Vienna Energy Forum 2021, 7 July 2021

Small Hydropower – Opportunities for electricity access & energy transition

Organizers: The United Nations Industrial Development Organization (UNIDO) and International Center on Small Hydro Power (ICSHP).

Summary

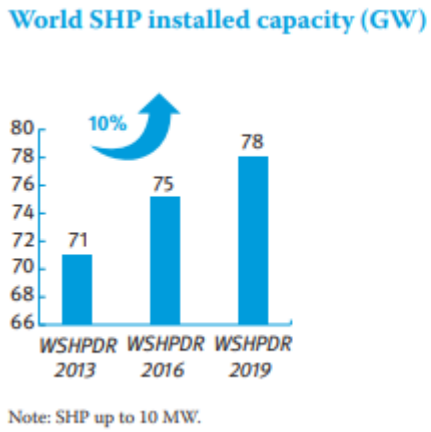
The session started with a note on IEA's recent publication Net Zero by 2050- A Roadmap for the Global Energy Sector. The report strongly makes a note of small hydropower (SHP) as critical in achieving energy transition goals. Although the renewable energy capacity addition for solar and wind has been phenomenal since the Paris Agreement (2015), the recent net zero emission (NZE) trends mean that complete decarbonization of electricity is not possible without SHP expansion. **SHP essentially suffers from poor lobbying.** Although NZE target was not part of the Paris Agreement, we now see ~ 30 countries having legislated NZE targets. This is exactly what we need for the renewable energy sector, except that special emphasis needs to be placed on SHP development (given its dispatchability feature to provide electricity security) if we are to meet the energy transition goal.

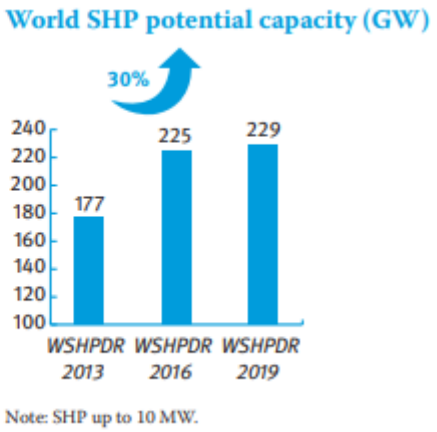
> "*Hydropower is the largest low-carbon electricity today and steadily grows in the NZE, doubling by 2050*". (IEA, 2021)

Anton recognized the role of Dr. LIU Heng and Prof. Arun Kumar in SHP lobbying, and providing technical assistance globally.

Dr. LIU discussed UNIDO's role and achievements in SHP. UNIDO and ICSHP are now collaborating to develop **SHP as a service (Water-Energy-Food approach)** in Africa.

Oxana introduced the World Small Hydropower Development Report 2019. For the first time the report has included case-studies, since the assessment report's first launch in 2013.





- 34% of SHP potential has been developed.
- > 50% SHP potential lies in Asia alone
- Many African countries lack the data and (conducted) studies, hence the World SHP potential is much greater than 229 GW.
- The 4th WSHPDR is being prepared.

Prof. Arun Kumar introduced Small Hydropower Technical Guidelines and noted its role in adding reliability and setting pace. He shared that it is entrepreneurs who are accelerating the growth of SHP now. Prof. Kumar's organisation, IIT-Roorkee has been critical in providing turbine testing and simulation activities for SHP technology.

Janice from Hydrogrid introduced the concept of digital SHP- to support demand response. 80,000 SHPs in the world do not have digitalisation, which means that they are not able to take advantage of the deregulated energy markets.

The event pointed the role of SHP in energy transition. It allowed attendees to appreciate the heavy lifting required in the sector, including the policy support. Hydropower has been forgotten and will need to be revived now. Out of the 7 IEA recommendations for hydropower in NZE context, 3 relate to SHP.

Sincerely,

Ugranath