

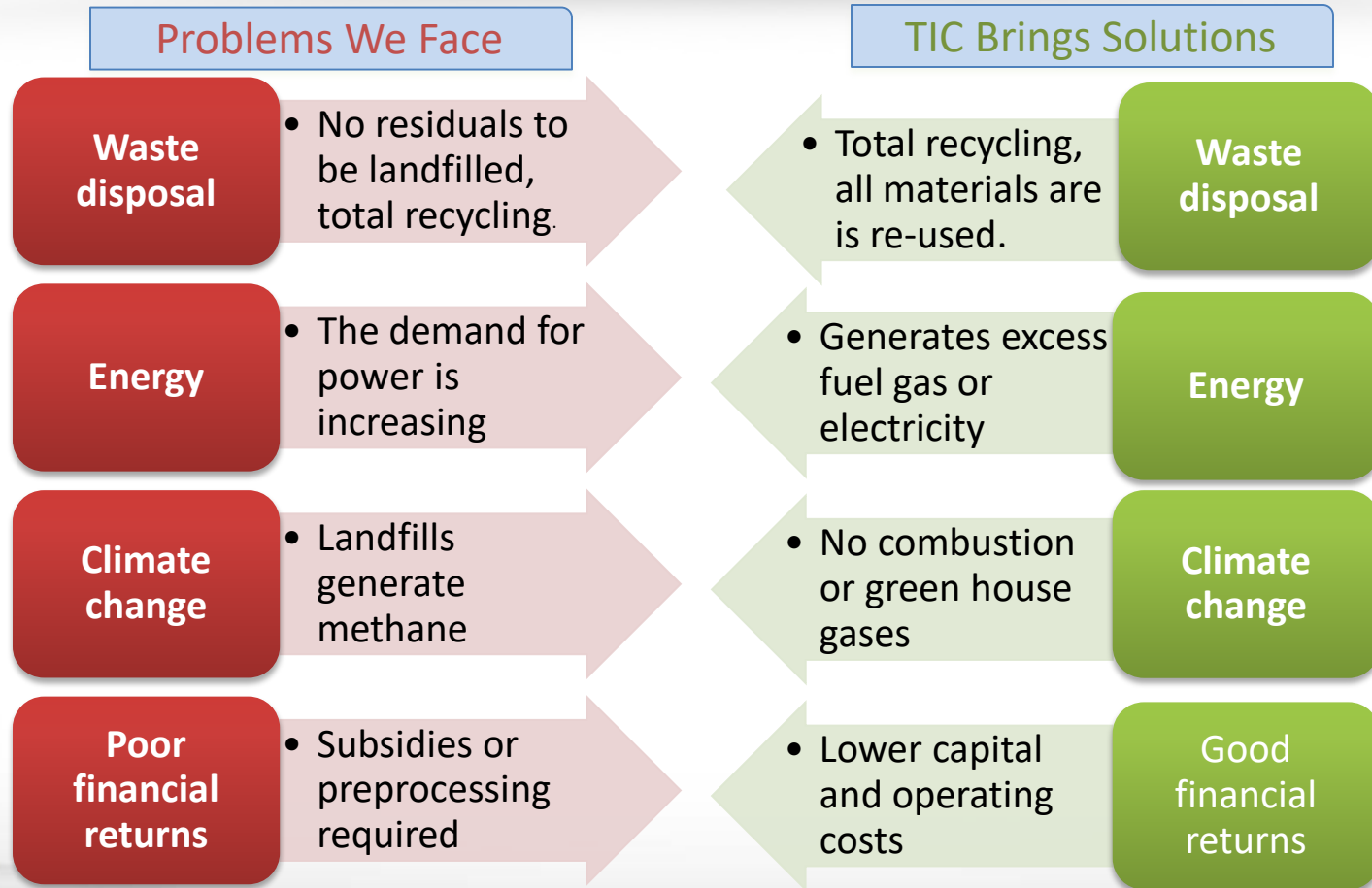
# Technologies International Corporation

This clean environment technology relies on a reverse engineered steel making process that is unique. Electric arc furnaces are used worldwide by the iron and steel industry to generate heat. The same high temperature technology has been adapted to gasify organic materials and convert inorganic waste materials into useful, valuable items. For example, the organic portion (paper, vegetables, etc) of municipal solid waste (MSW) can be converted to syngas, developing enough net energy to power the system and generate by products from the inorganic and metallic wastes. The metals can be collected as ingots and the inorganic slag can be used to make concrete aggregate or commercial products such as rock wool insulation. Besides MSW, this technology can be applied to coal ashes (from electric utilities) to extract significant concentrations of iron as well as nationally, strategically important rare earth elements (REEs). REE recovery from coal ash was successfully demonstrated under contract to the DoE.

The equipment is off-the-shelf and widely used worldwide by the steel industry. The inherent chemistry was developed back in the late 1800's by J Willard Gibbs and the Gibbs enthalpy of formation provides a guide to the energy required to reform wastes. TIC has extensive experience in thermal processes and has no direct competitors in this arena.

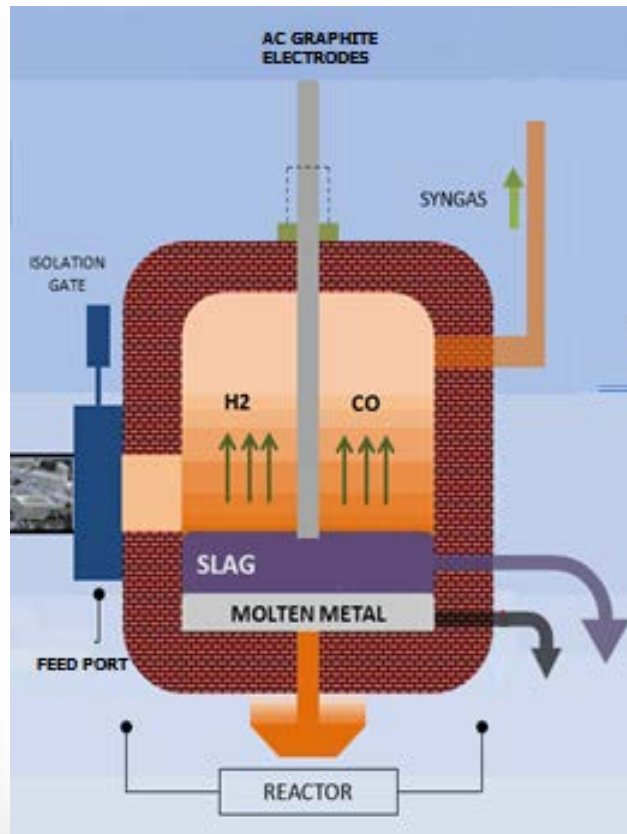
# TIC Competitive Advantage – Waste-to-Energy Solution

100% clean renewable energy and valuable by-products



# Technologies International Corp. Gasification Process

A/C Graphite Electrode Furnace preferred over DC for gasification



- Arc rotates between three electrodes
- The rotation of the arc imparts a stirring to the bath, increasing furnace efficiency
- Electrodes are used in brush mode, which concentrates heat at the surface of the bath where it is most needed for the gasification reactions
- This is the most commonly used furnace type in steel and smelting operations
- TIC uses an extruder type feeder to introduce waste at the side of the furnace. The extruder feeder eliminates extraneous air in the system, which results in a cleaner, richer syngas.

# Industry partners, customer research

- **TIC has worked with several major industry partners:**
  - Front End Engineering Design (FEED) has been done for two 250 tons per day plants by CH2MHill
  - Tenova has worked with TIC on the design of the furnace
  - Technip, URS and other engineering companies have reviewed and endorsed the system design
  - Technology has been reviewed by Juniper and New Energy Finance
- **TIC has looked at diverse markets for the technology:**
  - Waste Haulers who pay to dispose of waste in landfills
  - Municipalities that have landfills that may be close to full capacity
  - Waste Incinerators which need cost effective disposal of fly ash
  - Coal fired power plants that have issues with coal ash storage
  - Refineries that can convert their waste to Hydrogen

# Go to Market plan and Vision Statement

## Go to Market Plan

- Obtain funding to build prototype for demonstrations.
- Select potential users and demonstrate the efficiency of the system .
  - Fly ash producers to convert the ash to mineral wool and recover iron
  - Tires to recover stainless steel from the cords while generating significant amounts of syngas
  - E-waste to recover valuable metals.
  - Continue to work with CSX to pursue potential customers for areas they serve that generate large amounts of different kinds of waste

## Vision Statement

- To create a company that can process low or negative value wastes and convert them into profitable products.
- Build a couple of smaller industrial installations to have an installed base. Larger plants may be too capital intensive for a first sale.
- Create a revenue stream from the sale of the equipment plus an annual fee for performance monitoring of the system
- Expand internationally, where thermal technologies are better understood and accepted.