

## Environmental screening Process

REMASCO Gasifier Project

## Approvals in Ontario

- Any construction in Ontario requires some types of government approval
  - Buildings are covered by codes and must get municipal approval
  - Any source that emits to the atmosphere requires a Certificate of Approval (Air) from the MoE although there are exceptions:
    - Smaller buildings with limited heating installations;
    - Agricultural buildings.
  - Roads, rail lines, power transmission lines, wind farms all require approval under Environmental Assessment Act

## REMASCO Project

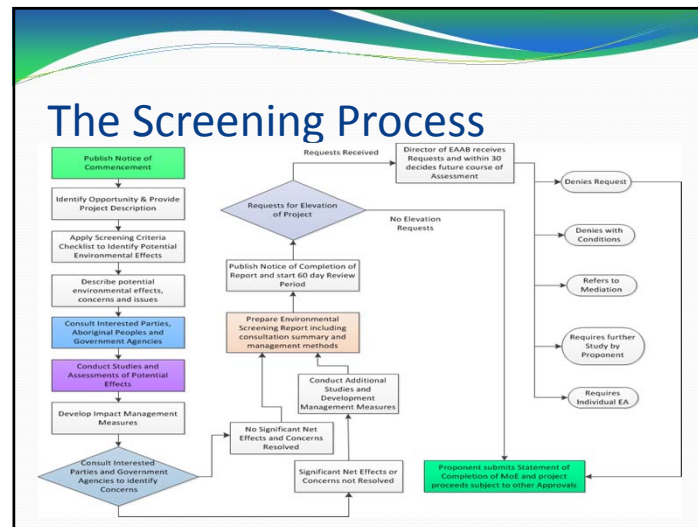
- REMASCO propose to use ENERPAX pellets to generate energy
- ENERPAX pellets are made from residual waste
- The MoE has designated the pellets as a waste
- Any facility handling waste is classified as a waste management facility
- Ontario Regulation 101/07 provides the Environmental Assessment Requirements for Waste Management Facilities
- REMASCO is not a waste management facility, but the proposed fuel is a waste thus REMASCO must undertake an environmental assessment

## Purpose of Process

- An Environmental Assessment seeks to examine the project and its interactions with the environment
- The Environmental Assessment Act defines environment into two broad categories:
  - the natural environment and in particular:
    - air quality;
    - water quality;
    - plants; and,
    - animals including humans; and,
  - the socio-economic environment
    - social, economic and cultural aspects such as those pertaining to industry, agriculture, tourism, First Nations Communities, and heritage resources.

## Requirements of Regulation

- The 101/07 Regulation defines different types of assessment procedures
- A full environmental assessment (Part II of the Regulation) for landfill site and large EFW facilities; or,
- A screening assessment for certain types of facilities including a thermal treatment site [REMASC0] if:
  - the site is located at a commercial, industrial or manufacturing facility;
  - the primary purpose of the facility is not waste management;
  - more than 100 tonnes of waste are received per day; and
  - the energy generated is recovered for use at the facility.



## Other Approvals

- Any facility handling materials characterised as waste requires a Waste Management Facility approval
- Typically with a release to the atmosphere would require a Certificate of Approval (Air) as well
  - Agricultural facilities are exempt but this facility will have the Air requirements as part of the Waste Approval
- Municipal approvals required for construction on the sites if new structures are needed

## Description of the Process

- The regulation requires that the proponent not divide a project up into little components
- REMASC0 envision that gasifiers will be installed at Southshore and Agriville to meet the heating needs of both the existing greenhouses on these sites, and proposed expansions of these facilities
- With the expansion at Southshore there is an opportunity to install a co-generation system to generate electricity and heat
- Project considered 3300 boiler HP at Southshore and 2000 boiler HP at Agriville as required by Regulation

## Study Area

- Early undertakings by REMASCO stated that an Air Quality and Human Health Risk Assessment would be completed
- That commitment assisted in defining the study area
  - South of a line from the intersection of County Road 3 and County Road 29 due east to the Kingsville Town Line
  - Approximately 13 square kilometres centered on a point half way between the Southshore and Agriville sites

## Study Area Description

- Stretches about 4.5 km north of lake
- Zoning within 2 km of lake largely residential with agricultural, commercial and institutional uses interspersed
- Agricultural includes:
  - About 120 ha of greenhouses at 23 separate complexes
  - Areas of orchards, vineyards and field crops

## Screening Process

- Designed to cover all environmental aspects
- Identify specific areas and ask whether the project might cause a change in that area
- 9 broad categories
  - Water quality; Land use; Air quality; Natural environment; Resource use; Community and Social structures; Heritage resources; Aboriginal land use; and Use of hazard land.
- 48 criteria in all

## Screening Criteria

CRITERION	YES	NO	CRITERION	YES	NO
1.1. have negative effects on surface water quality, quantity or flow?	X		51. result in inefficient (below 40%) use of a non-renewable resource (efficiency is defined as the ratio of input energy to input energy, where output energy includes electricity produced plus useful heat captured)?		X
1.2. have negative effects on ground water quality, quantity or movement?	X	X	52. result in generation of energy that cannot be captured and utilized?		X
1.3. cause significant sedimentation, soil erosion or shoreline or shorebank erosion on or off site?	X		53. result in practices inconsistent with water studies and/or water diversion targets (eg result in final disposal of materials subject to diversion program)?		X
1.4. cause potential negative effects on surface or ground water from accidental spills or releases (leachates) to the environment?		X	54. have negative effects on the use of Canada Land Inventory Class 1-3, specialty crop or locally significant agricultural lands?		X
1.5. have negative effects on residential, commercial or institutional land or other sensitive land uses within 100 metres of the site boundary?		X	55. have negative effects on existing agricultural production?		X
1.6. be inconsistent with the Provincial Policy Statement, provincial land use or resource management plans?		X	56. have negative effects on the availability of natural, aggregate or petroleum resources?		X
1.7. be inconsistent with municipal land use policies, plans and zoning by-laws (including municipal setbacks)?		X	57. be located a distance from required infrastructure (such as availability to customers, markets and other factors)?		X
1.8. use lands not zoned as industrial, heavy industry, or waste disposal?	X		58. have negative effects on the availability of forest resources?		X
1.9. use hazard lands or unstable lands subject to erosion?		X	59. have negative effects on genes and fishery resources, including negative effects caused by creating access to previously inaccessible areas?		X
2.0. have potential negative effects related to the remediation of contaminated land?		X	60. have negative effects on neighbourhood or community character?		X
2.1. have negative effects on air quality due to emissions of the parameters such as temperature, thermal treatment exhaust (eg gas volume, nitrogen dioxide, sulfur dioxide, oxidized sulfur, nitric oxide, hydrogen chloride, suspended particulates, or other pollutants)?		X	61. result in aesthetic impacts (eg visual and noise impacts)?		X
2.2. cause negative effects from the emission of greenhouse gases (CO <sub>2</sub> , CH <sub>4</sub> , methane)?		X	62. have negative effects on local businesses, institutions or public facilities?		X
2.3. cause negative effects from the emission of fluor or other? (acid rain)?		X	63. have negative effects on recreation, camping or tourism?		X
2.4. cause negative effects from the emission of noise?		X	64. have negative effects related to increases in the demands on community services and infrastructure?		X
2.5. cause light pollution from trucks or other operational activities on site?		X	65. have negative effects on the economic base of a municipality or community?		X
2.6. cause negative effects on trees (vulnerable, threatened or endangered species of flora or fauna or their habitat)?		X	66. have negative effects on local employment and labour supply?		X
2.7. cause negative effects on protected natural areas such as ANNs, EDNs or other significant natural areas?		X	67. have negative effects related to traffic?		X
2.8. cause negative effects on wetlands?		X	68. be located within 8 km of an aerodrome/airport reference point?		X
2.9. have negative effects on wildlife habitat, populations, corridors or movement?		X	69. interfere with flight paths due to the construction facilities with height (ie stacks)?		X
2.10. have negative effects on fish or their habitat, spawning, movement or environmental conditions (eg, water temperature, turbidity, etc.)?		X	70. cause public concerns related to public health and safety?		X
2.11. cause negative effects on sensitive or endangered species of flora or fauna or their habitat?		X	71. have negative effects on heritage buildings, structures or sites, archaeological sites or areas of archaeological importance, or other heritage buildings?		X
2.12. cause negative effects on sensitive or endangered species of flora or fauna or their habitat?		X	72. have negative effects on scenic or aesthetically pleasing landscapes or views?		X
2.13. cause negative effects on sensitive or endangered species of flora or fauna or their habitat?		X	73. cause negative effects on land, resources, traditional activities or other interests of Aboriginal communities?		X
2.14. cause negative effects on sensitive or endangered species of flora or fauna or their habitat?		X	74. result in the creation of new hazardous waste materials requiring disposal?		X
2.15. cause negative effects on sensitive or endangered species of flora or fauna or their habitat?		X	75. result in the creation of hazardous waste materials requiring disposal?		X
2.16. cause negative effects on sensitive or endangered species of flora or fauna or their habitat?		X	76. cause any other negative environmental effects not covered by the criteria outlined above?		X

## Criteria Evaluation

- Each of the Criteria are addressed in the Environmental Screening Report
- This amounts to a number of pages in the report
- Time is important so:
  - Will list the 37 criteria that the project is unlikely to effect first with brief explanation
  - Discuss the 11 criteria where there might be effects
  - The Air Quality issues will be addressed in a separate presentation as will the Human Health Risk Assessment

## Water Quality – No Effects

- have negative effects on ground water quality, quantity or movement?
  - No water taken, nor discharged to ground
- cause potential negative effects on surface or ground water from accidental spills or releases (leachate) to the environment?
  - All equipment on concrete pads a barrier between the soil and any material spilled.
  - No liquids outside the buildings and solid spills can be cleaned before they might present a concern.

## Land Use – No Effects

- have negative effects on residential, commercial or institutional land or other sensitive land uses within 500 metres of the site boundary?
- be inconsistent with the Provincial Policy Statement, provincial land use or resource management plans?
- be inconsistent with municipal land use policies, plans and zoning by-laws (including municipal setbacks)?
- use hazard lands or unstable lands subject to erosion?
- have potential negative effects related to the remediation of contaminated land ?

## Land Use No Effects Rationale

- Generally equipment installed inside existing greenhouse buildings on site already approved
- The REMASCO process is an adjunct use on the greenhouse lands needed to heat the greenhouses
- All greenhouses have heating systems so no different than other sites
- Will be done within requirements of the municipality
- Conclusion no effect on those land use items listed on the previous slide

## Air Quality – No Effects

- cause light pollution from trucks or other operational activities on site?
  - Unlike a landfill where large volumes of trucks operating late can create this type of effect, limited trucks used to deliver pellets and remove residues from the site
  - Not anticipated to be an effect

## Natural Environment – No Effects

- cause negative effects on rare (vulnerable), threatened or endangered species of flora or fauna or their habitat?
- cause negative effects on protected natural areas such as ANSIs, ESAs or other significant natural areas?
- cause negative effects on wetlands?
- have negative effects on wildlife habitat, populations, corridors or movement?
- have negative effects on fish or their habitat, spawning, movement or environmental conditions (e.g., water temperature, turbidity, etc.)?
- increase bird hazards within the area that could impact surrounding land uses (eg airports)?
- have negative effects on locally important or valued ecosystems or vegetation?

## Natural Environment - No Effects Rationale

- the sites are on lands occupied by existing greenhouse operations in fields that have been cultivated in the past.
  - No additional displacement since cultivation has done that
  - Municipal drains could be influenced but discussed later
  - Pellets are stored in siloes, have little odour and will not attract birds so no impact
  - No ecosystems identified on lands

## Resources – No Effect

- result in inefficient (below 40%) use of a non-renewable resource?
- result in generation of energy that cannot be captured and utilized?
- result in practices inconsistent with waste studies and/or waste diversion targets (eg result in final disposal of materials subject to diversion programs)?
- have negative effects on the use of Canada Land Inventory Class 1-3, specialty crop or locally significant agricultural lands?
- have negative effects on existing agricultural production?
- have negative effects on the availability of mineral, aggregate or petroleum resources?
- be located a distance from required infrastructure (such as availability to customers, markets) and other factors?
- have negative effects on the availability of forest resources?
- have negative effects on game and fishery resources, including negative effects caused by creating access to previously inaccessible areas?

## Natural Resources - Rationale

- No forestry, aggregate, petroleum, fishery or game resources on site so no possible influence
- Enhances the use of agricultural land and ensures good production because supplies heat so a positive effect
- Recovers over 70% of the energy from the pellets
- Energy is used on site so no limitations on use
- Uses a product (ENERPAX pellets) from materials that would otherwise have been landfilled so a positive benefit

## Socio-Economic – No Effect

- have negative effects on neighbourhood or community character?
- result in aesthetics impacts (eg visual and litter impacts)?
- have negative effects on local businesses, institutions or public facilities?
- have negative effects on recreation, cottaging or tourism?
- have negative effects related to increases in the demands on community services and infrastructure?
- have negative effects on the economic base of a municipality or community?
- have negative effects on local employment and labour supply?
- be located within 8 km of an aerodrome/airport reference point?
- interfere with flight paths due to the construction of facilities with height (ie stacks)?

## Socio-Economic - Rationale

- Little opportunity for the REMASCO facilities to create negative impacts on the neighbourhood or the community.
  - Pellets arrive in a closed truck, stored in a closed silo, and fed to the gasifiers through an enclosed fuel transfer system.
  - Pellets will not create a litter or visual impact, nor to cause any negative impacts on local businesses, institutions, or public facilities, nor to conflict with recreation or tourism in the area.
  - Pellets will not attract vectors or birds and no increase in bird populations in the area to affect aviation activities.
  - The operators can expand operations with assured energy costs creating more product and more economic spin offs to community.

## Heritage Resources – No Effect

- have negative effects on heritage buildings, structures or sites, archaeological sites or areas of archaeological importance, or cultural heritage landscapes?
  - installed on agricultural land that has been disturbed and unlikely to find any undisturbed archaeological sites
- have negative effects on scenic or aesthetically pleasing landscapes or views?
  - Land around the two sites is relatively flat
  - Site lines are unlikely to be disrupted as far removed from the road and shielded by existing greenhouses

## Aboriginal Community – No Effects

- cause negative effects on land, resources, traditional activities or other interests of Aboriginal communities?
  - Being cultivated land it can be assumed that there is little Aboriginal activity on the properties or surrounding lands
  - No comments have been received from local Aboriginal leaders

## Other Effects

- cause any other negative environmental effects not covered by the criteria outlined above?
  - No other effects were identified by the study team or mentioned by those contacted about the project or those attending public meetings

## Potential Effects

- There are 11 criteria that required further investigation as initial review suggested that there were possibilities that the project could cause some negative effects
- These were
  - Water related impacts (2)
  - Air related impacts (4) and the associated potential for concern about air pollution in the community (1)
  - Traffic concerns (1)
  - Land use not designated as industrial or waste management (1)
  - Waste generation on site (2)

## Land Use – Possible Effects

- use lands not zoned as industrial, heavy industry, or waste disposal?
  - The installations have been deemed adjunct to the operation of the greenhouses, an approved agricultural use for the land – they supply heat and electrical energy
- This designation makes the installations an approved use on the subject sites

## Air Quality Effects

- have negative effects on air quality due to emissions of nitrogen dioxide, sulphur dioxide, opacity, hydrogen chloride, suspended particulates, or other pollutants?
- cause negative effects from the emission of greenhouse gases (CO<sub>2</sub>, CO, methane)?
- cause negative effects from the emission of dust or odour?
- cause negative effects from the emission of noise?
  - Defer this to the detailed air quality study discussion

## Water Related Effects

- have negative effects on surface water quality, quantities or flow?
  - Having more land covered with buildings can increase runoff from the site
  - Increased runoff has the potential for soil erosion
  - Erosion can increase silt discharge
  - Concerns about process water discharges to local drainage ditches/municipal drains
- Storm water control plans are required for sites
- Water from facilities will be collected in holding tanks and used for ash quenching in facility, or hauled off-site to the water treatment facility – no discharges to municipal drains

## Water Related Effects (2)

- cause significant sedimentation, soil erosion or shoreline or riverbank erosion on or off site?
  - Possible for construction activities to increase run off in short term
  - Construction contracts will require appropriate measures to limit run-off to municipal drains
- By controlling storm water flow from site and not releasing process water to municipal drains there will be no long term impacts

## Traffic Impacts

- have negative effects related to traffic?
  - Worst case operating situation - 10 trucks could enter and leave the Southshore site each day
    - Deliver pellets
    - Remove residues
  - Traffic data from the County notes that 10,000 vehicles a day pass the site on Seaclyff east of Union.
- With limited number of trucks entering the site, it is unlikely that there will be any impact on local traffic.



## Residue Effects (1)

- result in the creation of non-hazardous waste materials requiring disposal?
  - Gasifier ash defined as non-hazardous under O.Reg.347
  - No restrictions on the disposal of this material
  - Arrangements made with EWSWA to dispose in landfill
  - Will be tested periodically
- Managed in this manner no negative impacts from gasifier ash

## Residue Effects (2)

- result in the creation of hazardous waste materials requiring disposal?
  - Boiler ash and residue from the Air Pollution Control system is classified as a hazardous waste
  - Containers of these residues are tarped and hauled by a company licensed by the MoE to a disposal site capable of safely handling this material.
- With the due diligence exercised in the handling and disposal of these materials they pose no threat to the environment or human health.

## Community Concerns

- The community has expressed concerns mainly about air emissions
  - Recognizing this the Air Quality Study and Human Health Risk Assessment were undertaken
- These are presented in the next sections of this evening's presentations