

# EndoGreen<sup>®</sup>

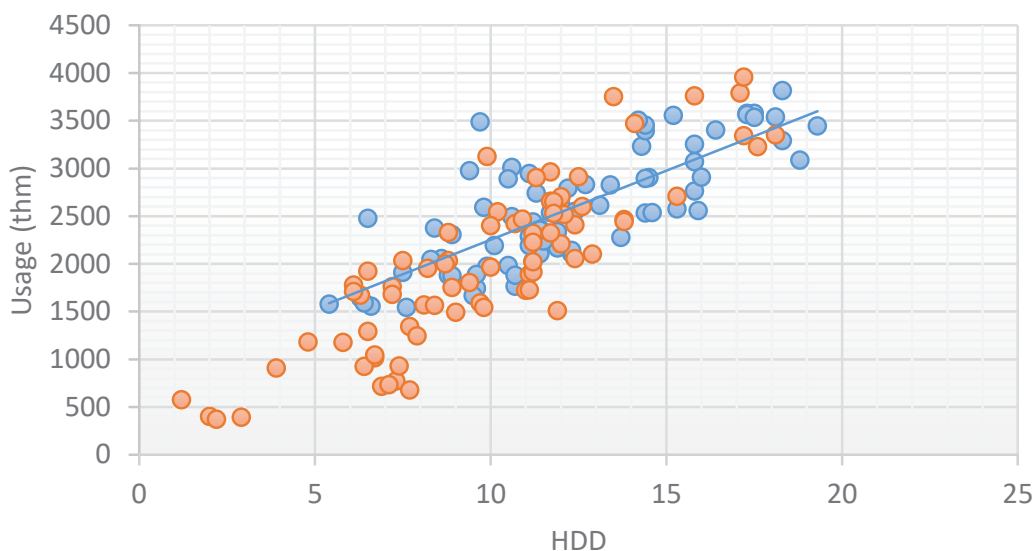
CASE STUDY: Fessler Nursery  
Woodburn, Oregon, USA



A pilot of EndoGreen was run by Fessler Nursery in Woodburn, Oregon. EndoGreen was installed on the 14th February 2018.

Data was supplied from the 1st December 2017 to the 30th April 2018. Usage was compensated using Heating Degree Days from nearby Aurora State Airport at a baseload of 18.5°C (65°F). A baseline was constructed by comparing Usage and HDD from 01/12/17 to 13/02/18 and this was compared with 15/02/18 to 30/04/18.

A trendline, constructed from the before data is plotted with the equation  $y = 144.71x + 805.61$ . This can be used by inputting HDD for X to predict the consumption (Y) each day. The difference between the predicted and actual consumption (the distance between each point and the trendline) can be combined (CUSUM) to identify the saving over the 2.5 weeks.



## FINANCIAL SAVING



**\$6,187**

## CO<sub>2</sub>e SAVING

**213,840 lbs**

## KEY INFORMATION

**Installed:** Feb 2017  
**Trial period:** 2 Months

**Boiler spec**  
1.5MMBTU

**Return on Investment**  
<12 months

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**14.91**  
%

**TOTAL SAVINGS**

**FINANCIAL SAVING**



**\$6,187**

**CO<sub>2</sub>e SAVING**

**213,840 lbs**

<b>Predicted Usage</b>	167,477.2 thm
<b>Actual Usage</b>	149,998 thm
<b>Difference</b>	17,479.21 thm
<b>Saving</b>	10.44%

The analysis shows a 10.44% reduction in overall site consumption. The initial site survey identified additional users of gas not associated with the hydronic heating system accounted for 30% of the total usage. This baseload was removed from the comparison confirming a 14.91% reduction in space heating consumption.

Based on a unit price of \$0.354 per thm this is a saving of \$6,187 meaning this installation has a projected ROI of less than 12 months.

This is the equivalent to 213,840 lbs of carbon dioxide equivalent. This is the same emissions as 19.8 passenger vehicles per annum.

// As soon as we added EndoGreen to the boiler, it was obvious that the boiler didn't cycle as often or as long. //

Dale Fessler