

July 2021
Environmental Moments

Innovations in Energy

Alternative fuels are derived from sources other than petroleum and often produce less pollution than gasoline or diesel. Common examples include hydroelectricity, geothermal, wind, and solar energies. Finding ways to seamlessly incorporate environmentally conscious energy sources over fossil fuels is a major step towards the goal of sustainability. The following innovations seek to incorporate renewable or sustainable energies into daily life, reducing environmental impact.

Wave Power

While it receives less press than its wind and solar counterparts, wave power is still an enormously impactful form of energy production on the horizon. Offshore wave energy converters have the potential to generate far more energy than from wind or solar sources. (Innovation Management) However, the damage sustained by these converters means the upkeep and cost associated with maintaining these installations insurmountable with our current technology. Due to this, wave power is still in the experimental stage, but the potential scope of implementation and amount of energy it produces is promising.

Body Heat

The human body itself is a source of heat and energy that can be utilized. If you think capturing heat from crowds of people seems outlandish, you may be surprised to hear that both the Mall of America and Stockholm's rail station have already implemented such measures. (Innovation Management) They utilize a series of pipes and tanks to divert the heat to the rest of the building and save energy. There are few places that do this currently, but it could be expanded in the future.

Flexible Generation

An incredible amount of energy is lost due to the inflexible generation of energy at non-peak or variable times. Surplus energy is often wasted, consuming excess fuel without benefit. Creating flexibility in conventional power plants using emerging technologies and co-opting artificial intelligence and big data for more accurate generation prediction helps accommodate variability. (Irena) This means increased efficiency resulting in lower prices for the consumer and less wastage for the utility.

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Work Cited

"30 Innovative Solutions Show Path to Renewable-Powered Future." IRENA â International Renewable Energy Agency, www.irena.org/newsroom/articles/2020/Jul/30-Innovative-Solutions-Show-Path-to-Renewable-Powered-Future.

"The 5 Most Innovative Renewable Energy Sources." Innovation Management, 2 Apr. 2020, innovationmanagement.se/2017/07/31/the-5-most-innovative-renewable-energy-sources/.