



Renewable Energy

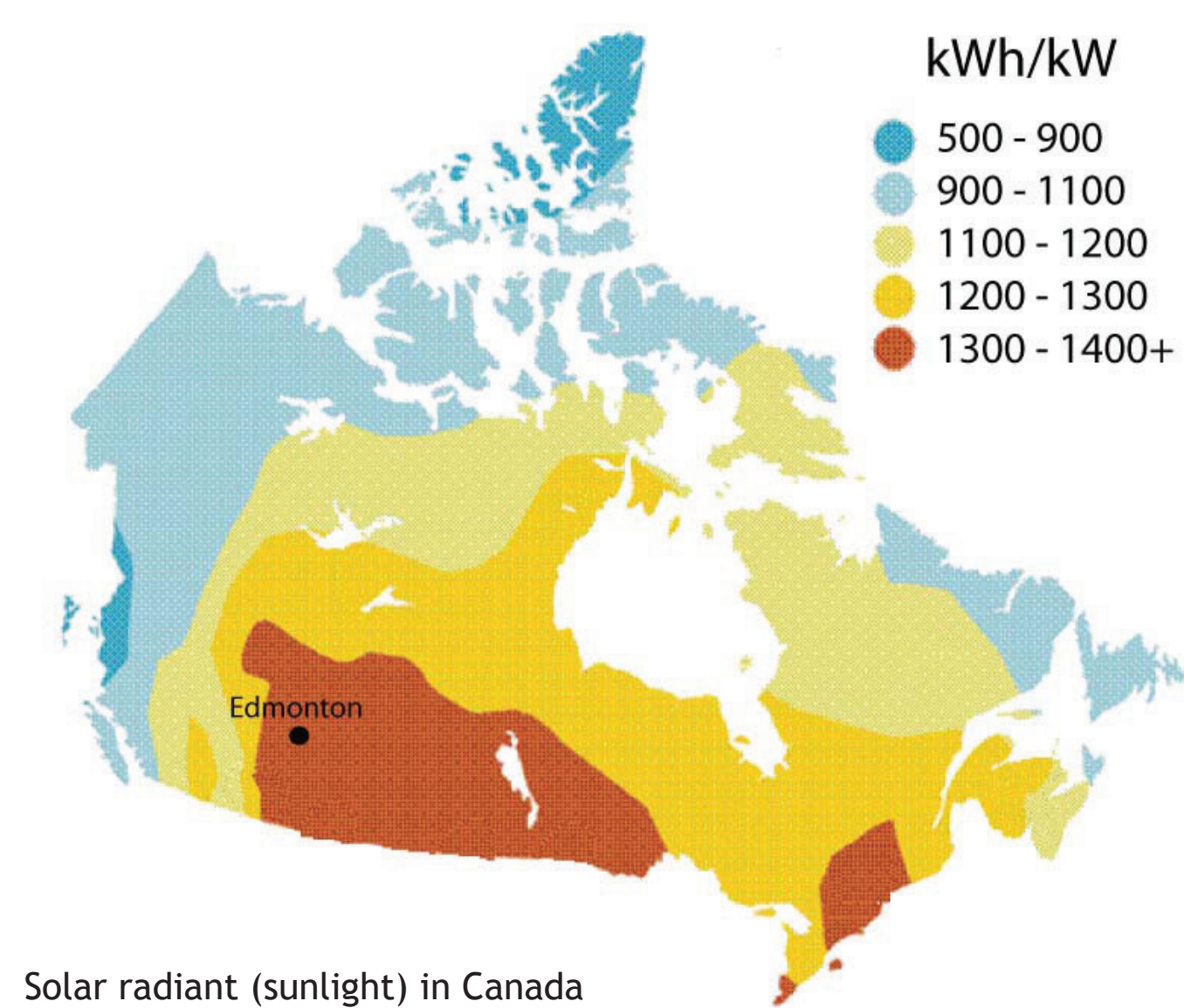
Renewable energy is derived from natural sources like the sun, wind, ocean tides and heat from the earth. These energy sources are continually replenished and can never be depleted. Renewable energy sources produce far less greenhouse gas emissions compared to burning fossil fuels (coal, oil, natural gas). For this reason, renewables are being considered as alternatives to or used in conjunction with energy derived from fossil fuels.

As energy demand and prices rise, alternative energy sources are becoming more popular.

Solar energy may be one of the best alternative sources of energy in the Edmonton area. Edmonton's solar potential exceeds most Canadian cities and many areas of the world (see map below). A high solar energy potential combined with decreasing costs of solar photovoltaic (PV) systems (module, hardware and installation costs), make this renewable energy attractive. By displacing fossil fuel consumption, solar systems can help Edmontonians and the City of Edmonton reduce our carbon footprint while building a market for solar power.



Solar Power



Solar radiant (sunlight) in Canada
Source: [Natural Resources Canada](http://NaturalResourcesCanada)

A 1 kW solar system will generate 1,245 kWh per year in Edmonton. That's enough to power the average household for a year.



Solar Power Available Now

Edmonton has a growing and experienced solar industry.

Edmontonians are increasingly embracing solar power to reduce their environmental footprint as well as their bills.

Alberta utilities are required to buy back solar electricity from homes and businesses with qualified solar systems.

The Solar Energy Society of Alberta is a non-profit organization which hosts a list of businesses offering solar services:
www.solaralberta.ca/company-directory



Solar Modules: How They Work

A solar photovoltaic (PV) system converts the sun's light energy into mechanical energy. A solar module is made up of smaller solar cells that contain a photovoltaic material. When sunlight hits the module, the material is charged and creates electrons within the system. These electrons flow in one direction, creating direct current (DC) electricity. This DC energy can be used immediately, converted into alternating current (AC), or stored in a battery for later use.

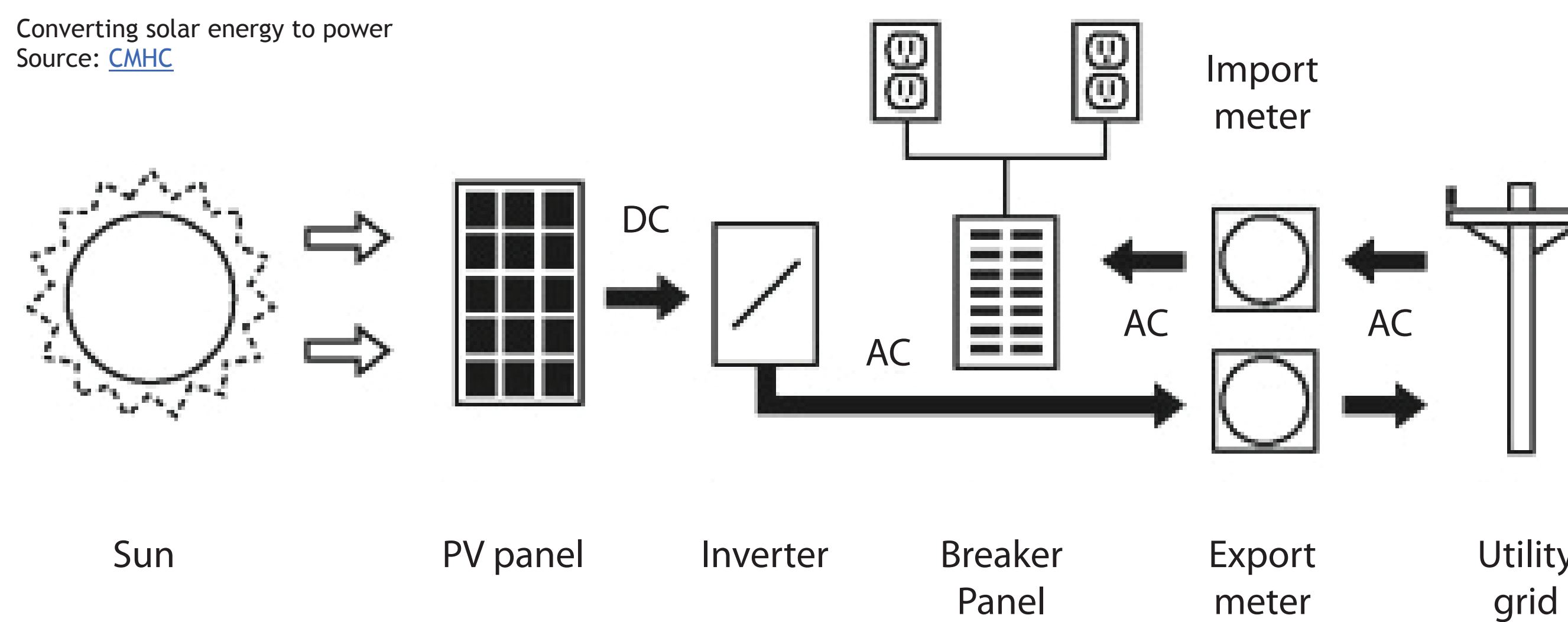
Solar PV modules usually last for a minimum of 20-25 years depending on the range of temperatures within which it operates. Solar PV systems can be used on their own to create electricity for use in a building or in conjunction with the grid, a generator, or another alternative energy source.

Feeding back to the grid

As of February 1, 2009 the Government of Alberta issued the Micro-Generation Regulation allowing Albertans to generate up to one megawatt of renewable and environmentally-friendly energy. According to the regulation, a micro-generator will receive a credit for the value of electricity exported to the provincial electrical grid. The Alberta Utilities Commission oversees the regulation and implementation of this regulation. For more information on the regulation visit www.auc.ab.ca/rule-development/micro-generation/Pages/default.aspx.

The Edmonton Federation of Community Leagues' Solar PV systems will be connected to the grid. This will be enabled by a two-way meter on the building that will measure both outgoing and incoming electricity. When there is insufficient energy generated by the solar system, the community league electrical system will seamlessly draw electricity from the grid. Conversely, when the solar PV system generates excess energy over and above the requirements of the community league building, the electricity will be exported to the grid. By supplying electricity to the grid, a credit will appear on the league's bill at the rate that the power supplier is charging at that time.

To ensure worker and owner safety, labels are used on the building and its system to indicate it as an Independent Power Producer (IPP).



EFCL Program Partners & Websites

THE WAY WE GREEN

City of Edmonton
www.edmonton.ca/TheWayWeGreen



Take Action to Manage Energy (TAME) Buildings Initiative
www.mccac.ca

howell-mayhew
engineering, inc.

Howell-Mayhew Engineering Inc.
www.hme.ca



Solar Energy Society of Alberta
www.solaralberta.ca



Solar & Energy Savings Program

Seven community leagues are participating in the Solar and Energy Savings Program (SESP). The SESP is designed to help leagues improve building energy efficiency and save money while also generating a portion of their energy from solar power. Each participating league contributed \$6,000 to the program, with additional funds from the City of Edmonton and the Edmonton Federation of Community Leagues.

As part of the SESP, an energy and carbon audit must be completed and a 5 panel, 1.2 kW solar package installed. In addition, each league will receive a television monitor to display solar system production and announce league events.

Retrofits to improve energy efficiency will receive 50% reimbursement from the Take Action to Manage Energy (TAME) Buildings Initiative from the Municipal Climate Change Action Centre (MCCAC).

Participating Community Leagues

Alberta Avenue
Meadowlark
North Glenora
Ritchie
Riverdale
Rossdale
West Jasper Sherwood

What Is An Energy Audit?

An energy audit is an analysis of efficiency of the building envelope and appliances and also an analysis of energy consumed within a building. The audits for the community leagues are comprehensive and evaluate both energy use and carbon footprint.



Importance Of Energy Audits

1. Energy audits (also called assessments) help you to understand and prioritize your retrofit and efficiency efforts.
2. Energy assessments report on the state of appliances, lighting, building envelope, insulation, windows and more.
3. The report will help you understand what actions will give you the highest return on your investments in energy efficiency.
4. Energy assessments are typically required in order to qualify for retrofit rebates (when applicable).

C Returns is a non-profit organization that helps building and home owners through the entire process of organizing audits, retrofit contractor selection and applying for rebate programs. Check out www.creturns.com for more details.

