HOW CAN I GET A SOLAR WATER HEATING SYSTEMS INSTALLED IN MY HOUSE

1. **List of Manufacturer:** Solar Water Heating Systems are available in the market from various approved manufacturer. You can contact to anyone of the manufacturer for purchasing solar water heating system.

   - ETC Manufactures Solar Water Heating System
   - FPC Manufactures Solar Water Heating System
   - Dealers of Solar Water Heating System in Delhi

2. **Do the assessment of hot water required:**

   Manufacturer will do an initial assessment of hot water requirement

   ESTIMATES OF REQUIREMENT OF HOT WATER –SOME USEFUL THUMB RULES

Application	Typical Requirementof Hot Water at 60 C
Household bathing using buckets	10-20 liitres per person per bath
Household bathing using shower	20-30 Litres for 10 Minute bath
Shaving, while a tap runs	10-15 Litres
Household bathing in bathtub (one filling)	75-100 Litres
Wash basin (hand wash, brushing of teeth, etc.)	3-5 Litres per person per day
Kitchen washing	2-3 Litres per person per day
Dish washer	40-50 Litres per washer cycle
Clothes washing machine	7-110 Litres per Wash cycle
Industrial Canteen	3-5 Litres per worker per day
Small unstarred hotels	30-40 litres per occupant per day
Starred hotels	100-150 Litres per room per day
Hospitals	10-15 Litres per bed per day
Multistoreyed apartments i. for flats having two bedroom ii. for flats having three bedrooms or more iii. for community system	 Minimum 100lpd per flat Minimum 200 lpd per flat Capacity may be increased by 25%

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3. **Selection of Technology**

   Advantages of evacuated tubes over flat plat panels

1. Evacuated tubes have better insulation than flat plate collectors
2. They often use cheaper materials that flat plate collectors
3. They have a better shape for solar absorption than flat plates
4. The water does not run through the glass tubes, so in the case of failure, no water is lost
5. They are more easily produced than flat plates

6. They are more easily replaced than flat plates-generally only one tube will need replacing
7. More easily customized by size and location than flat plates

4. Space Requirement

Approx. 3 sq. meter shadow free South facing space is required for 100 lpd system having one collector.

5. Approximate cost :

Around Rs. 18000 for a 100 litres capacity SWH
Rs. 140-170 per installed litre for higher capacity systems

6. Payback period: 2-3 years when electricity is replaced

7. Savings

Fuel Savings:

Fuel	Calorific Value (K Cal/Kg)	Efficiency (%)	Fuel Saved (KG/Annum)
Firewood	4708	17.3	2127
Kerosene	9122	50.0	380
LPG	10882	60.0	266
Charcoal	6940	28.0	891
Diesel	10004	75.0	231
Electricity		90.0	2230 (KWH)

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8. **Environmental benefits:** A SWH of 100 litres capacity can prevent emission of 1.5. tonnes of carbondioxide per year.

9. Subsidy from Delhi Government

The EE & REM CENTRE, Department of Environment, Govt. Of NCT of Delhi provides subsidy / Rebate / Incentive to offset initial cost of the system, reduce payback period.

Non Commercial Sector: Consequent upon the Cabinet decision no.1309 dated 20.11.07 for promotion of Solar Water Heating System (SWHS) by Non-Commercial Institutions (NCI) like Colleges, Hostels, Old Age Homes, Orphange, Religious Establisment, Charitable Institutions, Group Housing Societies etc. through a scheme of incentive/rebate to extent of Rs.6000 per every 100 lpd (litres per day) SWHS and up to a maximum amount of Rs. 60,000 for 1000 lpd system installed.

Domestic Sector: A subsidy scheme is also available in Domestic sector for Promotion of Solar Water Heating System in Domestic Sector. Through this scheme, an fixed incentive/rebate of Rs.6000 is given on installation of Solar Wter heating Systems. (more details click here)

10. Subsidy from MNRE on the basis of collector area, under JNNSM

S. No.	Solar Collector type	Capitalsubsidy/Collector area (Rs./ sq.m.)
1	Evacuated Tube Collectors (ETCs)	3000
2.	Flat Plate Collectors (FPC) with liquid as the working fluid	3300

11. Subsidy Calculation Table

Domestic Sector

Capacity (LPD)	Domestic subsidy from Delhi Government (In Rs.)	MNRE Subsidy (On the basis of per m2 collector area and type of system		Totals amount of subsidy	
		FPC (in Rs.)	ETC (in Rs.)	FPC (in Rs.)	ETC (in Rs.)
100	6000	6600	4500	12600	10500
200	6000	13200	9000	19200	15000
300	6000	19800	13500	25800	19800
400	6000	26400	18000	32400	24000
500	6000	33000	22500	39000	28500

Non Commercial Sector

Capacity (LPD)	NCI subsidy from Delhi Government (In Rs.)	MNRE Subsidy (On the basis of collector area and type of system		Totals amount of subsidy	
		FPC (in Rs.)	ETC (in Rs.)	FPC (in Rs.)	ETC (in Rs.)
100	6000	6600	4500	12600	10500
500	30000	33000	22500	63000	52500
700	42000	46400	27300	88200	69300
1000	60000	33000	39000	39000	99000
1500	60000	99000	58500	159000	118500