

A renewable energy source that benefits the environment and provides jobs to local and national economies!



PELLET FUEL

A **renewable fuel** already being produced across the USA, Canada and Europe.

A fuel already providing energy to over one million homes,

businesses and schools in North America.

Economical and sustainable energy source that continues to grow internationally.



A fuel that **burns cleaner** than nonrenewable fossil fuels.

A growing industry that has the potential to create many jobs, especially in rural areas, and positively boost regional economics.

A competitive, price-stable fuel that costs less than oil, LP or natural gas.



With proper forest and agricultural management, pellet fuel supply is virtually limitless and

self-generating

WHAT IS BIOMASS FUEL?

Cordwood, wood pellets, wood chips, waste paper, along with dozens of other agricultural by-products capable of being used for energy, are all examples of biomass fuel. The most compelling principle of biomass is that it is renewable. Given proper forest and agricultural management, biomass is virtually limitless, and has proven to be price stable. The environmental benefits of the fuel is that it turns readily available waste products into clean and efficient energy.

Sustainable Forest Initiatives, wood manufacturing by-products and other forms of forest agricultural management provide cost effective pellet fuel manufacturers with low cost materials by retrieving biomass materials from these programs. The majority of North America's forest is secondgrowth, and requires periodic treatment in order to address forest health and fire mitigation. A tremendous amount of unusable material remains on the forest floor after such treatment; material rejected by high-end wood product manufacturers but a perfect resource for commercial pellet manufacturers.

By engineering waste such as cornstalks, straw, wastepaper, wooden shipping pallets, residual forest waste, even animal waste...pellets can utilize millions of tons of waste and put them to work.

THE BENEFITS OF PELLET FUEL

Pellet manufacturers take by-products (like wood waste) and refine them into pencil-sized pellets that are uniform in size, shape, moisture, density and energy content. Why not simply burn raw biomass? First, the moisture content of pellets is substantially lower (4% to 8% water-compared to 20% to 60% for raw biomass). Less moisture means higher BTU value and easier handling especially in freezing situations with green raw biomass materials. Second, the density of pellet fuel is substantially higher than raw biomass (40 lbs. per cubic foot verses 10-25 lbs.



per cubic foot in raw material form). More fuel can be transported in a given truck space, and more energy can be stored at your site. Third, pellets are more easily and predictably handled. Their uniform shape and size allows for a smaller and simpler feed system that reduces costs. This high density and uniform shape can be stored in standard silos, transported in rail cars and delivered in truck containers. Pellets pose none of the explosion risks or environmental pollution from spills as nonrenewable fossil fuels do.

The remarkable consistency and burn efficiency of pellet fuel produces a fraction of the particulate emissions of raw biomass. Pellet burners feature the lowest particulate matter emissions of all solid fuels burners.

When you heat with biomass, carbon dioxide is released into the atmosphere. Trees absorb this carbon dioxide in equal amounts as they grow, so burning pellets does not increase the amount of this greenhouse gas in the atmosphere.

Arsenic, carbon monoxide, sulphur and the greenhouse gas carbon dioxide are just a few of the air and water pollutants resulting from the use of all nonrenewable fossil fuels as a heat and an energy source. Even if the supply of nonrenewable fossil fuel was unlimited, the economic and associated environmental costs of transporting and burning ever-increasing amounts of nonrenewable fossil fuels are simply unsustainable. In fact, since pellets can burn more efficiently (system efficiency averages at 80 percent!) than other fuels, emissions from pellet burners meet even the most stringent EPA requirements.

Any remaining ash in the burn chamber, when removed, is of little consequence. Once the ash is emptied periodically, it can actually double as a fertilizer. Finally, pellet storage poses no soil or water contamination risks. A spill can be cleaned with a shovel...not a hazardous waste crew.

COMBUSTION SYSTEMS & CHANGEOVER

Though pellet fuel installations have a reputation in some circles as "alternative" choices, their functional components are virtually identical to those of the more conventional oil, coal or gas systems. The European example offers a glimpse of what future opportunities hold. They include a pellet storage container, a burner, an automated feeder to supply that burner, a boiler, exhaust system and chimney. There is no need for extensive permits or containment because there is no volatile oil or gas. Any storage can take place above or below ground, making maintenance and filling easier and further reducing costs of installation and upkeep.

A heating system producing approximately 500,000 Btu/hr (the size of a small school's system, for



SYSTEM COMPONENTS

The components of a commercial pellet fuel system mirror their nonrenewable fossil fuel counterparts, and in most cases retrofitting will require little change to either the boiler or heat delivery system. In many cases, even existing oil or coal burners won't require replacement, but simple modifications to burn pellets.

instance) currently burning oil, coal, or natural gas, in many instances can be changed to burn pellets with retrofits made only to the burner, plus the addition of a combustion conveying system and a storage container. In such a system, the existing boiler and heat delivery structures remain unchanged. Solid fuel systems such as those burning coal or wood chips is more easily retrofitted to burn pellets through simple feed and air supply adjustments. A pelletized, refined fuel will always burn cleaner than the virgin material form.

The pellet fuels burn process holds emissions far below those of nonrenewable fossil fuels. Future research in commercial pellet burning systems are employing various technologies which are promising even further increases in efficiencies.

With the reduced costs, ease of operation and environmental benefits, pellet fuel provides financial benefits to the consumers and the communities in which they live. Since pellets are manufactured regionally, they are never a monetary drain on a town, city or county. Regional waste problems are addressed and supply is tailored to local needs. Pellets provide jobs, pellet dollars stay in the region, and the entire community relies less on foreign energy.

GETTING OFF THE NONRENEWABLE FOSSIL FUEL ROLLER COASTER

History has shown that nonrenewable fossil fuels are extremely price volital. A crisis or an international event that chokes fossil fuel supplies can cause periodic spikes in costs. The US is expected to increase our importation of foreign oil greatly as compared to our oil consumption today. Considering the human, political and economic consequences of nonrenewable fuels, such variations loom ominously large for anyone contemplating running a tightlybudgeted business on oil or natural gas. Pellet fuel costs have been virtually constant with no foreseeable change during that same ten years. Since forecasters rely on regional manufacturers for their production estimates, that guess is likely to be far more accurate than oil estimates from OPEC. Given that hundreds of businesses were forced to shut their doors due to the dizzying spike in fuel costs in 2001, doesn't it simply make better sense to rely on local resources for your energy?

THE BOTTOM LINE

Energy policy means making tough decisions, weighing costs and benefits and even judging the next turn in the financial road. Pellet fuel can put North America ahead in all those areas. It will encourage the economic and energy independence of your communities, reduce costs and clean the air in the bargain.

- Cost Effective Energy
- Cleaner Environment
- Stronger Local Economies





Pellet burners are so efficient that their emissions meet even the most stringent EPA standards

PELLET FUEL WILL MAKE IT HAPPEN.

PELLET FUEL CAN CHANGE THE WAY WE DO BUSINESS FOREVER.

The Pellet Fuels Institute has a mission of informing consumers of the convenience and practicality of using wood pellet fuel; and now that over 600,000 homeowners have learned the efficiency and practicality of using pellet stoves, it now turns its attention to the millions of large-scale commercial applications for which pellet fuel is suited. Such systems have already been working efficiently and effectively for twenty years.

Whether you are a school administrator, banker, legislator, business owner, factory manager, energy consultant, or just anyone who needs to heat their home-you have a unique opportunity to free yourself from the price fluctuations of oil and gas and embrace a convenient, environmentally sound and forward-thinking way to heat.





RESIDENTIAL STOVES

COMMERCIAL FURNACES





BULK DELIVERY

VOLUME SHIPPING

PELLETS IN ACTION (Customer Testimonials)

THEATER

The 600 seat Elma Theater in Elma, Washington opened in November of 1928, and has had a proud history of showcasing regional performers ever since. After many years of heating the theater with oil, a unique, pellet-based system was recently installed that has cut costs dramatically. Rather than a single large burner, the facility uses several smaller burners, and even a single pellet stove in the lobby.

BUSINESS

NRG Systems, a global leader in wind assessment technology, designed their facility in Hinesburg, Vermont with the melding of manufacturing and office building using natural environments and renewable fuels. The 46,000 square foot building is heated by two wood pellet boilers supplied directly by thirty ton capacity pellet silo delivered to the facility by a bulk pellet truck.



HYDROPONIC FARM

This Hydroponic tomato farm in Sutton, Quebec has burned pellets as its primary heat source since 2000. The system was installed with the assistance of a government renewable energy initiative, and is so efficient that the investment has already paid back in fuel cost savings.

POWER PLANT

In Hinkley, Maine, a cogeneration power plant located in a paper manufacturing facility has been using industrial wood pellets to add capacity and improve boiler heat control since 1986. It has successfully used tens of thousands of tons of wood pellets a year. This installation was a retrofit on an existing industrial boiler.

EDUCATION CENTER

The Harris Center for Conservation Education is located in Hancock, New Hampshire and has been housed in a large old sprawling summer home since the organization began in the 1970's. In the Fall of 2003, an extensive renovation of the building resulted in 9400 square feet of space. The renovation was carried out with a philosophy of making the building as environmentally friendly as possible with energy efficiency being kept as the key goal. The "greening" of the building included the installation of a Multi-Heat Boiler that automatically feeds wood pellets via a flexible auger attached to an exterior pellet-storage silo. The Center owns or holds conservation easements on approximately 8000 acres, offers conservation education in the classroom for area schools, as well as offering programs at its revitalized facility.

HDF-LI STOKER Stoker components

ENERGY

Proudly Made in





ENVIRONMENT



PELLETS ARE SAFE TO HANDLE

Safe, Clean Burning, and Easy to Transport



Greenhouse Gas Carbon Emitted Per Quad of Heat (in Millions of Short Tons)



Source: Department of Energy/ Energy Information Administration

ECONOMY

Enhances i while prov	ndependence f iding jobs to lo	from imports ocal economies
	CURRENT JOBS	
	Pellet Manufacturing	Industry-Related 2566
	POTENTIAL JOBS with an estimated 570,000,000 dry tons of raw materials available to be pelletized.	
PELLET FUELS INSTITUTE TRACKS OVER 50 PELLET MILLS ACROSS NORTH AMERICA PRODUCE IN EXCESS OF 1.3 MILLION TONS OF FUEL PER YEAR.	Pellet Manufacturing 820,000	Industry-Related