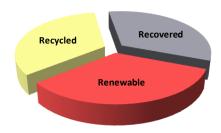


#### **McIlvaine Company Hot Topic Hour**

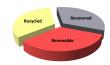
#### **KeLa Engineered Fuel**





#### KeLa Energy, LLC

- KeLa has developed and patented technology for the production of KeLa Engineered Fuel
- KeLa plants will be licensed, owned and operated by others
- Target markets Stoker Fuel, MET Coal, Utility/Steam Fuel with Biomass



# KeLa Engineered Fuel

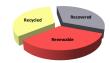
A coal-based fuel made up of recovered coal fines, recycled binding materials, and renewable biomass.





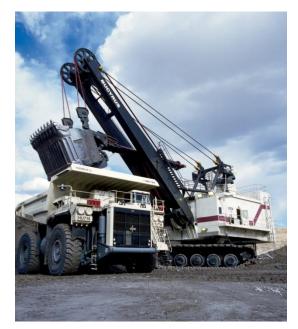


KeLa Engineered Fuel

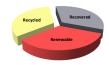


# KeLa Engineered Fuel

- Meets the needs of the customer -
  - Reduced air emissions
  - Higher heating value
  - Biomass integrated in pellet
- Fuel Rank High-Volatile A Bituminous
- Handled and stored like coal
- Patent protected technology

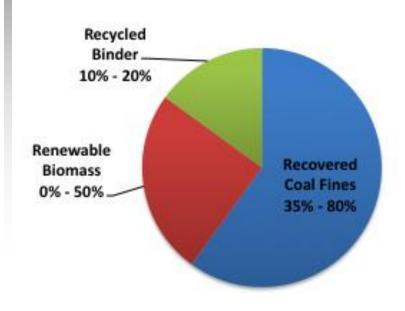






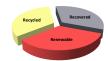
## Raw Materials

KeLa Engineered Fuel Utilizes a readily available stream of recovered, recycled, and renewable materials

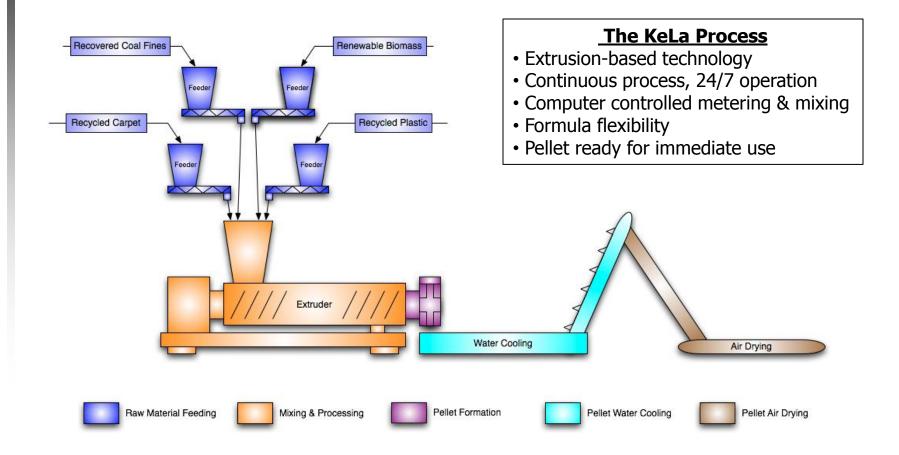


- Recovered Coal Fines
- Recycled Carpet
- Recycled Plastics
- Renewable Biomass (optional)

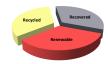




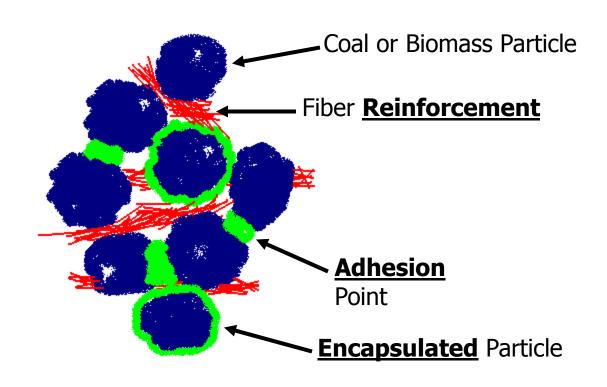
# The KeLa Process



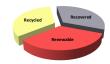




# Binding Schematic





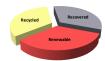


# Coal Fines

- Generated at coal mines and coal processing plants
- Over two billion tons in 700 impoundment sites in the US
- 50 million tons added each year
- Can be a high quality coal
- A substantial source of energy







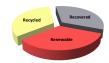
# Coal Fines - Recovered Raw Material

- Diverted from coal processing
- Recovered from impoundments
- Moisture up to 15%
- Size Less than 3/8"









## Biomass - Renewable Raw Material

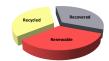
- Locally sourced
- Agriculture, timber, mill, or urban generated material
- Moisture up to 50%
- Size Less than 3/8"











# Carpet - Recycled Raw Material

- Landfill diversion
- Post Consumer & Post Industrial
- More than five billion pounds placed in landfills yearly
- All components used









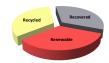
# Plastic - Recycled Raw Material

- Post & Pre-Consumer
- Mixed stream plastic
- Size Less than 3/8"









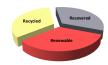
#### **Emissions Reductions**

- Sulfur Oxides reduced by 35% 41%
- Nitrous Oxides reduced by 14% 41%
- Carbon Dioxide reduced by 3% 5%
- 15% lower Volatile Organic Chemicals
- Reduction in Hazardous Air Pollutants

Compared to coal, based on stoker fuel trials.
The quality of the coal, amounts of binder and biomass determine the final reductions.
Reductions have been documented by independent testing based on EPA methodology.



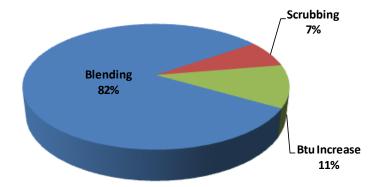




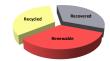
# **Emissions Reductions**

- Blending with binder & biomass
- Increased Btu (binder & moisture reduction)
- SO<sub>x</sub> Scrubbing (Calcium Carbonate in binder)

#### **Sulfur Oxide Emissions Reduction**







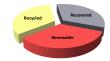
#### Benefits – Coal Producers

- Increased preparation plant yield
- Cost effective increased coal value
- Impoundment life extension
- Reduction in impoundment management and permit costs
- Recovered coal used in process
- Handled and stored like coal
- Ready for immediate shipment



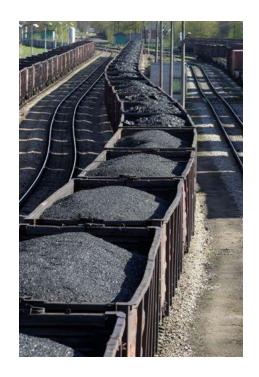


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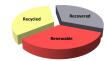


#### Benefits – Coal Users

- Handled like coal
- Stored outside no pellet break-down
- Biomass contained in pellet
- Can be blended with coal
- Higher combustion efficiency
- Low moisture content
- Higher hydrogen content
- No equipment modifications
- Eligible for RPS credits







# Benefits – Environment

- Lower emissions
- Uses recycled, renewable and recovered materials
- No binder leaching during outside storage
- Process makes high grade fuel from coal fines
- More complete burn (less carbon in ash)

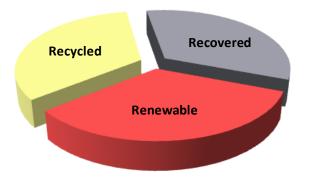




# KeLa Energy LLC

#### **Licensed Technology**

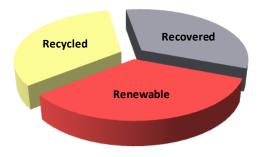
Providing the coal industry with a profitable, environmentally sound fuel by converting coal to a high-yield, cost-effective and marketable product.



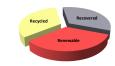




# Questions?







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