

HYDROPOWER

Definition

Moving water (kinetic energy) is used to produce electricity, referred to as hydropower.

Hydropower generation is categorized in relation to the: (i) means of storage, (ii) movement of the water. There are two broad types of hydro-power, run-of the river and reservoir. Reservoir is subdivided into storage reservoir and pumped storage.

The energy produced is classified according to their energy production capacity, expressed in megawatts. The two types of hydropower are associated with differ capacities of energy production, described below.

Large scale hydropower generation requires water storage provided by natural or man-made lakes or reservoirs, which are dammed to retain and regulate water for later release for power generation for domestic and industrial use. Globally, the hydropower scheme with the largest installed capacity is the Three Gorges Dam, China (22,500 MW), and the largest in Europe is the Iron Gates I, Romania (2,250MW).

Small scale hydropower is characterised by the capture of energy in flowing water (run of the river), with an upper limit of 10MW to 30MW depending upon country. The power of the scheme is proportional to the flow and the head: 1. Flow - the minimum amount of water that is constantly available throughout the year, and 2. Head - the vertical distance between the flow intake and the turbine. This definition includes micro hydropower that is considered to be an installation of 300kW or less, depending upon country.

Related terms

Marine Energy

Keywords

Hydroelectric, Water energy



Figure 23a Micro hydro power in Eftimie Murgu village, Caraş Severin county, Romania. (Photo: Maria Bostenaru Dan 2008)



Figure 23b Large hydro power plant Alqueva II in Portugal. (Photo: Naja Marot 2015)

Source

Eurelectric 2011: Hydro in Europe: Powering Renewables. Union of the Electricity Industry, Brussels. pp. 66.

http28: https://ec.europa.eu/research/energy/index.cfm?pg=area&areaname=renewable_hydro

http29: www.small-hydro.com/about/small-scale-hydropower.aspx

<p>Translations: Small and micro hydropower</p> <p>Bosnia and Herzegovina Male i mikro hidroelektrane Bulgarian Малка и средна хидроцентрала Croatian Male i mikro hidroelektrane Czech Malá a extrémně malá vodní energie Danish Lille og micro vandkraft Dutch Kleine en mico waterkracht Esperanto Malgranda kaj mikro akvoelektrejo Estonian Väikehüdroelektrijaamad Finish Pienvesivoima French Energie hydraulique de petite et moyenne taille German Mini- und Kleinstwasserkraftwerke Greek Μικρά Υδροηλεκτρικά Hebrew וקטן בינוני הידראו־אקטריית אנרגיה לייצור מתקן</p>	<p>Hungarian Kis és mikro vízerőmű Italian Mini e micro idroelettrico Islandic Smá- og örvirkjanir Latvian Mazā un mikro hidroelektrostacija Lithuanian Mažosios ir mikro hidroelektrinės Montenegrin Mala i mikro hidroelektrana Polish Mała i mikro- elektrownia wodna Portuguese Pequenas e micro hidroelétricas Romanian Micro- și minihidrocentrale Russian Малая и средняя гидроэлектроэнергия Slovenian Mala in mikro hidroelektrarna Serbian Male hidroelektrane Spanish Energía hidroeléctrica a pequeña escala Swedish Liten och mikro vattenkraft</p>
<p>Translations: Large hydropower</p> <p>Bosnia and Herzegovina Velike hidroelektrane Bulgarian Голяма хидроцентрала Croatian Velike hidroelektrane Czech Velká vodní energie Danish Større vandkraft Dutch Grote waterkracht (-plant = -centrale) Esperanto Granda akvoelektrejo Estonian Hüdroelektrijaam Finish Suurvesivoima French Energie hydraulique de grande taille / Grande hydraulique German Großwasserkraft Greek Μεγάλα υδροηλεκτρικά Hebrew גדול בהיקף הידראו־אקטריית אנרגיה לייצור מתקן</p>	<p>Hungarian Nagy vízerőmű Italian Grandi impianti idroelettrici / Idroelettrico a grande scala Islandic Stórar vatnsaflsvirkjanir Latvian Lielā hidroelektrostacija Lithuanian Didžiosios hidroelektrinės Montenegrin Velika hidroelektrana Polish Elektrownia wodna Portuguese Grandes hidroelétricas Romanian Hidrocentrale Russian Крупномасштабная гидроэлектроэнергия Slovenian Velika hidroelektrarna Serbian Велике hidroelektrane Spanish Grandes centrales hidroeléctricas Swedish Stor vattenkraft</p>