Alternative fuel, known as non-conventional and advanced fuels, are any materials or substances that can be used as fuels, other than conventional fuels like; *fossil fuels* (petroleum (oil), coal, and natural gas), as well as nuclear materials such as uranium and thorium, as well as artificial radioisotope fuels that are made in nuclear reactor

Scrap tires are used as fuel because of their high heating value. Using scrap tires is not recycling, but is considered a beneficial use — it is better to recover the energy from a tire rather than landfill it. In 2003, 130 million scrap tires were used as fuel (about 45% of all generated) — up from 25.9 million (10.7% of all generated) in 1991.

Tires can be used as fuel either in shredded form - known as tire-derived fuel (TDF) — or whole, depending on the type of combustion device. Scrap tires are typically used as a supplement to

traditional fuels such as coal or wood. Generally, tires need to be reduced in size to fit in most combustion units. Besides size reduction, use of TDF may require additional physical processing, such as de-wiring.

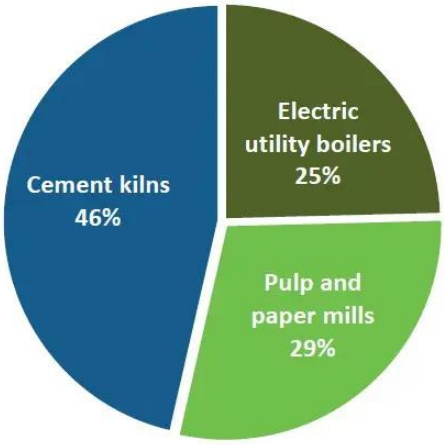
There are several advantages to using tires as fuel:

- Tires produce the same amount of energy as oil and 25% more energy than coal;
- The ash residues from TDF may contain a lower heavy metals content than some coals;
- Results in lower NOx emissions when compared to many US coals, particularly the high-sulfur coals.

Of the 130 million scrap tires used as fuel per year:

- Cement industry – 41%
- Pulp and paper mills – 20%
- Electric utilities – 18%
- Industrial/institutional boilers – 13%
- Dedicated tire-to-energy facilities – 8%

U.S. Tire Derived Fuel Markets 2017



Did you know?

Total scrap tires diverted to TDF market:

1,736,340 tons or about 106 million tires