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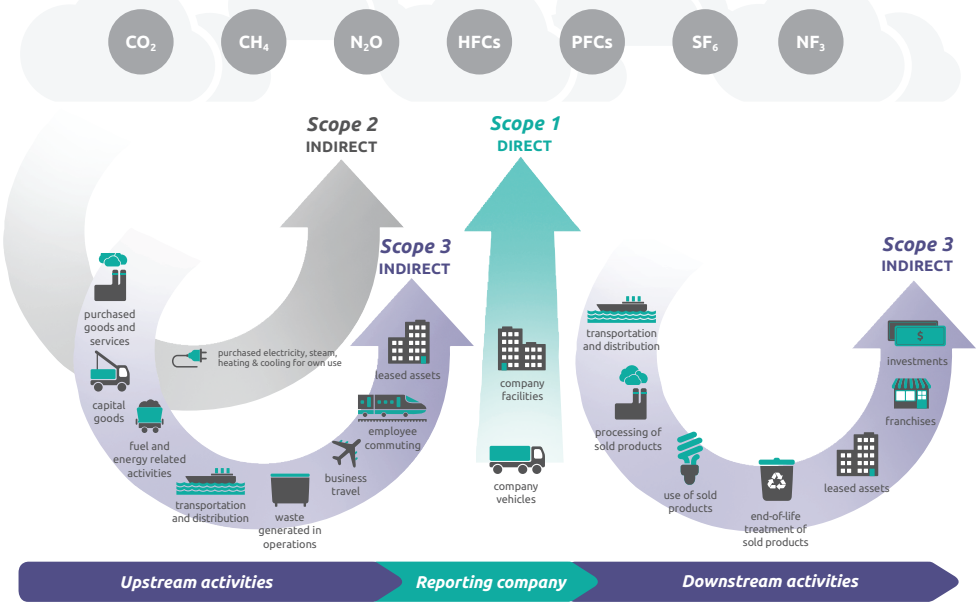
Sultech has developed a line of renewable and sustainable fertilizer products that dramatically reduce Scope 3 impacts. Sultech provides a meaningful reduction of GHG emissions to host sites regardless of the method used for calculation.

The patented exothermic process utilizes molten sulphur with minimal creation of additional GHG emissions. Enough renewable power will be generated over the course of a year to offset the 480kW required to run 100k metric tons (we can offset the complete carbon footprint of a facility with solar panels on the roof). Our facility can utilize excess steam from the gas plant, as well as excess power to optimize usage of consumables at the host site. Sulphur comes off the back of the plant with a neutral GHG score, but the processing, handling, and disposal of the by-product can impact the producing company.

A host company has to recognize the full "cradle-to-grave" impacts of all outputs, and Sultech turns this problem into an opportunity.

# Sultech's GHG Protocol Scope 3 Impact Summary




Overview of GHG Protocol scopes and emissions across the value chain
Source: Figure 1.1 of *Scope 3 Standard.*

There are two basic ways to account for emissions associated with a material or product: Life Cycle Emission Factors or Cradle-to-Gate (at times referred to as upstream) emission factors. These include emissions that occur in the life cycle of the material and product. Below is a brief summary of how Sultech improves the environmental impacts of a gas processing plant utilizing the Scope 3 Calculation Guide.

## CAPITAL GOODS

- Sultech is repurposing and transporting sulphur. Since any GHGs generated in our process can be offset with renewable power, we can recognize a net neutral starting point.
- Sultech's product is pure sulphur, while our competition (AMS) only contains between 20%–25% sulphates. This means we provide a huge reduction in truck and rail capacity to deliver the same end use benefit.
- Our products are transported in totes that are reusable, with at least three uses before they can be recycled.
- The water in the process can be pulled from water at the facility—it just has to be treated to the specifications of our process.
- In the construction of the facility, Sultech can utilize used equipment, including mixing tanks, storage tanks, and other metal in the process. On average, we can utilize 15% or more of recycled equipment.
- The process is gravity fed with limited utilization of pumps, which significantly reduces the electricity load.

## WASTE GENERATED IN OPERATIONS

- Sultech doesn't produce waste in the process—everything is consumed.
  - Molten sulphur is injected into a water polymer solution that stays with the product until the centrifuge. At separation, a minimum of 11% surface moisture remains with the final product, eliminating dusting and explosion concerns.
  - The water not consumed gets cycled back to the beginning of the process.

- Our maintenance steam stays in a closed loop, utilizing the host facility and remaining in the system with minimal loss.

- These savings provide us with a strong starting point to capture all of the benefits from the agriculture community back to the host site in Scope 3 calculations.

## DOWNSTREAM TRANSPORTATION AND DISTRIBUTION

- The nutrient density of our product reduces the amount of containers, trucks, and railcars required to get product to market.
- Storage of Sultech's output does not require a climate-controlled atmosphere. It can be exposed to the elements without detriment to the product's effectiveness.
- Sultech is producing micronized, elemental sulphur that can "share the tank" with anything on the farm. This enables the farmer to reduce their passes on the soil, which cuts down on diesel consumption during application.
    - Sulphur is inert, which means it doesn't react in the containers.
- Our products can be dispersed using current equipment and storage, which eliminates any additional downstream GHG, while optimizing existing equipment.
- Sultech products are available and remain throughout the growing season, so there is no need to re-apply, providing additional savings to the farmer in time, money, and diesel consumption.

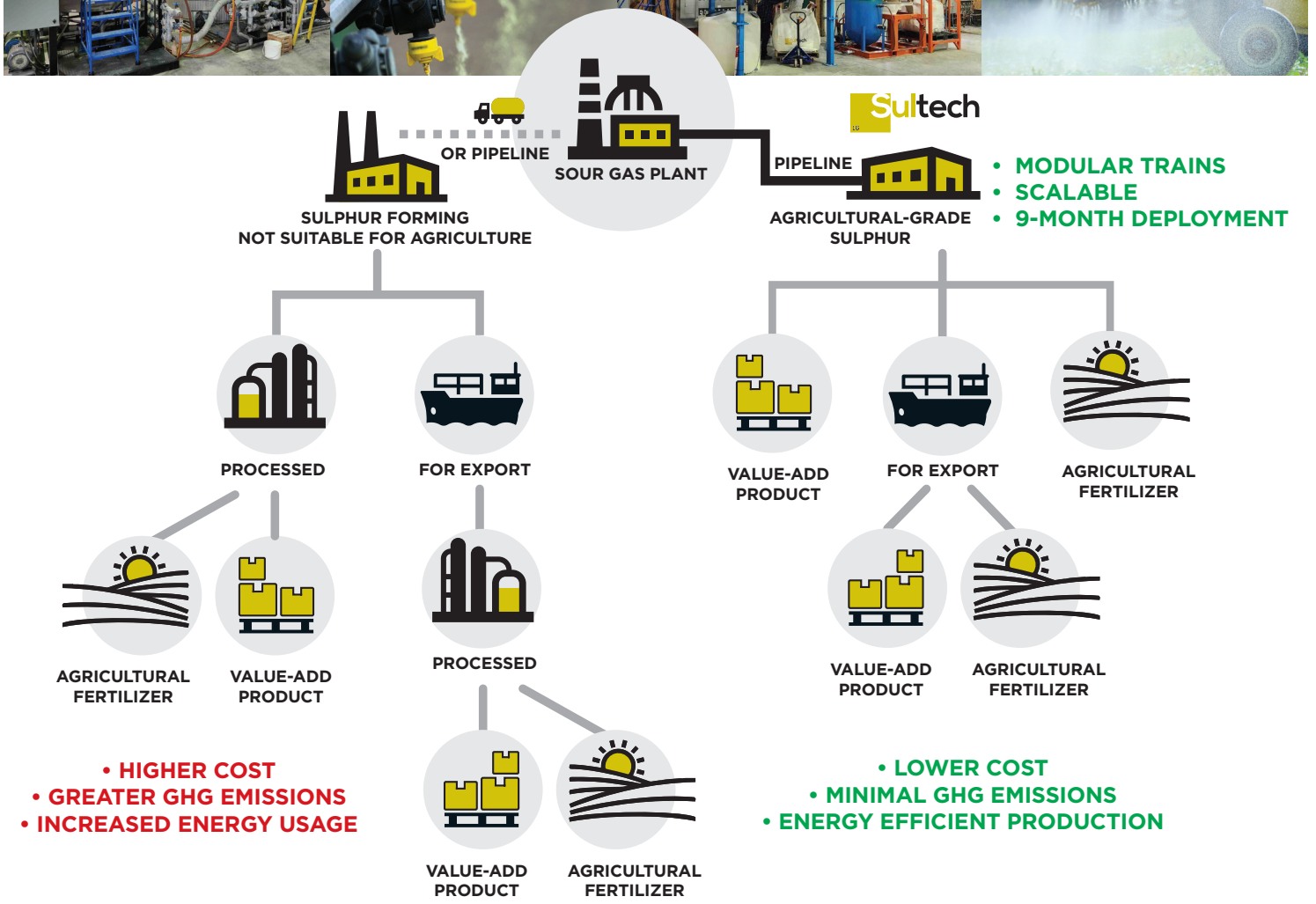
## PROCESSING OF SOLD PRODUCTS

Our products are sold in their final form. There is no need for additional energy inputs to turn them into something different.

## USE OF SOLD PRODUCTS

- Sultech's offerings are being sold directly to the end user to increase yield, amend soils, or enrich other products.
- All of Sultech's products begin the process at a neutral GHG status and are all organic. Every product is Omri listed and meets all of the stringent protocols around the world to be organic.



**THERE ARE FOUR MAIN WAYS TO UTILIZE SULTECH'S OUTPUT:**

1. **YIELD ENHANCEMENT**
2. **SOIL AMENDMENT**
3. **VALUE-ADD TO OTHER FERTILIZERS**
4. **INDUSTRIAL USE**

**Yield Enhancement**

- Weather changes are impacting crop yields. We have reached a point where 5 out of every 10 years are experiencing significant drought or flooding conditions. It's expected that over the next several decades, growing centers will see up to 7 adverse years out of every 10.
- Sultech's products enable the farmer to reduce their nitrogen, potash, and water consumption while releasing nutrients and minerals tied up in the soil matrix, e.g. weathering phosphate rock naturally.
- Our products aren't water soluble so there is no risk of run-off during rainfall. Bacteria converts sulphur into sulphates, which are absorbed by the plant.
    - Australia had to re-apply AMS three times throughout last year's growing season because "rain bombs" washed all the sulphates into the ocean.
- The product's presence throughout the growing season enables sulphates to remain during all of the critical growth and blooming periods. This increases yield and quality of the farmer's product, increasing caloric value.
- The presence of sulphur in soils also reduces emissions of nitrous oxide (N2O) by almost 30%. Soil scientists have been able to repeat the results many times, but are unable to define reaction process. This is now in the hands of microbiologists to unlock the science behind this result.
    - N2O is 324x worse in the atmosphere than CO2.
    - N2O is mainly released through soil disturbance, nitrogen fertilizers, and some other means, but the largest remains agriculture. Sultech's products address this issue head-on and provide a pathway back to the host site through Scope 3 metrics.
- "Nitrous oxide accounted for about 49 percent of (non-energy-related) agricultural emissions of greenhouse gases (in carbon dioxide equivalents) in 2021. Nitrous oxide emissions predominantly come from chemical reactions between the atmosphere and nitrogen put onto soils via fertilizers, with a much smaller quantity of emissions resulting from animal manure." [1]
- Crops absorb GHGs. For example: Corn produces about 176 bushels per hectare, which absorbs about 140kg of CO2. Sultech's products provide yield improvements of up to 40% in adverse years. This increase enables farmers to maintain GHG absorption and increase their reductions with broad yield bumps.
    - "Research conducted by Embrapa Wheat and the Federal University of Santa Maria (UFSM), has proven that wheat can sequester more carbon than it emits into the atmosphere. The scientists noted that during the production cycle, wheat absorbed a total of 7,540 kg of carbon dioxide (CO2) per hectare from the atmosphere, neutralizing emissions from fallow periods (without land cover plants or crops that generate income in the form of forage or grain production), and ensuring the net supply of 1,850 kg of CO2 per hectare." [2]
- The end result is the ability to bring Sultech's Carbon Intensity significantly lower (if not negative) based on benefits derived at the farming level.
- Blueberry farmers are using our products to adjust the pH balance of their soils to increase yield and reduce weed growth. This greatly diminishes the need for pesticides, providing another uplift to our broader scope.

**Soil Amendment**

- By utilizing Sultech products, scientists have been able to reduce the presence of calcium and sodium left behind from irrigation and extensive use of synthetic fertilizers.
    - The reduction of these impediments increases their arability and natural eco-system.
- "Without efforts to restore and protect land, nearly 70 gigatonnes more carbon would be emitted by 2050 due to land use change and soil degradation, representing approximately 17 percent of current annual greenhouse gas emissions." [3]
- Micronized, elemental sulphur helps return soils to a natural homeostasis—reducing the need for fertilizers and pesticides over time.
- Soils left bare lose their ability to absorb carbon and other GHGs and start to emit them back into the atmosphere.
    - "We found that soil warming results in a four-phase pattern of soil organic matter decay and carbon dioxide fluxes to the atmosphere, with phases of substantial soil carbon loss alternating with phases of no detectable loss. Several factors combine to affect the timing, magnitude, and thermal acclimation of soil carbon loss. These include depletion of microbially accessible carbon pools, reductions in microbial biomass, a shift in microbial carbon use efficiency, and changes in microbial community composition. Our results support projections of a long-term, self-reinforcing carbon feedback from mid-latitude forests to the climate system as the world warms." [4]
- Sultech's products provide soil rejuvenation, increasing the soil's ability to retain GHGs and bring back vegetation to accelerate the absorption of emissions from the atmosphere.

**Value-Add to other Fertilizers**

- Micronized, elemental sulphur isn't water soluble, so once it is applied, it won't leach from the soil the way a sulphate will.
- Binding elemental sulphur in a fertilizer process doesn't require the burning of sulphuric acid to create a crystal or to weather a phosphate rock.

- Melting sulphur to create sulphuric acid and the reaction of sulphuric acid and heated ammonia are massively energy intensive processes, and they emit significant GHGs throughout their life cycles.
- Sultech's products can replace many forms of "S" in other fertilizers, providing a sulphur component that is available throughout the growing cycle.

- Sultech has several whitepapers from renowned scientists that prove out the effect of micronized, elemental sulphur and the benefits when blended with rock phosphate.
  - It increases the availability of phosphates throughout the growing season by 65%, while the sulphur also provides season-long sulphates.
- By implementing sulphur into current available fertilizers, a farmer can reduce the amount of product needed to be put on the field and increases the efficacy of the nutrients.
  - This method reduces the emissions for the full supply chain (upstream and downstream) and results in improved crop yields, pulling more GHGs out of the atmosphere.

**Industrial Use**

- Sultech products can be utilized in vulcanizing rubber and as added sulphur to asphalt mix.
- Sultech's micronized element creates an even dispersion of sulphur, reducing waste and increasing the longevity of the product.
- SEA (Sulphur-Extended Asphalt) can mix in varying ratios: sulphur/asphalt binder mass ratios from 20/80 to 40/60, and at times even up to 50/50.
  - By blending sulphur, you utilize less fossil fuels in the creation of the product.
  - SEA is produced with minimal plant additions and modifications. Today's method of blending uses solid sulphur, so our micronized element enables for a uniform blend at significantly reduced GHG in comparison to molten sulphur.
- Utilizing SEA increases durability in high heat and stress regions.
  - By increasing longevity, this reduces the need for fossil fuels for replacement asphalt.

## END-OF-LIFE TREATMENT OF SOLD PRODUCTS

- Sultech's products remain in the soil and are naturally broken down by bacteria. The majority of the sold product is naturally disposed of and provides a fantastic reduction of GHGs that can be recognized by Sultech, the farmer, and the host site.
- The flexi-totes and chem-totes are re-usable. They can all be utilized multiple times and fully recycled at the end of their useful life.
- All the water and steam is recycled within the process.

[1] https://www.rff.org/publications/explainers/agricultural-greenhouse-gas-emissions-101/
[2] https://acsess.onlinelibrary.wiley.com/doi/10.1002/jeq2.20362
[3] https://www.un.org/en/climatechange/science/climate-issues/land
[4] https://www.science.org/doi/10.1126/science.aan2874
[5] https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/reporting-requirements

The United Nations Framework Convention on Climate Change (UNFCCC)/Kyoto Protocol utilizes 15 scopes broken into three categories. We have outlined in the above summary how we impact several of the biggest hurdles faced by products leaving a gas processing facility. "Originally, the requirements of the UNFCCC/Kyoto Protocol, and therefore of the GHG Protocol, were limited to a set of six individual GHGs or classes of GHGs: carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride ($SF_6$). However, changes to international accounting and reporting rules under the UNFCCC/Kyoto Protocol now also require the reporting of another GHG: nitrogen trifluoride ($NF_3$)." [5]

Sultech enables the farmer to reduce their $CO_2$ and nitrous oxide emissions in enough quantities to be meaningful to our host site. The process to create our various products doesn't require additional GHGs, which allows us to maximize the benefits downstream. Sultech reduces diesel consumption at all points of the lifecycle from logistics to farmers spreading it in the field. The natural breakdown of micronized, elemental sulphur provides GHG absorption through elevated yields, reduces use of synthetics, and promotes natural bacteria eco-systems in the soil.

SULGRO™65

SULGRO™85

SULGRO™100

SULGRO™MAX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