade so that it can be refined into liquid fuels and chemicals. It is through the combination of the bubbling fluidized bed

gasification reactor and the proprietary syngas cleaning and conditioning process that the company is able to control the purity of the syngas and its composition.

- **4. Conversion into liquid fuel and renewable chemicals:** The last component of the proprietary process is the catalytic conversion of the chemical-grade syngas into liquid methanol. A combination of in-process controls and quality analysis are used to ensure and confirm that all of the company's products consistently meet the required specifications.

## Feedstock Materials

(Waste Material RDF) Specification

- Wood residue
- Mixed plastics and fiber:
- Sorting center rejects:

Typical waste appearance and shape:



Waste plastic & fiber



Wood bark



Sorting center rejects



**Fig. 2) Public**

Photographs of Enkern Alberta Biofuels facility, located in Edmonton, Alberta. (Public)



**Fig. 3) Public**



**Fig. 4) Confidential**

Photograph of a Specialized Prefabricated Process Units (SPPU)

**Fig. 5) Confidential**

Photograph of a Specialized Prefabricated Process Units (SPPU)

**PRODUCERS & EXPORTERS**

Enerkem has not yet purchased equipment or Specialized Prefabricated Process Units (SPPU) due to the possible implications to the project cost if the fabricated steel components are considered to be subject goods. Decisions will be made for sourcing vendors once the scope ruling has been issued.

The manufacturing capacity in Canada is very limited. Most manufacturers are small enterprises and have limited capacity and capabilities which hinders their ability to provide large complex project execution requirements for reporting, documentation, quality, delivery schedule, and commercial guarantees. Very few suppliers possess the internal expertise to take on complex industrial equipment design and provide the associated performance guarantee.

A list of potential Canadian suppliers who may be capable of fabricating some of Enerkem's equipment, structural steel and specialized prefabricated process units has been provided on a confidential basis in The Ethanol Cellulosique Varennes (ECV) Waste to BioFUEL Processing Facility document, section 4.6 Potential Supplier List.

**HS CLASSIFICATION**

We believe that the correct tariff classification for the Specialized Prefabricated Process Units is 8419.90.00.90 as parts of distilling or rectifying machinery classified under 8419.40.00.00. A request for an Advance Ruling for Tariff Classification has been submitted and is pending with the CBSA.

**OTHER PARTIES**

There are no other parties to this application.

**OTHER INFORMATION**

Due to the potential financial implications and uncertainty of subjectivity for duties under the FISC case, Enerkem Inc., has not yet finalized contracts with vendors.



## **APPLICANT'S POSITION**

It is our position that fabricated steel components incorporated into Specialized Prefabricated Process Units (SPPU) and used in a biofuel facility would not be considered as one of the seven end uses listed in the product definition of the FISC case.

Waste material for the biofuel facility will be made up of wood residue, mixed plastics and sorting center rejects.

Petrochemical plants convert natural resources such as crude oil, natural gas, ores and minerals into products for a wide range of applications.

Raw material will not be obtained from natural resources such as crude oil, natural gas, ores and minerals.

## **CONCLUSION**

Based on the information presented, we are of the opinion that the Biofuel fabricated Specialized Prefabricated Process Units (SPPU) are outside of the scope of the subject goods definition of the FISC case. The Specialized Prefabricated Process Units (SPPU) do not fall under any of the seven industries listed in the FISC 2016 IN case.