**Pollution Prevention Strategies**

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Source Reduction Options

Source reduction can be described as any routine that lessens the number of harmful substances, pollutants, or contaminants entering waste streams or being discharged into the environment before they are recycled and treated (Basu, Roy, & Pal, 2019). Therefore, source reduction lessens the danger to the community health and the surrounding linked to the discharge of such pollutants. Two source reduction options are discussed below.

1. Material Changes

The material change alternative includes the purification, substitution, and dilution of materials. Additionally, material change alternatives can consist of input material and material product transformations. Product material transformation techniques involve substitution, modification, and conservation in product composition. Cleaning operations frequently generate massive waste amounts thus can present significant source reduction favourable chances. Also, in cleaning operations, there are three kinds of materials included, which are solvent, substrate, and dirt. There is a possibility that one can transform these three material kinds during a source reduction exertion. For instance, if one can transform a product's base material from metal to plastic, he or she could eliminate the necessity for an exterior cleaning phase.

To achieve material changes, a facility can start by analyzing every material used in every section with the inclusion of maintenance and working materials. After that, material pollutants and compositions would need to be spotted out. At this juncture, studies can be carried out to know how every product is put into use to assess potential elimination, reduced usage, or even substitution. Generally, the material changes alternative involves using other alternative materials inside the manufacturing procedure. That way, less toxic products can replace highly toxic ones without lessening quality.

1. Technology Changes

The technology changes classification can include changing the applied equipment inside the operation process. It can also involve using a different technological strategy to accomplish the same outcome or product (Dupont, Ganesan, & Theodore, 2016). For instance, a new and more effective washing machine can replace an old and ineffectual one. Also, when it comes to surface clean-up, one can use mechanical cleaning techniques rather than using solvent cleaning.

Another example is in the case of laboratory examination equipment, whereby purchasing new analytical instruments could be an excellent idea since they may need tinier sample sizes. Also, these new analytical tools may lessen or get rid of particular reagents. Technology change alternatives can include procedure changes, tools, layout, or piping transformations, procedure operational settings changes, and added automation. They can also consist of measures for energy and water preservation.

Recycling Options

1. Sale for Reuse Off-Site

The sale for off-site reuse alternative is an option to off-site and even on-site recycling whereby the generator can move waste to a different facility to be used as raw material inside its production operations (Migliore, Talamo, & Paganin, 2020). Facilities that receive the waste can either use it just the way it is or subject the garbage to a minimized pretreatment amount before using it. The alternative is beneficial since it takes wastes that have been thrown away by individuals who no longer require them and passes them to people who need the waste.

Demand and supply is usually the chief decisive factor for the achievement of this kind of waste transfer. However, off-site recycling becomes highly practical if a technique exists inside an organization that assists it in identifying facilities that can utilize the waste and helps it to market the waste to these facilities. Waste exchanges have allegedly realized this need. Waste exchanges play the role of waste brokers or clearinghouses for data regarding waste streams availability. Additionally, waste exchanges can be individually-owned or government-financed firms that smooth the progress of waste transfer via spotting out potential customers and linking them to relevant suppliers.

Therefore, waste exchange usually officiate trading opportunities through establishing online lists or even hard copies of materials that a particular firm would desire to get rid of and which another company may need. Such exchange is usually economically beneficial to the companies involved since the generator's disposal cost goes down and the purchasing firm's raw material expenses reduce.

1. Energy Recovery

Energy recovery is a vital part of achieving sustainable advancement goals. It is inextricably associated with the evasion and reduction of waste and presents governments and organizations with another technique of lessening their waste (Tong et al., 2018). After removing all recyclable materials, one can use the rest of the trash to release energy. Energy recovery offers complementary and different means of achieving the most sustainable advantage from natural resources together with their waste, thus lessening virgin resources' consumption. Therefore, energy recovery is crucial since it minimizes carbon emissions via decreasing people's need to use fossil fuel-established energy resources.

Additionally, energy recovery lessens the emission of methane, which is produced by landfills. Therefore, one can accomplish recycling by recovering energy via using wastes as a fuel substitute. An individual can process waste inside a fossil-fuel-fired plant or in an incinerator stocked with an energy system. Usually, multiple wastes with various compositions are mixed to generate a preferred specification fuel.

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