Centralised solar PV

South Africa has vast open spaces with high solar radiation. Centralised photovoltaic (PV) technology uses arrays of PV panels to collect solar energy. Under South Africa's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) a total capacity of 1,448 MW has been secured for supply to the national grid in the first three bidding windows. Each PV farm will contribute capacity of between 5 and 75 MW. Many of these farms are under construction to be operational by 2014 or 2015.

Level 1

Level 1 assumes that only the capacity contracted in the first three bidding windows of the REIPPPP is installed from now to 2050. Of this, a total of 1,448 MW is installed by 2015. This capacity is maintained by replacing equipment at the end of their lifespan (20 years), but no additional PV capacity is installed.

Level 2

This level assumes, like Level 1, that capacity of 1,448 MW is installed by 2015 and that this capacity increases to 8,400 MW by 2030, as per the IRP 2010. It is assumed that this capacity then doubles to a total of 16,800 MW by 2050.

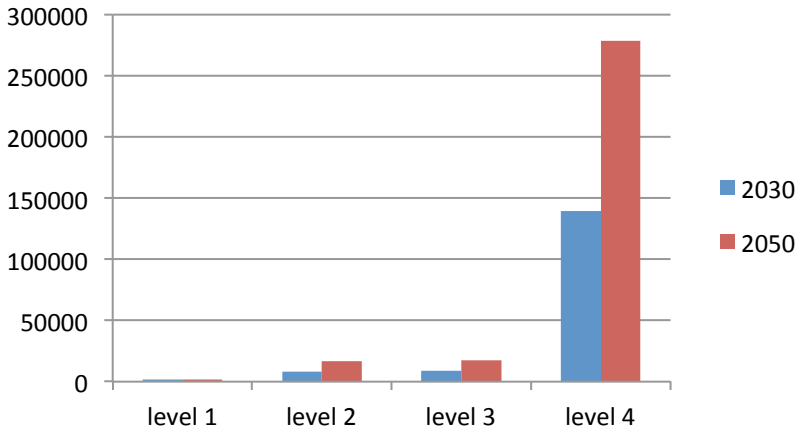
Level 3

This level assumes the same as in Level 2, excep that the capacity is increased as per the IRP 2010 'Adjusted Emissions Scenario' to 8,820 MW and it doubles to 17,640 MW by 2050.

Level 4

This level assumes there is ambitious effort to build solar power farms within the country and that the solar PV capacity reaches 136,900 MW by 2030. This doubles to 278,300 MW by 2050 - half the maximum technical potential that has been suggested in research.[1]

PV panels on the 50 MW Droogfontein solar PV project in the Northern Cape.
Source: www.greenbusinessguide.co.za



Installed PV farm capacity (in MW) in Levels 1 to 4

1. Fluri, T.P. "The potential of concentrating solar power in South Africa."*Energy Policy* 37.12 (2009): 5075-5080.