

### GENERAL QUESTIONS

#### What is LucidPipe?

The LucidPipe Power System is a water-to-wire system that generates clean, renewable energy from excess head pressure in gravity-fed water pipelines.

#### How does LucidPipe work?

LucidPipe converts water pressure to energy using a unique, lift based, vertical axis turbine installed within a pipeline.

#### How much electrical energy can be produced from a LucidPipe unit?

A single unit can produce 20 – 100kW of renewable, zero-emissions electricity, depending on the flow and head pressure conditions at a given site. Multiple units can be aggregated for a system that can produce more than a MW.

#### How can I determine how many megawatt hours of electricity my LucidPipe system will produce in a year?

Considering there are 8760 hours in a year, the nameplate capacity of your system as expressed in kilowatts (kW) can be multiplied by 8760 to determine the annual potential power production total in kilowatt hours (kWh). That power production is then multiplied by a capacity factor that takes into account how often a system is flowing at or near peak flow conditions. That capacity factor — often 60-70% — is multiplied by the potential power. Divide by 1,000 to arrive at a close estimate of MWh that will be produced from your system.

#### Where are LucidPipe Power Systems used?

LucidPipe is suitable for use in water transmission and distribution pipelines, wastewater effluent pipelines, industrial effluent pipelines, in thermo-electric plant water-

ways, and other pipelines with sufficient flow and pressure.

#### Does LucidPipe qualify for federal renewable energy incentives?

LucidPipe qualifies for the Investment Tax Credit (ITC) and Production Tax Credit (PTC), as well as other incentive programs. Please consult your attorney or tax advisor.

### SITE CONDITION QUESTIONS

#### What size pipelines are suitable for LucidPipe?

LucidPipe is suitable for the purposes of generating electricity for grid-connected use in pipelines ranging from 24 to 96 inches. Often, larger pipelines would be necked down into the 36 – 60” range to increase velocity and thus power production. Smaller pipelines, those less than 24”, often only have enough potential energy to power a small device or instrument.

#### What flow velocities are suitable for LucidPipe?

Unlike conventional hydropower technologies, LucidPipe can operate in a wide range of velocities. Flows that range from 3 FPS to 9 FPS are suitable for LucidPipe.

#### What happens if my flow velocities vary in and out of the 3 – 9 FPS range?

LucidPipe requires a cut-in-speed of approximately 3 FPS. At flows exceeding 9 FPS, inverters are programmed to stop the turbine rotation. When the turbine is stopped, head losses are less than .5 PSI.

#### What is the risk of cavitation when using LucidPipe?

Anytime a device or piece of equipment is placed within a pipeline, the risk of cavita-

tion exists. LucidPipe is designed to limit the possibility of cavitation over a wide range of conditions typically found within pipelines. LucidPipe also is designed to automatically and remotely monitor for conditions that might allow for the onset of cavitation, such as extremely high flow velocity, and utilizes a control system that will apply either the electrical or mechanical braking capabilities to shut the system down until such conditions have subsided.

#### How much pressure will a LucidPipe system extract from my pipeline?

LucidPipe is a low-solidity turbine system, therefore it only extracts minimal amounts of pressure from a pipeline. A typical unit will extract 1 – 5PSI.

#### Is there a minimum amount of head pressure available for extraction in a prospective pipeline?

There should be 5 – 7 PSI available for extraction.

#### How much pressure will a LucidPipe system extract from my pipeline when in the stopped position?

In the stopped position, LucidPipe will extract up to 1 PSI, allowing for virtually normal system operation.

#### How can I use LucidPipe to break more than 1 – 5 PSI of head pressure?

LucidPipe units can be installed in a series to extract additional pressure.

#### How does LucidPipe operate in bi-directional flows in a pipeline?

The LucidPipe turbine rotates the same direction regardless of the direction of the water flow and can accommodate flows in any direction through a pipeline. This means gravity fed water can pass through

the system to generate power, while when the pipeline is used to convey pumped water in the opposite direction, the system can be stopped and the impact is virtually unnoticed.

### ELECTRICAL QUESTIONS

#### How do I use the electricity generated by a LucidPipe Power System?

The electricity generated by a LucidPipe system can be used on site behind the meter, to power a device or transmitted to the grid via a grid tie inverter. The electrical energy could also be used to charge batteries.

#### What kind of voltage is produced by LucidPipe?

Typically, LucidPipe systems are designed to generate 240 volt, 3 phase AC power. Other configurations are possible.

### FINANCE QUESTIONS

#### How are LucidPipe systems financed?

Lucid Energy will work with renewable energy project developers and channel partners to provide financing options for a client. These options include: PPA-backed financing, leasing and developer-owner financing.

#### What is projected IRR for a project developer?

Based on current system economics, LucidPipe supports an IRR of higher than 40% for developer-owners. The projects can be held or sold to an independent power producer (IPP) at a significant multiple, while offering the IPP an attractive return.