

Return on Investment: Energy efficiencies yield big paybacks

Arlington County, Virginia

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Since at least the mid-1990s, the County has been investing in energy efficiency – in streetlights, traffic signals, buildings, and vehicles.

Arlington's investments are paid back in 5 years

On average, the County's investments in energy efficiencies are **paid back in 5 years, with net savings each year thereafter**. Put another way, each dollar the County invests in energy efficiency projects returns about 20 cents per year in **reduced operating costs**. These reduced operating costs are primarily energy savings, but also often include maintenance savings and increased equipment life.

Some of these investments pay for themselves immediately. For example, in one warehouse last winter, **a \$500 fix produced \$10,000 in annual natural gas savings**. Also, energy conservation measures such as turning off lights, turning off engines, and lowering thermostat savings cost nothing and save energy and money immediately.

In most cases, the payback takes several years. For example, at the Courthouse, we spent \$130,000 on new energy-efficient lighting in 2005, which is **saving the County \$22,000 a year in electricity and maintenance costs** (6-year payback). As electricity prices continue to rise, the value of these annual savings will also rise, accelerating the return on investment.

Annual ROI of 20%

Overall, factoring in the range of low-cost/no-cost measures as well as the longer term durable investments in efficient technologies (such as hybrid vehicles, which have an additional clean air benefit), the return on each dollar invested is about 20 cents per year, or, a **20% return on investment**.

More examples

- New, energy-efficient lighting and improvements to the steam heating plant at the **Justice Center** (courthouse and jail) are saving enough electricity and natural gas to heat and power 40 homes a year. These measures cost \$200,000 to install and are **saving the County more than \$70,000** in annual utility bills.
- The County has reduced electricity use at **Central Library** by 25% -- **saving more than \$30,000 a year** -- with improved operation and maintenance, and investments in new lighting, efficient equipment, and improved controls. These electricity savings are enough to power about 80 homes.
- At the **Madison Community Center**, reinsulated hot water pipes and improved temperature controls have **reduced natural gas use over 20%**, saving enough natural gas to heat six typical Arlington homes each winter.
- A lighting retrofit at a teen detention facility cost \$6,000 in 2002, and has cut electricity use by 30%, saving \$4,000 a year (**payback time of 1½ years**).
- Arlington County has retrofitted more than half of its signalized traffic intersections with **light-emitting diode (LED) traffic lights**. These LED traffic lights are brighter and **only use 25% as much electricity** as traditional traffic signals. LED traffic lights also **last ten times longer** than incandescent bulbs, so the maintenance cost of these new signals is sharply reduced. All of our traffic signals will be LED lights by 2010, saving enough electricity to power about 250 homes.