



# Off-the-Grid Initiatives



*This four-season off-the-grid home is a Custom Northwood.*

**People** have different reasons for living off-the-grid. It may be a temporary solution or its simply too cost prohibitive to connect to the grid. Typically, though, living off-the-grid is an ideal-based choice. Whether the objective is making-do, self-reliance, or environmental impact, those who take the off-the-grid living initiative must learn to master the balance between old and new technology options and an acceptable level of home comforts. An evaluative approach from research to cost analysis to application is a must in order to attain that balance.

## The Log Home as a Smart Off-the-Grid Choice

The iconic log home, synonymous with frontier homesteading closely matches the off-the-grid philosophy. This may be reason enough to choose a log home for an off-the-grid home venture. There are, however, more practical reasons. Log home construction utilizes one material, wood. Wood logs act as exterior, interior and insulation whereas stick built homes might also include house wrap, insulation, and drywall all of which are not sustainable nor renewable. Wood is a sustainable and renewable resource and a natural choice.

## Off-The-Grid Building Challenges

One could easily get bogged down with every “green” application available, therefore, it is essential to locate a consultant whose expertise matches your particular agenda. Since there are new and often unfamiliar technologies hitting the market it is important to understand the workings of each system install as well as the when, where, how, who and cost of preventative maintenance and common service repairs that may be necessary. Once decided, ensure each contractor fully understands their role in integrating the systems within the building project.

## Off-The-Grid Viability

### REGARDING WATER & SEPTIC

#### Water

There are state and local regulations that apply to private wells which require a licensed well driller. Submersible pumps for shallow (up to 200 feet) need only a third horsepower pump. Deeper wells may require half or three quarter hp pumps. Rain water can be harvested by channeling water from a metal or clay roof top to a cistern. Any other roof material could be used but might require a water filtration system. Cistern storage requires a pump unless the cistern is elevated above faucets in which case gravity would suffice. Dedicating indoor space to a cistern will alter a blueprint so plan accordingly.

#### Septic

An outhouse for handling human waste is an option though most will choose indoor options such as the composting toilet. Check to see if alterations should be made to the blueprint for venting and storage needs. In many cases though a gravity-feed septic system can be installed which expertly handles both human waste and gray water disposal using the standard install methods.



*Battery bank and circuitry.*

## Power Storage Housing

Build a dedicated battery closet within the homes thermal envelope. Equip the space with a small exhaust fan to operate when the battery voltage is high, especially when using the lead acid battery. Keep any spark creating devices separate for safety sake.

## **REGARDING POWER**

### **Solar Panels**

Roof mounted solar panels in the Northern Hemisphere will typically need to face true south to receive the maximum amount of light. The roof lines must be open and free from valleys, dormers, skylights, chimneys and plumbing vents. The rule of thumb for the proper angle of the roof slope is that it should closely match the latitude. Acceptable roof pitches anywhere in the U.S. range from 8/12 to 12/12.



### **Wind Power**

The U.S. Department of Energy recommends that an acre or more of unimpeded wide-open space be available for off-grid systems. Wind speeds annual average should be at least 14 mph. Keep in mind the longer the distance between the tower and the home the more power is lost.

### **Hydro Power**

If you are fortunate enough to have a running water source with enough volume and elevation drop to create pressure you can generate full power 24/7 as opposed to sunshine and wind options which generate full power only intermittently.

### **Hybrid Power**

Hybrid power is a combination of solar, hydro or wind sources. Since full power for each option is not needed minimum requirements can be lowered. For instance, the average wind speed need only be 9 mph for viability. Combination ratios and requirements can be determined by a professional consultant.



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*When planning your venture be realistic with yourself about your personal limits. Choose options you and your family can live with for the long haul. If you do this you should be able to enjoy the rewards of homeownership, off-the-grid style!*