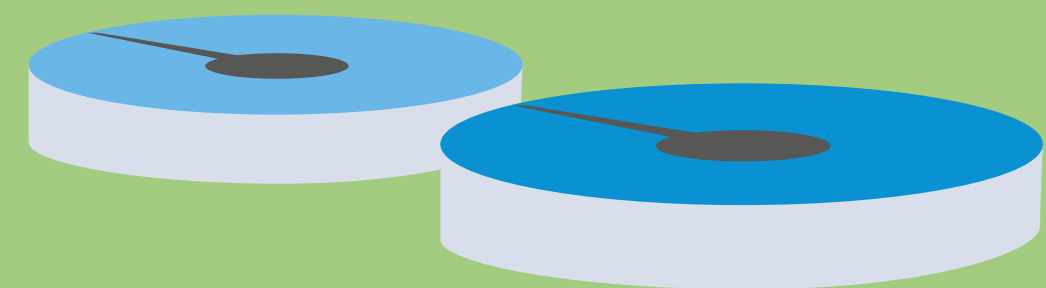


# A

## Anaerobic Digestion (current process)

### Wastewater Treatment

Sludge is produced

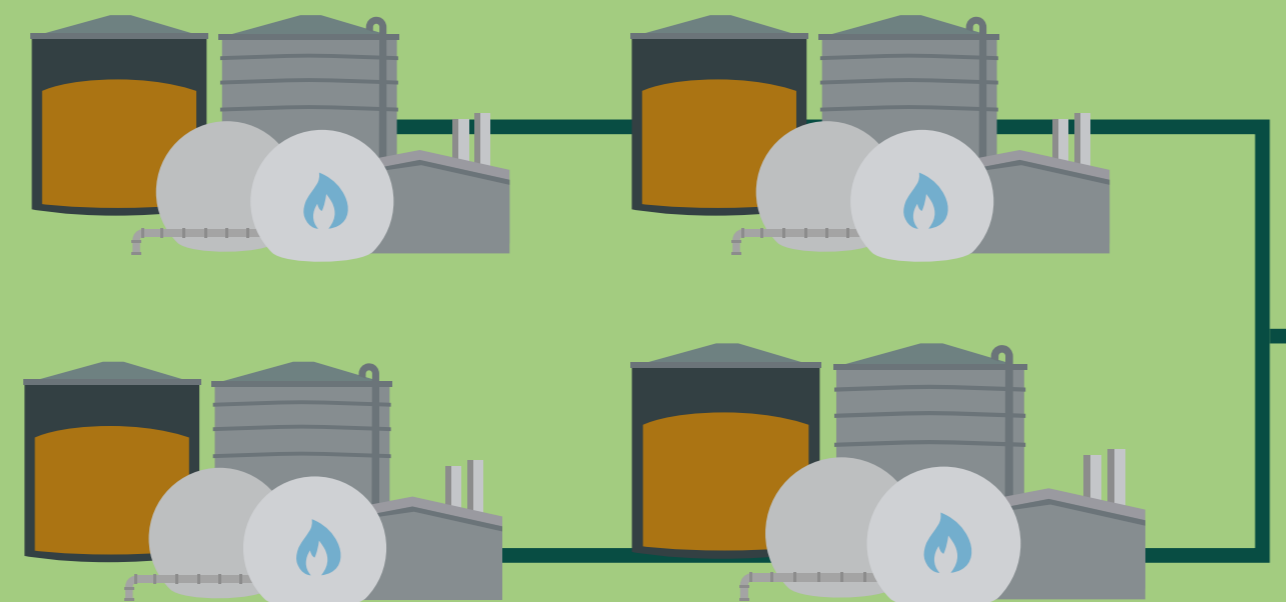


Sludge transported to a sludge treatment centre



### Sludge Treatment

Anaerobic Digestion



Small sites

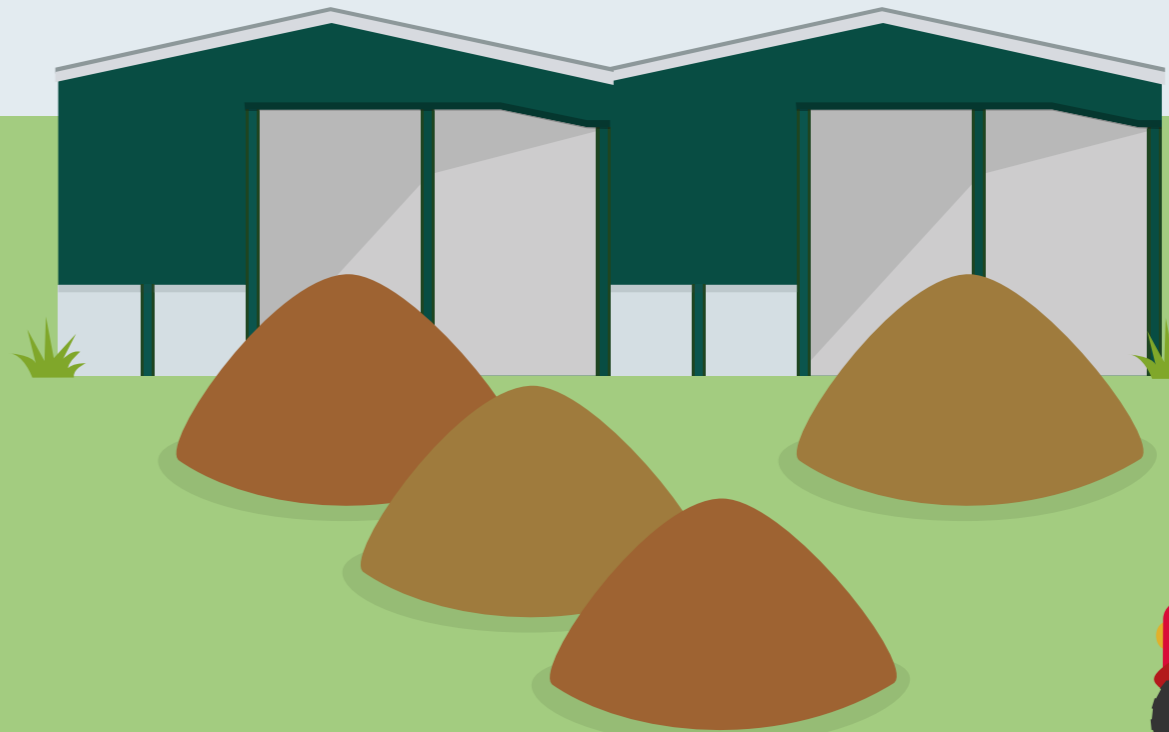


Electricity generated



Transport Biosolids to farms

### Storage of Biosolids



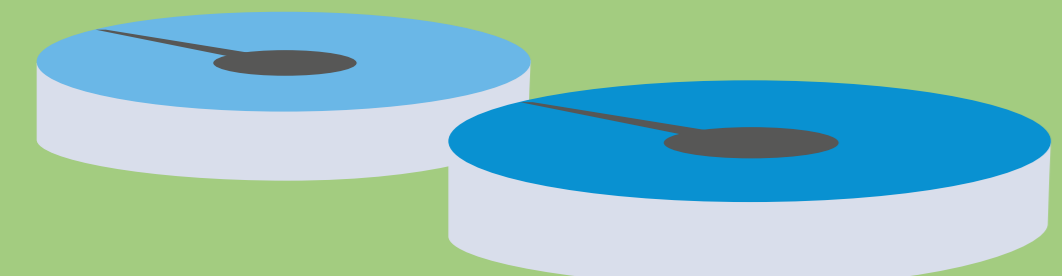
### Use on farms



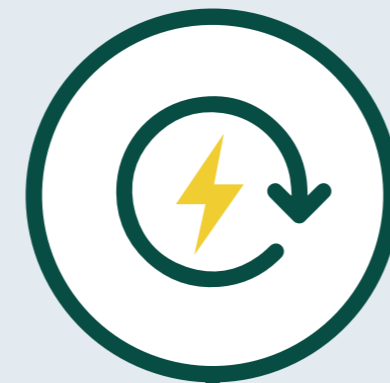
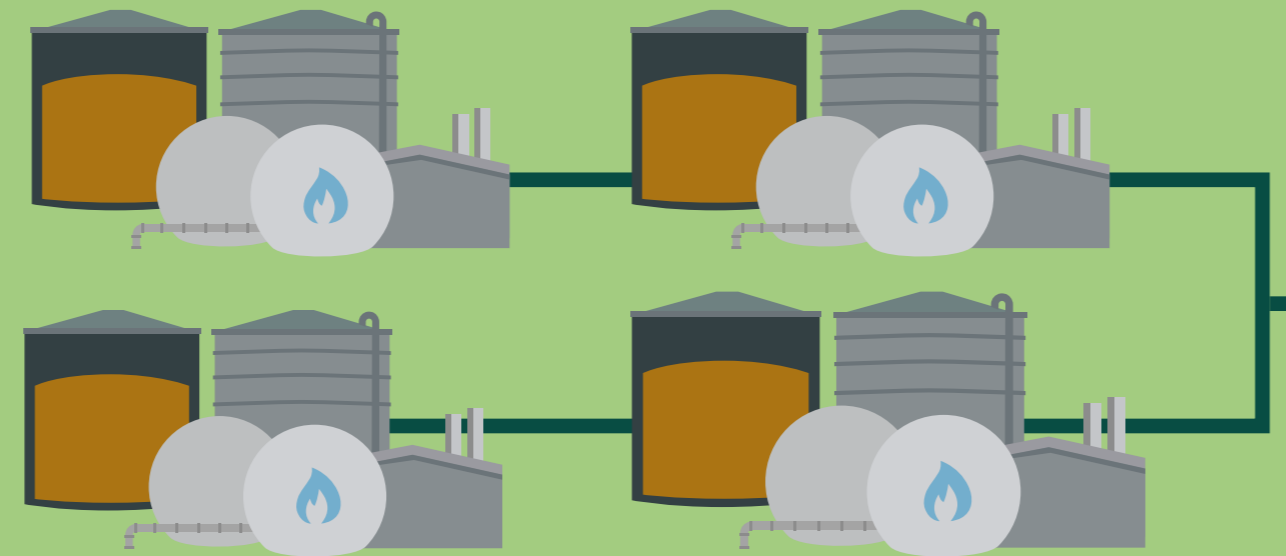
A

# Anaerobic Digestion (current process)

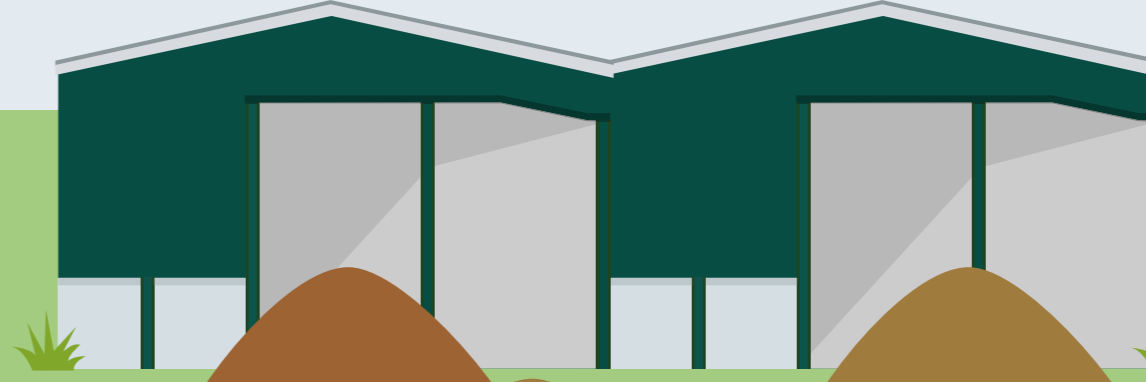
Wastewater Treatment



Sludge Treatment



Storage of Biosolids



Use on farms



Many small sites

Small Renewable Electricity Generation

Large volume of transport vehicles

Large amount of storage needed for Biosolids

Limited farms and grass

Impact on river water quality continues

# B

## Advanced Anaerobic Digestion

Wastewater Treatment

Sludge is produced

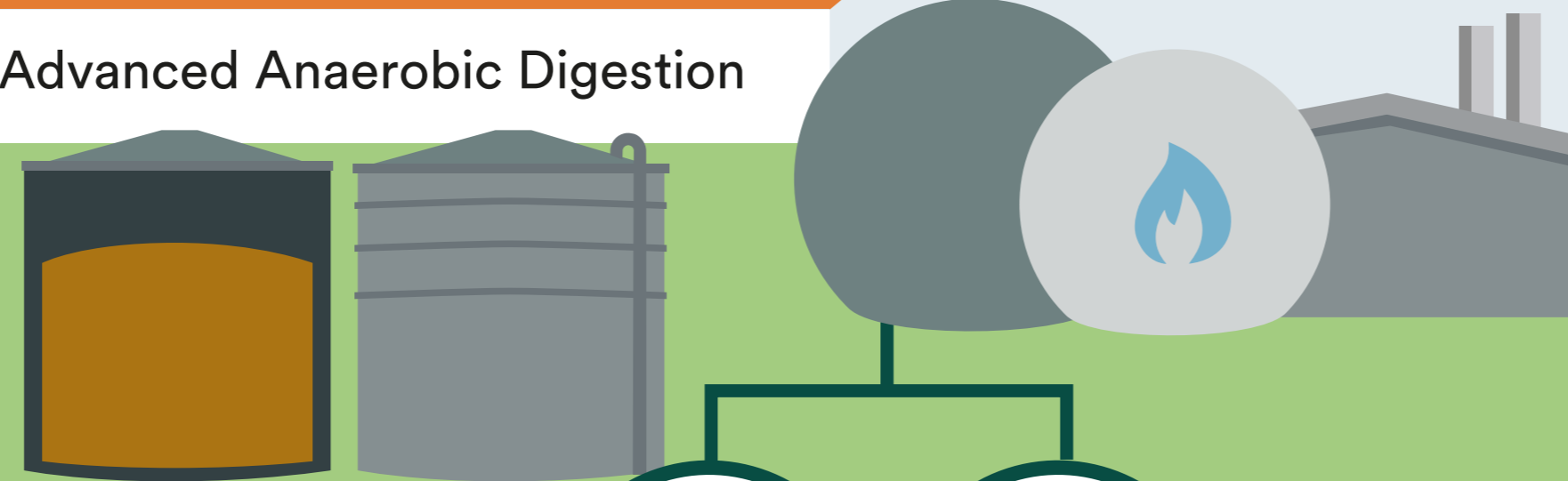
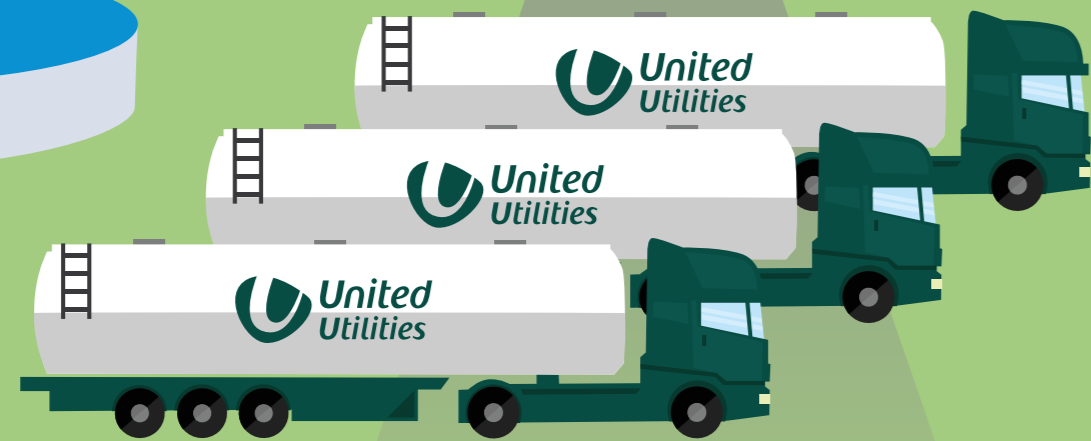
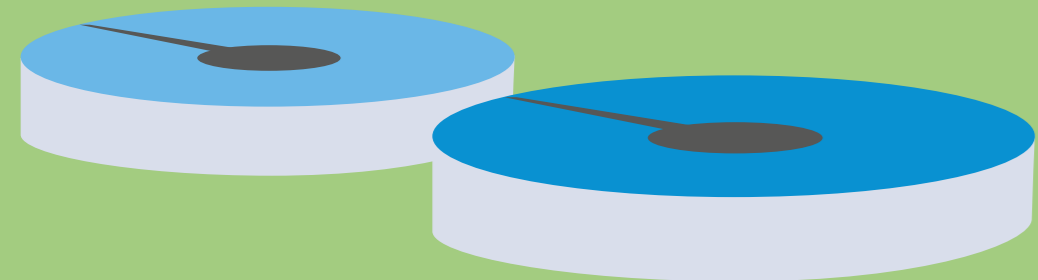
Sludge transported to a sludge treatment centre

Sludge Treatment

Advanced Anaerobic Digestion

Storage of Biosolids

Use on farms



Large site

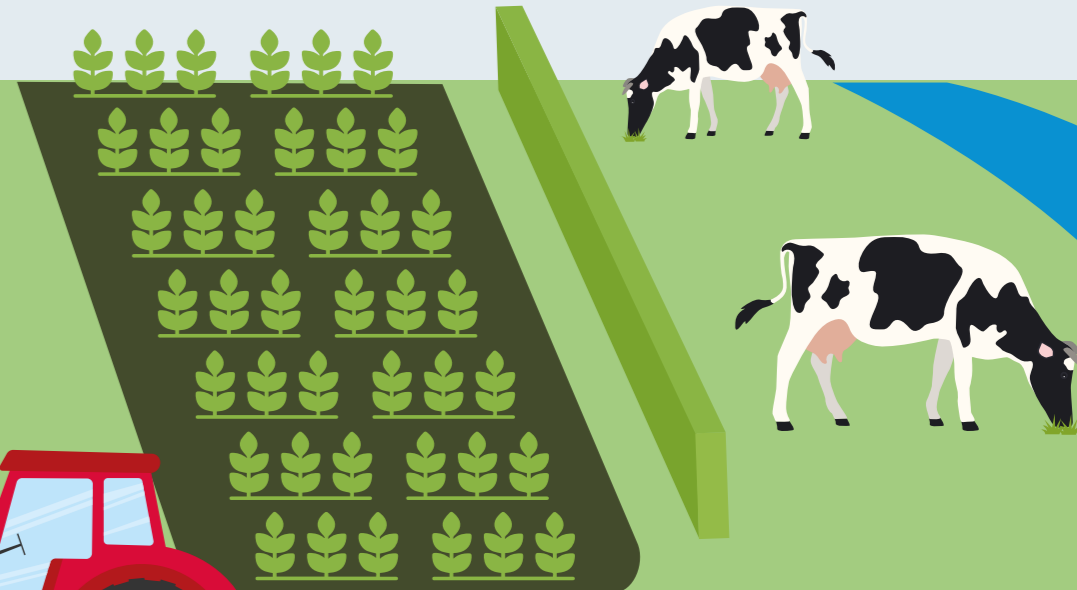
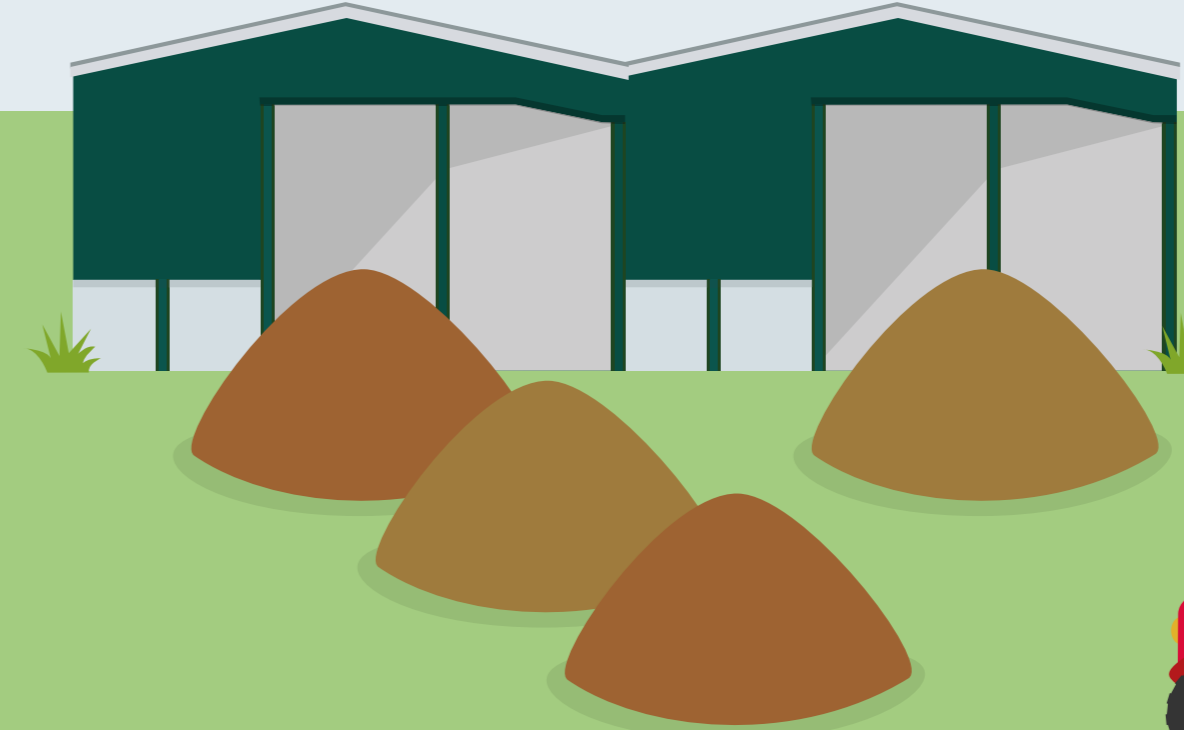
Heat to homes



Electricity generated



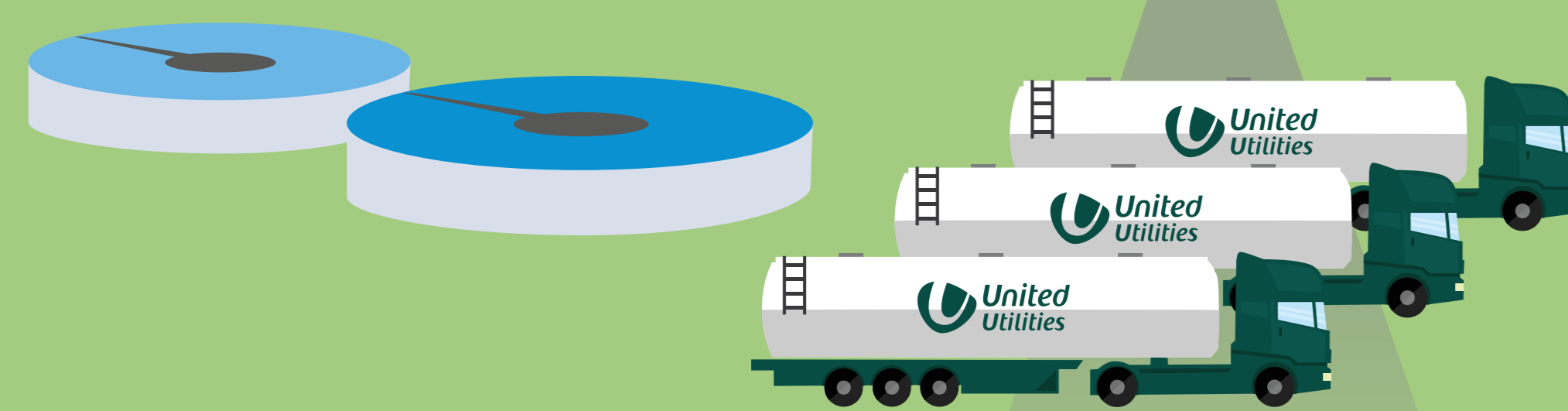
Transport Biosolids to farms



# B

## Advanced Anaerobic Digestion

Wastewater Treatment



Increased transport of sludge to fewer larger treatment centres

Sludge Treatment

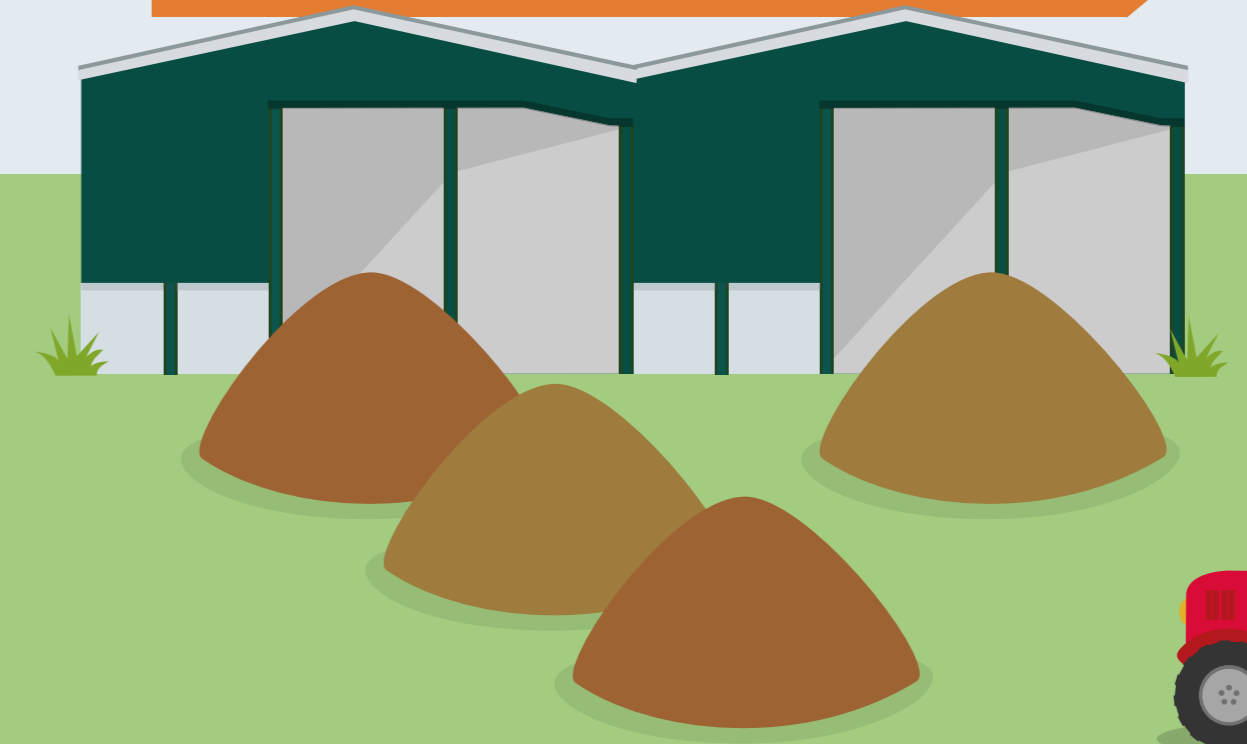


Green gas to heat homes  
Greater renewable electricity and heat generation  
Lower Carbon footprint



Fewer transport vehicles as the Biosolids volume has reduced

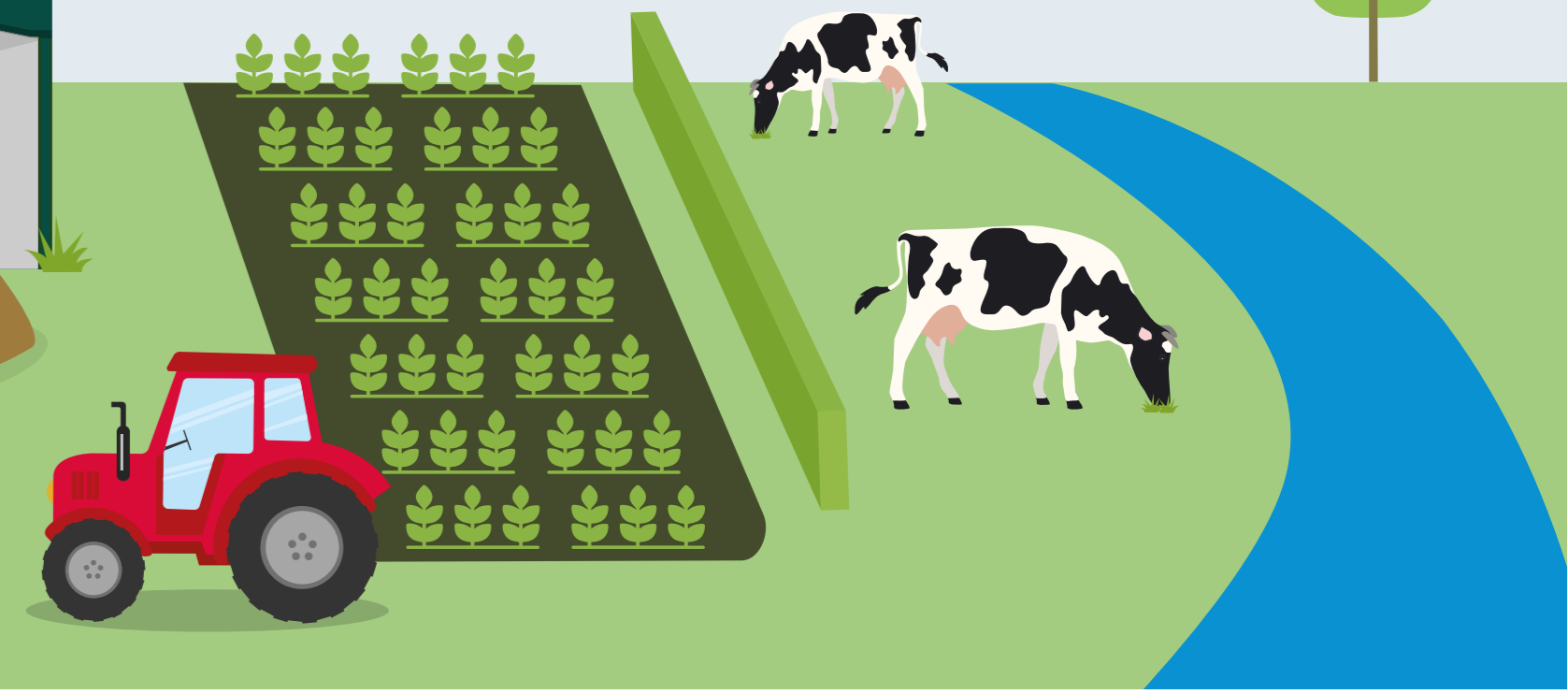
Storage of Biosolids



Large amount of storage needed for Biosolids  
Quality Biosolids, more farmer acceptance & land available

Recycling nutrients and carbon to agriculture

Use on farms



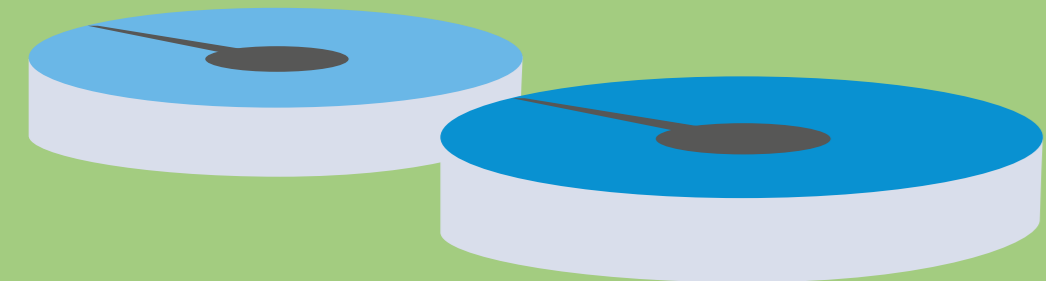
Biosolids are reliant on agricultural land  
Contaminants could still be present and applied to agriculture  
Impact on river water quality continues



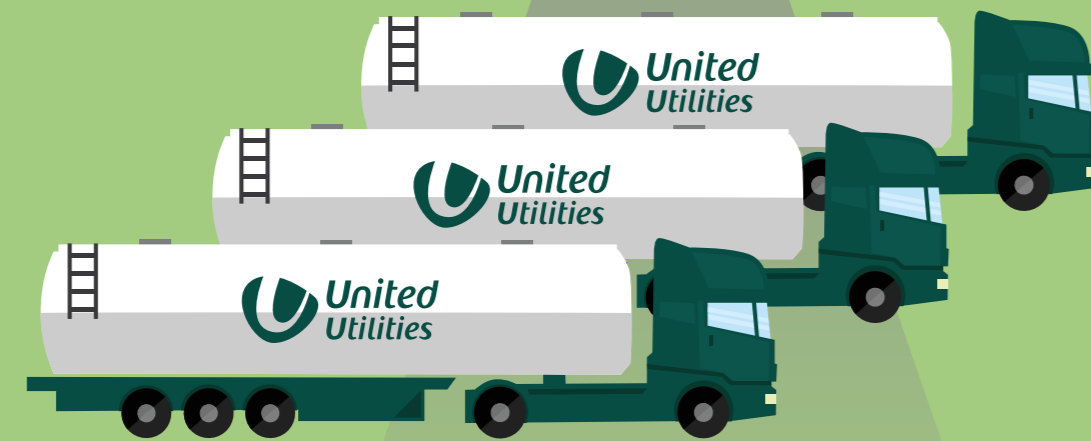
# Incineration

## Wastewater Treatment

Sludge is produced

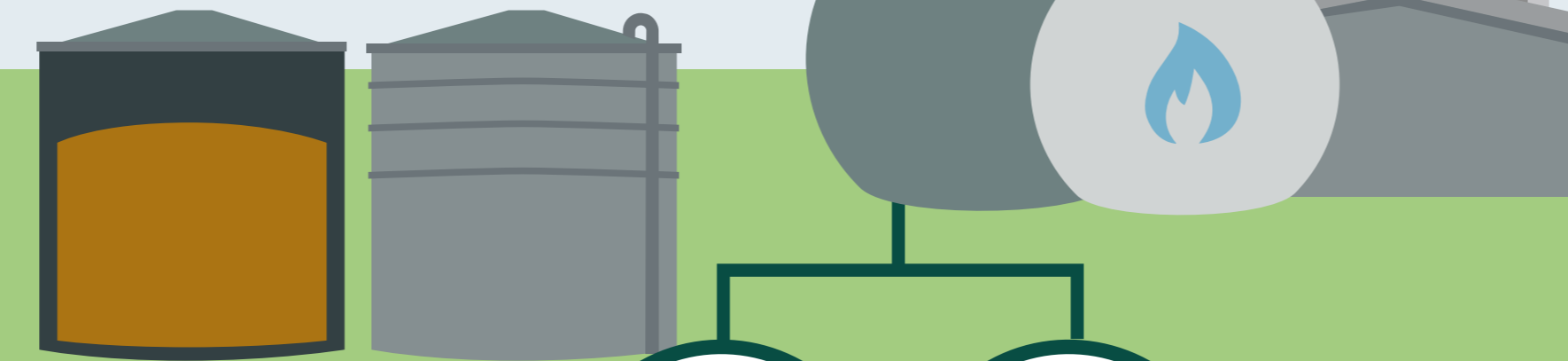


Sludge transported to a sludge treatment centre



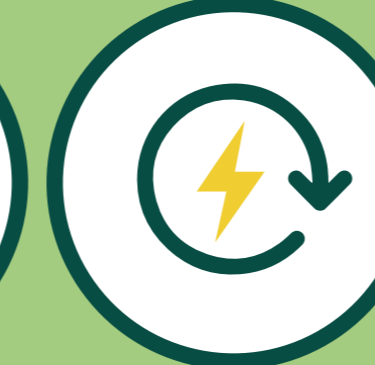
## Sludge Treatment

Advanced Anaerobic Digestion



Large site

Heat to homes



Electricity generated

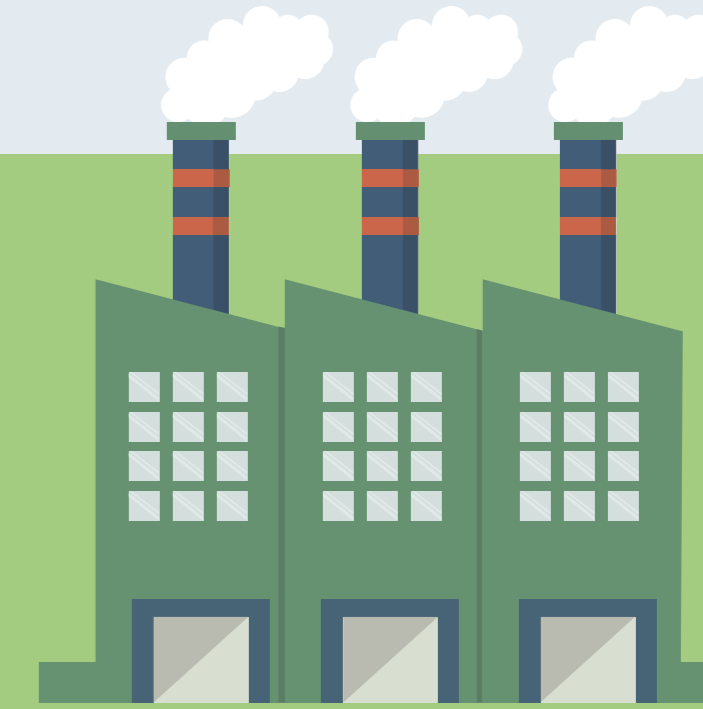
## Storage of Biosolids

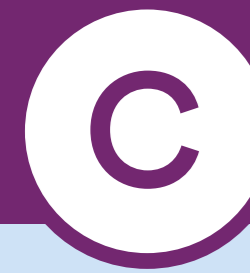


Transport Biosolids to incinerators



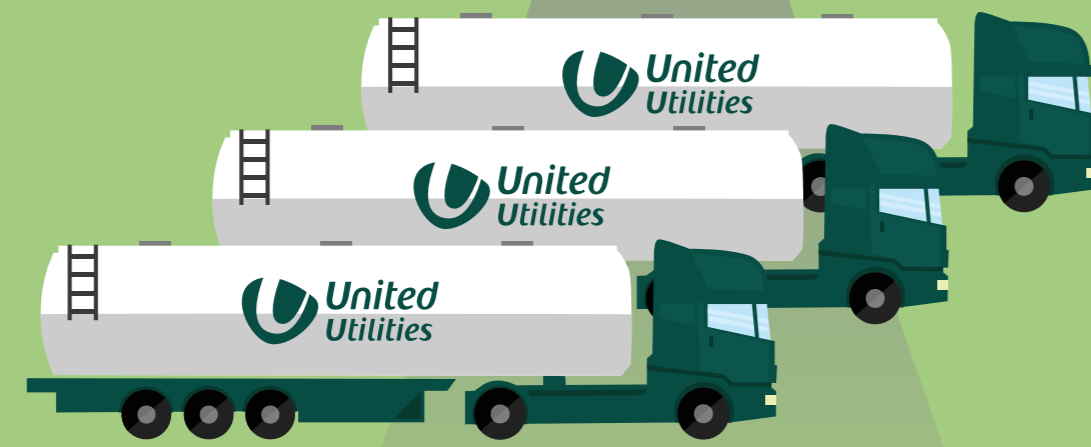
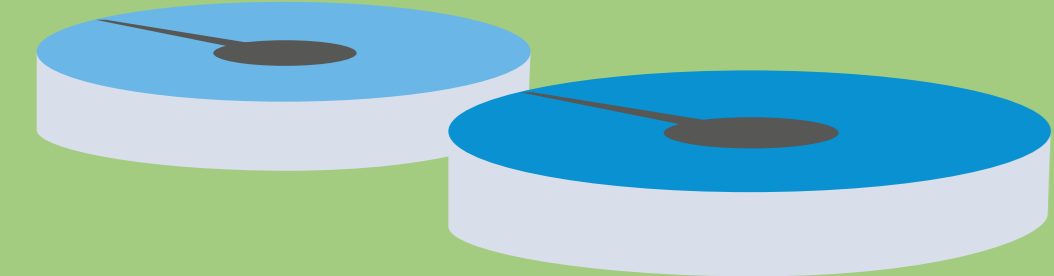
## Incineration



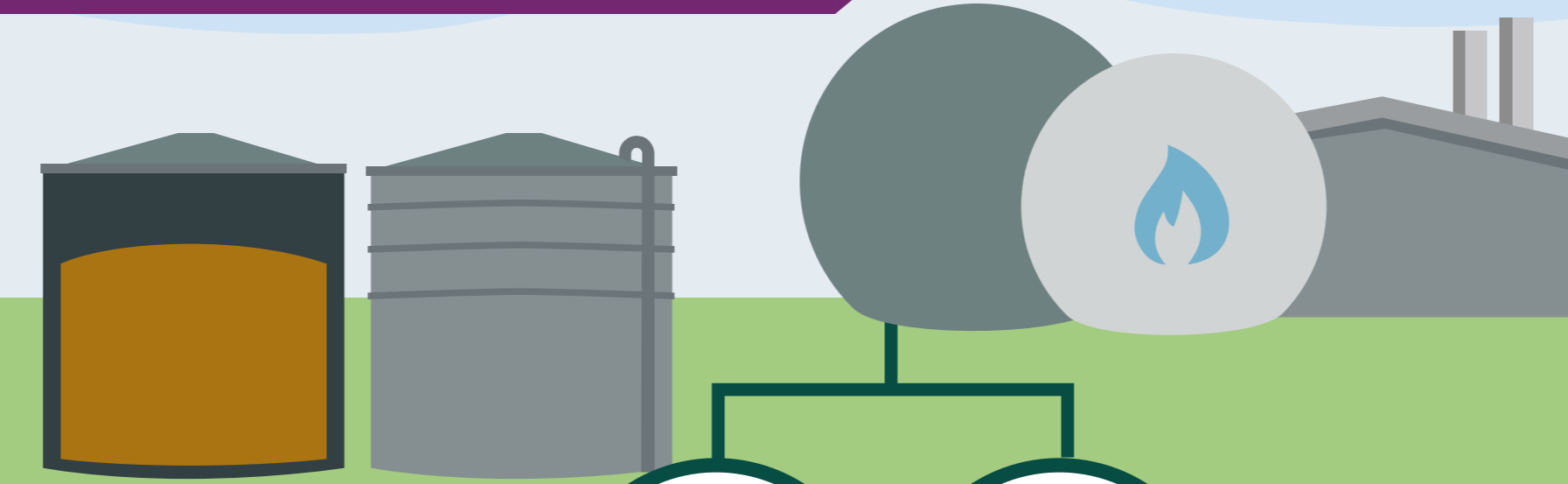


# Incineration

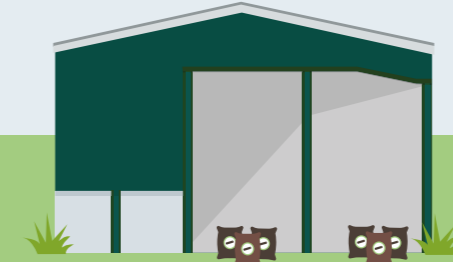
Wastewater Treatment



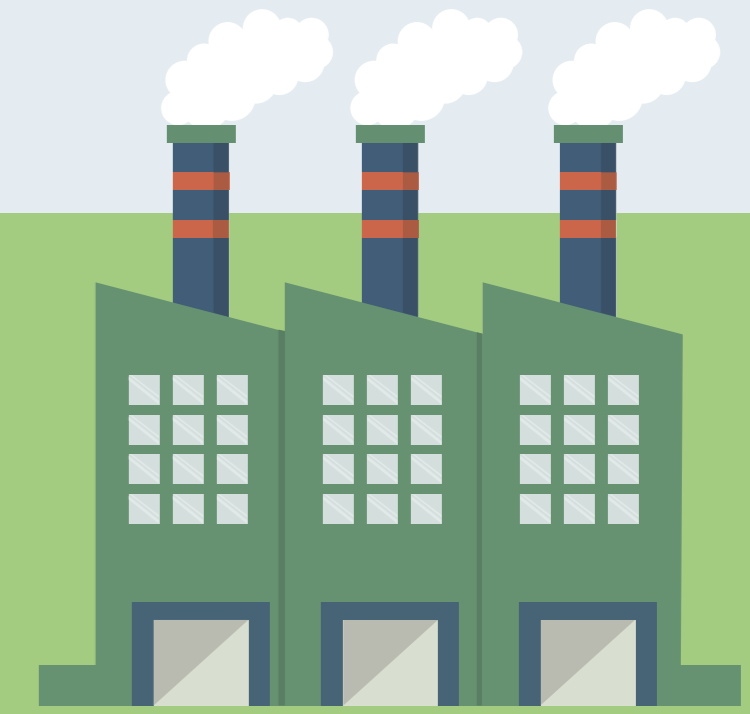
Sludge Treatment



Storage of Biosolids



Incineration



Increased transport of sludge to fewer larger treatment centres

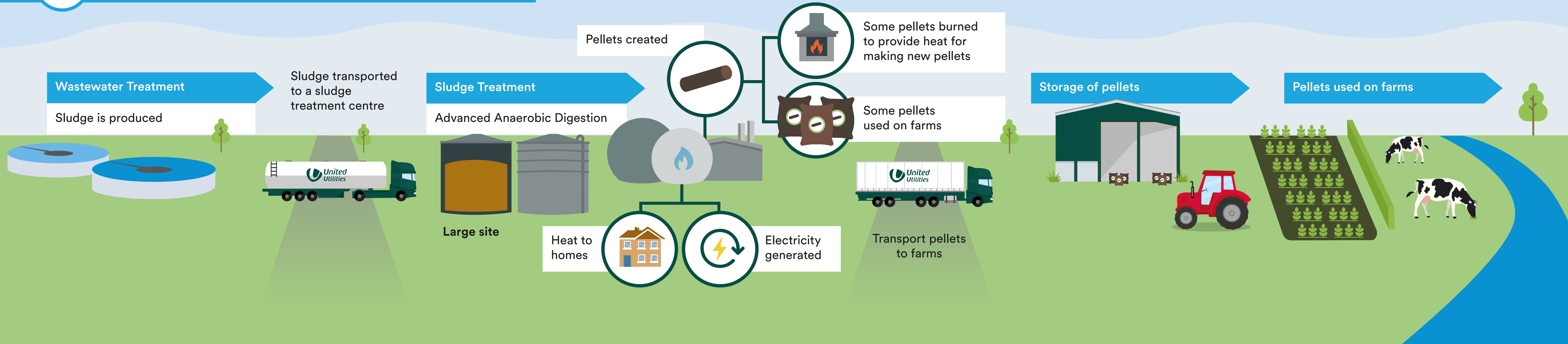
Green gas to heat homes  
More renewable electricity & heat generation

Fewer transport vehicles as the Biosolids volume has reduced  
Minimal storage needed for Biosolids

Air emissions may increase  
Higher Carbon footprint  
Nutrients are not recycled to agriculture  
No reliance on recycling to farms  
Contaminants are not applied to agriculture  
Reduced impact on river water quality

D

# Advanced Anaerobic digestion (AAD) and heat source



D

# Advanced Anaerobic digestion (AAD) and heat source

Wastewater Treatment

Sludge Treatment

Storage of pellets

Pellets used on farms



More trucks on the road

Green gas to heat homes

More renewable electricity & heat generation

Untested technology

Air emissions may increase

Less trucks on the road

Less storage needed for pellets

Recycling nutrients & carbon to agriculture

Less reliance on recycling to farms

Quality Biosolids, more farmer acceptance & land available

Reduced impact on river water quality



**E**

Enhanced nutrients

Wastewater Treatment

Sludge is produced

Sludge transported to a sludge treatment centre

Sludge Treatment

Advanced Anaerobic Digestion

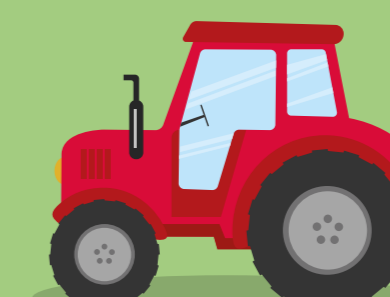
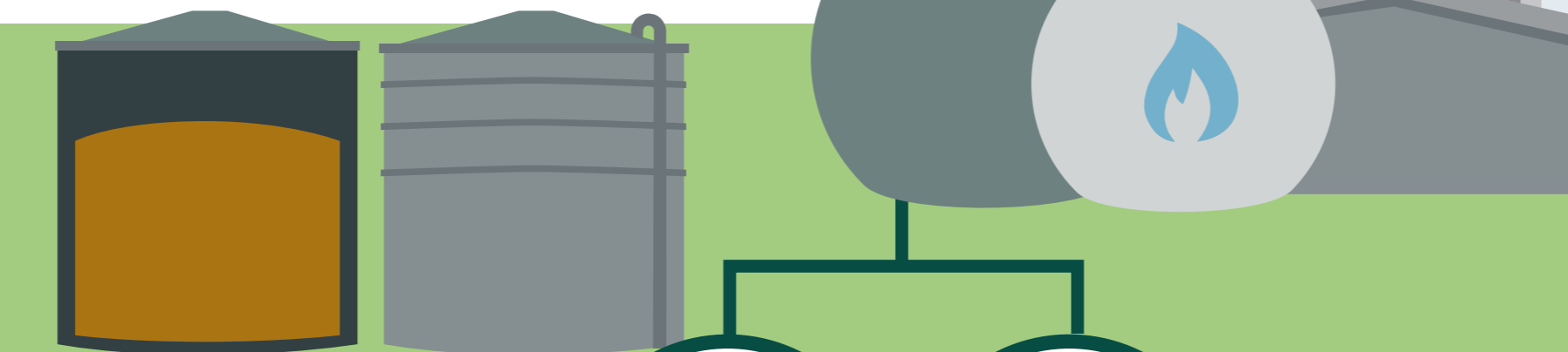
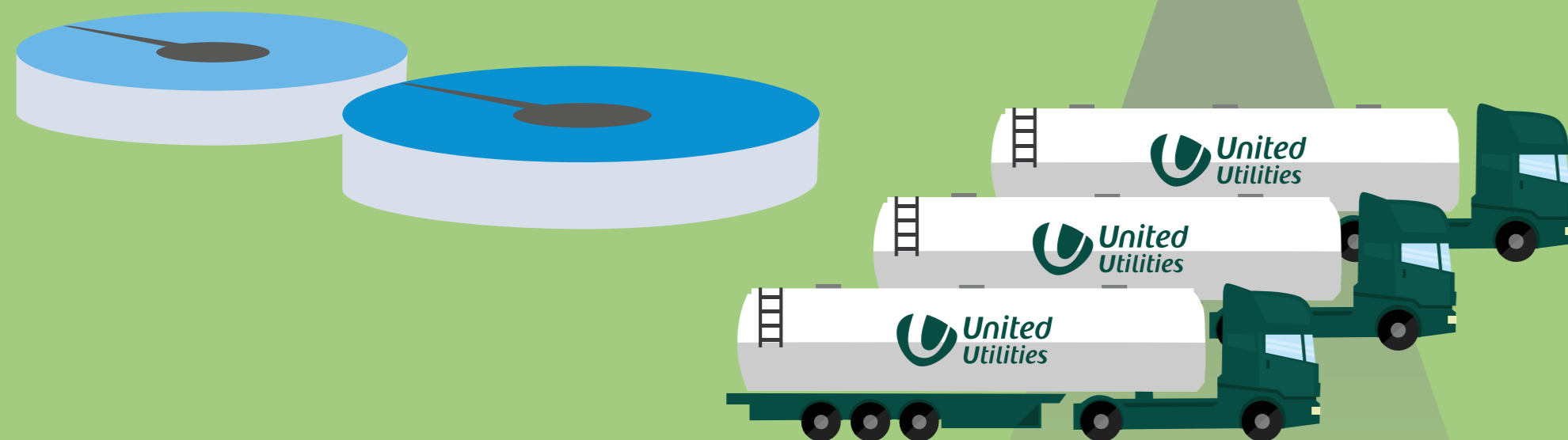
Pellets created

Heat

Nutrients added

Storage of pellets

Pellets used on farms

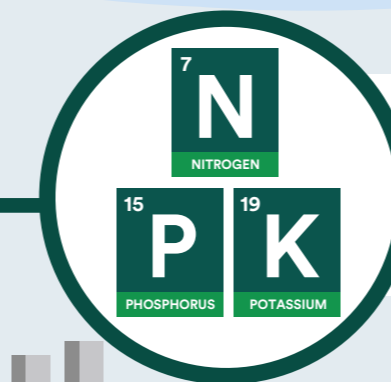
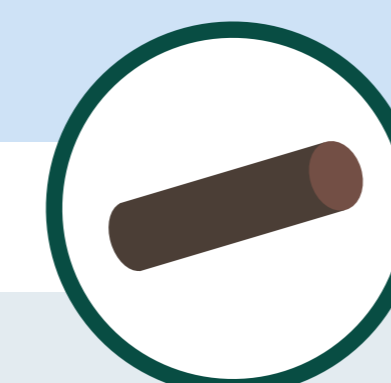
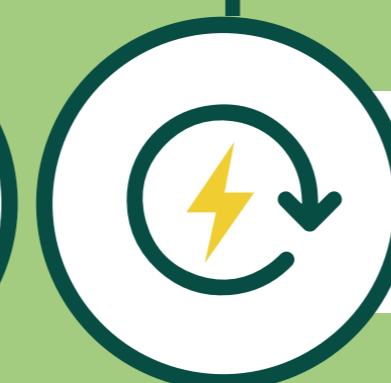


Large site

Heat to homes

Electricity generated

Transport Biosolids to farms



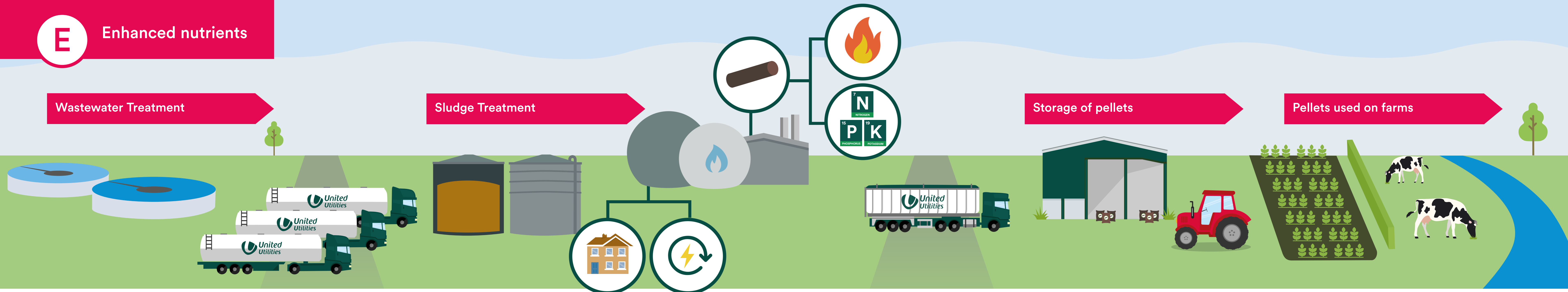
**E** Enhanced nutrients

Wastewater Treatment

Sludge Treatment

Storage of pellets

Pellets used on farms



Increased transport of sludge to fewer larger treatment centres

Air emissions may increase

Fossil fuels provide heat. Higher Carbon footprint

Green gas to heat homes

Greater renewable electricity and heat generation

Emerging technology not yet been tested

Fewer transport vehicles needed to transport pellets

Less storage needed for pellets

Tailor nutrients to the crop

Quality Biosolids, more farmer acceptance & land available

Recycling nutrients and carbon to agriculture

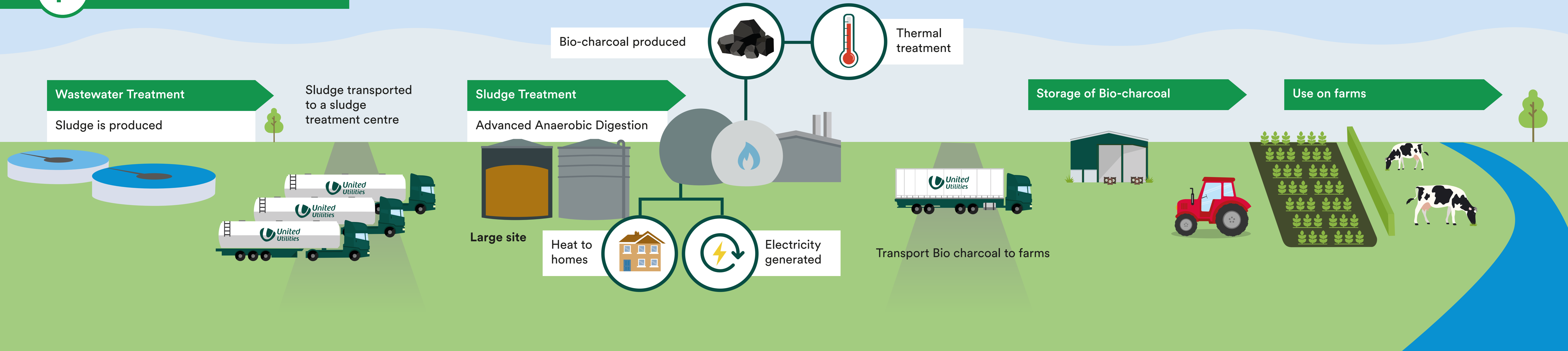
Biosolids are reliant on agricultural land

Contaminants could still be present and applied to agriculture

Reduces impact on river water quality

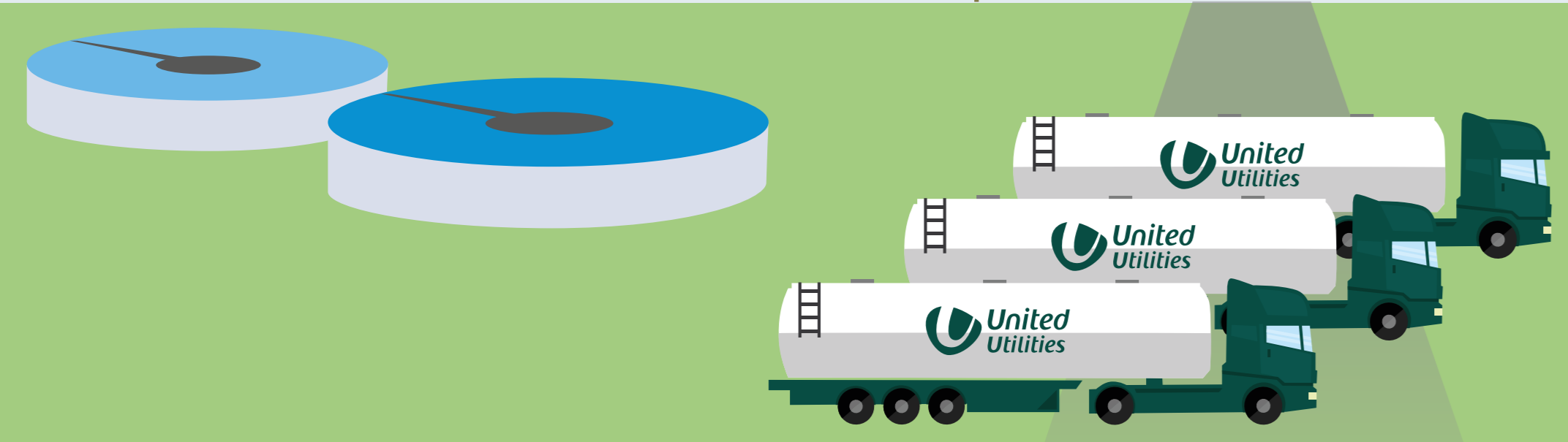
# F

## Advanced thermal treatment

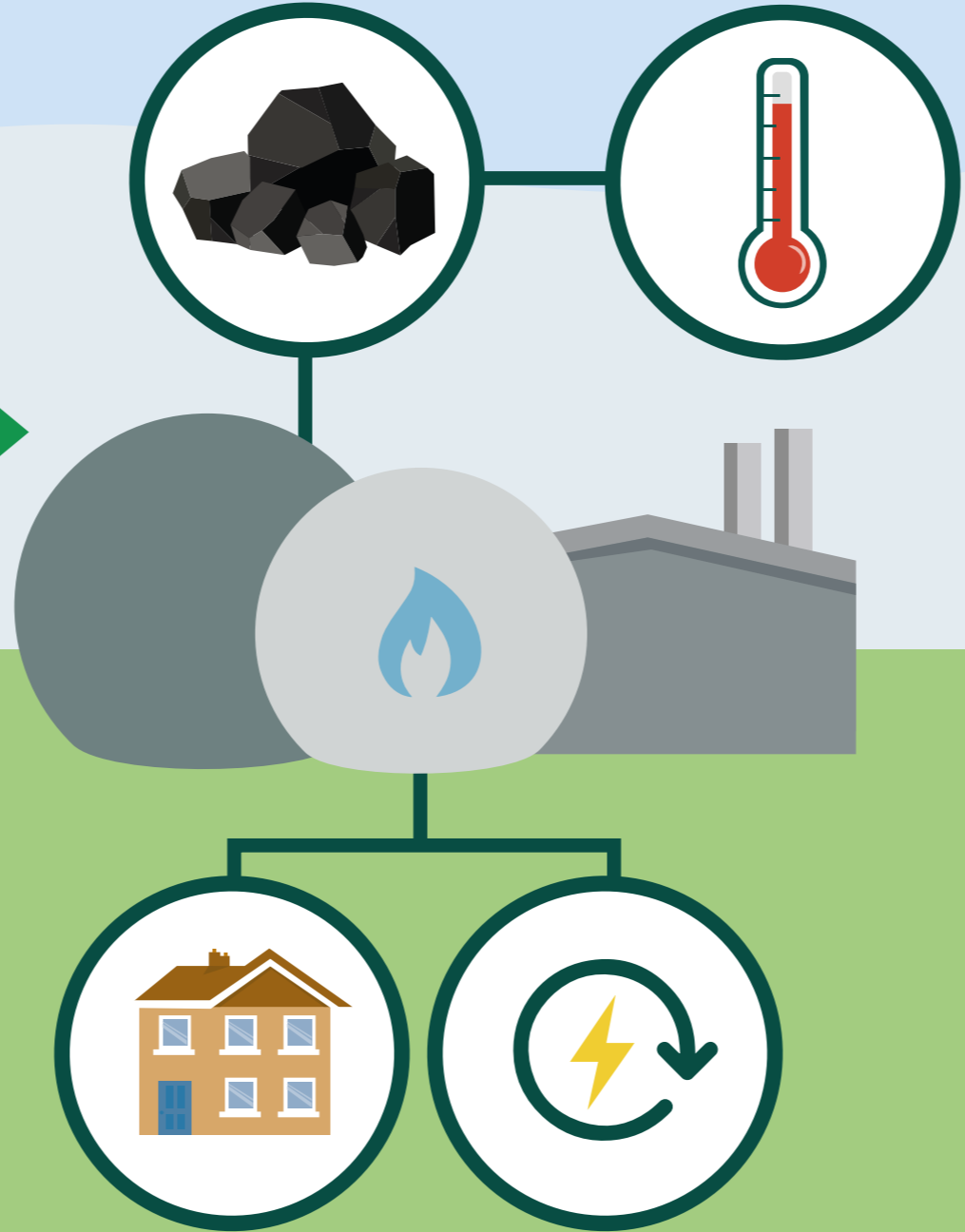
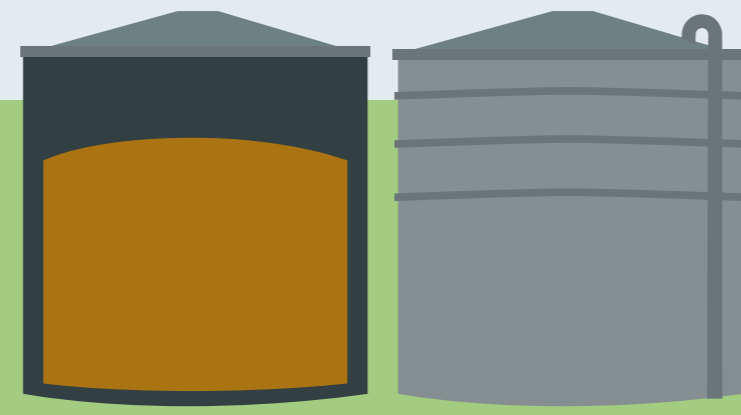


**F** Advanced thermal treatment

Wastewater Treatment



Sludge Treatment



Storage of Bio-charcoal



Use on farms



Increased transport of sludge to fewer larger treatment centres

Air emissions may increase

Fossil fuels provide heat. Higher Carbon footprint

Emerging technology, not yet proven

Green gas to heat homes

Greater renewable electricity and heat generation

Fewer vehicles needed to transport bio-charcoal

Less storage needed bio-charcoal

Less reliance on recycling to farms

May be suitable to go to agriculture dependent on further testing and research

Bio-charcoal are reliant on agricultural land

Contaminants could still be present and applied to agriculture

Reduces impact on river water quality