

**6% of energy in the US
– 20% in California –
is used to move water.**

SOURCE: EPA

Harvesting renewable, low-cost electricity from gravity-fed water pipes

Lucid Energy Inc. is a provider of renewable energy systems that enable industrial, municipal and agricultural facilities to produce clean, reliable, low-cost electricity from their gravity-fed water pipelines and effluent streams.

LucidPipe™ Power System is a water- to-wire energy recovery solution. LucidPipe uses a patented, in-pipe turbine generator to capture the energy of fast-moving water inside of large, gravity-fed pipelines, converting it into a continuous source of low-cost electricity.

Unlike other renewable energy systems, LucidPipe produces predictable, base load energy with no environmental impact. The LucidPipe Power System can be installed in a day and energy generation can begin in less than a week. This keeps permitting and installation costs low and project returns high.

This electricity can be used on-site to power pumps and other devices, to charge storage systems, or to connect to the grid for net metering.

LUCIDPIPE IS IDEAL FOR:

- Industrial facilities that use a high volume of water for processing or cooling, such as aluminum manufacturing, chemical processing, pulp and paper, thermo-electric power, fabs and data centers
- Municipal water transmission and distribution
- Wastewater treatment plants
- Irrigation and agriculture water districts

HOW LUCIDPIPE WORKS

LucidPipe recovers otherwise untapped energy in the form of excess head pressure in large, gravity-fed pipelines and converts that energy into clean, renewable power – without affecting operations.

Water flows through LucidPipe's unique, lift-based turbine, generating power as the turbine spins. The hydrodynamic turbine has been designed and field-tested to maximize power generation without disrupting the flow of water. As velocities increase, power production increases. Due to the lift-based design of LucidPipe, the system produces power across a very wide range of flow velocities.

LUCIDPIPE INSTALLATION

LucidPipe can be installed anywhere upstream of a pressure-transient zone in a gravity-fed pipeline. This provides several advantages for project siting:

- Flexibility to be located anywhere in the pipeline where power is desired (to power remote devices, etc.)
- Ability to harvest head pressure along the pipe, thus incrementally reducing pressure throughout
- Operation across a wide range of flow conditions without the need for pumps to create back-pressure and velocity adjustments
- No need for bypasses

ADVANTAGES OF LUCIDPIPE

LucidPipe gives energy- and water-intensive customers a way to improve their bottom line by generating renewable electricity from the water already flowing through their pipelines.

INDUSTRIAL

Industrial facilities use billions of gallons of water every day for processing and cooling functions. All of this valuable, potential energy can now be put to use in generating clean, low-cost electricity. Tax credits are available for renewable energy generation.

MUNICIPAL WATER

Energy is often the single largest expense for many water utilities, representing 40%-50% of a water agency's annual operating budget. LucidPipe provides

municipalities with an opportunity to reduce costs, reduce carbon emissions and reduce reliance on grid-based power by using their existing water infrastructure to generate cost-effective, renewable energy.

WASTE WATER

Publicly-owned wastewater treatment plants serve 189.7 million people and treat 32.1 billion gallons of effluent every day. By installing LucidPipe, wastewater facilities can use their distribution and wastewater streams to generate electricity that can be used to run power-dependent systems on site or can be fed back into the power grid to offset energy costs.

AGRICULTURAL IRRIGATION

Now the water that is used to produce our food can also be used to produce billions

of megawatts of electricity. The LucidPipe system can be used in large, agricultural transmission lines to generate power in remote, off-the-grid locations and is ideal for use where agricultural districts are converting earthen canals to pipe or where closed conduits are currently moving irrigation water.

As the demand for both water and electricity continue to grow, the LucidPipe Power System provides an easy, no-impact way to harness the untapped energy potential of moving water to produce clean, reliable, low-cost electricity.

To see our product and learn more, visit www.lucidenergy.com.

