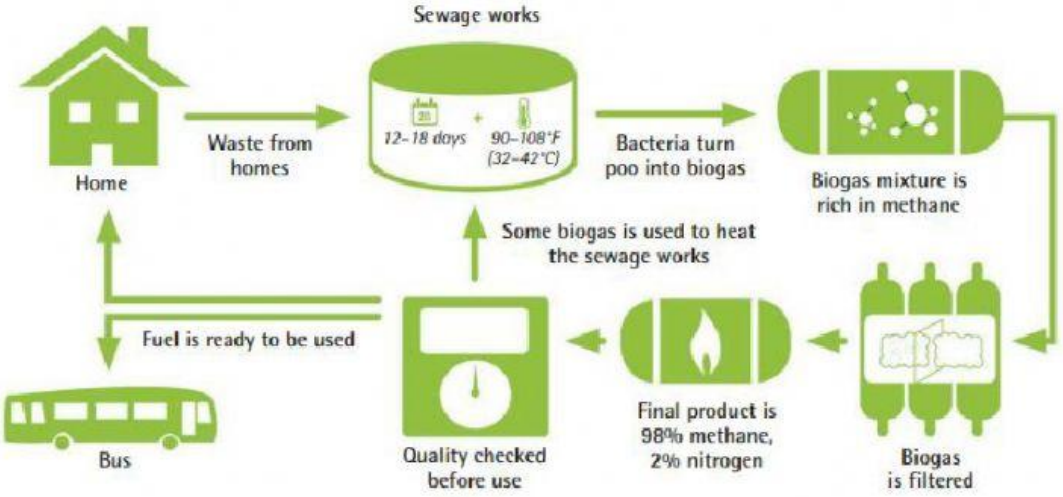
BIO BUS



Unlike an ordinary bus, the Bio-Bus has an unusual power supply: human poo. Human waste from sewers can be collected and turned into biomethane, a highly flammable fuel. Because the raw ingredients of biomethane are both plentiful and completely renewable, the Bio-Bus shows us that clean fuel made in this way could one day be used to power our cars, heat our homes, and generate electricity.

Biomethane is made by heating waste inside tanks where all the air has been removed. Inside, bacteria turn the poo into biogas, which is 60 percent methane. Dust, bugs, and bad smells are filtered, and the biogas is then refined, so it is 98 percent methane, which can be used as fuel for vehicles, or even supplied to homes.

On the bus, the gas fuel is stored in a tank on the roof, compressed to 200 times the air pressure in the atmosphere. The exhaust emissions contain 97 percent less smoke and 90 percent less nitrogen oxide than diesel-powered buses.

The 40-seater bus can travel 186 miles (300 km) on a full tank of biogas. Actually, the Bio-Bus runs a regular public transportation service through Bristol, UK, powered by human sewage and food waste. After being processed at a biogas plant, these rotting materials become a super-clean, odor-free, and low-carbon fuel.

LIVEWORKSHEETS

Other Alternative Energy Sources

One new source of oil fuel can be made with light. Tiny, plantlike algae use a source of bright light to grow inside an algal bioreactor, where they are kept free of impurities. The oils stored in the algae's cells are then refined into a fuel. Likewise, the trash cans of Copenhagen, Denmark, have become a source of power since the Amager Resource Center (ARC), and energy plant and sports facility, opened. This giant incinerator makes electricity from the heat of burning garbage.

**Adapted from How Super Cool Tech Works. DK Publishing.*

Note:

- Alga (singular) is pronounced **/ˈælgə/**
- Algae (plural) is pronounced **/ˈældʒiː/**

Identify the synonyms of the following words and write them in front:

- Paragraph 1:

different

changed

abnormal

create

gathered

- Paragraph 2:

odors

in

automobiles

- Paragraph 3:

kept

- Paragraph 4:

in fact

daily

- Paragraph 5:

in the same way

trash

small

tins

huge

Match the concepts with the descriptions on the right.

1. Bio-Bus	a. Place where energy is generated and people can exercise.
2. Biomethane	b. Material no longer needed
3. Waste	c. Plants, like seaweed, that grow in or near the water.
4. Exhaust	d. System through which gases come out.
5. Algae	e. A type of fuel
6. ARC	f. Vehicle that runs on alternative fuel.

LIVEWORKSHEETS