



DEPARTMENT OF JUSTICE
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Department of Energy
625 Marion St. NE
Salem, OR 97301-3737

Re: Our File Number FF1213-06

We have received the enclosed information from Waterfilm Energy Inc. pertaining to a device eligible for tax credits based on energy savings. Since this appear to be a matter within your authority, we are forwarding it to you for your review.

Susan LeTourneau
Enforcement Officer

Enclosures

cc: Carmine Vasile
P.O. Box 128
Medford, NY 11763

Table A

Oregon State Tax-Credit Qualifications

(From: <http://egov.oregon.gov/ENERGY/CONS/RES/tax/apphtrec.shtml>)

Tax Credit Type	Recovery Effectiveness Range	Oregon State Tax Credit	Qualifying 3"-DWV Length of a GFX	Qualifying 3"-DWV Length of a Power-Pipe *
HR3	0.31-0.40	\$80	11" to 28"	17" to 36"
HR4	0.41-0.50	\$90	29" to 40"	37" to 49"
HR5	0.51-0.60	\$105	41" to 58"	51" to 70"
HR6	0.61-0.70	\$120	60" to 87"	71" to 102"
HR7	0.71-0.80	\$135	91" to 146"	106" to 168"

* Based on the only known independent evaluation of Power-Pipe models R3-36 & R3-60 from: "*Performance Evaluation of Drain Water Heat Recovery Technology at the Canadian Centre for Housing Technology [CCHT]*", Sustainable Buildings and Communities, Natural Resources Canada, Ottawa, 24 March 2006. A ReTherm Model S3-60 and GFX models G3-40 & G3-60 were also evaluated; the latter for a second time after the original G3-60 was stolen from the CCHT.

Table B

Examples of Oregon Tax-Credit Fraud & Discrimination

Models	Actual State Tax Credit	Legitimate Tax Credit	Illegal Power Pipe Tax Credit Amount	GFX Tax-Credit Deficiency
R3-12	\$80	ZERO	\$80	
G3-12 (Special)	None	\$80		\$80
R3-18, -24	\$80			
R3-30 & R4-30	\$90 & \$90	\$80 & \$90	\$10 (3" Model)	
G3-30 & G4-30	\$80	\$90 & \$90		\$10 & \$10
R3-36	\$90	\$80	\$10	
G3-40 & G4-40	\$90	\$90 & \$105		\$15 on 4" Model
R3-42	\$105	\$90	\$15	
R3-48	\$120	\$90	\$30	
R3-54	\$105	\$105		
R3-60 & R4-60	\$120 & \$135	\$105 & \$120	\$15 & \$15	
G3-60 & G4-60	\$105	\$120 & \$120		\$15 & \$15
R3-66	\$120	\$105	\$15	
R3-72, -78, -84, -90	\$120	\$120		
G3-90 (Special)	None	\$120		\$120
R3-96	\$135	\$120	\$15	
R3-102	\$135	\$120	\$15	
R3-108 to R3-126	\$135	\$135		
G3-91 to G3-146	None	\$135		\$135

NOTES

- CCHT evaluated five 3" drain models: (i) 60" long ReTherm Model S3-60, (ii) 60" long GFX (G3-60), (iii) 40" long GFX (G3-40), (iv) 60" long Power Pipe (R3-60) and (v) 36" long Power Pipe (R3-36). Measure effectiveness values are: 46%, 61%, 50%, 56% & 40%, respectively, compared to advertised values of 57%, 60%, 49%, 60% and 46%.
- CCHT measurements disprove this claim "*New Power-Pipe™ Design Provides Improved Performance*" and others listed in Table C.
- Tax-Credit Discrimination:** Oregon awards the same tax credits for 4" and 3" GFX models, but offers much higher tax credits for a 4" than 3" Power Pipe with no third-party certification. For example, an R3-60 gets an inflated tax credit \$15 higher than a G3-60's, whereas a corresponding 4" drain model (R4-60) gets a \$135 tax-credit, \$30 higher than either a G3-60 or G4-60.
- CCHT evaluation did not include 4" models, so it's not possible compute legitimate tax credits for 4" Power Pipes.

Table C Fraudulent Power Pipe/GFX Comparisons & Claims

Two Examples of False Claims

"The Power-Pipe™ will undergo testing at NRCAN's CCHT in the Fall of 2005 which will reflect its improvements over the earlier generation of drainwater heat recovery systems previously tested at CCHT", according the following Web page; not Table 3:

www.renewability.com/Power_Pipe_us/energuide.htm

'According to Van Decker, the Power-Pipe differs from the GFX device formerly manufactured by Doucette. "Doucette used tubing for the coil that was square with rounded corners," says Van Decker. "What we have is somewhat different. We use a rectangular shape that gives us higher heat transfer efficiency.' (Quote from "Competing GFX Devices" Energy Design Update, February 2005)

1st DRAFT: Performance Evaluation of DWHR Technology at the CCHT

Unit	Length (mm)	Configuration	Effectiveness
Power-Pipe, R3-60	1,525	A	0.67
		B	0.56
Power-Pipe, R3-36	914	A	.49
		B	.40
GFX, G3-60	1,525	A	0.70
		B	0.61
GFX, G3-40	1,016	A	0.60
		B	0.50
ReTherm, S3-60	1,525	A	0.55
		B	0.46

Table 3. Measured Effectiveness of the DWHR units.

More False Claims

"New Power-Pipe™ Design Provides Improved Performance"

"The newly patented Power-Pipe™ drainwater heat recovery unit by RenewABILITY Energy Inc. (REI) offers improved performance over the original GFX™ designs. Added to these advantages is the simplified model line-up that makes specifying the Power-Pipe™ more straightforward in any project." **But Table 3 show a Power-Pipe offers degraded performance!**

In the original GFX™ design, pressure loss was reduced by splitting the fresh water flow into two or three single coils covering different sections of the drainpipe. Efficiency was reduced, as the heat exchanger was not counter-flow, and the lengths of exposed drainpipe between the coils reduced the heat transfer area. In addition, the added complexity meant higher cost for these units, which were required in most applications. **But a two-coil S3-60 GFX outperforms an R3-60 Power Pipe, according to Table 3!**

The new Power-Pipe™ design, on the other hand, uses multiple coils wound together in parallel, giving the following advantages:

- It is a true counter-flow heat exchanger and therefore more efficient **[False]**
- The coils take advantage of the full length of drainpipe, increasing the overall heat transfer area. **[False]**
- REI's improved manufacturing process provides greater contact area between coil and drainpipe, further improving performance. **[False]**
- Most importantly, the number of coils can be varied from 1 to 6 to meet project pressure requirements without increasing the cost of the unit. When Pressure drop is reduced to insignificant levels, then other characteristics such as increased turbulence can be introduced to further increase heat exchange efficiency. **[False]**

BUT according to Table 3, testing at NRCAN's CCHT proved GFX outperforms both Power-Pipe & ReTherm. Contrary to false Power-Pipe claims below:

- A 70" Power-Pipe is required to do the job of a 60" GFX,
- A two coil Model S3-60 GFX offers an effectiveness of **57%** compared to **56%** for an R3-60;
- A ReTherm S3-60 offers only **46%**.



**CCHT Photos Corresponding to Table 3
Top: ReTherm Model S3-60
Center: GFX Model G3-40
Bottom: Power-Pipe Model R3-36**