Renewables Global Status Report 2025 – Hydropower- Endnotes

1 Global capacity estimate based on sources as cited by country in this section; International Hydropower Association (IHA), personal communication with REN21, May 2025; IHA, "2025 World Hydropower Outlook", June 2025, https://www.hydropower.org/; IHA, "Annual World Hydropower Outlook and Hydropower Status Report", 2019-2024, https://www.hydropower.org/. Note: IHA estimates global additions at 16.2 GW, including some multi-turbine facilities where commissioning began in 2024 and stretched into 2025. Estimates in this report only consider turbines commissioned in 2024. Accordingly, country totals for China, Ethiopia, Bhutan, Nepal, Cameroon, Indonesia and Vietnam and associated rankings might differ significantly from those published by the IHA. The estimate of 15.1 GW was calculated by taking the totals for the top 11 countries from the IHA (13.8 GW) and the total for the same countries from other sources in this section (12.7 GW) and subtracting the difference (1.1 GW) from the IHA global total. See also endnote 9.

2 Based on reported year-end total global capacity for 2018 through 2023, from IHA, "Annual World Hydropower Outlook and Hydropower Status Report", 2019-2024, https://www.hydropower.org/.

3 IHA estimate of 1,254 GW, less the adjustment for annual additions of 1.1 GW.

4 Country data from IHA, from sources noted elsewhere in this section, and from the following sources: China: 377 GW of installed hydropower capacity, 58.69 GW of installed pumped storage (sum of both being 436 GW), 6.25 GW of hydropower capacity additions, 7.53 GW of pumped storage additions (sum of both being 13.78 GW), hydropower generation of 1423.9 TWh, from China National Energy Administration (NEA), "2024 年可再生能源并网运行情况"[Grid-connected operation of renewable energy in 2024], January 27, 2025, https://www.nea.gov.cn/20250221/e10f363cabe3458aaf78ba4558970054/c.html; 381 GW of installed capacity and 58.69 GW of pumped storage (sum of both being 440 GW), from China Electricity Council (CEC), 24 January 2025, https://www.cec.org.cn/detail/index.html?3-341403. **Figure H-1** based on capacity sources provided in this note.

5 IHA, "Annual World Hydropower Outlook and Hydropower Status Report", 2020-2025, https://www.hydropower.org/

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https://www.gov.br/aneel/pt-br/centrais-de-conteudos/relatorios-e-indicadores/geracao.

7 IHA, “Annual World Hydropower Outlook and Hydropower Status Report”, 2020-2025, https://www.hydropower.org/

8 Capacity values by country from International Hydropower Association (IHA), personal communication with REN21, May 2025; 2024 data from IHA, “2025 World Hydropower Outlook”, June 2025, https://www.hydropower.org/; and from other sources by country noted in this section. **Figure H-2** based on same.

9 According to IHA data, these ten countries added 13.8 GW. Based on the methodology exposed in endnote 1 that total may overstate additions for China, Ethiopia, Bhutan, Nepal and Cameroon, and understate additions for Indonesia and Vietnam. Based on sources by country cited elsewhere in this section, these ten countries may have added only 12.7 GW of capacity during calendar year 2024. Adjusting the global total by this difference, from 16.2 GW to 15.1 GW, yields the share of 84% (12.7/15.1).

10 IHA, “World Hydropower Outlook”, June 2025, https://www.hydropower.org/; Wasu Manawko Tefera and K.S. Kasiviswanathan, “A global-scale hydropower potential assessment and feasibility evaluations”, Water Resources and Economics, April 2022, https://doi.org/10.1016/j.wre.2022.100198; Wei Jing Ang et. al., “Dams in the Mekong: a comprehensive database, spatiotemporal distribution, and hydropower potentials”, Earth Systems Science Data, 7 March 2024, https://doi.org/10.5194/essd-16-1209-2024.

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12 Based on a pipeline of 5 GW and further remaining potential of 355 GW for North and Central America [5/(5+355)] and a pipeline of 160 GW and further remaining potential of 341 GW for East Asia and Pacific [160/(160+341)], from IHA, “World Hydropower Outlook”, June 2025, https://www.hydropower.org/

13 IHA, “World Hydropower Outlook”, June 2025, https://www.hydropower.org/

14 IHA, “World Hydropower Outlook”, June 2025, https://www.hydropower.org/

15 IHA, “World Hydropower Outlook”, June 2024 and 2025, https://www.hydropower.org/

16 IHA, “World Hydropower Outlook”, June 2025, https://www.hydropower.org/

17 IHA, “World Hydropower Outlook”, June 2025, https://www.hydropower.org/

18 IHA, “Annual World Hydropower Outlook and Hydropower Status Report”, 2020-2025, https://www.hydropower.org/

19 See, for example, IHA, “World Hydropower Outlook”, June 2025, https://www.hydropower.org/

20 IHA, “Annual World Hydropower Outlook and Hydropower Status Report”, 2020-2025, https://www.hydropower.org/. In the top eight countries for cumulative hydropower capacity, the five-year generation growth was only 4% against capacity growth of nearly 9%. For the rest of the world, generation growth was nearly 11% (even higher than capacity growth).

21 Hydropower Sustainability Alliance, “Our Mission”, accessed 23 August 2025, https://www.hs-alliance.org/our-mission,.

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l; China Electricity Council (CEC), 24 January 2025, https://www.cec.org.cn/detail/index.html?3-341403.

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33 Data for years 2005 through 2023 from China Bureau of Statistics, "Electricity Balance Sheet", accessed 23 August 2025, https://data.stats.gov.cn; Generation in 2024 from China National Energy Administration (NEA), "2024 年可再生能源并网运行情况"[Grid-connected operation of renewable energy in 2024], January 27, 2025, https://www.nea.gov.cn/20250221/e10f363cabe3458aaf78ba4558970054/c.html; China Electricity Council (CEC), 24 January 2025, https://www.cec.org.cn/detail/index.html?3-341403.

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