

DEFINING A ZERO-WASTE, POWER-INDEPENDENT, AND ECONOMICALLY VIALE AQUAPONICS SYSTEM WORKSHEET

Name:

Date:

Class period:

Indicate if the Goal of each Consideration listed refers to Energy independence (EI), Economic viability (EV), or Zero Waste (ZW) in the column on the left.

EI: Energy independence

Eliminating reliance on energy supplied by a power company.

EV: Economic viability

A product or project is economically viable if its economic benefits exceed its economic costs, when analyzed for society as a whole. The project's economic costs are not the same as its financial costs; externalities and environmental impacts must be considered.

ZW: Zero waste

Maximize recycling, minimize waste, reduce consumption and ensure that products are designed to be reused, repaired, or recycled back into the environment or marketplace.

Goal	Consideration
	Analyze society as a whole
	Autonomy from the national electric grid
	Both community and industry have responsibility
	Economic benefits exceed its economic costs
	Economic impacts that affect persons who may not benefit from a product
	Eliminating reliance on a power company
	Ensure that products are designed to be reused, repaired or recycled
	Externalities and environmental impacts must be considered
	Maximize recycling
	Minimize waste
	More than just financial costs
	Produce more energy than you consume
	Reduce energy consumption
	Reduced energy costs
	Reducing use of fossil fuels, the source of 60% of U.S. electric power

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Complete the following statements.

Energy independence

- Definition: Eliminating reliance on _____ supplied by a power company.
- Reducing use of fossil _____, the source of 60% of U.S. electric power
- Autonomy from the national _____ energy grid.
- Produce _____ energy than you consume.
- Goal: Reduced energy _____.

Economic viability

- Definition: A product or project is economically _____ if its economic benefits exceed its economic _____, when analyzed for society as a whole.
- The economic costs of the project are not the same as its _____ costs.
- Externalities and environmental _____ must be considered.
- The economic impacts on people who may not _____ from the product must also be considered.

Zero waste

- Definition: maximize _____, minimize _____, reduce _____, and ensure that products are designed to be reused, repaired or recycled back into the _____ or _____.
- Who is responsible? Both _____ and industry.

Summary

A zero-waste, grid-independent, and economically viable aquaponics system would be possible when:

- All waste is used within the system or by complementary systems.
- All power requirements are generated by wastes from the system.
- The costs of production, including all inputs and outputs, are less than the income generated by the system.