

# Durham Cogen Triples Power

By Bruce Cordon, Clean Water Services



**I**n Tigard, Oregon, Clean Water Services' Durham Advanced Wastewater Treatment Facility has a new cogeneration system that meets 60% of the treatment plant's electricity needs. The Durham Cogeneration Upgrade Project replaced an aging cogeneration system that used a single 500-kilowatt Superior cogeneration engine with one that uses two 848-kilowatt GE Jenbacher engines, producing three times as much power as the old system.

The treatment plant currently produces enough municipal wastewater solids to operate one of the new engines and will initially rely on high-strength waste brought to the treatment plant by waste haulers to operate the other engine. With expected local population growth, however, there will be enough municipal wastewater solids to operate

both engines by 2025. At that time, the District may add a third engine and continue using high-strength waste.

Initially, the high-strength waste used by the new cogeneration system will consist of fats, oils, and grease (FOG) from local restaurants. FOG, also known as "brown grease," is cleaned out of restaurant grease traps and interceptors at regular intervals. In the past, this significant energy source was disposed of in landfills, but it is increasingly being used as feedstock to produce energy.

Clean Water Services (CWS) is also considering the use of waste from a local food processor as an additional source of high-strength waste. If CWS ends up using only FOG, it will use about 100,000 gallons of this material

per week. CWS has contracts with four waste haulers to bring FOG to the treatment plant. The haulers pay an average tipping fee of about \$0.065 per gallon, which would mean \$325,000 in annual revenue if CWS relied exclusively on FOG to meet its energy needs.

The construction cost of the cogeneration facility was approximately \$14.6 million. CWS received a \$3 million grant from the Energy Trust and a \$2.8 million tax credit (net value) from the Oregon Department of Energy to offset the construction cost.

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