TIMES OF TRANSITION
Hydropower's Role in the New Energy System

Anne Vera Skrivarhaug
Director
Energy Departement
NVE

Photo: Arne T. Hammarsland / NVE
The Power System is Changing Fast – new customers
New large consumers

Data centers

Battery factories

Offshore electrification

Hydrogen production
New Consumers challenge the system’s capacity
The Power System is Changing Fast – new production
More Inflow Increases Hydropower Production in Norway...

- **1961-1990**: 139 TWh/year
- **1981-2010**: 145 TWh/year
- **1989-2018**: 149 TWh/year
... but also Give more Frequent and Severe Flood Incidents
... but also Give more Frequent and Severe Flood Incidents

Change in Floods With 200 Years return period

- 41 - 60 %
- -55 - -40 %
Time for new Conditions and new Investments in Existing Hydropower

Age of the Norwegian Hydropower Fleet
How can the Research Community Contribute?

Innovative Hydropower Technology
How can the Research Community Contribute?

Innovative Hydropower Technology

Market Design & Investment Decisions
How can the Research Community Contribute?

- Innovative Hydropower Technology
- Market Design & Investment Decisions
- The Value of Hydropower Services
How can the Research Community Contribute?

- Innovative Hydropower Technology
- Better Modelling Tools
- The Value of Hydropower Services
- Market Design & Investment Decisions
Thank you for your attention