**Trash management**

3 kinds of trash & 3 kinds of processing plant:

1. Biodegradable: 10 Env Point each.
2. Plastic : 30 Env Point each.
3. Radioactive: 100 Env point each (very few will be there, just 1 or 2)
4. Research Facility

In-game Menu to build factories and research facilities: There will be a build-icon. Clicking on it will enlarge the build menu. The menu will display: a) How much resource is left b) options to build different kind of plants. The plant will get built just below the hydrobot position.

More and more trash will be dropped periodically.

+ Pressing Z: collect trash and put it in biodegradable category.

+ Pressing X: collect trash and put it in plastic category.

+ Pressing C: collect trash and put it in radioactive category.

+ Double clicking on a plant will drop the collected trash in it.

It takes 5 resources and 5 days to build a plant/research facility.

Player will initially have only 20 resources. Plant will generate resources to build more plants or power packs. Resources will get carried over to next level.

Right click on research facility to see options to upgrade. If Research Facility is 15 days old, and 25 trash has already been processed, level 1 upgrade will be available. If 50 trash has been processed, level 2 upgrade will be available. Upgrade option not available for radioactive trash. This screen will also display the information about how the trash is getting processed & how it will be processed when the plant gets upgraded. It will also have option to choose whether to produce resources or powerpacks. By default, it produces resources.

**BIODEGRADABLE WASTE**

5 trash = 1 powerpack = 1 unit resource

Basic Plant : Trash decompose naturally to produce methane power packs after 40 secs/ 10 days.

Upgrade 1: Waste decomposes faster using chemicals like fertilizers. Power packs after 4 secs / 1 day

Upgrade 2: Waste decomposes even faster to produce charcoal using flash carbonization process. Power packs after 1 sec / 0.25 day.

DISPLAY:

Plastic

Power packs after 1 days ( 4 sec )

Basic Plant : Only PET and HDPE plastics are recycled. 1 power pack for every 10 trash.

Upgrade 1: Monomer Recycling. 1 Power pack for every 3 trash.

Upgrade 2: Thermal depolymerization. Power pack for every 1 trash.

DISPLAY:

Basic Steps for plastic recycling:

1. Manual Sorting: All non-plastic materials are removed. Plastic is sorted into 3 types: PET, HDPE and ‘others’.
2. Chipping: The sorted plastic is cut into small pieces ready to be melted down.
3. Washing: Contaminants are removed.
4. Pelleting: The plastic is melted down and made into small pellets.

Types of plastic (with code and some examples):

1: PET – bottles

2: HDPE – milk bottles, bags

3: PVC – pipes, detergent bottles, raincoats

4: LDPE – bread bags

5: PP – straws, screw-on lids

6: PS – foam, yogurt containers

7: Others – ketchup bottles

The code numbers are printed within a recycle sign on most plastic containers.

(For basic Plant):

Usually only type 1 and 2 are recycled. Recycled PET is usually used to make threads which are used to make shoes, jackets, hats. Recycled HDPE is used to make durable products like tables, rulers, trashcans, etc. Other types are not recycled due to lack of incentive to invest in equipments required.

(For Upgrade1):

Monomer Recycling: The polymers undergoes inverse of the polymerization reaction which is used during manufacturing. This creates same mix of chemicals that formed the original polymer, which can be purified and used to synthesize new polymer chains of the same type.

(For Upgrade 2):

Thermal Depolymerization: Melts plastic into petroleum that can be remade into a variety of products.

Biodegradable plastics can also be produced which can decompose in composting plants where it is placed in a heated environment with moisture and oxygen for months.

**RADIOACTIVE WASTE**

Process: Some part is reused to produce fuel. Remaining waste is concentrated to reduce the volume and stored it in a sealed container. It might take millions of years to lose its radioactive property completely. No upgrade.

5 Power packs after 1 days ( 4 sec ) per trash.

Fish health will reduce when it swims near radioactive trash.

Powerpacks of different quality. Methane power pack is less powerful than others.

Bones, fossils in trash. The plant will give it to you along with the power packs. Take to research lab. Lab will tell you how many more is needed for playing the jigsaw game.