



**TREN/07/FP6EN/S07.70442/038514 SEMS**

**SEMS**

**Sustainable Energy Management Systems**

Instrument: **Integrated Project**

Thematic Priority: **No. 6: "Sustainable development, global change and ecosystems (including energy and transport research)"**

### **D 2.07.3 Monitoring report on operation**

Due date of deliverable: **M48**

Actual submission date: **M48**

Start date of project: **1<sup>st</sup> June 2007**

Duration: **5 years**

Organisations name of lead contractor for this deliverable: **Pfalzwerke**

Revision **01**

<b>Project co-financed by the European Commission within the Sixth Framework Programme (2002-2006)</b>		
<b>Dissemination Level</b>		
PU	Public	<b>PU</b>
PP	Restricted to other programme participants (including services)	
RE	Restricted to a group specified by the Commission (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

## Monitoring report on Operation of small scale PV systems

As part of the WP 2.07 Large Scale and Small Scale PV systems are monitored by using DEMS.

The Large Scale facility was metrological integrated on DEMS on 26. April 2011, so there is no evaluable data for a useful analysis. This will take place in the next report. For the small scale systems 6 photovoltaic systems have been integrated in DEMS. Physically, there are 7 plants, but two of the photovoltaic systems run on one electric meter and therefore measured and evaluated as one system.

The 6 photovoltaic systems are not only just newly installed systems, but also to stock.

<b>PV-System</b>	<b>Installed Power in kW</b>	<b>Orientation</b>
PV Bürgerhaus 1	13,44	SO 20°
PV Bürgerhaus 2	20	SO 20°
PV Eulenbis	8,75	SO 15°
PV Kollweiler	33,8	SW 32°
PV Mackenbach	51,4	SO 31°
PV Reichenbach	20,4	SW 10°
PV Weilerbach	41,8	S 0°

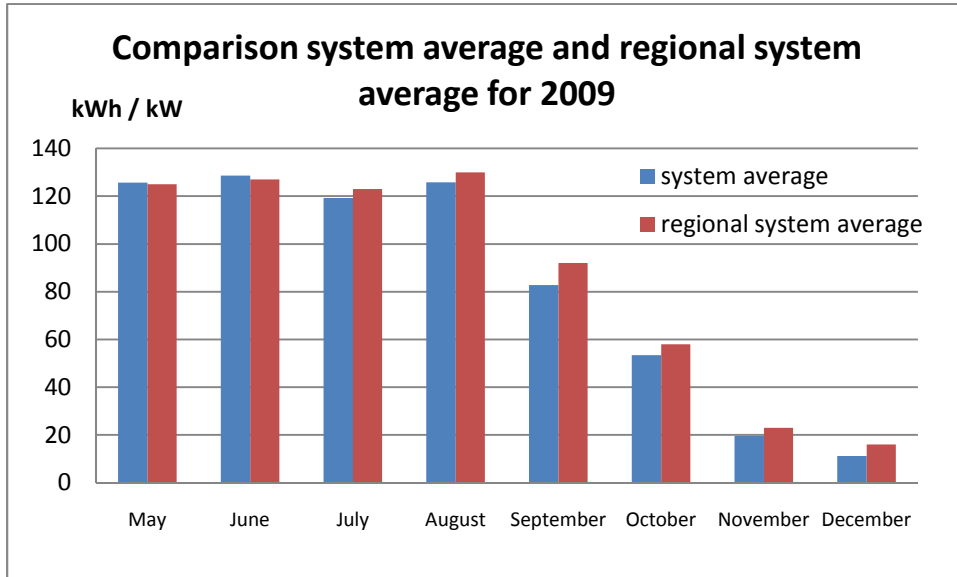
**Total: 189,59 kW**

For the analysis of the values data from Meteomedia GmbH for the region Kaiserslautern were used as reference or comparison values.

The Meteomedia GmbH is next to the “Deutscher Wetterdienst” largest German provider of weather data. It acts in the SEMS project as a meteorological consultant and provides the project with the forecast and measurement data over project period.

**Evaluation for 2009:**

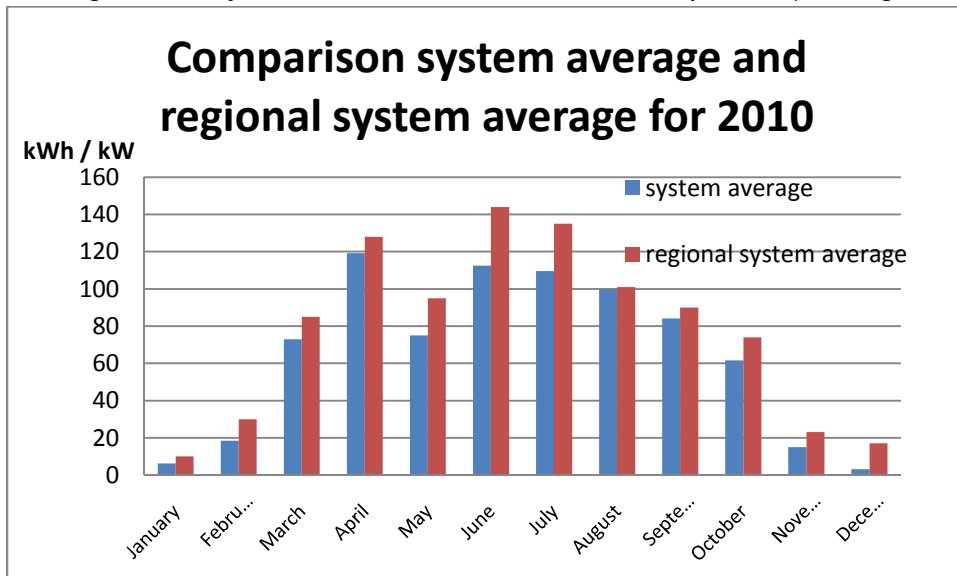
Average monthly returns over the measurement period (average of all plants). The monitored system average is shown in blue; the regional average plant is shown in red.



The system average of the average monthly production from May to December 2009 from 83 kWh / kW is slightly below the regional average of 87 kWh / kW.

**Evaluation for 2010:**

Average monthly returns over the measurement period (average of all plants)

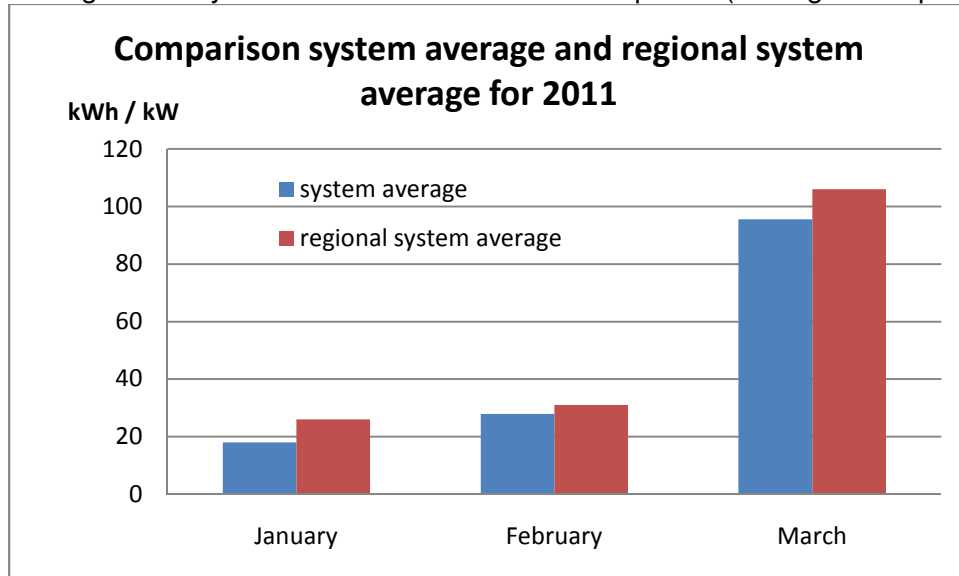


The system average of the average monthly output of 65 kWh / kW is about 17% below the regional average of 78 kWh / kW.

The average total return of PV systems is around 807 kWh / (kW \* a). The reference return is at 947 kWh / (kW \* a).

**Evaluation for 2011:**

Average monthly returns over the measurement period (average of all plants)



For the first three months of average monthly production is 47 kWh / kW, so below the regional average of 54.3 kWh / kW.

**Explanation of deviations from the regional average:**

The 6 photovoltaic systems are not all perfectly aligned, because the existing roof surfaces were used for elevation.