Kore
Infrastructure

Kore Infrastructure Helps Utilities Cost Effectively Manage Biosolids

LIFT
Leaders Innovation Forum for Technology

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Kore Infrastructure Technology Helps Utilities Cost Effectively Manage Biosolids

1. Reduces biosolids volume by 90%
2. Recovers carbon negative biogas
3. Generates biochar
4. Provides an economical solution with long term stability

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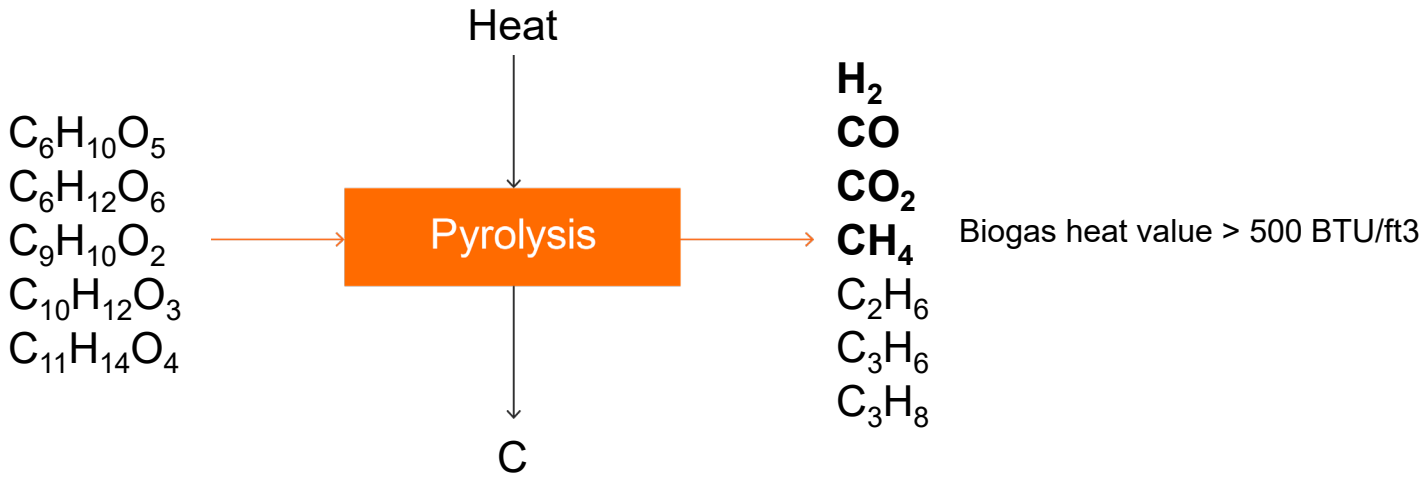
Kore uses high-temperature "slow" pyrolysis to convert biogenic feed to gasses and carbon



The gas composition and biochar (C) properties depend upon feedstock composition, pyrolysis temperature, and gas and solid retention time

Kore's modular high-temperature pyrolysis system is designed and operated to optimize hydrogen and calorific value for various feedstocks.

- **High-temperature pyrolysis >600°C** at 90 minutes, destroys PFOA and PFOS
- **Plug flow reactor**
- **T and t controlled to achieve C**

Pyrolysis pilot tested for six years at Los Angeles County Sanitation Districts Joint Water Pollution Control Plant

Green Chemistry Award
winner in 2012

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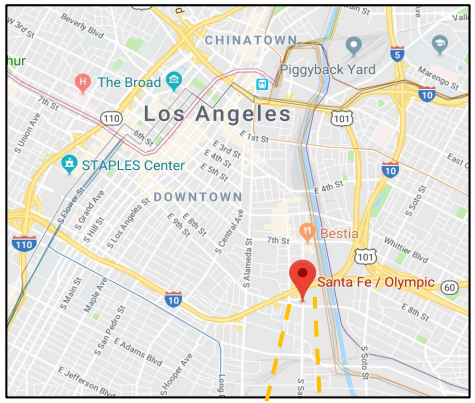
Kore will begin a commercial-scale demonstration project in Los Angeles in Q1 2021

SoCalGas
A Sempra Energy utility®

South Coast AQMD



Demonstration Purpose

- Validate mechanical integrity
- Develop multiple feedstock data
- Confirm performance for two existing letters of intent

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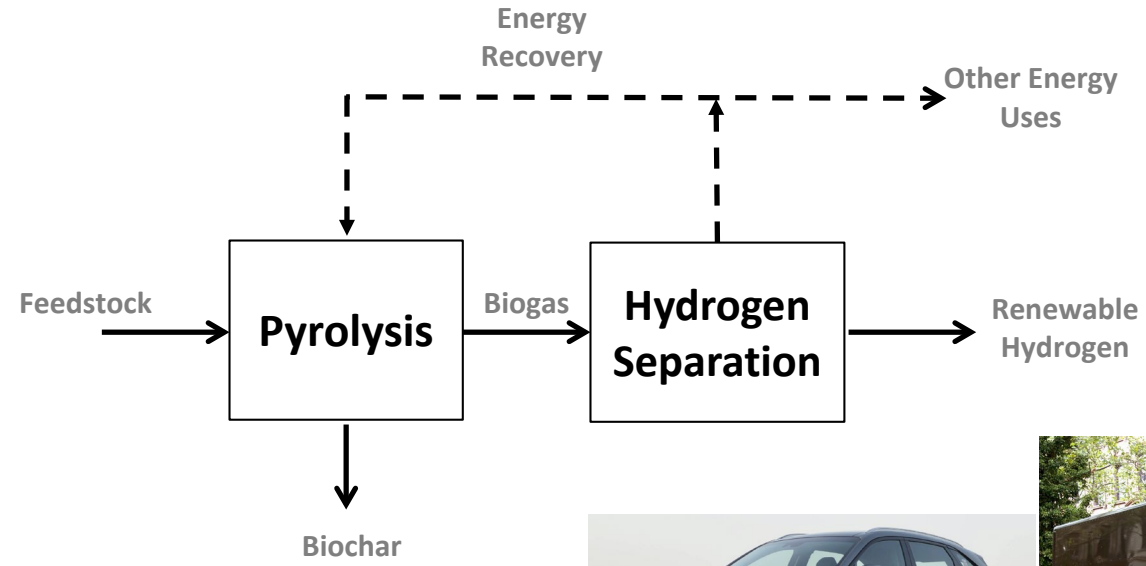
Biogas can be blended into anaerobic digesters, potentially increasing total gas production

1. Maintaining a single gas stream from the digesters to the energy recovery equipment
2. Increasing digester gas output via bioconversion of H_2 and CO_2 into additional methane.
3. Recovering heat from the pyrolyzer biogas to heat digester contents, reducing current heating demands.

Separating Renewable H2 from biogas



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Biochar produces significant benefits

Application	Benefits
Landfill	• Carbon sequestration value • Potential landfill leachate reduction/improvement (PFAS)
Soil Amendment	• Reduces irrigation water • Reduces fertilizer application and nutrient runoff • Improves microbial activity • Increases crop yield
Refuse derived fuel	• Coal substitute for cement, steel, or power production
Concrete strengthening	• Early studies indicate strength improvement
Adsorbent	• Multiple water and air treatment applications

Kore Infrastructure Technology Offers an Economical Solution with Long Term Stability

1. Typical payback 3-7 years depending on local economics
2. Permanent solution
3. Amenable to regional solution for cost sharing

How LIFT can help

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Kore encourages feedstock generators (e.g. utilities) to visit our demonstration project and begin a conversation about their biosolids management plans

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