



IEA Hydropower TCP introduction

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Executive Committee Secretary

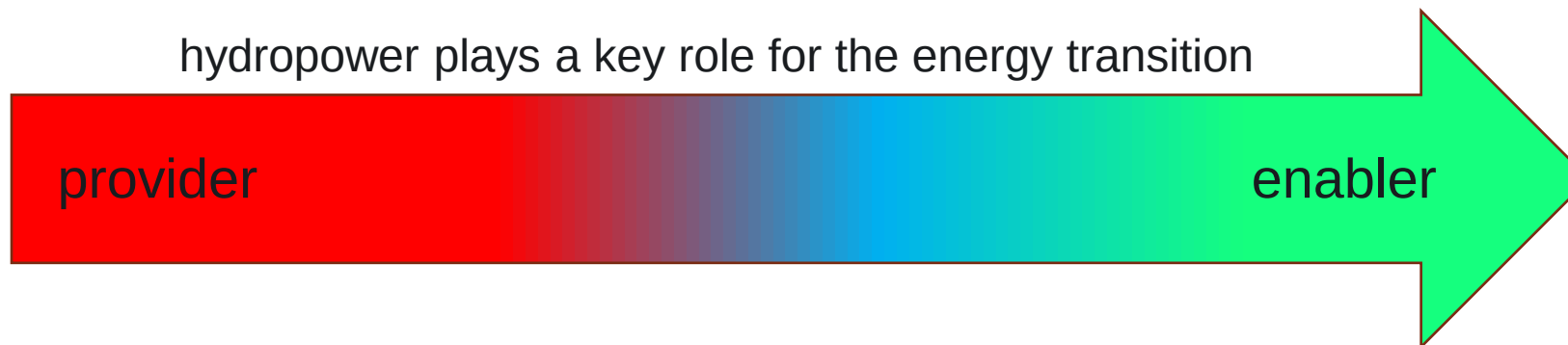


Global context



- Globally installed hydropower must be doubled by 2050 as compared to 2021 to reach NZE (IEA 2021)
- Mostly Refurbishing/upgrading in Europe and North America, most new HPP in Asia, sub-Saharan Africa, South America
- Presently we are lagging behind by a factor of 2-3 (IEA 2021)
- More storage, more flexibility and highest sustainability standards
- 7 priority areas identified by IEA, adopted by IEA Hydro

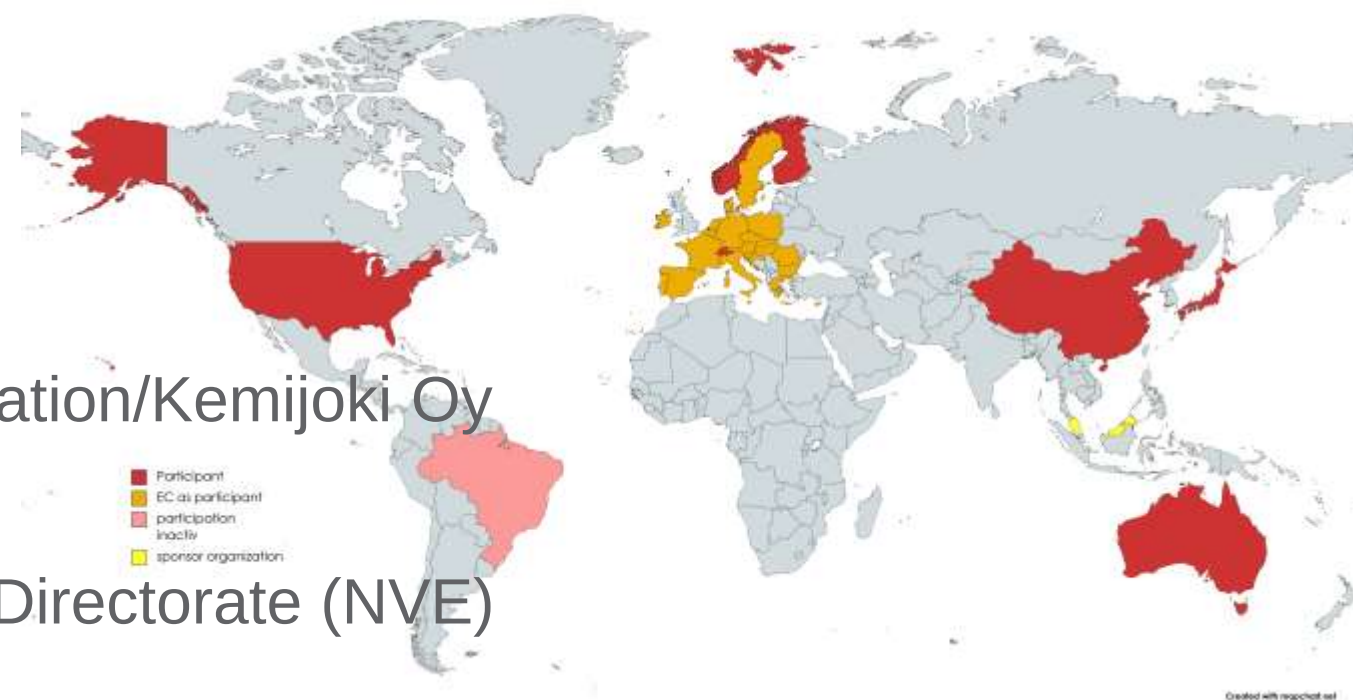
hydropower plays a key role for the energy transition



IEA Hydro participants



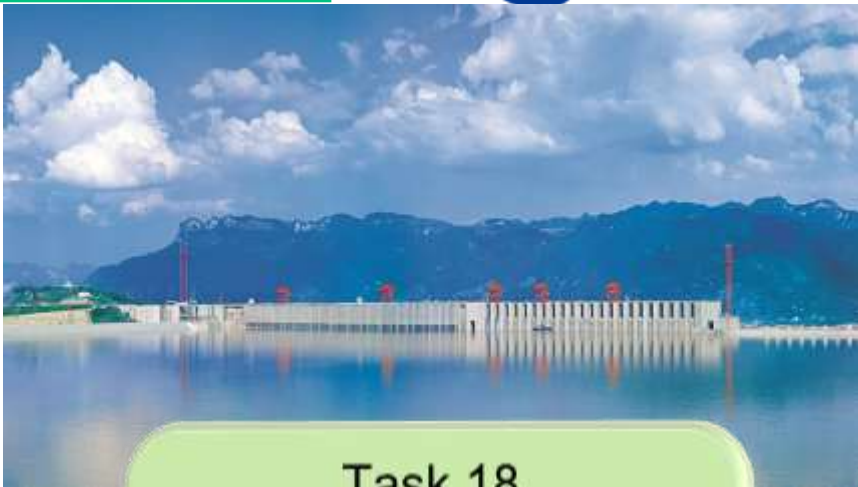
1. Australia – Hydro Tasmania
2. Brazil – Ministry of Mines and Energy, CEPEL
3. China – China Yangtze Power Corporation
4. European Union – European Commission
5. Finland – Funding Agency for Technology & Innovation/Kemijoki Oy
6. Japan – New Energy Foundation (NEF)
7. Norway – Norwegian Water Resources & Energy Directorate (NVE)
8. Switzerland – Swiss Federal Office of Energy
9. USA – US Department of Energy, Oak Ridge National Laboratory
10. Sarawak Energy (Malaysia) - participates as a sponsor



Individual Tasks



Task 9
Valuing Hydropower
Energy and Water
Services



Task 19
Hydropower
and Fish 2.0



Task 16
Hidden and
Untapped Hydro
Opportunities

Task 17
Measures to
Enhance Climate
Resilience



Task 18
Decision Support for
Comprehensive
Utilization of Basin
Water Resources



Strategic work plan for 2025-2029



Flexibility and Storage

- Dispatchable capacity
- Long duration storage
- Increasing flexibility
- Pumped storage with flexibility
- Hybridization
- Economic efficiency and optimization of operation
- Digital twins

Climate Change Impact

- Technologies to strengthen climate change resilience
- Retrofitting HPPs
- Managing reservoir sedimentation

Sustainability

- Better ecological performance (E-flows, hydropeaking, fish migration, monitoring, sensors)
- Climate change resilience
- Reservoir sedimentation

Hidden Hydro

- HP at existing infrastructures
- Adding storage and flexibility to existing HPP
- Non-powered dams and other infrastructure
- Small decentralized pumped storage

Digitization and AI as overarching components

Alignment with IEA mission + better communication + dissemination + new participants

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Task 9 Hydropower services

Task19 Hydropower & Fish

Task 17 climate change resilience

Task 18 Decision support for utilization of basin water resources

Task 16 hidden hydro

Task 16 hidden hydro

(Non)-technical general activities



1. Research collaboration
2. Align TCP activities with IEA key recommendations (7 priority areas for hydropower)
3. Raise awareness about global importance of hydropower for energy transition
4. Team up and coordinate with other multilateral hydropower organizations
5. Dissemination: better communication strategy
6. Support international hydropower conferences
7. Increase collaborative activities with other TCPs (Wind, Solar PV, Energy Storage ...)
8. Increase participating countries (target India, Canada, Sweden, Austria.....)
9. Modernization process (new implementing agreement, additional vice chairs)



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For further information:

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