



## On-Grid or Off-Grid? That is the question.



**F**irst off, let's get some definitions straight: for the purpose of this article, "on-grid" means you get electricity from a utility company. There are many examples of "mini-grids" in which a small number of homes share a centralized power system, but that's another article.

Choices abound when deciding where to get the power for your cottage these days. The simplest and most common approach is to call the power company and get them to hook you up, but not everyone wants simple, and not all sites are simple; issues surrounding rights of way, timing, environmental concerns and more all weigh in on this decision.

Purchasing a renewable energy system is like paying for 20 years of electricity upfront,

as opposed to the pay-as-you-go approach we are most accustomed to.

What will work best for your particular situation depends on a whole host of factors, so let's break it down:

**Cost** Generally speaking, if cost is your prime motivation for considering renewable energy, and if it's going to cost you more than \$20,000 to bring power lines to your site, you should study renewable energy as an option.

The cost to go off-grid starts at about \$2,000 for a basic system providing simple, summer-only needs such as lights and music. For a cottage with most of the creature comforts of a normal home, you can

**Solar panels are a great option for sunny, summertime properties.**

expect to pay around \$30,000-60,000. Design is a huge factor in the amount of energy required.

Another consideration is the ongoing costs your choice of energy system may incur. If your cottage is only used for a month or two in the summer, and your needs are very simple, a renewable option may be best. Most utilities will still be charging you a basic rate even if you have everything off and draw no electricity.

**Electrical Requirements** This is one of the most significant considerations. It's not necessarily the size of the dwelling that is the main consideration, though a

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larger space will generally use more energy; it's the number of appliances and the habits of whoever is using them that's most significant. "Average" and "typical" don't really work for this; we need actual numbers to best design a system. This is called an energy budget, which is a listing of everything in your cottage that uses electricity, and how often it's used.

Energy Alternatives has developed a spreadsheet to make it easy for you to figure this out. You can download this utility from [www.energyalternatives.ca/systemdesign](http://www.energyalternatives.ca/systemdesign) or obtain a copy of our print catalogue, which walks you through this process in detail.

To aid you in determining how much power small appliances use, you can purchase a device to measure this ([www.energyalternatives.ca/wattmeter](http://www.energyalternatives.ca/wattmeter)). These meters tell you the actual measured power, which is far more useful than the rating found on an appliance's nameplate. If you must rely on nameplate values, keep in mind the rating listed is always larger than actual, so reduce the number by one third for better accuracy, and be sure to let your designer know so they don't do the same.

Think also when you use your cottage: if you're there primarily in the summertime,

and you have a good solar resource, solar energy could be a good match for you. Even if you do go up there occasionally in the winter, running a generator periodically to charge things up may still be a good option.

**Budget** A renewable energy system is like buying a new car with cash, compared to utility power, which is like a zero per cent

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down, zero per cent interest, life-long debt you will never pay off.

If your budget reality dictates that your renewable energy system will grow incrementally, it's in your best interest to develop a master plan for your system, so all

purchases made are moving forward to a final ideal system. I've seen too many people save \$100 initially only for it to cost them \$5,000 later to change it. Find a renewable energy company you trust and work with them to develop a plan for your site. Use this plan for your purchasing decisions.

**Maintenance / Reliability** When there is a utility power outage you have little choice but to wait it out, relying on others to find and fix the problem. If you are off-grid, well, you are responsible for your own power. If something goes wrong, it's up to you to solve it. Renewable energy systems rarely break down, as the components are designed to operate in very remote locations.

We always get smug calls or emails from clients who elected to install off-grid energy systems even when grid-power is available after a good power outage.

Factor in all of the above to decide what is best for you. If you know enough about all of this, dive in and do what's best. Many people find it's worth the value to contract the services of a renewable energy professional to help guide them through this initial decision-making process, as well as come up with the framework for a system design. ●

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