

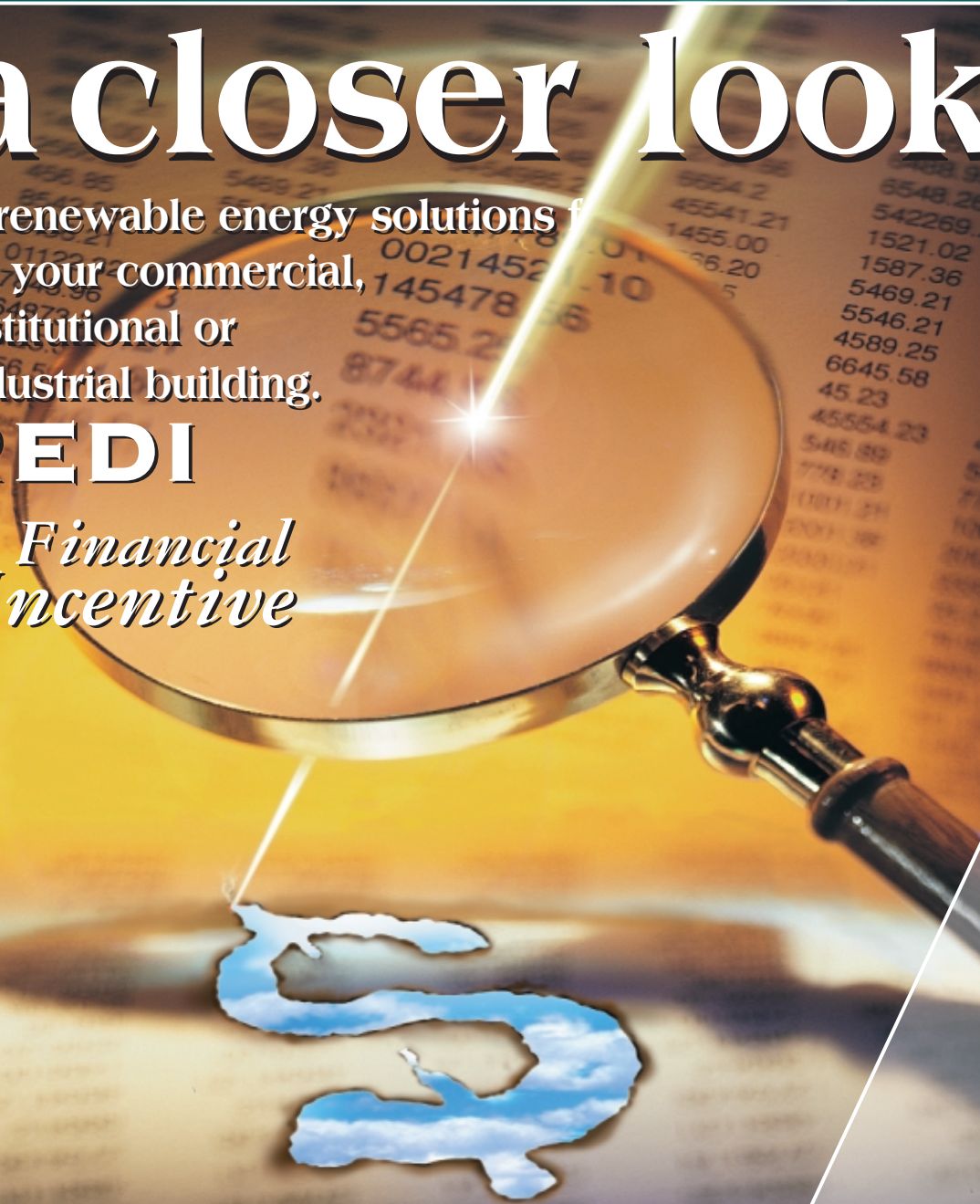
Take

a closer look

at renewable energy solutions for
your commercial,
institutional or
industrial building.

REDI

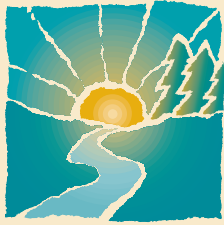
*Financial
Incentive*



Natural Resources
Canada

Ressources naturelles
Canada

Canada



REDI *Financial Incentive*

The Renewable Energy Deployment Initiative (REDI) is an incentive program designed to help business and industry purchase certain types of solar and biomass heating systems. The idea behind the program is simple: by using proven renewable energy technologies, a company can save money and reduce its environmental impact and dependence on non-renewable fuels.

REDI is a partnership between business and Natural Resources Canada (NRCAN), which administers the incentive program. Qualifying businesses and corporations are eligible for a contribution of up to 25% (40% in remote communities) of the purchase and installation costs of a qualifying system, to a maximum of \$80,000 per installation.

What is a “qualifying system”?

Three renewable energy systems are eligible under REDI: solar water heating systems, solar air heating systems and high-efficiency/low-emissions biomass combustion systems of a minimum capacity of 75 kW and a maximum of 2MW. Each of these three technologies uses renewable energy to augment – not replace – existing conventional heating systems.

There are some conditions: a qualifying system has to meet technical criteria defined in the terms and conditions of the program, and the system must be commissioned on or before March 31, 2007, and within 12 months of signing a relevant contribution agreement. A complete list of eligibility criteria for the REDI financial incentive is available from NRCAN at www.nrcan.gc.ca/redi.

What is renewable energy and why is it important?

Renewable energy is energy produced in such a way that it does not deplete natural resources. For instance, once hydrocarbons are used for heating purposes, they are gone forever. The use of renewable energy, on the other hand, relies on energy sources that are essentially limitless (solar, earth, water and wind) or sustainable through proper management (biomass combustion and hydroelectricity).

Renewable energy will play an increasingly important role in meeting Canada's energy needs. The use of renewable energy is a cornerstone of sustainable development – the integration of economic and environmental goals. Canada is a world leader in applying sustainable development principles to natural resources.

REDI for the future

By using energy more efficiently – by using proven, reliable renewable energy technologies – REDI will help Canadian business and industry meet their energy needs and save money in the process.

REDI helps the Canadian community conserve and protect natural resources while contributing to the country's energy security.



Solar Water Heating Systems

What is a solar water heating system and how does it work?

Solar water heating systems use the sun's energy to heat water for a variety of commercial and industrial uses. The most common types of solar collectors used in solar water heaters are “flat plate” and “evacuated tube” collectors.

A flat plate collector consists of a rectangular box with a transparent glass or plastic glazing covering a flat, black plate. Sunlight passing through the glazing strikes the black, light-absorbing material converting solar energy into heat energy. Trapped in the solar panel by the glazing, the heat energy is then transferred to a liquid, usually water, while passing through a series of tubes attached to the back of the panel.

An evacuated tube collector, although more expensive but generally considered the most efficient, works in essentially the same way. Tubular-shaped collectors maximize solar collection angles while minimizing reflection. Plus, a vacuum created around the liquid transfer tubes helps to reduce heat loss through the convection and conduction.

A solar water heating system does not replace a conventional heating system – it augments it. On sunny days, a well-designed system can produce and store enough hot water for any application. However, a back-up heating system is required to meet demands during cloudy days.

Can my business use a solar water heating system?

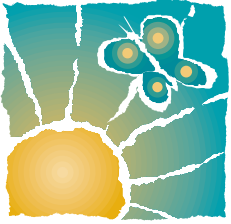
Modern solar water heating systems are designed to withstand the Canadian climate.

Virtually any business that uses large amounts of hot water can benefit from a solar water heating system. These systems are particularly useful for heating water for industrial process applications in, for example, dairies and food processing. The more hot water required, the more cost-effective the solar water heating system.

How much can I save?

A solar water heating system reduces the amount of fuel used for heating, and maintenance costs are low, thereby saving money and conserving natural resources for the community at large.

For example, Omega Salmon Group Ltd., a fish hatchery operating on Vancouver Island, installed a state-of-the-art solar water heating system. Its weekly propane bill immediately dropped by 25%. It uses less fuel and saves a substantial amount of money.



Solar Air Heating Systems

What is a solar air heating system and how does it work?

A solar air heating system uses the sun's energy to warm air that is then used for ventilation and space heating or drying purposes.

In a typical system, air is drawn across a heat-absorbing south-facing wall or other form of solar collector. The solar-heated air is then drawn into the building, where it can be heated further, if necessary, before being distributed throughout the facility. A solar air heating system augments a conventional heating system rather than replaces it.

Can my business use a solar air heating system?

Any business or industry with a large air heating load can benefit from a solar air heating system. It is designed primarily to preheat ventilation air for commercial and industrial facilities, such as factories, warehouses and hangars. Because the air going into the building's primary heating system is already warmer than the outside air, less energy is needed to heat it to the desired temperature. That saves money for the company and conserves natural resources for the community at large.

Solar cladding is available, which preheats ventilation or make-up air for commercial and industrial facilities. Examples of solar cladding installations are available at www.canren.gc.ca. Glazed solar-air-heating systems use the sun's energy by passing existing building air over a glazed solar absorber on the south wall of a building.

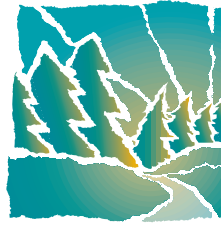
Recent improvements in technology have made these systems even more cost-effective than they were several years ago. Many Canadian companies and organizations have installed solar air heating systems, including Bombardier, Goodyear, Ford Motor Company, and Natural Resources Canada.

How much can I save?

Solar air heating systems offer Canadians a great opportunity to save on fuel costs, since we benefit from an abundance of sunshine and we have a long heating season.

Ventilation systems using solar-heated air that are incorporated into the design of a building will provide an excellent payback time frame and will be a source of price-guaranteed heat for many years.

A solar air heating system can typically provide up to 30% savings on the fuel costs. For example, at the Bombardier facilities mentioned above, the total annual savings are close to \$170,000. There are other less obvious cost savings: any new building using a solar air heating system eliminates the need for a conventional south wall façade, and could allow the purchase of a smaller primary heating system, lowering the incremental cost of the solar air heating system.



Biomass Combustion Systems

High Efficiency, Low Emissions

What is a high-efficiency/low-emissions biomass combustion system and how does it work?

Biomass combustion systems use wood or animal waste, often in the form of wood chips or pellets, to generate heat for space and/or water heating. The fuel is burned in specially designed, high-efficiency boilers, furnaces or wood stoves that reduce emissions, such as air-borne particulates, ash and volatile organic compounds, to acceptable levels. Typically, the biomass energy is used to produce steam or hot water for a given application.

After hydro-electricity, biomass combustion technology is by far the most deployed and utilized renewable energy system in Canada.

Businesses and corporations may be eligible for a contribution of up to 25% of the purchase and installation costs of a qualifying system, to a maximum of \$80,000.

Can my business use a biomass combustion system?

Businesses with ready access to a consistent and reliable source of biomass fuel can benefit from biomass combustion. The systems are successfully used by many manufacturers with access to wood waste. They are also well-suited to remote, rural and farm applications. For most businesses, a conventional heating system may be needed for backup and to meet peak demand.

How much can I save?

Canada's climate is ideally suited for biomass combustion systems. Biomass displaces heating fuel, which means cost-effectiveness rises with the length of the heating season. Many biomass combustion systems typically run from mid-September to late May.

Cost-effectiveness also depends on such variables as the cost of the system, the cost and availability of biomass fuel, the amount of biomass used and the corresponding amount of heating fuel displaced. In one instance, a New Brunswick greenhouse operation opted for a 130-kW automated wood-chip system to meet its energy needs. The operator calculates that wood chips cost him about one quarter of the price of heating oil or propane. Biomass systems make use of cheap, plentiful biomass residue as a source of renewable energy.



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