

# Introduction to the ARP

**The Advanced Recycling Plant (ARP) integrates multiple commercially available & novel technologies to process:**

- Municipal Waste
- Food Scraps
- Regulated Medical Waste (RMW)
- Specialty Waste (i.e., expired pharmaceuticals)
- Industrial & Hazardous Waste
- Construction & Demolition Waste (C&D)
- Bio-solids (i.e., sewage sludge)
- Tires

**Turning waste into valuable chemicals\*\*, energy, and building materials:**

- Methanol
- Dimethyl Ether
- Gasoline
- Carbonic Acid
- Glyoxylic Acid
- Electricity
- Commercial grade steam & hot water
- Aggregate
- Recovered Metals

*\*\* Partial List of Chemicals the ARP can produce*

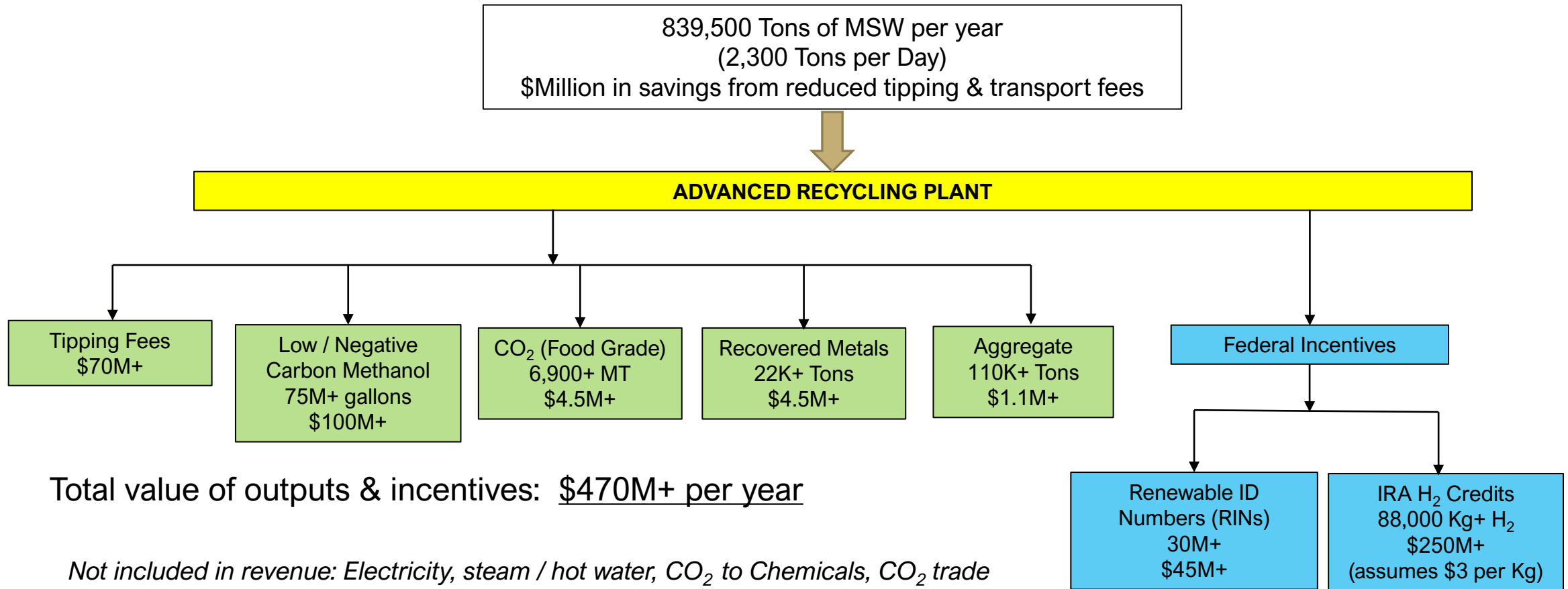


# The 4-Stage Implementation Plan...

- Does **NOT** require subsidies to be economically viable. No reliance on “unicorns & rainbows”! Does qualify for multiple incentives including but not limited to:
  - ☐ Dept. of Energy loans (Title 17), loan guarantees, & grants
  - ☐ Renewable Identification Number (RIN) payments.
  - ☐ Inflation Reduction Act tax credits or direct payments from the treasury.
- Can be integrated into other commercial & industrial development.
- Is modular, customizable, and scalable allowing implementation in ‘stages’.
- Provides an in-state ‘Last-Mile’ solution for waste hauler generating savings \$\$\$ in transport cost reductions.



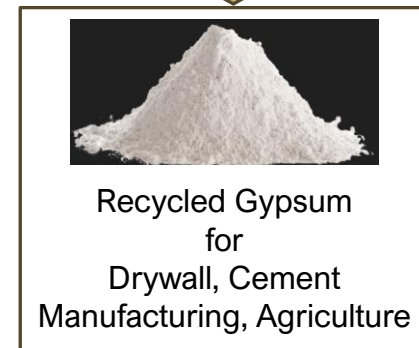
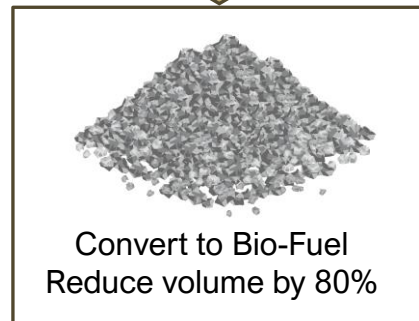
# ARP Estimated Annual Inputs vs. Outputs / \$ Value



Total value of outputs & incentives: \$470M+ per year

*Not included in revenue: Electricity, steam / hot water, CO<sub>2</sub> to Chemicals, CO<sub>2</sub> trade credits*

# STAGE 1: Conversion & Pre-Treatment Solutions



- Commercially Proven
- Readily Available
- Modular / Scalable

Short Term Implementation Timeline  
[6 to 18 months]

## STAGE 2: Electricity & COGEN



Food Scraps &  
“Garbage Juice”



Anaerobic Digestion  
Convert to Electricity  
&  
Compost



Regulated  
Medical Waste



Confidential  
Paper



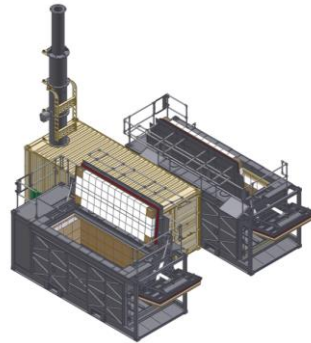
Bio-Solids Fuel



Contaminated or  
Non-recyclable Paper &  
Plastic, MSW



Tires



- COGEN = Cogeneration – Onsite Heat & Power Generation
- High efficiency alternative to expensive grid power & natural gas.
- Compact & Modular Design
- Commercially in use since the late 1990s.

Mid Term Implementation Timeline  
[18 to 36 months]

## Stage 3: Chemical Conversion (SYNGAS to Renewables)



Treated Medical Waste, Contaminated or Non-recyclable Paper & Plastic, MSW, C&D Waste



Confidential Paper



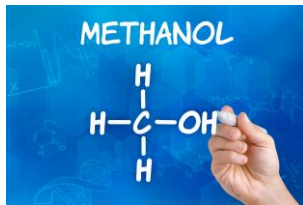
Tires



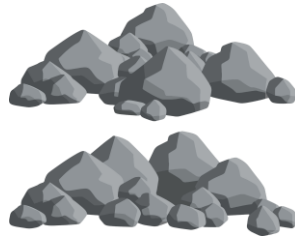
Specialty Waste



Hazardous Waste



Renewable Chemicals



Aggregate



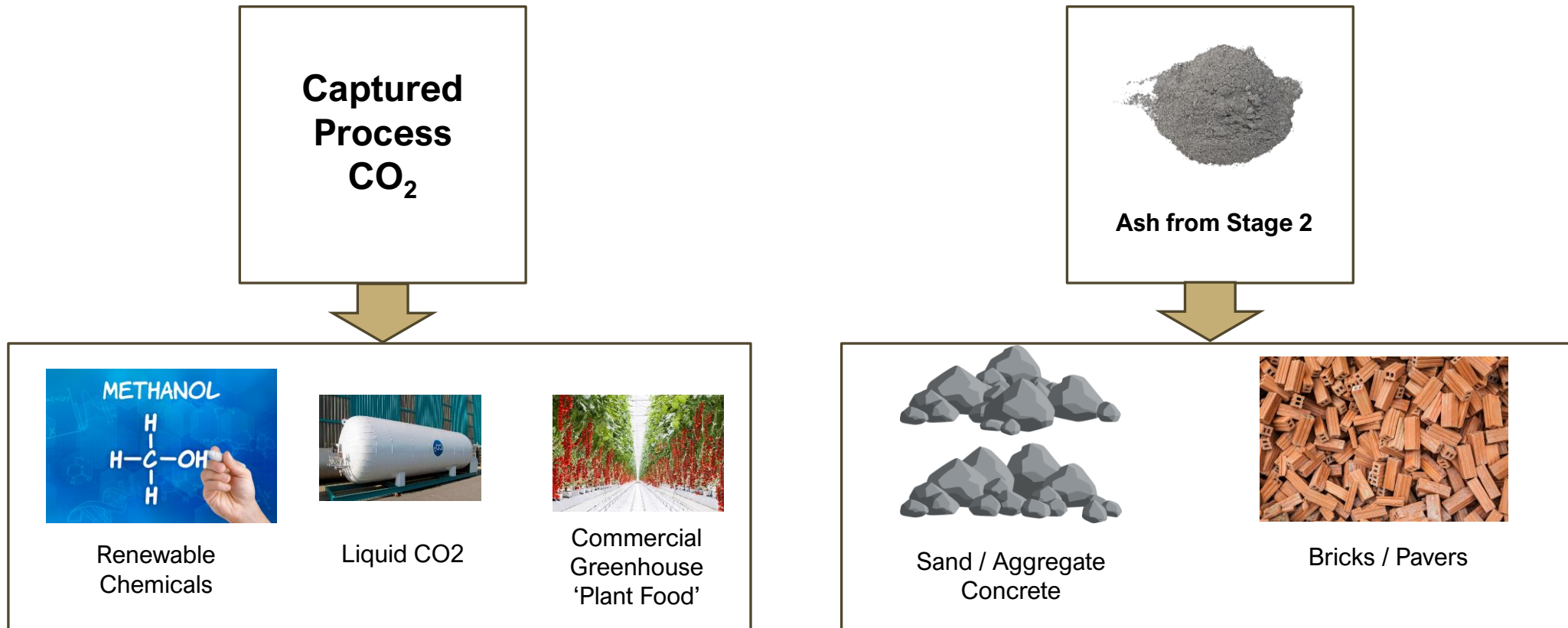
Electricity &  
Commercial Grade  
Steam / Hot Water



Recovered  
Metals

Long Term Implementation Timeline  
[36 to 60 months]

## Stage 4: CO<sub>2</sub> Capture & Conversion. Ash Recycling



Implementation Timeline [TBD]