

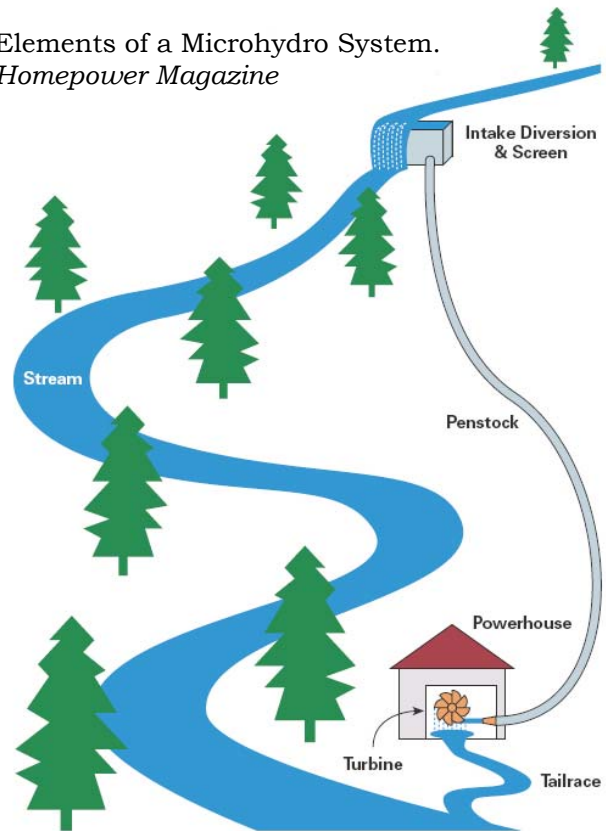
Example System

Measured Head: 135 feet (41 meters)
Measured Flow: 250 gpm minimum
Pipe Length: 900 feet (274 meters)
Estimated power: 1,140 watts

A battery-based system with an inverter is one possible choice for a hydro site with the above parameters. If an AC turbine were used, electrical usage would be limited to about 1,140 watts. This would not be sufficient to run the combined loads of a typical household. A battery-charging turbine will allow energy storage in a battery bank. The inverter will be able to provide surges of instantaneous power to the house. A smaller grid-tie AC system could be used to reduce or eliminate the power bill through net metering.

With a design flow of 100 gpm, using 3" pipe would result in a head loss of 21 feet (per pipe loss charts), for a net head of 114 feet and an estimated power of 1,140 watts. This would supply the house with 820 kWh per month.

Elements of a Microhydro System.
Homepower Magazine



Resources

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| US Department of Energy | www1.eere.energy.gov/windandhydro |
| The Low Impact Hydropower Institute | www.lowimpacthydro.org |
| US Army Corps of Engineers, Regulatory Division | www.saw.usace.army.mil/wetlands |
| Energy Systems & Design | www.microhydropower.com |
| Harris Hydroelectric | www.harrishydro.com |
| Hydro Induction Power | www.hipowerhydro.com |
| Powerpal | www.powerpal.com |
| Canyon Hydro | www.canyonhydro.com |
| Alternative Power and Machine | www.apmhydro.com |
| Otherpower | www.otherpower.com |
| Earthbound Services LLC | www.earthboundservices.com/microhydro.asp |
| NC Green Power | www.ncgreenpower.org |
| Database of State Incentives for Renewables & Efficiency | www.dsireusa.org |
| Homepower Magazine | www.homepower.com |
| NC State Energy Office | www.energync.net |

Western North Carolina Microhydro Installers

Appalachian Energy Solutions, Kent Hively, (828) 773-9762
www.appalachianenergysolutions.com

Big Frog Mountain, Thomas Tripp, (423) 265-0307
www.bigfrogmountain.com

Blue Ridge Energy Solutions, Bill Poteat, (800) 689-8824
www.brescoltd.com

Solar Dynamics, Ole Sorensen, (828) 665-8507
www.solardynamicsnc.com

Solar Village Institute, Chris Carter, (336) 376-9530
www.solarvillage.com

Sundance Power Systems, Dave Hollister, (828) 689-2080
www.sundancepower.com

For more information contact:

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State Energy Office



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