**Fuel:**

|  |  |
| --- | --- |
| Fuel | Price (EUR/GJ) |
| Oil | 145 euro/MWh |
| Natural gas | 86 euro/MWh |
| Biomass (firewood) | 54 euro/MWh |
| LPG | 239 euro/MWh |
| Electricity: see hourly price or | Hourly distibution |

**Investment cost:**

|  |  |
| --- | --- |
| Technology | Price (EUR/kW) |
| PV (3 kW) | 3000 euro/kW |
| Micro Hydro (up to 100 kW) | 4500 euro/kW |
| Oil boiler (15 kW) | 833 euro/kW |
| Natural gas boiler (15 kW) | 333 euro/kW |
| Biomass (firewood) boiler (15 kW) | 933 euro/kW |
| LPG boiler (15 kW) | 400 euro/kW |
| Individual Heat pump (GSHP) (15 kW) | 2267 euro/kW |
| Individual Heat pump (ASHP) (15 kW) | 1300 euro/kW |
| Solar thermal (HSW) (1 family) | 5000 euro |
| Individual electric heater (HSW) (1 family) | 250 euro |

**Fixed operation and Maintenance cost:**

|  |  |
| --- | --- |
| Technology | Cost (EUR/KW), in terms of percentage of investment, from EnergyPLAN |
| PV (3 kW) | 0.25% |
| Micro Hydro (up to 100 kW) | 0.2% |
| Oil boiler (15 kW) | *2.5%* |
| Natural gas boiler (15 kW) |
| Biomass (firewood) boiler (15 kW) |
| LPG boiler (15 kW) |
| Individual Heat pump (GSHP) (15 kW) | **0.7%** |
| Individual Heat pump (ASHP) (15 kW) |
| Solar thermal (HSW) (1 family) |  |
| Individual electric heater (HSW) (1 family) |  |

**Variable operation and Maintenance cost:**

|  |  |
| --- | --- |
| Technology | Cost (EUR/MWh) |
| PV (3 kW) | 0 |
| Micro Hydro (up to 100 kW) | 2.48 (according to lcoe wiki) |
| Oil boiler (15 kW) | 0 ? |
| Natural gas boiler (15 kW) | **0 ?** |
| Biomass (firewood) boiler (15 kW) | **0 ?** |
| LPG boiler (15 kW) | **0 ?** |
| Individual Heat pump (GSHP) (15 kW) | **0 ?** |
| Individual Heat pump (ASHP) (15 kW) | **0 ?** |
| Solar thermal (HSW) (1 family) | **0 ?** |
| Individual electric heater (HSW) (1 family) | 0 ? |

**Useful life**

|  |  |
| --- | --- |
| Technology | years |
| PV (3 kW) | 25 |
| Micro Hydro (up to 100 kW) | 20 |
| Oil boiler (15 kW) | 20 |
| Natural gas boiler (15 kW) | 20 |
| Biomass (firewood) boiler (15 kW) | 20 |
| LPG boiler (15 kW) | 20 |
| Individual Heat pump (GSHP) (15 kW) | 50 (heat pump 20 y - borehole 80 y) |
| Individual Heat pump (ASHP) (15 kW) | 20 |
| Solar thermal (HSW) (1 family) | 20 |
| Individual electric heater (HSW) (1 family) | 10 |

**Efficiency**

|  |  |
| --- | --- |
| Technology | efficiency |
| PV (3 kW) | monocrystalline silicon 20% |
| Micro Hydro (up to 100 kW) | 90% |
| Old standard boiler | 85% |
| High efficiency boiler | 92% |
| Condensig boiler | 109% |
| Individual Heat pump (GSHP) (15 kW) | SPF = 3,1 (DD = 3000) |
| Individual Heat pump (ASHP) (15 kW) | SPF = 2,2 (DD = 3000) |
| Solar thermal (HSW) (1 family) | 50% |
| Individual electric heater (HSW) (1 family) | SPF = 1 |

**National grants**

|  |  |
| --- | --- |
| Technology | efficiency |
| PV (3 kW) | (50 %) + 140 euro/MWh |
| Micro Hydro (up to 100 kW) | 219 euro/MWh |
| Old standard boiler | 0 |
| High efficiency boiler | 0 |
| Condensig boiler | 65% |
| Individual Heat pump (GSHP) (15 kW) | 65% |
| Individual Heat pump (ASHP) (15 kW) | 65% |
| Solar thermal (HSW) (1 family) | 65% |
| Individual electric heater (HSW) (1 family) | 0 |