

Tutorial - 5

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Q) What do you interpret from the term "Life Cycle Assessment"?
Explain the various stages of life cycle assessment with reference to a tissue paper (paper napkin).

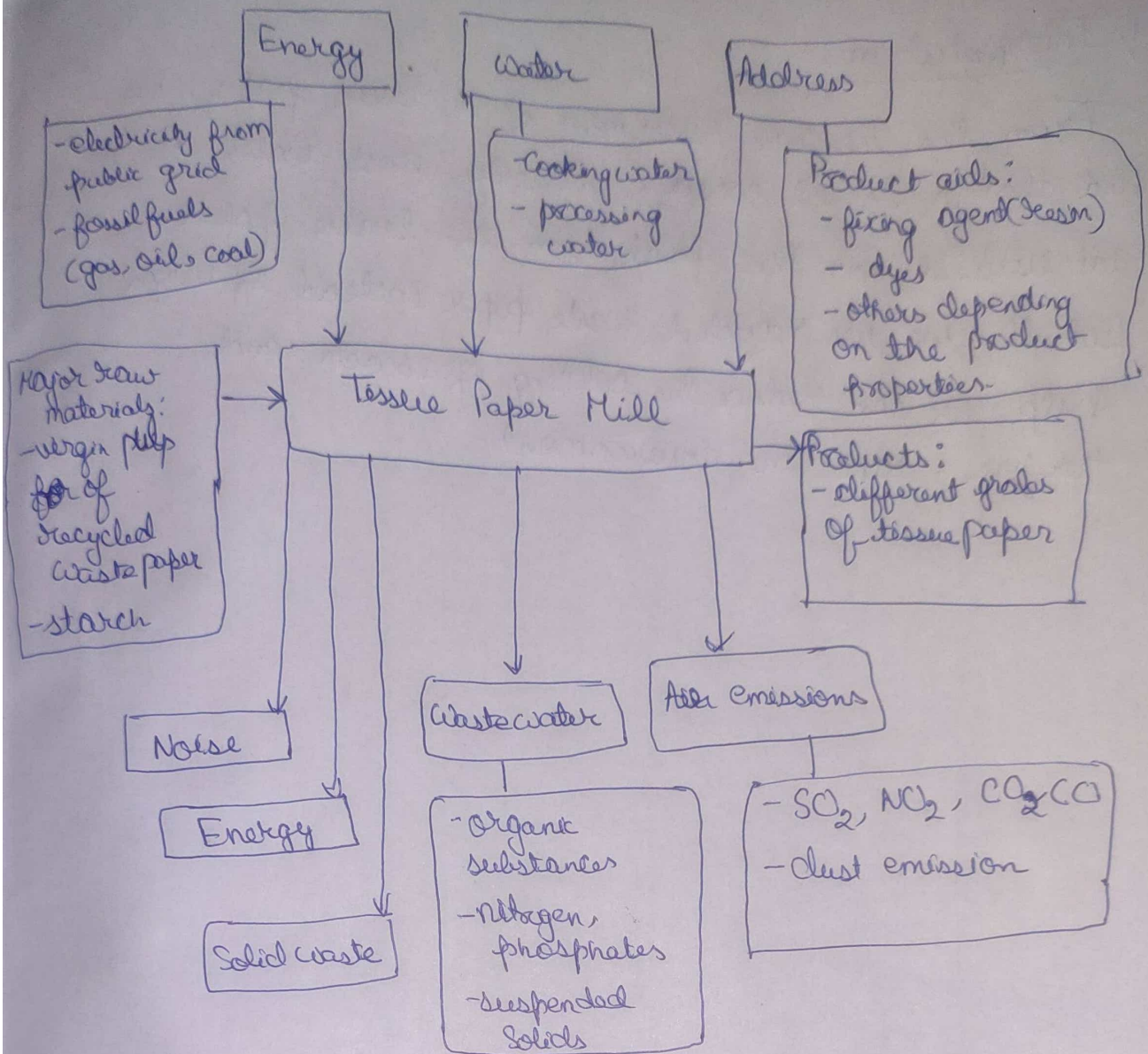
Sol. The most common method of life cycle management (LCM) for assessing products and services' environment performance is the life cycle assessment (LCA) framework. The methods, which are based on LCA methodology, cover environmental ~~solution~~ evaluation of goods and services based on multiple criteria. In the areas of environmental protection, energy efficiency, green tenders, competitiveness, and other actions that contribute to the development of a green economy, it is anticipated that LCA methods will become part of mandatory regulations.

1) Goals and scopes of the analysis:-

The aim of the assessment is to determine the life cycle of tissue paper and the impacts on environment.

2) Inventory Analysis:-

The collection and qualification of inputs and outputs for a specific product or process system throughout its lifecycle is referred to as life cycle inventory (LCI). As a result, data collection is done to get a complete picture of the energy, materials, and chemicals that come from the environment and go into the system as emissions to the environment. A brief inventory of the system's environment flows includes the following: water, electricity, heat, resin, starch and dyes (as inputs), virgin pulp or waste paper pulp, air emissions, and solid waste (as outputs).



3) Impact assessment :-

The pulp and paper industries are one of the highest energy-consuming and polluting sectors and one of the largest greenhouse gases emitters, including CO₂. In order to accomplish the operations of a paper mill a lot of electricity is used. The tissue papermaking process also needs a large amount of fresh water and then releases a lot of wastewater, which is harmful for the environment.

4) Interpretation:-

From the Life Cycle Assessment of a tissue paper, we find that a lot of wood, electricity, fresh water is ~~not~~ utilized for the production of tissue paper. But, if we use recycled waste paper instead of virgin pulp, we can reduce the cutting of woods and therefore, save the environment.