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Sustainable Systems
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Life Cycle Part B

24 INNOVATIONS

1. Find a supplier closer to the manufacturer
2. Place more glass recycling bins (one closer in proximity)
3. Include a QR code to find closest recycle bin on the phone
4. Create removable rubber or plastic ring on metal lids
5. Reduce thickness of glass making the entire product lighter to encourage buyers
6. Eliminate pesticides chemicals on peanuts during planting
7. Replace harvest trucks with more workers
8. Use recyclable paper, without coatings for labels
9. Use removable adhesive on labels
10. Use peanut shells to make mulch or use for packing fragile shipping items
11. Hand roast peanuts rather than machinery
12. Use solar or water or wind energy to supply the machines rather than burning fossil fuels
13. Use a separation process to recycle mixed materials alike the brand Terra
14. Improve soil fertility from natural resources such as recycle waste water
15. Alternate crop species for better quality crops and helping soil absorb better moisture and for it to rest
16. Insert mixture of oxygen, carbon dioxide and nitrogen to extend shelf life instead of stabilizer and other chemicals
17. More efficient machineries/automations with multiple function at once, using less machines, time and energy
18. Use thinner ink film, reducing materials and energy used to dry the print
19. Substitute trucks for transportations with trains
20. Replace the peanut grinder with non-mechanical, no energy needed, grinder
21. Add recommendation/instructions on how to revive or make use of hardened peanut butter
22. Include interval production shut downs in factories to save energy
23. Include Integrated pest management for better quality nuts
24. Dribble water from above plant rather than water plants directly saves water

CHOSEN INNOVATION

Replace industrial peanut grinders with manual grinders

NEGATIVE EXTERNALITY AVOIDED

Amount of electricity used, lessen burnt fossil fuels, to operate the industrial grinders

This innovation will save electricity, diminish the amount of fossil fuels being burnt which is the main cause of air pollution. In this case, less greenhouse gas emitted into the atmosphere, reducing the intensity of global warming. However, this replacement would result in hiring additional workers and the manufacturer owners would have to raise the wage as it requires more labor work, as a result raising the market price of peanut butter. Another factor that

would raise the price would be the increase in process time. Manually grinding peanuts takes longer as industrial grinders are stronger, more efficient. And there is a possibility that the manual machine would not withstand as long as the industrial machines as different workers are in contact, handling the machine. vary strength and intervals may hinder the lifespan of the machine, therefore, more frequently replacing the machine meaning more materials needed.