

Hydroelectric power

South Africa produces and imports hydroelectricity. Local hydroelectric capacity is approximately 670 MW, of which 70 MW is from small hydroelectric dams. Under the Renewable Energy Independent Power Procurement Producer Program (REIPPPP) capacity of 14.4 MW capacity has been contracted for supply to the national grid from small hydroelectric power plants.

Most of South Africa’s hydroelectric capacity (approximately 1,500 MW) is imported from the Cahora Bassa power station in Mozambique. There is a potential for around 65,000 MW of hydroelectric capacity across the Southern African region¹, and South Africa would be able to import some this capacity, although much would supply other countries too.

Level 1

Level 1 assumes that locally generated hydropower capacity is maintained at the current level of 670 MW until 2025 these power stations are retired and capacity falls by 70 MW. Capacity secured by 2014 under the REIPPPP is installed and adds 10.4 MW by 2015. Imported hydroelectric capacity from Mozambique remains constant at 1,500 MW from now to 2050.

Level 2

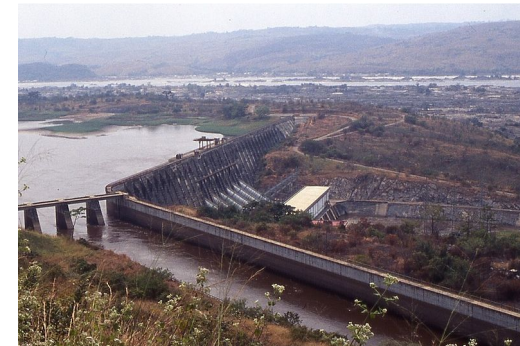
This level assumes that in addition to the capacity installed in Level 1, imported capacity, as per the Integrated Resource Plan (IRP) 2010, adds 2,609 MW by 2025 to a total capacity of 4,700 MW. Hydroelectric power capacity grows further to 5,218 MW by 2050.

Level 3

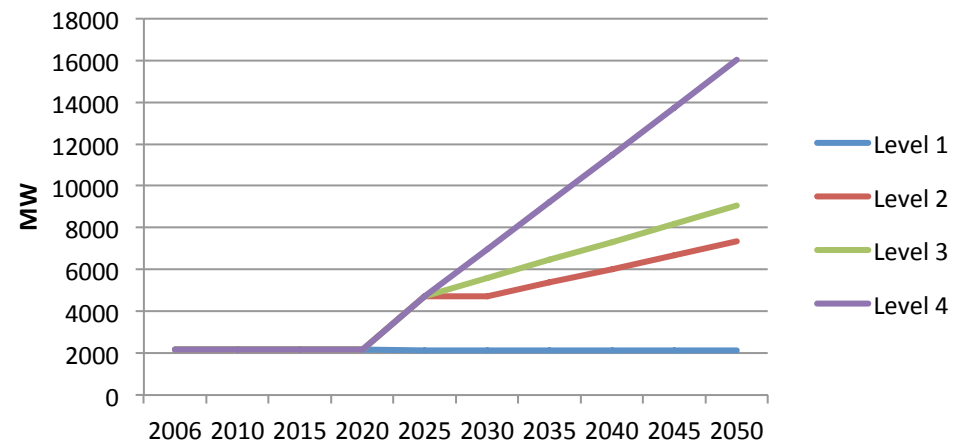
This scenario, we import Hydro as per the IRP 2010 ‘Emissions Adjusted Scenario’. A total capacity of 3,474 MW is imported by 2030 largely from new hydroelectric projects. Imported capacity doubles by 2050 to 6,948 MW. This level assumes fairly rapid development of hydroelectric power projects such as the Grand Inga project in the Democratic Republic of the Congo.

Level 4

This level assumes rapid development of hydroelectric power capacity in Southern Africa to provide imported capacity of 13,896 MW, more than 20% of the total potential hydroelectric capacity potential in the region.



The Inga I dam on the Congo river.
Source: www.theguardian.com



Installed capacity (in MW) of hydroelectric power under Levels 1 to 4

¹ World Hydro Potential and development, Norwegian Renewable energy partners.