



HOW TO USE THIS CHECKLIST: Energy costs are a significant and growing burden on operating budgets at small treatment facilities nationwide. At small water treatment facilities this energy use is typically concentrated in the pumping and disinfection systems. Use this Checklist to assist in highlighting potential energy savings at your facility. Email this checklist to your local Hawaii Energy representative at the address below with your results to learn how your facility can start saving energy and money, and what incentives and other resources we have to offer.

DISCLAIMER: This Checklist is an informational tool. Submitting the completed Checklist to Hawaii Energy entails no commitment on the part of yourself or your facility to make process or operations changes. Consult with a professional engineer prior to making process changes that may impact drinking water quality or public health. This Checklist was developed by CEE with help from engineering professionals.

1. PLANT & SYSTEM INFORMATION

A. Please provide plant flow rates for all water sources at design, peak and winter average conditions

	Wells	Pumped Surface Water	Gravity Surface Water
Design	<input type="text"/>	<input type="text"/>	<input type="text"/>
Peak	<input type="text"/>	<input type="text"/>	<input type="text"/>
Winter Avg.	<input type="text"/>	<input type="text"/>	<input type="text"/>

B. Treatment process (check all that apply)

Slow Sand Filtration	Package Filtration	Mixed Media	Membrane Filtration	Other
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C. In the table to the right, please provide information on pump use at your facility, by pump type (raw/finished water pumps, booster pumps, backwash pumps). For each type please provide total pump horsepower, horsepower usually operating, annual hours of use, and method used to control pump output, if any (e.g. recirculation, throttling, variable speed drive)

	HP Total	HP Operating	Annual Hours	Control
Raw Water	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Finished Water	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Booster	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Backwash	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

D. When was the last time your pumps were tested for energy efficiency?

E. Is the majority of your motors NEMA Premium® efficiency?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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F. Do you receive and review the facility's electric and gas bills?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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2. IN-PLANT PUMPING

A. Do you have raw water pumps? (include # of pumps and total pump hp, as above, in Comments box to right)

B. If yes, are any of these pumps not operating at their design flow and head?

C. Are any of these pumps throttled to adjust flow rate?

D. Do you have variable speed control on raw water pumps?

E. Do you have finished water pumps? (include #, total hp, as above)

F. If yes, are any of these pumps not operating at their design flow and head?

G. Are any of these pumps throttled to adjust flow rate?

H. Do you have variable speed control on finished water pumps?

I. Are finished water pumps operated mainly during off-peak hours?

J. Do you use in-system storage to minimize peak-hour pumping?

Yes	No	Comments
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	



DRINKING WATER TREATMENT FACILITY ENERGY CHECKLIST

3. TREATMENT PROCESS

	Yes	No	Comments
A. Do you use membrane or pressure filtration?	<input type="checkbox"/>	<input type="checkbox"/>	
B. Do you use backwash pumps?	<input type="checkbox"/>	<input type="checkbox"/>	
C. Do you use an ultraviolet disinfection system?	<input type="checkbox"/>	<input type="checkbox"/>	
D. If yes, does the UV system use low-pressure, high-output lamps?	<input type="checkbox"/>	<input type="checkbox"/>	
E. Do you use centrifuges for dewatering residuals?	<input type="checkbox"/>	<input type="checkbox"/>	

4. BOOSTER PUMPING – RESERVOIR TO RESERVOIR

A. Do you have booster pumping stations to move water from one reservoir to another? (include # of stations, # of pumps, total hp at each station)	<input type="checkbox"/>	<input type="checkbox"/>	
B. If yes, are any of these pumps not operating at their design flow and head?	<input type="checkbox"/>	<input type="checkbox"/>	
C. Are any of these pumps throttled to adjust flow rate?	<input type="checkbox"/>	<input type="checkbox"/>	
D. Do these pumps have variable speed control? If yes, please explain.	<input type="checkbox"/>	<input type="checkbox"/>	

5. BOOSTER PUMPING – RESERVOIR TO CLOSED SYSTEM

A. Do you have booster pumping stations that move water from one storage reservoir to a pressure zone w/o a storage reservoir? (include # of pumps, stations, & total hp)	<input type="checkbox"/>	<input type="checkbox"/>	
B. If yes, are any of these pumps allowed to run continuously w/o controls?	<input type="checkbox"/>	<input type="checkbox"/>	
C. Are any of these pumps throttled to adjust flow rate?	<input type="checkbox"/>	<input type="checkbox"/>	
D. Do any of these pumps have variable speed control?	<input type="checkbox"/>	<input type="checkbox"/>	
E. Are any of these pumps sized to meet maximum daily flow (vs. avg. day flow)?	<input type="checkbox"/>	<input type="checkbox"/>	
F. In your distribution system, do any pressure zones operate at pressures greater than 65 psi? (please provide operating pressure and reason necessary)	<input type="checkbox"/>	<input type="checkbox"/>	

6. OTHER

A. Has your plant undergone any energy improvement projects in the past 5 years?	<input type="checkbox"/>	<input type="checkbox"/>	
B. Is or will your plant be undergoing renovation to comply with permitting requirements or to meet capacity needs?	<input type="checkbox"/>	<input type="checkbox"/>	
C. If yes, are energy conservation measures included as part of this renovation?	<input type="checkbox"/>	<input type="checkbox"/>	
D. Do you have a backup generator capable of powering your facility?	<input type="checkbox"/>	<input type="checkbox"/>	

Do you have ideas or plans that could improve the operating efficiency of your facility? Please Provide them below:

Contact Information

Your Name: _____

Facility Name: _____

Facility Address: _____

Email Address: _____

Phone Number: _____