SOLAR WATER HEATING IN LOUISIANA

by
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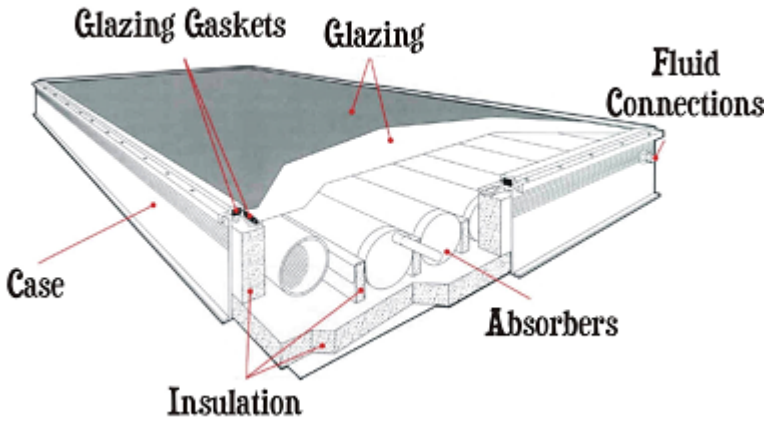
Domestic hot water ranks only behind heating and cooling as the highest energy consumers in residences. When the correct type of system is installed by a qualified installer, Louisiana's climate can be highly suited to the use of solar collectors for hot water generation.

Integrated Collection Panels or ICPs are solar collectors that integrate water storage capacity into the collector. ICPs perform extremely well in climate zones 3 and 4 (Southern Louisiana) with no freeze protection, and perform extremely well in climate zones 5 and 6 (Northern Louisiana) with minimal freeze protection. ICPs perform well without freeze protection in Southern Louisiana simply due to their mass and size. The ICP absorber tubes are large (4" diameter), and the tube case maximizes heat retention.

Figure 1. Integrated Collection Panel

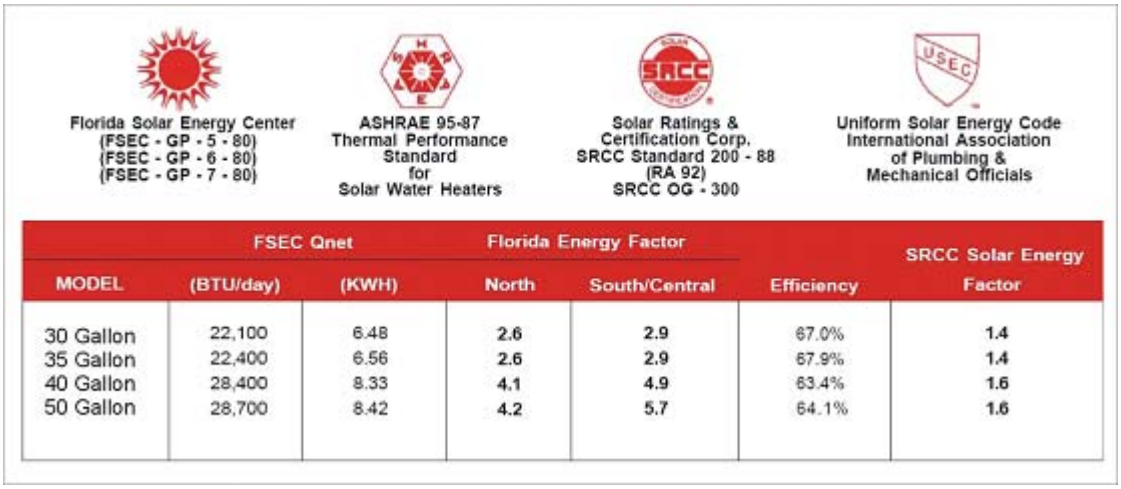


Source: URL: http://www.tctsolar.com/doa/specguide.pdf, January 2007

Louisiana's winters are milder than our neighbors in the Northern United States and a solar collector system can be installed for much less than it can be installed for in most Northern parts of the country. Elaborate, very expensive, freeze protection measures are not critical in Louisiana. Even in Northern Louisiana, where the temperatures generally fall lower during winter than they do in South Louisiana, minimal freeze protection measures will sustain a solar collection system. Without the need for expensive freeze protection systems, the cost for installing a solar collector water heater can have dramatic pay back. ICPs serve as the hot water storage tank so they are purchased according to capacity just like you would purchase a conventional electric or gas water heater (30 gallon, 40 gallon, 50 gallon). This also means that the amount of hot water available is as predictable as with a conventional water heater. ICPs can be configured in many ways, even as a direct system where it provides the only source of hot water, however, the recommended installation for the ICP is to be used as a pre-heater for your existing water heater. With ICPs properly sized, and installed as pre-heaters, they can handle total home hot water needs, except on rare occasions. This means that you will only pay for hot water when you exceed the output capacity of the ICP (the rest of the time heating your water costs nothing), and since the ICP serves as a storage tank – you double your hot water capacity and should never run out of hot water.

A 50 gallon ICP system will cost about three and a half times as much as a conventional 50 gallon electric water heater, and about two times as much as a conventional gas water heater (before applying the tax credit incentive[1]), but will pay for itself in about three years in the way of saved utility. Based on a 10 cent per kwhr rate, after the three year payback you can expect to save about $25.00 per month or $300 per year over electric water heating utility. A 30 gallon ICP will yield about one third less savings, or about $200 per year.

Figure 2. Performance Data for ICP



MODEL	FSEC Qnet (BTU/day)	FSEC Qnet (KWH)	Florida Energy Factor North	Florida Energy Factor South/Central	Efficiency	SRCC Solar Energy Factor
30 Gallon	22,100	6.48	2.6	2.9	67.0%	1.4
35 Gallon	22,400	6.56	2.6	2.9	67.9%	1.4
40 Gallon	28,400	8.33	4.1	4.9	63.4%	1.6
50 Gallon	28,700	8.42	4.2	5.7	64.1%	1.6

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For more information visit:

- URL: http://www.solardirect.com/swh/swh.htm
- URL: http://www.lses.org

To find a vendor visit:
URL: http://www.tctsolar.com

To find a Louisiana contractor visit:
URL: http://www.findsolar.com/index.php?page=findacontractor

[1] Effective January 1, 2006 through December 31, 2011, under EPACT 2005, purchases of solar water heaters for residential use are eligible for a 30% tax credit of up to $2,000. Further information about this tax credit can be found on the internet at URL: http://www.energystar.gov/index.cfm?c=products.pr_tax_credits#s4.