

**Arlington County  
Water Pollution Control Plant**

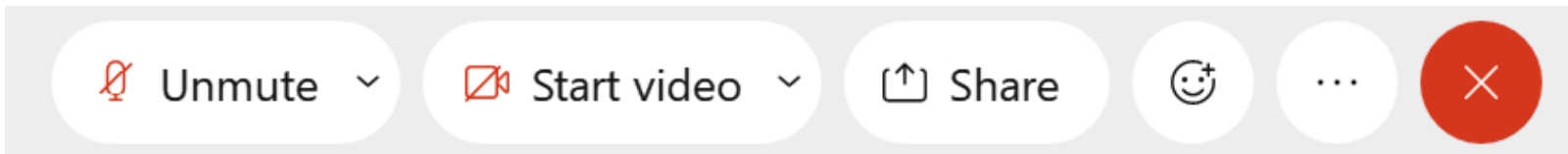
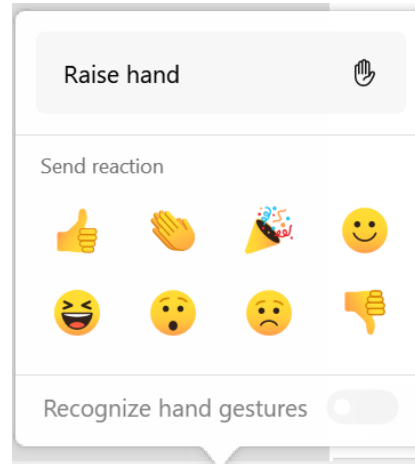
# **Solids Master Plan**

**Biosolids Advisory Panel**

June 22, 2021

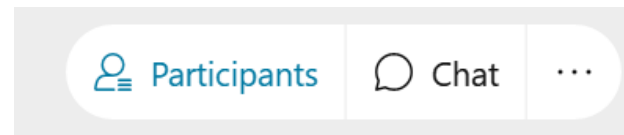
# Meeting Logistics

## WEBEX CONTROLS



## MEETING PREVIEW AUDIO SELECTION

- Use computer for audio
- Call me
- Call in
- Don't connect to audio



## TO BE UNMUTED

*Click the “Raise Hand” button pressing \*3 on your phone*

*You can also ask to be unmuted in the “Chat” box*

## ISSUES HEARING AUDIO?

*Re-join using “Call me” Audio Selection*

# Agenda

- 6:00 - 6:10**      **Introductions/Icebreakers**
- 6:10 - 6:15**      **Your Role as a Stakeholder**
- 6:15 - 6:25**      **Recap: Where Are We Now?**
- 6:25 - 6:30**      **Regional Solution**
- 6:30 - 6:35**      **Mission/Vision/Purpose**
- 6:35 - 6:50**      **Program Status**
- 6:50 - 7:05**      **Process**
- 7:05 - 7:20**      **Biogas Utilization Evaluation**
- 7:20 - 7:25**      **Site Plan Development**
- 7:25 - 7:30**      **Next Steps**



# Introductions

**Mary  
Strawn**

Arlington County Water  
Pollution Control Bureau

**Tom  
Broderick**

Arlington County Water  
Pollution Control Bureau

**Lisa  
Racey**

Arlington County Water  
Pollution Control Bureau

**Katie  
O'Brien**

Arlington County Dept.  
of Environmental Services

**Samantha  
Villegas**

Raftelis

**Brian  
Balchunas**

HDR

**Megan  
O'Reilly**

HDR

**Rahkia  
Nance**

HDR

**Jessica  
Snead**

HDR

# Biosolids Advisory Panel

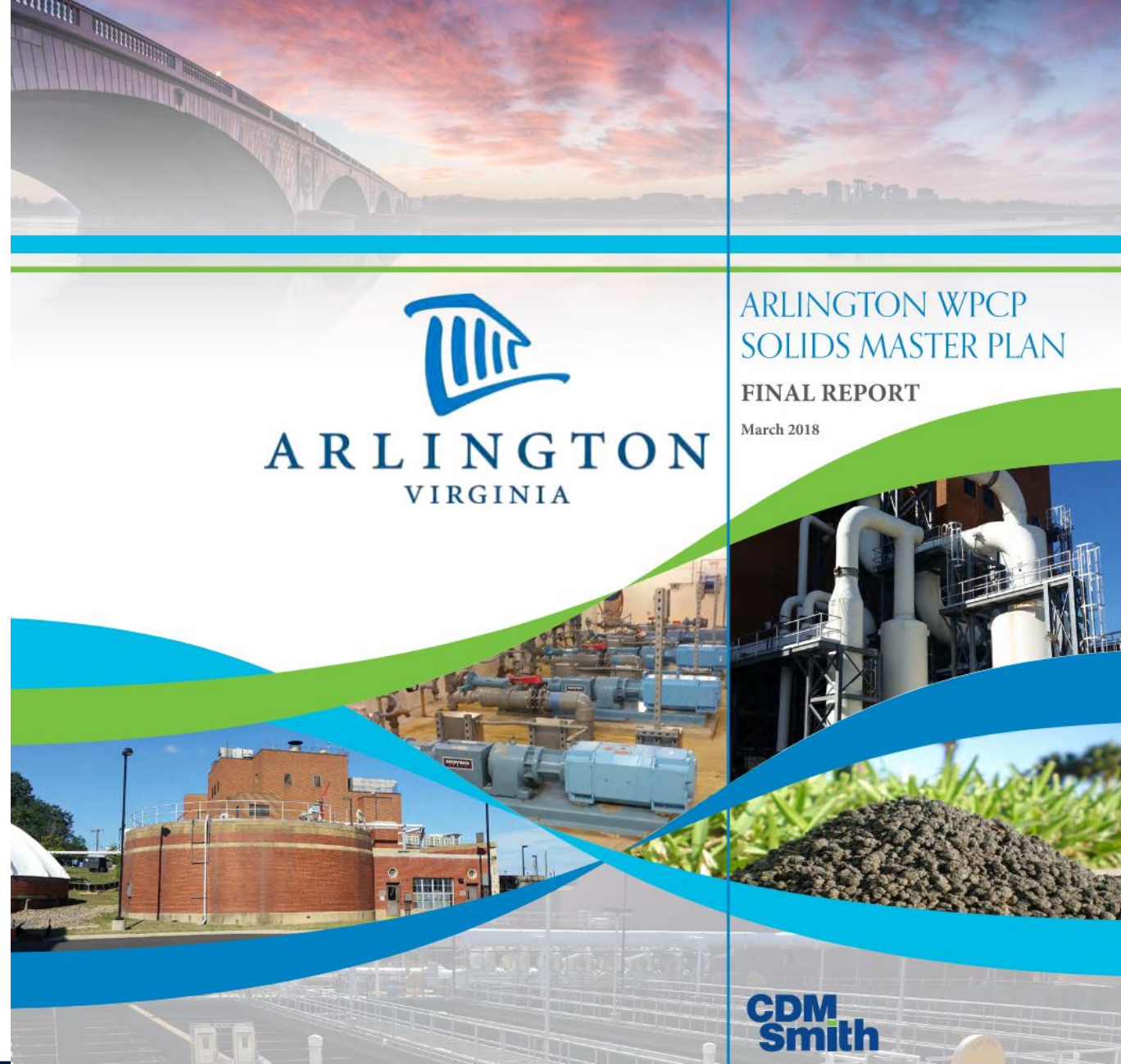
- Purpose: to serve as a focus group that examines and provides feedback as the program develops
- Expectations: to provide thoughtful input and perspective from your respective groups for those represented

# Your Role as a Stakeholder

- Arranging meetings (moving forward)
  - Materials will be provided prior to the meeting
  - 90-minute meetings
  - Presentations, followed by Q&A
- Soliciting feedback from your organization

# Previous Work

- Development of the Solids Master Plan began in 2015 and was completed in 2018
- It included rigorous evaluation of multiple solids handling options
- Key input from this stakeholder group led to technology selection of thermal hydrolysis and anaerobic digestion



# Benefits of Upgrades





# Regional Solution

- Further review completed by DC Water and Arlington County
- Joint memo issued in February 2020, concluding that regionalization is not feasible within current capacity
- Look to formalize approach to resiliency between utilities with similar processes (DC Water, WSSC, Arlington)





# Open Issues from Master Plan

- Biogas utilization
- Site layout and configuration
- Final technology selections
- Procurement and delivery
- End product marketing

*HDR hired as Program Manager in late 2020 to assist with open issues and delivery of the Program*

## **Mission**

*To create renewable energy and a soil-enhancing biosolids product using a safe and reliable transformation process.*

## **Vision**

*To be a good neighbor within our community, a leader in efficiency in our industry, and a beacon of sustainability in Arlington County.*

## **Purpose**

*To replace infrastructure in a manner that helps Arlington County meet its energy and carbon reduction goals.*



# Program Status

# Program Execution

## “What”

- Data Analysis
- Condition Assessment
- Technology Review
- Process Evaluations
- Gas Utilization
- Air Emissions
- Site Development
- Facilities Plan

## “How”

- Risk Analysis
- Project Packaging
- Delivery Evaluation
- Procurement of Delivery Teams

## “Implementation”

- Detailed design
- Construction

## “Future”

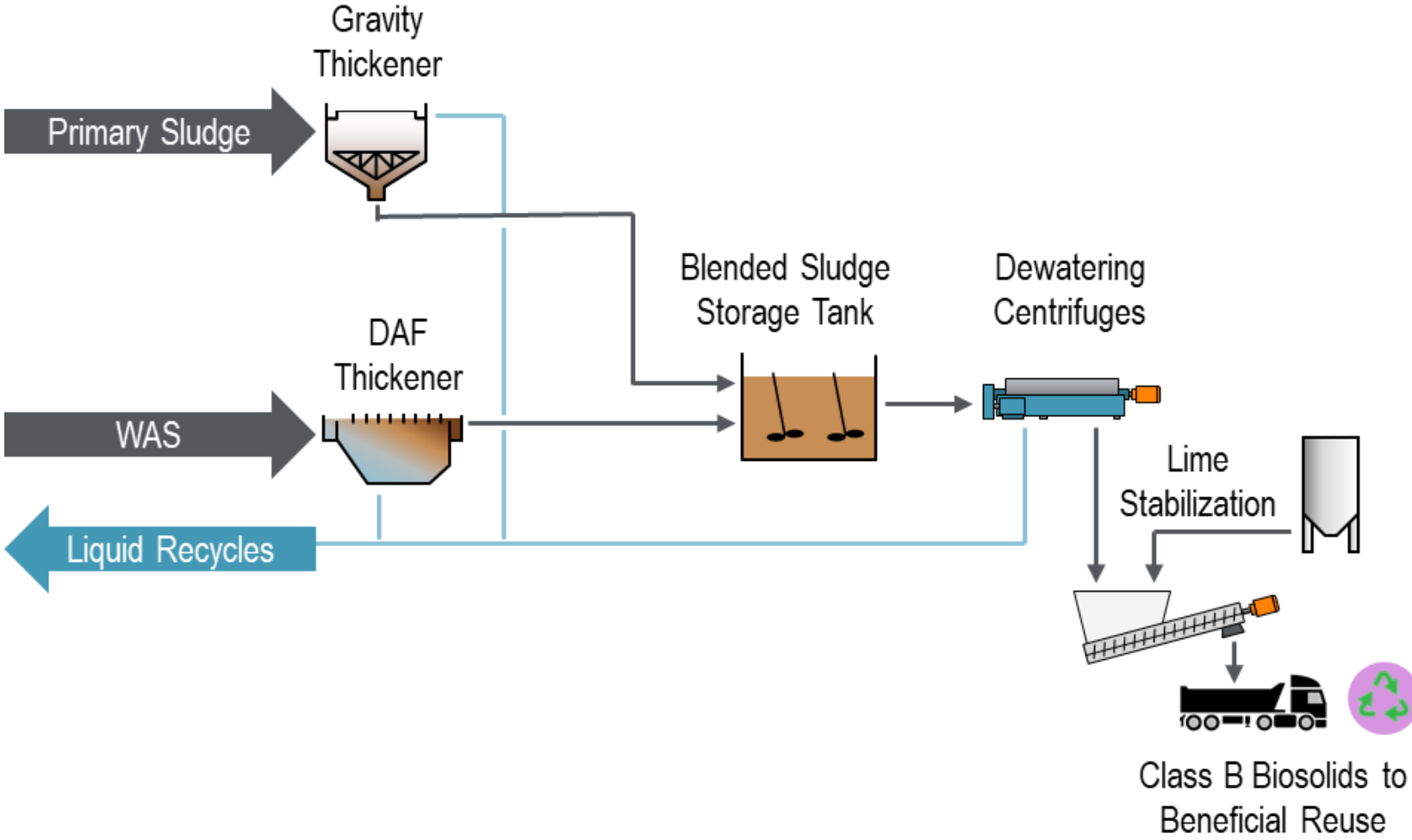
- Start-up and Commissioning
- Training
- Operations and maintenance needs
- End product marketing





# Process

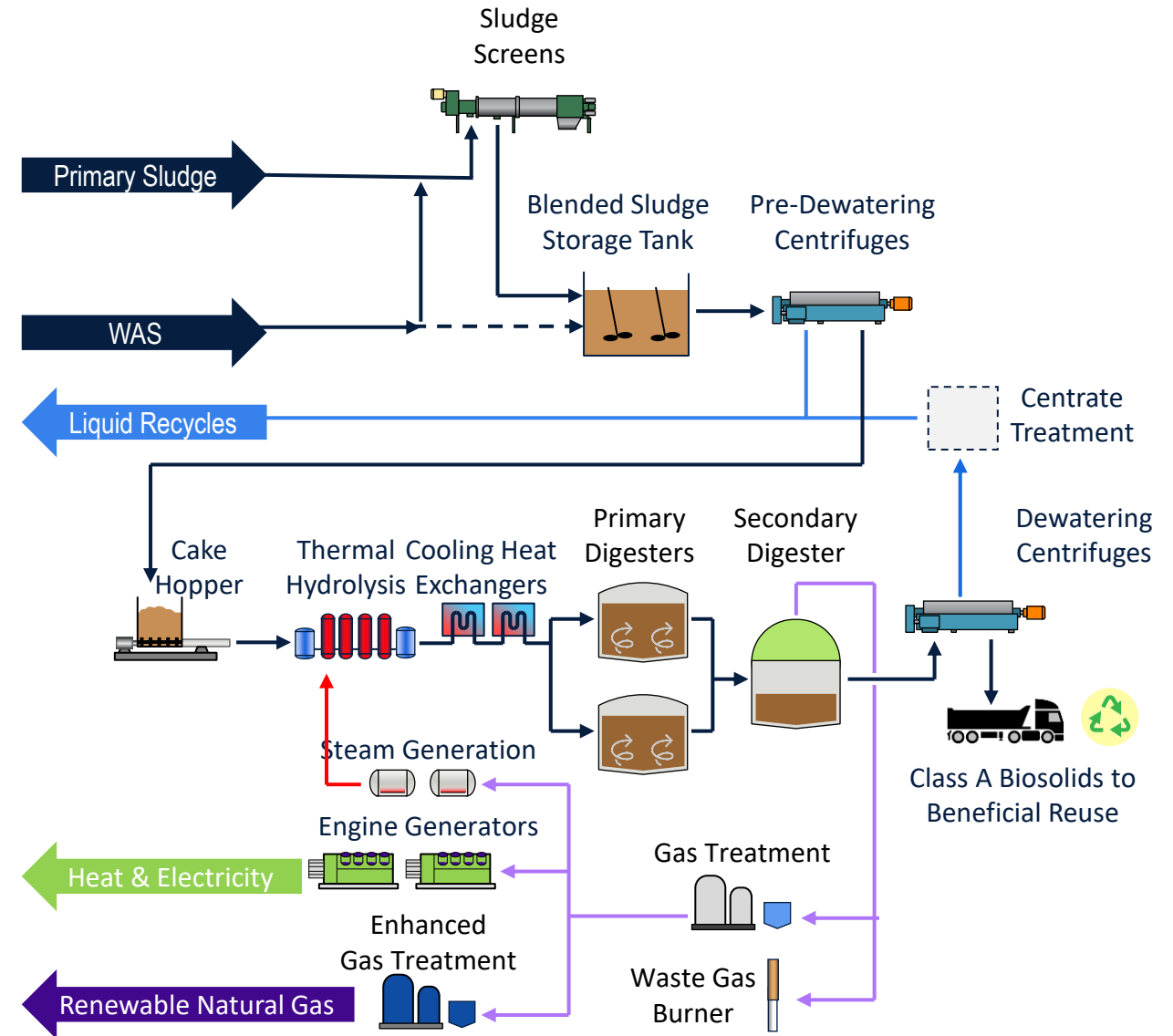
# A paradigm shift from...





# To:

- Thermal hydrolysis
- Anaerobic digestion
- Class A biosolids
- Biogas utilization



# Key Terms

- Thermal Hydrolysis
- Anaerobic Digestion
- Class A Exceptional Quality Biosolids
- Biogas Utilization

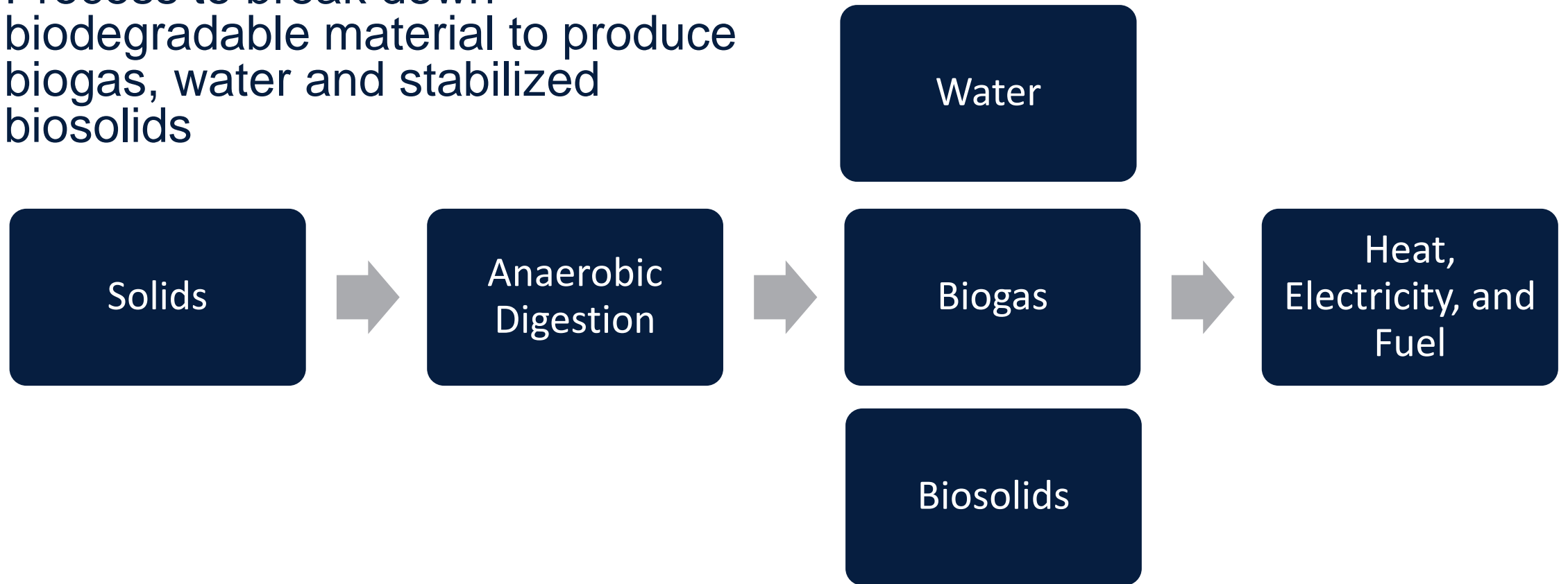
# What is Thermal Hydrolysis?

- A high-temperature process– similar to a pressure-cooker– that sterilizes biosolids.
- The high-temperature process removes pathogens, resulting in a Class A Exceptional Quality biosolids product



# What is Anaerobic Digestion?

- Process to break down biodegradable material to produce biogas, water and stabilized biosolids





# What is Biogas Utilization?

- Biogas generated in the digesters is cleaned through a treatment process.
- The cleaned biogas can be used to generate electricity, fuel natural gas buses or injected into the Washington Gas Pipeline



# What are Class A Exceptional Quality Biosolids?

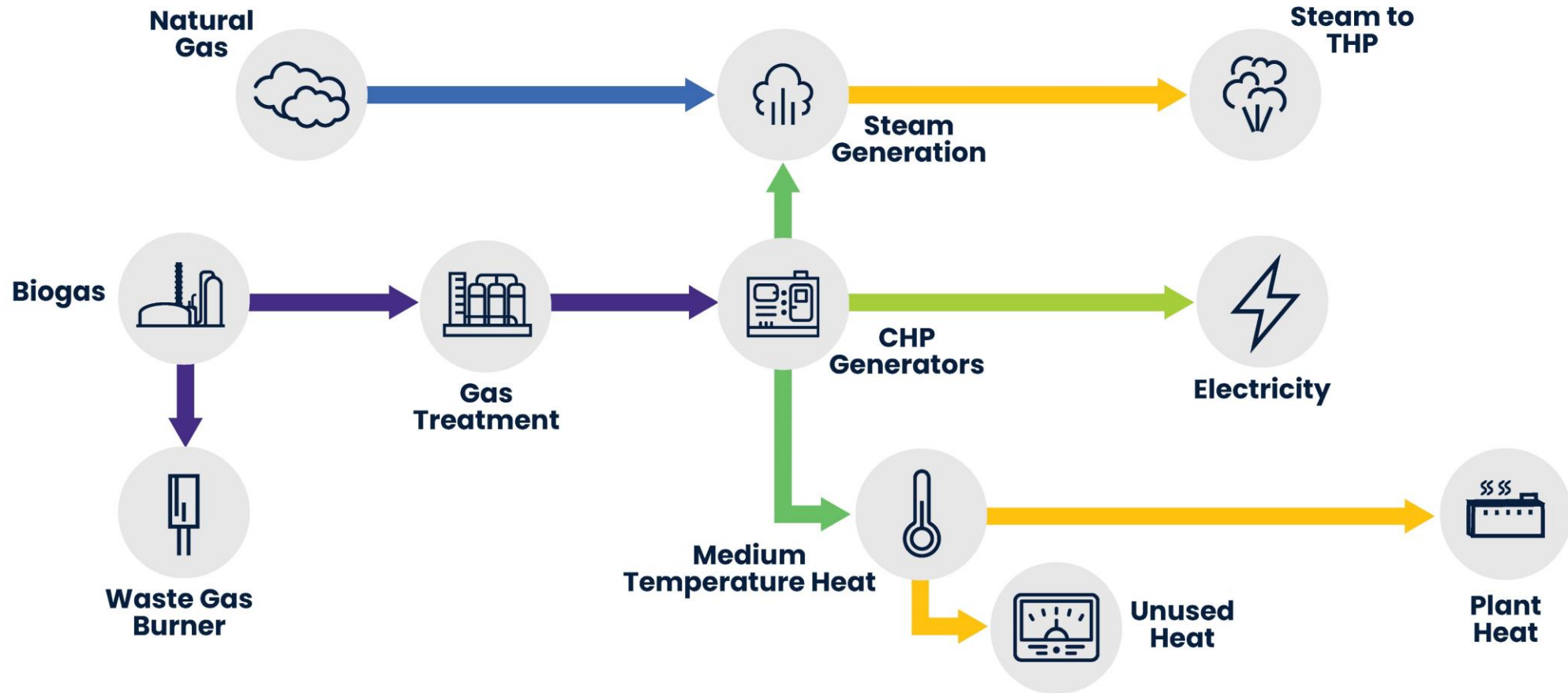
- Highly treated biosolids that do not have detectable levels of pathogens. Class A Exceptional Quality (EQ) biosolids can be used as fertilizer on areas such as lawns, parks, gardens, etc.





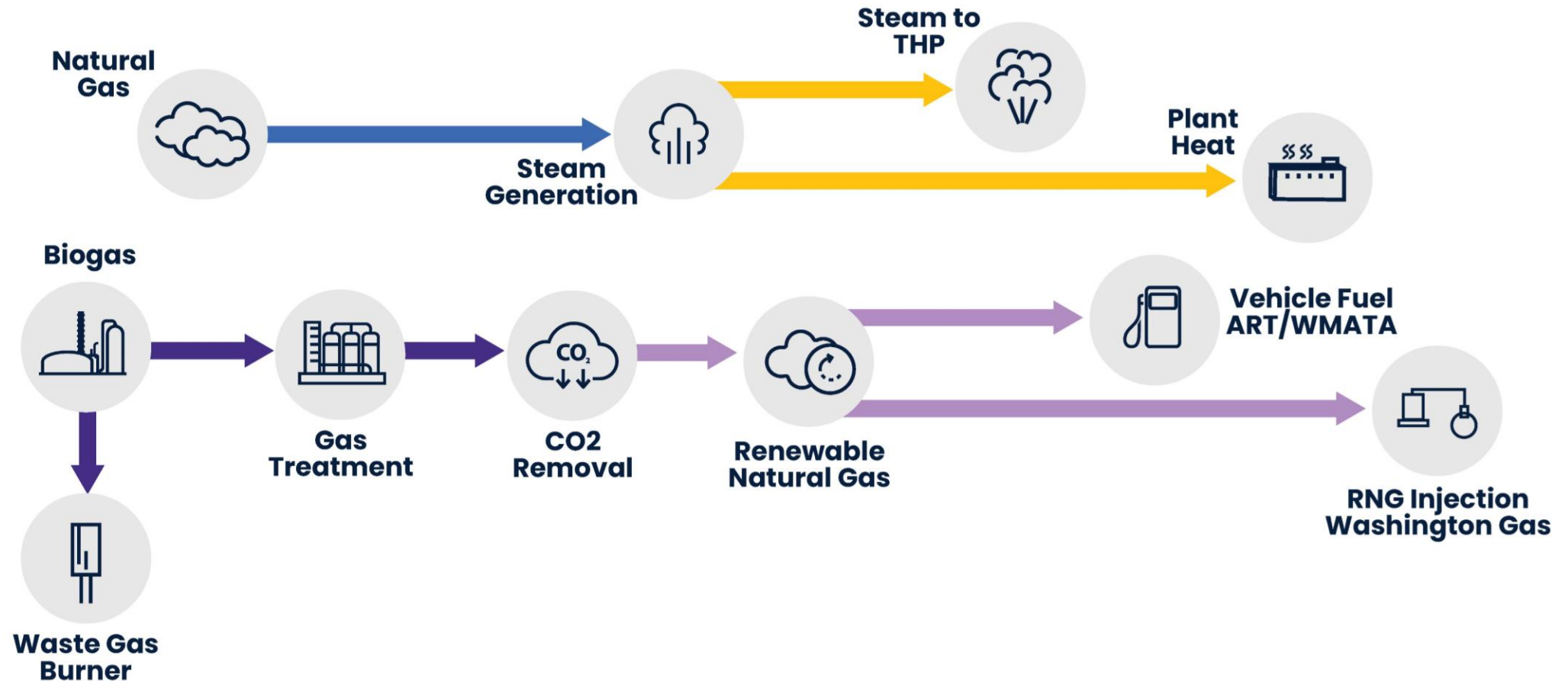
# Biogas Beneficial Use Evaluations

# Biogas used in Engines for Electricity and Heat

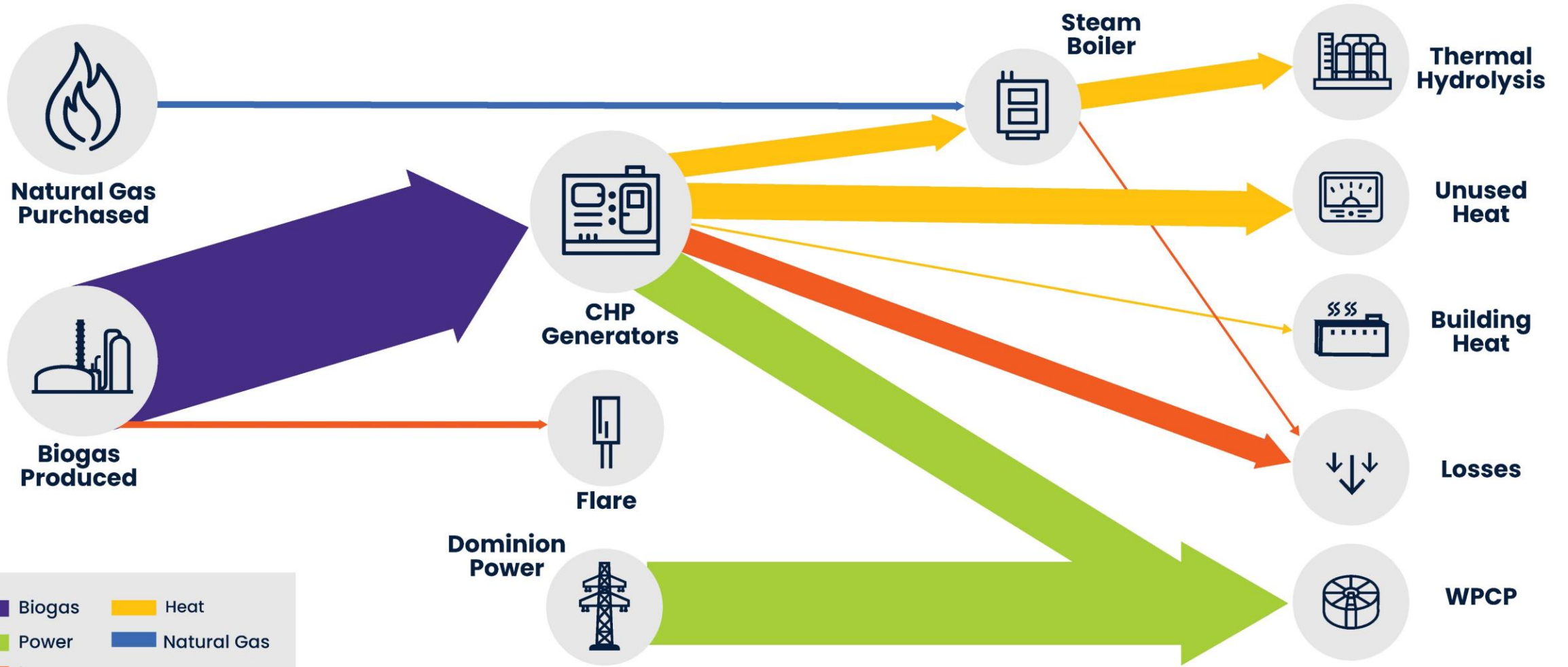




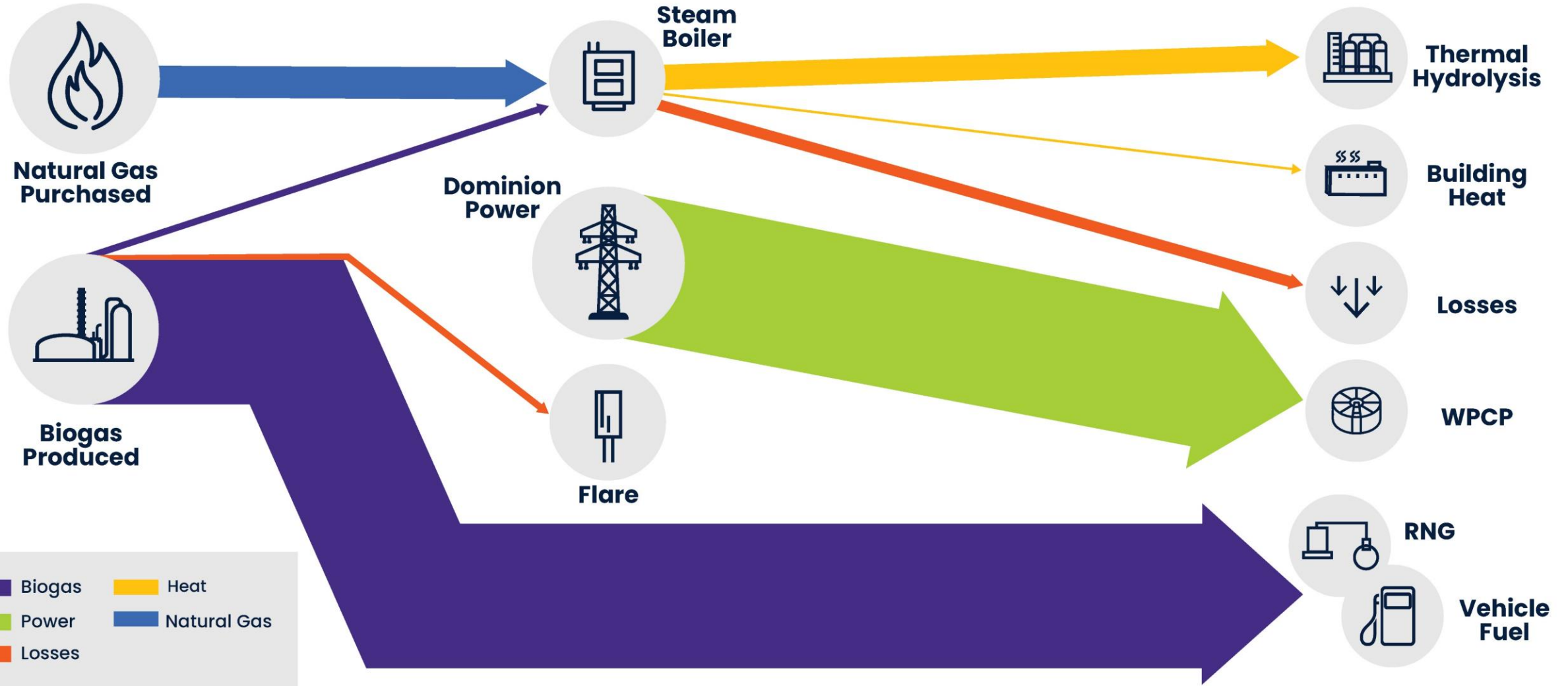
# Biogas upgraded to Renewable Natural Gas



# Biogas used in Engines for Electricity and Heat



# Biogas upgraded to Renewable Natural Gas





# Site Plan Development

# Evaluating Existing Facilities



# Evaluating Existing Facilities

Potential Reuse or Demolition

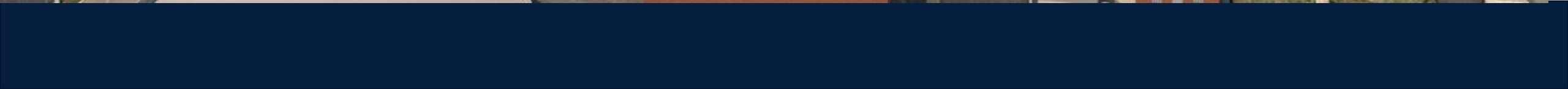
Demolition

Demolition

Reuse

Reuse

Demolition





# Project Contact

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