

DOCKETED

Docket Number:	20-EPIC-01
Project Title:	Development of the California Energy Commission Electric Program Investment Charge Investment Plans 2021-2025
TN #:	239232
Document Title:	Dakota Energy Systems Comments - Hydro Electric Power System for alternative energy production and energy security
Description:	N/A
Filer:	System
Organization:	Dakota Energy Systems
Submitter Role:	Public
Submission Date:	8/10/2021 9:47:33 AM
Docketed Date:	8/10/2021

*Comment Received From: Dakota Energy Systems
Submitted On: 8/10/2021
Docket Number: 20-EPIC-01*

Hydro Electric Power System for alternative energy production and energy security

Dakota Energy Systems, LLC (DES) has developed and deployed a patented technology that harvests energy from Municipal and Private Water systems as well as the Oil and Gas Industry. California's private and public water districts maintain multiple pressure reducing stations throughout their domestic potable water system in order to deliver household and agricultural water at a safe and reasonable pressure. These pressure reducing valves (PRVs) reduce the water pressure by absorbing the water flow enough to reduce its pressure to a usable pounds per square inch. The DES Hydro-Electric Power System (HEPS) harvests inherent energy by flowing the water through a turbine that reduces the water's pressure while harvesting electricity.

Our system can work in conjunction with PRVs and/or replace them. It is modular in design so it can fit any size PRV. The smallest unit harvests 9KWH with a 50 pound pressure drop and only 500 gallons per minute. DES can tie multiple units together in one skid to support PRVs as large as necessary and can harvest into the megawatt range. Unlike solar and wind, the HEPS system harvests continuous electricity sun up or down, wind or no wind.. Our engineers have used reliable American made components to develop the HEPS system. This equates to reliable production of electricity 24/7/365 for over 30 years with minimal annual maintenance cost and relative low startup costs when compared to other alternative energies. Water districts locate PRVs throughout their service area; this creates an opportunity for a safe, distributed power source that can either go directly into a facilities electrical panel or into the electrical grid without the construction of new power infrastructure, major transmission lines or large swaths of land.

Dakota Energy Systems commissioned an independent market study to identify the possible electrical impact to the State of California. California has over 134K PRVs that fit the HEPS parameters. At a conservative estimate of 7 units per PRV, our technology could produce 8442 Megawatts of reliable electricity if it was implemented at every eligible location.

Additional submitted attachment is included below.

DAKOTA
ENERGY
SYSTEMS

HEPS
HYDRO ELECTRIC POWER SYSTEM

Zero Carbon,
Clean Energy
for a Sustainable
Environment

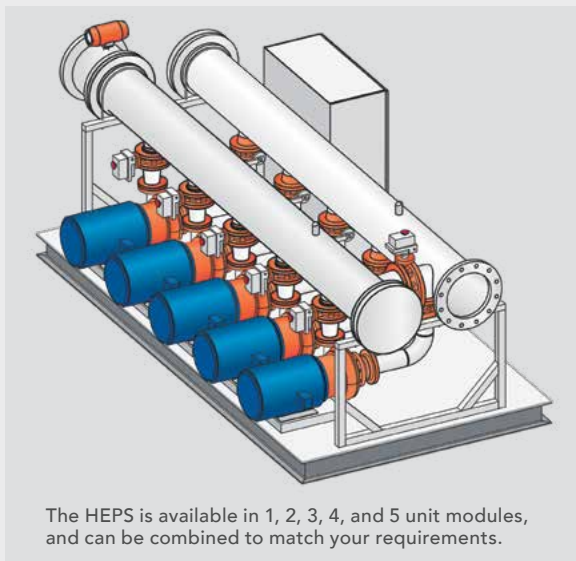


SOUTH ORANGE COUNTY, CALIFORNIA

Dynamic energy harvesting, Dakota Energy System's Hydro Electric Power System (HEPS)

The Hydro Electric Power System captures energy from a new or existing, closed, or open loop constant volume hydronic piping/pumping system.

If a pressure reducing valve (PRV) is being used within a new or existing municipal water or private water distribution system, our patented HEPS technology works in conjunction with PRVs to not only reduce the pressure, but convert it into clean, carbon-free electricity.



The HEPS is available in 1, 2, 3, 4, and 5 unit modules, and can be combined to match your requirements.

The DES HEPS Advantage

Dynamic Fluid Energy Harvesting
Closed-Loop or Open-Loop

Extraordinary Reliability

Return on Investment 2-4 years

Low Maintenance

Low Cost of Harvesting Electricity
60-65% Conversion Efficiency

Wide Range of Fluid Flow (GPM)
500-25,000 GPM (or larger)

Pressure Differential of 50-200 PSI or higher

Wide Range of Fluid Viscosity (CPS)

Modular Design

From 9 KW to 360 KW (Or larger)

Applications

Municipal & Private Water

Oil Injection Wells

Water & Wastewater Treatment Plants

Pressure Reducing Applications

Patented Technology

 DAKOTA ENERGY SYSTEMS
FLUID FLOW TO CLEAN ELECTRICITY
www.dakotaenergysystems.com

CONNECT WITH A DEDICATED
SOLUTIONS PROFESSIONAL

623.440.5799

Dakota Energy Systems, PO Box 5309, Peoria, AZ 85385