# FME RenewHydro

### Hydropower research for the future













Renewing Hydropower within the energy transition

RenewHydro shall provide knowledge and solutions that enable flexible hydropower to support the energy transition and reach national energy, climate and nature targets.

Forskningspartnere





#### Status Januar 2025

37 partnere

8 år (2025 – 2032)

383 mill. NOK

16 aktive prosjekter

x assosierte prosjekter

**x** forskere

36 PhD & Postdoc

Target at >400 MSc

> 3000 m<sup>2</sup> laboratorier

### Partners in RenewHydro

**Research partners** 

**User-partners from industry and government** 





RenewHydro

### Research programs

Framework Program: FP1 Enabling and competing technologies FP2 Market design

developments

FP3 Future power price

dynamics

**FP4** Societal and

environmental frameworks FP5 Trends in runoff under climate change and effects on hydropower production



#### **Future Hydropower Plants**

- RP1.1 New hydro power plants design and new construction
- RP1.2 Design for intermittent operation and high ramping rates
- RP1.3 Holistic monitoring and condition prediction of hydro power plants
- RP1.4 Sediment handling

#### **More Power and Energy**

- RP-2.1 Sustainable flexibility services from hydropower
- RP-2.2 Sustainable upgrading and expansion of the hydropower system
  - RP-2.3 Provision of energy security and adequacy from hydropower
  - RP-2.4 Hydropower resource allocation and markets

#### Hydropower in a Changing Climate

• RP-3.1 Adaptation & opportunities for hydropower due to changed hydrological inflow and seasonality

🖸 NTNI J NHH 🚟 🌀 SINTEF

- RP-3.2 The role of hydropower in climate adaption
- RP-3.3 The impacts of climate change on hydropower infrastructures

• RP-3.4 Climate change and ecological flows



Forskningssenter for miljøvennlig energi

### dro ST Forskr

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RP2

RP1

RP3

## Framework Program





Programme	Framework	Duration	2025-2032	Responsible	NHH	Program Manager	Mette Bjørndal, NHH
Title	Perspectives o						
<b>Objective:</b> Pro under which h	Project leaders & Partners						
FP1 Enabling a Provide insight	Michael Belsnes, SINTEF NHH, USN, SINTEF						
FP2 Market de Understand ho electricity mar	Stefan Jaehnert, SINTEF IØT NTNU, NHH, USN, SINTEF						
FP3 Future por Understand th	<b>Kyriaki Tselika,</b> NHH USN, NHH, SINTEF						
FP4 Societal and European and societal legitim	Erling Holden, NMBU NMBU, NINA, SINTEF						
FP5 Trends in Develop inflov explore implica	Øyvind Paasche, NORCE NORCE, SINTEF						
							RenewHyd

### Research Program 2





Programme	RP2	Duration	2025-2032	Responsible	SINTEF Energi	Program Manager	Linn Emelie Schäffer, SINTEF
Title	More pow	er and energ					
<b>Objective:</b> Exp	Project leaders						
hydropower to	& <i>Partners</i>						
<b>RP-2.1 Sustain</b>	Linn Emelie, SINTEF, NINA,						
Develop metho	NORCE, NHH						
<b>RP-2.2 Sustain</b> Develop and ir pumped storag	Tonje Aronsen, NINA og Chirag Trivedi, NTNU, NTNU (EPT, IEL, IBM, IGT), NMBU, NINA, SINTEF, USN						
<b>RP-2.3 Provisio</b>	<b>Stefan Rex, SINTEF</b> , IEL NTNU,						
Establish a frar	NHH, SINTEF						
<b>RP-2.4 Hydrop</b>	Stein-Erik Fleten, NTNU						
Understand ho	NHH, IØT NTNU, SINTEF						



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