

Wood Pellets

What are wood pellets?

Wood pellets are made from sawdust, compressed into uniform diameter (6-8mm) pellets to be burned in heating appliances. They are a clean, renewable, standardised fuel and allow for easy handling and storage.



Wood pellets should conform to European Quality standards for pellets as defined in – CEN/TC 14961

One tonne of pellets contains the same amount of energy as 500 litres of oil and has a volume of 1.8m³.

How can wood pellets heat my home?

Rather than burning wood in open fires, efficient stoves and boilers are used to burn wood pellets.

For pellet heaters with integrated boilers and outdoor pellet boilers, a building is plumbed the same as if an oil or gas boiler is being installed and they are connected similarly. They can be used for both radiator and underfloor heating systems.

Pellet storage

Pellets can be bought in bulk (min. 3 tonne at present) and stored in a pellet hopper. The minimum recommended hopper size is 3.5 - 4 tonne or approx. 2x2x2m volume.



Alternatively, pellets can be bought in bags of 10 - 20kg and used to refill a room heater.



Pellet Stoves and Boilers

Wood pellet stoves and boilers should conform to the European Standard for solid fuel appliances as defined in EN 303. They usually have efficiencies of 90% and above.

Pellet stove and insert room heaters



Pellet stove room heaters are stand alone units, which can also be built into existing fireplaces.

These usually range in size from 3kW - 10kW - sufficient to heat up to 100m² in a well insulated building. They are particularly suited to open plan areas.



Room heaters are fed manually with bagged pellets, with one fill lasting approx. 3-4 days.

Pellet stove room heaters (with water heating)



Pellet stove room heaters with integrated boilers look and are fed similar to room heaters.

The major difference is that only a small proportion of the heat is emitted to the room (10-30%), with the remainder used to heat water in a backboiler or central heating system.

Pellet stove room heaters with integrated boilers usually range in size from 8kW - 15kW - sufficient to heat a large room plus an additional 6-8 radiators as well as domestic hot water.

Pellet boilers

Outdoor pellet boilers range in size from 15 kW to >50kW, sufficient to provide heating and domestic hot water for most houses.



Modern pellet boilers employ automatic controls and the pellet fuel is delivered automatically from the hopper through an auger.

For correct operation and maximum efficiency, a hot water buffer store/mixing valve should be installed with the system. A standard 125mm insulated chimney and flue draught stabiliser is also recommended.

Pellet boilers can be located in a purpose built boiler house or garage. They can also be placed outdoors if housed in an insulated weather casing.

Some systems are delivered in self-contained boiler houses incorporating the boiler, fuel store and hot water storage tank. These are often integrated with a solar thermal system to provide hot water.

Maintenance and operation

Most pellet systems incorporate computer controls meaning that they can start-up and shut down automatically and modulate continuously according to heat requirements. Most also have a self-cleaning combustion chamber.

Ash from wood pellets is minimal (<0.5%) and needs to be removed from the boiler once every 3 - 4 weeks. As with an oil or gas boiler, servicing of the pellet stove or boiler once a year is recommended.

Renewable Energy & Energy Efficiency

Renewable energy combined with energy efficiency offers a viable method of minimising energy costs and counteracting the causes of climate change.

Different types of renewable energy technologies offer different benefits but they all use non-polluting and effectively limitless energy sources.

Energy efficient features can be easily incorporated into the building design and construction at minimal additional cost.

Domestic Renewable Energy Grants

Sustainable Energy Ireland, through the Greener Homes Scheme provides grants to homeowners for renewable energy domestic heating systems.

Heating systems	Typical Lower Price	Typical Higher Price	Grant Available*
Solar Flat Plate	€800 / m ²	€1,100 / m ²	€250/m ²
Solar Evacuated tube	€900 / m ²	€1,300 / m ²	€300/m ²
Heat Pump - Horizontal	€13,000	€15,000	€2,500
Heat Pump - Vertical	€18,000	€21,000	€3,500
Heat Pump - Water Source	€12,000	€14,000	€2,500
Heat Pump - Air Source	€12,000	€13,000	€2,000
Biomass Stove	€2,000	€5,000	€800
Biomass Stove with Integral Boiler	€4,000	€8,000	€1,400
Biomass Boiler	€10,000	€16,000	€2,500
Wood Gasification Boiler	€10,000	€16,000	€2,000

*from July 2008 - Phase III

Website: www.sei.ie/greenerhomes : tel: 1850 734 734

Your Local Energy Agency

The Carlow Kilkenny Energy Agency was established by Carlow and Kilkenny County Councils to provide sustainable energy information and services to the people of Carlow and Kilkenny, to local businesses and community groups and to the Local Authorities.

Impartial advice and information on energy efficiency, renewable energy and building energy rating is available by contacting the Carlow Kilkenny Energy Agency.



E-mail: info@aiea.ie
Website: www.aiea.ie

Carlow Kilkenny Energy Agency
(059) 9143871
www.ckea.ie

CODEMA (City of Dublin Energy Management Agency)
(01) 4100659
www.codema.ie

Cork City Energy Agency
(021) 4941508
john_walsh@corkcity.ie

Cork County Energy Agency
(022) 43610
mallowre@eircom.net

Donegal Energy Action Team
(074) 9172222

Galway Energy Agency Limited
(091) 566 954
peter.keavney@galwaycity.ie

Kerry Energy Agency
(066) 7183576
wmoynihn@kerrycoco.ie

Limerick Clare Energy Agency
(061) 234296
www.lcea.ie

Mayo Energy Agency
(096) 76113
www.mayoenergy.ie

Meath Energy Management Agency
(01) 8358019
www.mema.ie

Midlands Energy Agency
(057) 5674351
mmacaulay@laoiscoco.ie

Northern Ireland Energy Agency
(028) 90265997 - Belfast
(028) 71273074 - Derry
(028) 66328269 - Fermanagh
info@nienergyagency.org

Tipperary Energy Agency
(052) 43090
www.tea.ie

Waterford Energy Bureau
(051) 395531
www.waterfordenergy.ie

Wexford Energy Agency
(053) 9176555
www.wexfordenergy.com



Wood Pellet Systems Renewable energy heating systems



- Pellet stove room heaters
- Pellet stove room heaters - with water heating
- Pellet boilers

Your Local Energy Agency

Carlow Kilkenny Energy Agency

Tel No: 00 353 59 914 3871
Fax No: 00 353 59 9143290
E-mail: info@ckea.ie
Website: www.ckea.ie
Castlehill, Carlow, Co. Carlow

