

## Solar water pumping project at Tembru, Melghat.

In Tembru, there is a manual hand pump 2026 feet (almost 3/4 of a kilometer) below the village from which the villagers carry all the water they need for drinking, washing and bathing each day. They make this walk 2 to 3 times a day and water carrying consumes a great deal of the available time of the women and children in the village. Water from the well on which the pump is installed is available all the time.



The Long walk carrying water to Tembru

The project consists of using a well near the one that is presently being used. This well is not being used now because the manual pump installed on this well is in need of repair. Near this well, solar panels will be erected to power two pumps electrically. One submersible pump will be installed in the well and the second pump will be located part way up the hill. The solar panels and controllers will be pole mounted and protected from theft with lockable gates around them.



Tembru village

The second pump which will be located part way up the hill will pump the water from a tank located there to the tanks located in the center of the village. This intermediate pumping station is necessary because the solar pumps can not overcome the water head (pressure) required to get the water from the bottom of the well to the top of the tanks to be located in the village. The solar panels will all be located together so they can be guarded and protected from would-be thieves. The tanks in the village will be mounted on a platform so that water

can flow by gravity to two stations with concrete water taps where villagers can get the water they need very near their houses.

The cost of the project shall be reduced because the villagers will dig the piping trench and lay the pipe at no cost. However, the solar and plumbing equipment and their installation will cost 1370,000 rupees (\$28,533 USD at 48 rupees per dollar). Solar equipment will be supplied and installed by Aurore Systems, Pondicherry. Piping and tanks will be purchased and installed by the Melghat Mitra (MAITRI) team in Melghat.



Site of the Intermediate Pumping Station

**Additional photos of Tembru can be seen at**

<http://picasaweb.google.com/bobbej/MelghatII?authkey=0RpnxCYRimM&feat=email#>

<u>SL No</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit Rate (Rs)</u>	<u>Total Cost (Rs)</u>
1	Grundfos SQ flex Pump	2	94,000.00	188,000.00
2	80 Watts PV modules [1440 Watts]	36	16,500.00	594,000.00
3	Hensel Junction Box with Connectors	4	3,500.00	14,000.00
4	Electrical & Plumbing Accessories – at actual	1	25,000.00	25,000.00
5	Tracking Structure to Mount Solar Panels	4	15,000.00	60,000.00
6	Array to Pump: 35 Sq mm cable single core (Meter) – at actual	800	15.00	172,000.00
7	10 Sq mm three core cable	50	220.00	11,000.00
8	Earthing	2	3,000.00	6,000.00
9	Installation	1	30,000.00	30,000.00
	<b>Sub Total (Rs)</b>			<b>1,100,000.00</b>
	<b>Central Sales Tax 10%</b>		10%	110,000.00
	<b>Total (Rs)</b>			<b>1,210,000.00</b>
	<b>Transportation &amp; Packing Charges till Amravati</b>			12,000.00
	<b>Transportation from Amravati till site</b>			12,000.00
<b>A</b>	<b>Total (Rs)</b>			<b>1,234,000.00</b>
	<b>Materials to be purchased locally:</b>			
	3 water tanks each 5000 ltr - Plasto company, ISO		22500.00	67,500.00
	HDP 1.25 inches, 10 kg per cu cm pressure - 625 m		85.00	53,125.00
	Transport			10,000.00
	Plumber, cement and other sundry expenses			5,000.00
<b>B</b>	<b>Total</b>			<b>135,625.00</b>
	<b>Total Cost of the project (A+B)</b>			<b>1,369,625.00</b>

Any contribution towards this project is most welcome. We also appreciate any voluntary help that you can give during the implementation of this project, especially if you have any experience in engineering / plumbing.

(Contributions to Maitri are exempt under Section 80 (G) of the Income Tax Act)



“Kalyan”, 32 Natraj Society, Karvenagar, Pune 411052.

Tel 91 20 25443134 / 25450882. Email: [maitri1997@gmail.com](mailto:maitri1997@gmail.com), URL: [www.maitripune.net](http://www.maitripune.net)