Solar savings

With rising energy costs and a push for sustainability, some poultry farmers are turning to solar air heating.

By Melanie Epp



heating expenses while improving ventilation and air quality. Victoria Hollick, a representative of SolarWall, explains how the system works, its benefits, and why more farmers are adopting it.

SolarWall is a unique solar air heating system that uses perforated, dark-coloured metal panels made from 26-gauge steel that absorb solar energy and heat incoming air before it enters the building. The panels are installed on the exterior walls of barns. Using solar energy to heat incoming air reduces reliance on conventional heating methods such as propane or natural gas, and leads to significant cost savings.

The process reduces reliance on conventional heating methods such as propane or natural gas, leading to cost savings. "Heating and ventilation are some of the largest energy expenses for poultry barns," said Hollick. "Our technology preheats incoming air, reducing fuel consumption and providing fresh, warm air essential for proper humidity and temperature levels."

The SolarWall system functions under negative pressure, which means air is drawn through the perforations into the collector panel where it is heated before entering the barn.

"Instead of drawing in outside air at -10°C, for example, the system can heat it to around 10°C, reducing strain on conventional heating systems," she explained.

Although counterintuitive, solar wall technology continues to work during Canada's harsh winters.



Before and after images of a SolarWall installation showcasing the transformation. "Even in snowy conditions, SolarWall remains effective because its surface stays warm enough to prevent snow accumulation," said Hollick. "Additionally, sunlight reflection off the snow increases solar gain, further enhancing efficiency."

For poultry farmers, SolarWall offers several advantages beyond energy savings, though. According to Hollick, the technology maintains optimal temperature, enhances bird welfare, lowers greenhouse gas emissions, and improves air quality inside barns.

Since it filters incoming air, some producers believe the system also improves biosecurity. Filtration reduces contaminants such as dust and feathers, and possibly even airborne pathogens, which could protect flocks from viral diseases such as avian influenza.

Adoption of solar wall technology on the rise

Several factors contribute to the growing adoption of solar wall technology among Canadian poultry farmers.

Rising energy costs have made alternative heating solutions more attractive, while government incentives, such as the federal solar tax credit, provide financial support for installation.

"There is a renewed focus on sustainability, and farmers are looking for proven, cost-effective ways to reduce their carbon footprint," said Hollick. "With hundreds of installations across Canada, producers are seeing first-hand how SolarWall lowers costs and improves efficiency."

The ease of installation also makes SolarWall appealing. According to Hollick, "The system is straightforward to integrate, whether for new construction or retrofitting existing barns. In some cases, farmers can even install it themselves, further reducing costs."

Retrofitting existing barns

Adopting SolarWall technology doesn't necessitate the construction of a whole new building. The technology can be retrofitted to existing poultry barns by mounting the panels onto exterior walls.

Lowy Gunnewiek, an Alberta-based engineer who has helped involved in several SolarWall installation projects, said the job is straightforward enough that farmers can take it on themselves with minimal effort.

"It's quite simple to install," he said. "Farmers can mount the system onto a wood-framed support structure and tie it into the existing ventilation system. In most cases, warm air is drawn into the attic through existing inlets, making integration straightforward."

One challenge in retrofitting SolarWall is adapting airflow to existing ventilation setups. Some older barns may require additional ducting or modifications for proper air distribution.

"Every barn is different," said Gunnewiek. "Some have multiple exhaust fans, and integrating SolarWall means ensuring adequate air intake to balance the system."

Despite these challenges, retrofitting is worthwhile. SolarWall not only reduces heating costs but also enhances summer cooling, he said.





BENEFITS OF SOLARWALL® HEATING

Lowers Heating Costs: Heats incoming fresh air an average of 10 degrees C to 30 degrees C above ambient. It has a solar energy conversion rate up to 80 percent.

Healthier Livestock: Improved ventilation and indoor air quality lowers bird mortality and enhances animal well being.

No Cold Drafts: Acts as a barrier against cold winds, ensuring better comfort.

Humidity Control: Reduces moisture and aids in drying after cleaning, creating a healthier environment.



sales@exacon.ca exaconinc.ca solarwall.com

