

Manufacturer experiences on monitoring solar heat systems

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UNFCCC Carbon Credit system monitoring:

- ▶ Developed flow and temperature monitoring system for NTS systems, which was accepted by UNFCCC under Carbon Credits.
- ▶ Involved measurement of flow using analog flow meters.
- ▶ Temperature measurement through button sensors immersed in the outlet pipe section.

Analog flow meter:



Source: <http://www.ningbo-electric.com/water-meters.html>

Button temperature datalogger:



Source: <http://www.dftme.com/media/lgprods/sig-sl54th.jpg>

Advantages:

- ▶ Cheap and cost effective.
- ▶ Robust construction.
- ▶ Very less electronics involved.
- ▶ Relatively easy post processing of data.

Drawbacks:

- ▶ Long data collection interval (30 mins).
- ▶ Low accuracy of sensors as compared to digital sensors (due to relatively lower flow rates).
- ▶ Results were estimations at best.
- ▶ Only suitable for building confidence of system operation.

Industry scenario:

- ▶ Objective of monitoring needs to be defined.
- ▶ Analysis of monitoring system cost vis-à-vis system sizing required.
- ▶ Very less experience in industry till date.
- ▶ Only a few examples with analog/digital flow meters and temperature sensors can be observed.
- ▶ Interaction between monitoring systems manufacturers and solar thermal manufacturers required.

Thank You