



GOOD ENERGY FOR  
**ANAEROBIC DIGESTION**  
**FOR WASTEWATER FACILITIES**

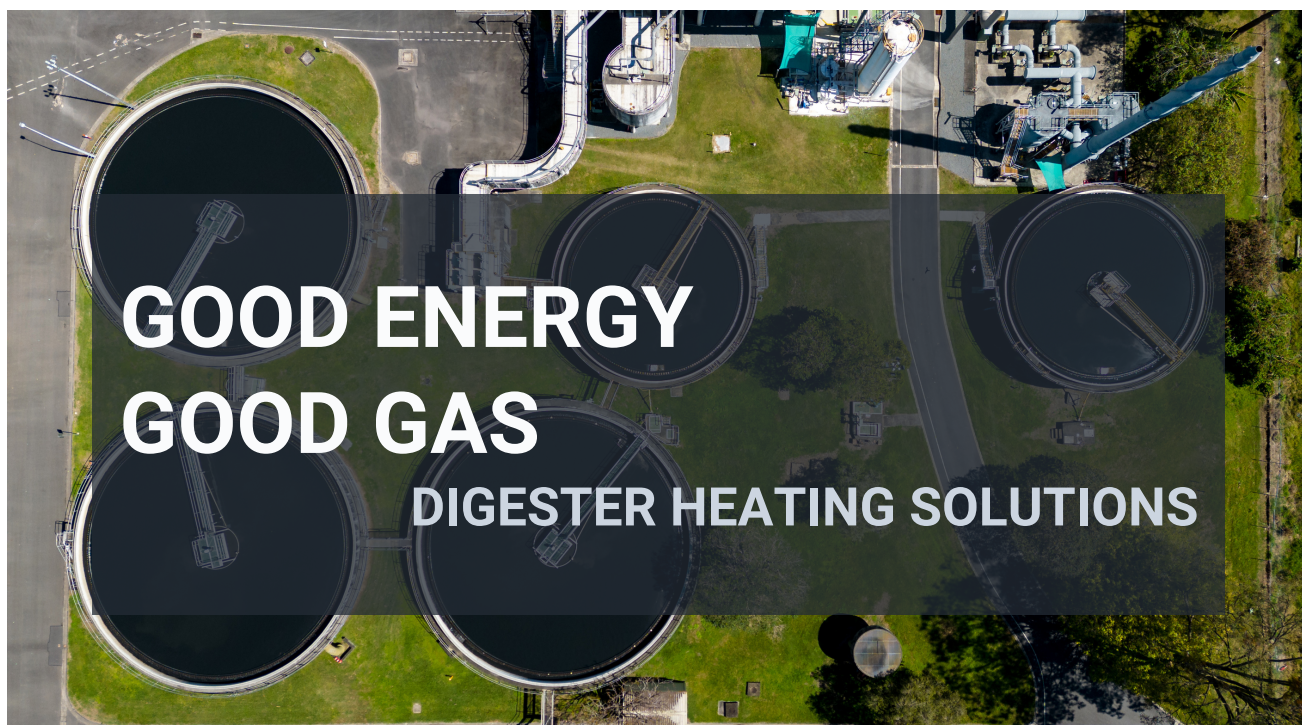
INCREASE CARBON CREDIT VALUE

MAXIMIZE PRODUCTION

SAVE ON HEATING

DRAMATICALLY INCREASE PROFITS





## BETTER HEAT FOR WASTEWATER GAS PRODUCTION

Anaerobic digestion tanks require continuous, reliable heat to maximize production. Digester profits can be easily eroded by variable energy costs. Digester operators face a challenge: **How can I maximize the profitability of anaerobic digester production without disrupting operations?**

**SunDrum Solar provides a solution.** Our suite of technologies combines **photovoltaic solar, solar thermal, and heat pump technology** into integrated systems that provide **high-volume, high-quality, consistent & reliable heat** at a cost that maximizes the value of digester operations.

### IMPACT


SunDrum Solar allows biodigester tanks to operate at optimal temperatures (100 - 102°F) without generating carbon emissions. A SunDrum Solar system simultaneously helps digester operators maximize gas production *and* increase the value of carbon credits (LCFS and RIN), dramatically improving financial outcomes.






## BENEFITS FOR ANAEROBIC DIGESTERS


SunDrum Solar provides the heat tank digester operations require at a lower and more consistent price than natural gas, propane, or electrical heating while improving the value of carbon incentives.



**Improve carbon credit value**  
Offsets  $\geq 200$  kg of carbon dioxide emissions annually per panel - reducing carbon intensity and increasing LCFS credit value

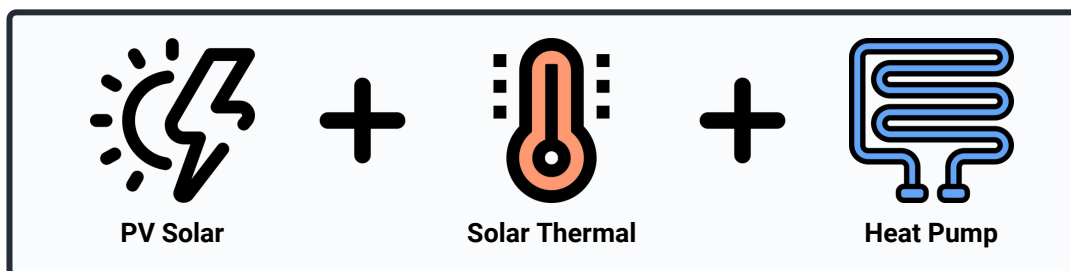


**Spend less on heating**  
Reduces the cost of heating, improving the profitability of digester operations compared to fossil fuel or electrical heating



**Take advantage of incentives**  
Offers federal and state energy rebates to offset more than 40% of the cost of a well-qualified system

## HOW DOES SUNDRUM SOLAR WORK?



**SunDrum Collectors** mount directly behind conventional photovoltaic (PV) panels. A heat transfer fluid (propylene glycol) moves heat from the panels to an integrated heat pump to provide water heating.

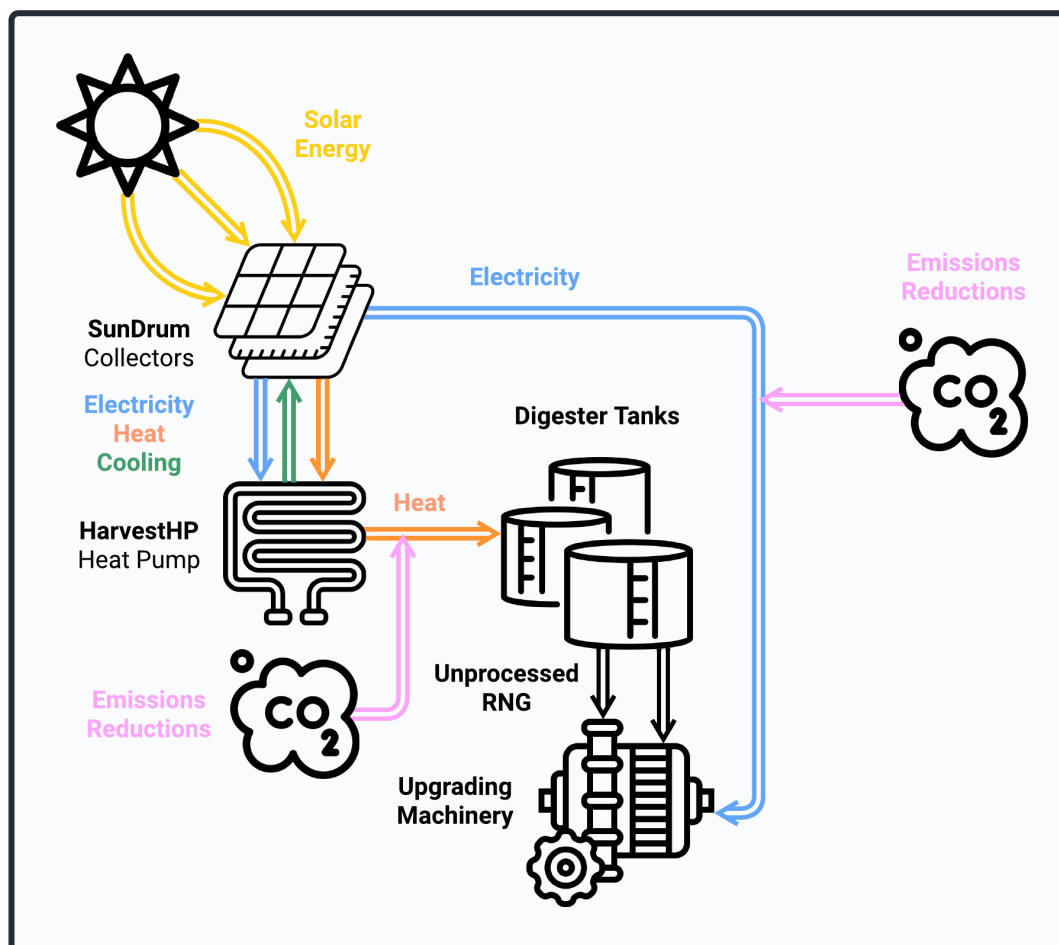
**When the sun is bright**, the sunlight on the panels provides a direct source of heat for high-temperature, continuous water heating.

**When the sun is dim**, the integrated heat pump pulls heat from the surrounding air, providing on-demand heating at high efficiencies 24/7.

**The result: 8x more solar energy capture than conventional solar** with the same number of panels.



# INTEGRATING SUNDRUM SOLAR



SunDrum Solar captures heat and electricity with an integrated heat pump to provide 24/7 heating for anaerobic digestion systems. The power drawn by the heat pump is provided by the panel, and a SunDrum system reduces - and in many cases eliminates - the need for expensive battery and thermal storage.

SunDrum Collectors directly offset the carbon emissions associated with fossil fuel heating, reducing Carbon Intensity score by ~ 4 g CO<sub>2</sub>e per MJ. In moderate-to-large digester systems, this translates to tens of thousands of dollars in additional revenue each year.

The energy provided by the PV panels can simultaneously be used to power gas upgrading machinery onsite, further increasing energy offset value and potentially improving Carbon Intensity score further still.

SunDrum Systems are designed specifically based on each client's goals, priorities, and resources.



## EXAMPLE SYSTEM

Consider a digester operation with **69,000 therms per year** of digester heating demand to maintain optimal temperatures. This client wants to power their digester system entirely using a SunDrum Hybrid Solar system.

<b>Heating Goal:</b> 69,000 Therms
<b>SunDrum System Size:</b> 1,000 Collectors
<b>PV System Size:</b> 1,000 PV Panels
<b>Annual Savings Value:</b> \$315,000
<b>Annual Credit Increase:</b> \$50,000
<b>Annual Financing Cost:</b> \$250,000
<b>Net Annual Savings:</b> \$115,000
<b>Net Lifetime Savings:</b> \$4,000,000

This example operator would save over \$100,000 per year using a SunDrum Solar system to heat their digester compared to using propane. This includes \$50,000 in increased LCFS incentives due to the improved CI score achieved by offsetting fossil fuel use.

## IMPROVING DIGESTER PROFITS

SunDrum Solar provides continuous, reliable heat that maintains tank digesters at optimal temperatures (100°F - 102°F), increasing expected gas production as much as 50%. SunDrum Solar significantly reduces lifetime expenditure on heating, markedly improving the profitability of digester operations.

SunDrum Solar provides heat with no carbon emissions, reducing Carbon Intensity score and, in applicable regions, increasing the value of carbon incentives including the Low Carbon Fuel Standard (LCFS) credit.

## NEXT STEPS

Contact SunDrum Solar today to begin the process of engineering your system and taking advantage of reduced heating costs, increased incentives, and improved system profitability.

Our proven system has been installed at over 200 sites nationwide, and our systems have reduced carbon emissions by over 17 million pounds - and counting. **Make SunDrum Solar a part of your sustainability strategy today.**

