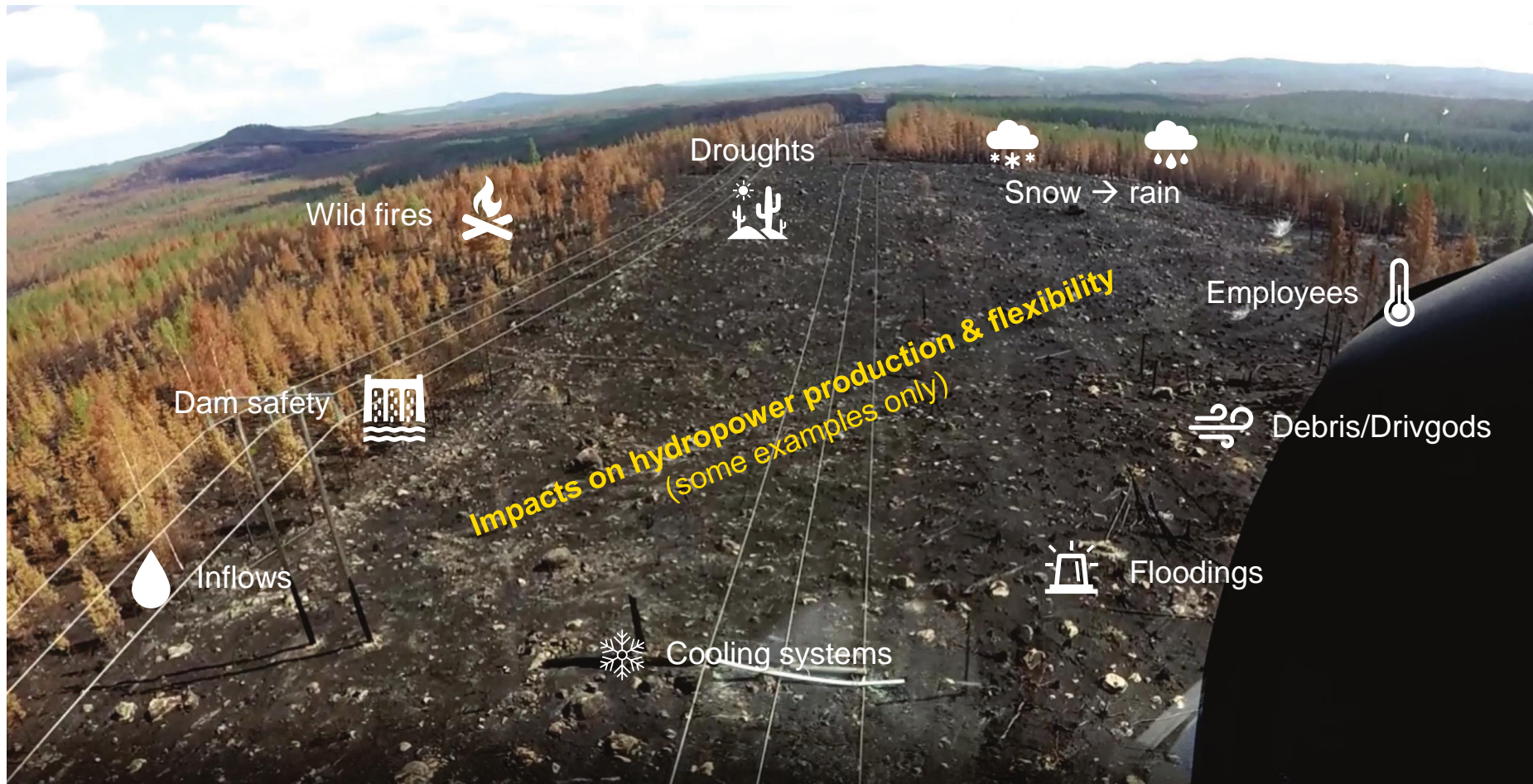




What we do *not* know...

...about the effects of climate change on hydropower production and its flexibility

FoU-dagar, Svenskt centrum för hållbar vattenkraft, 2024-04-23, Richard Scharff



Wild fires



Droughts



Snow → rain



Employees



Dam safety



Debris/Drivgods

Impacts on hydropower production & flexibility
(some examples only)



Inflows



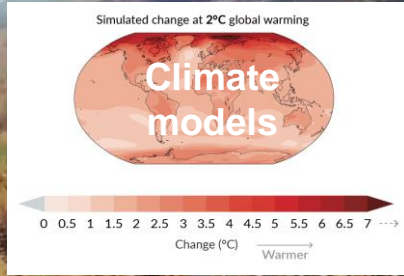
Floodings



Cooling systems

In **KLIVA**, we analysed the impact of climate change on both **production and flexibility** of hydropower

→ The report is online



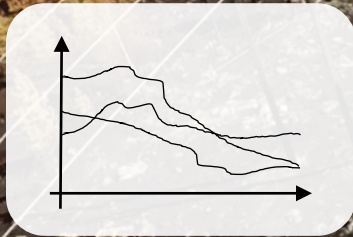
Hydrological model



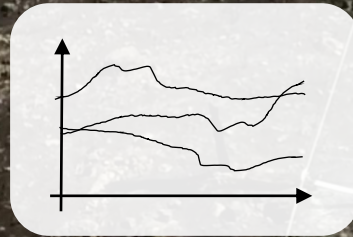
Hydropower model



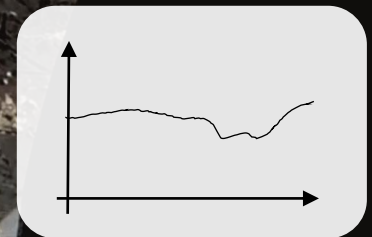
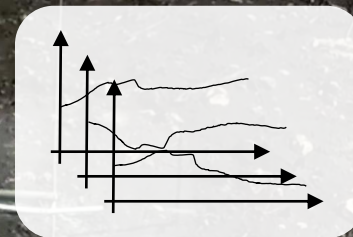
Energy system model

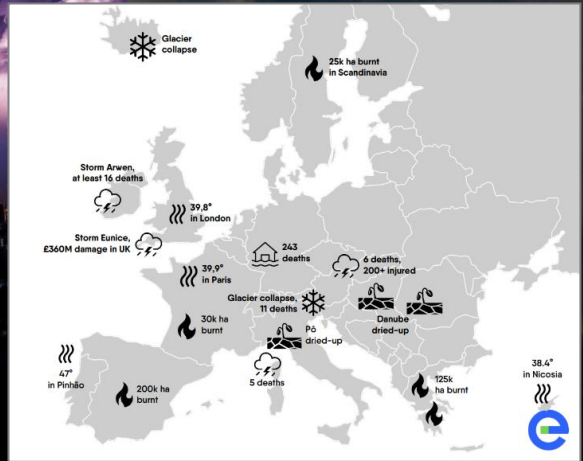
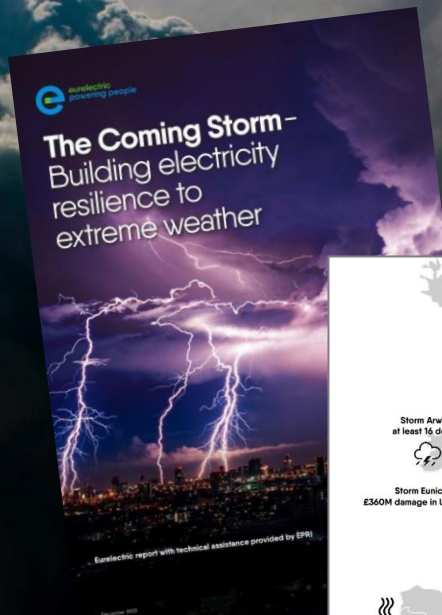


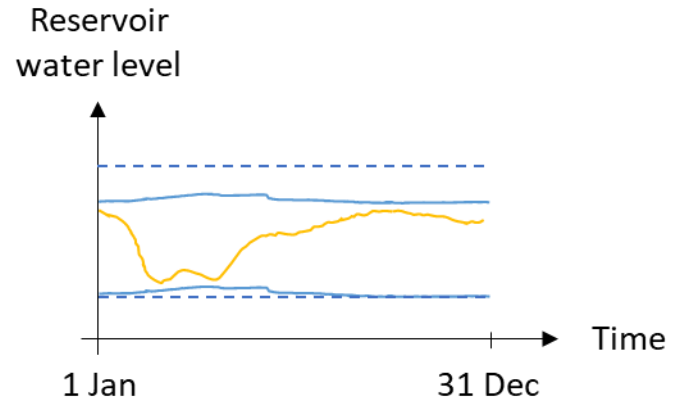
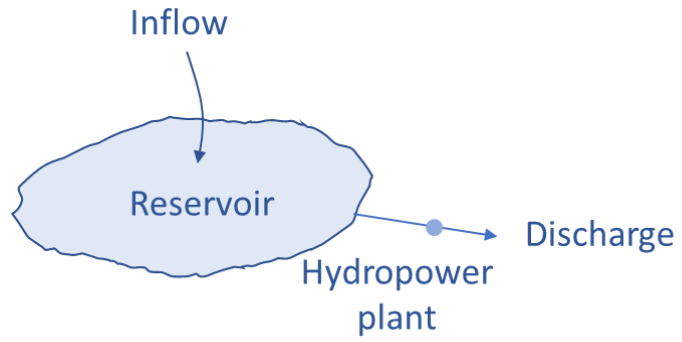
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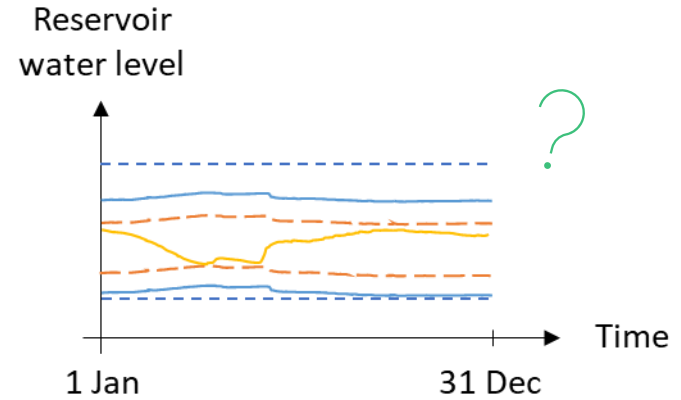
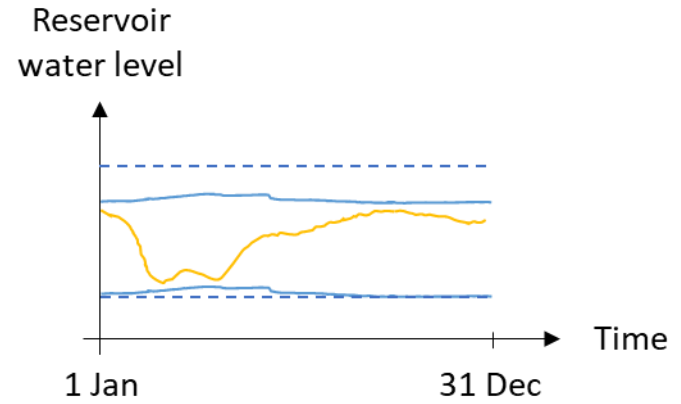
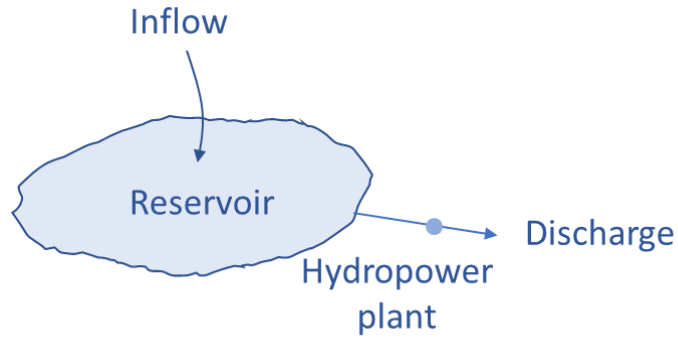


N:1

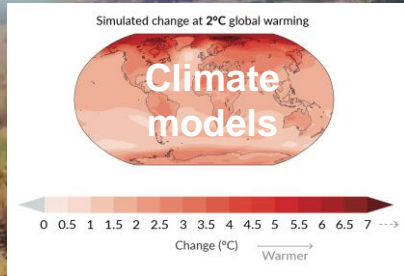








Suggestion: tight coupling of S-HYPE to hydropower model ☺



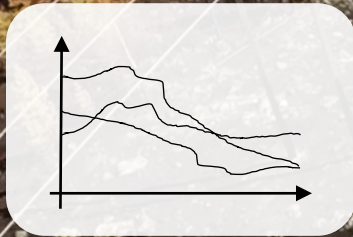
Hydrological model



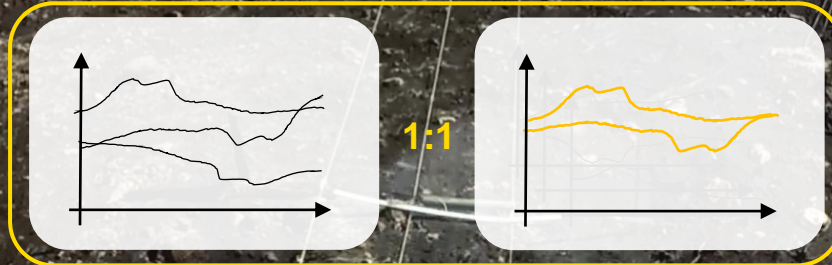
Hydropower model



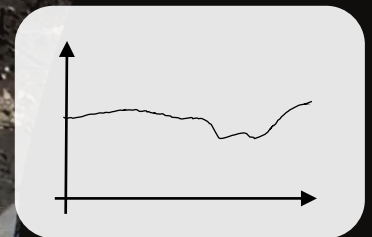
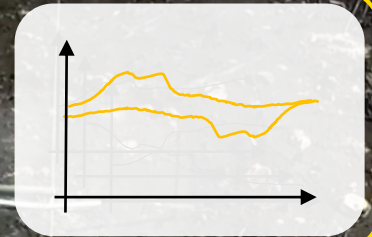
Energy system model

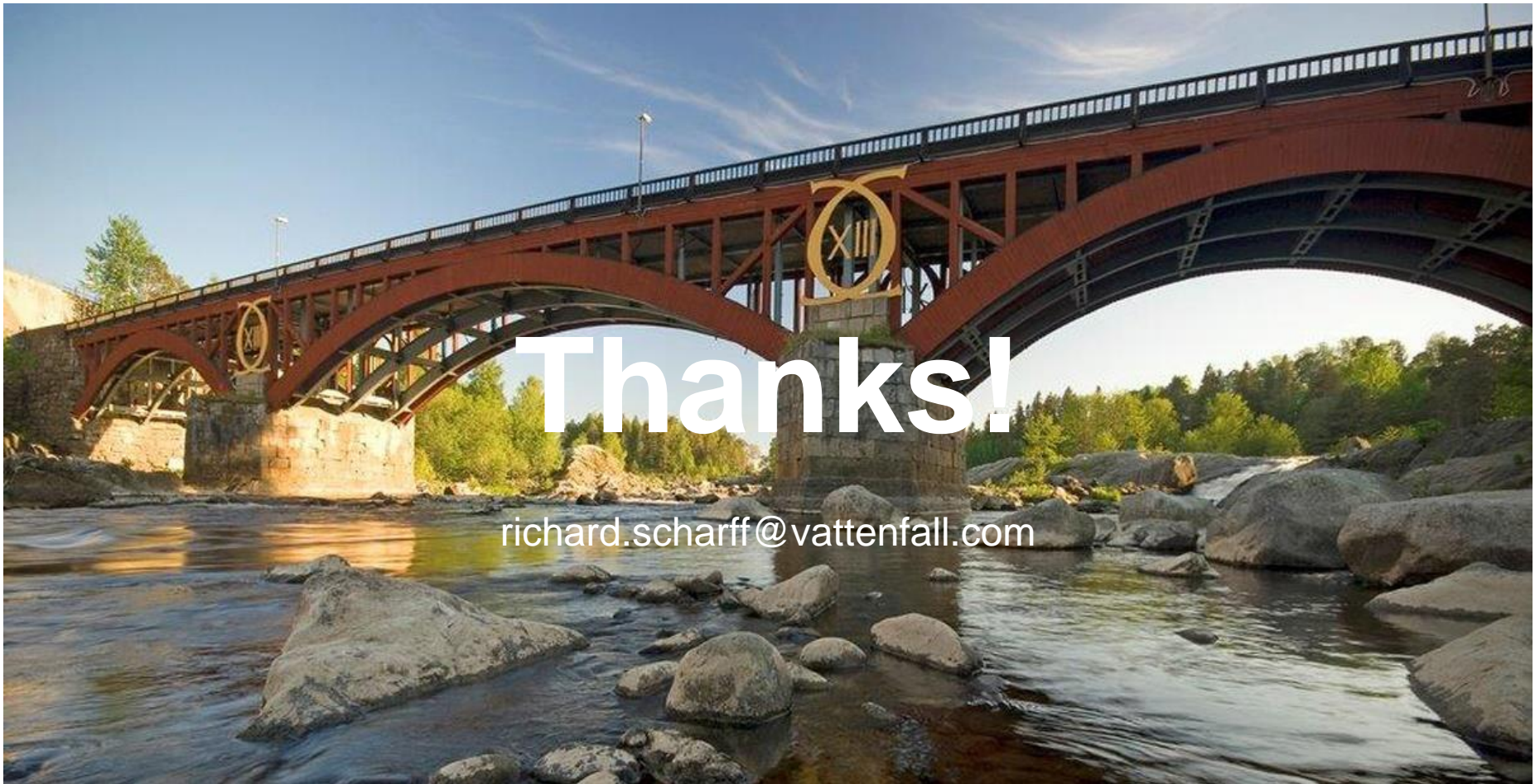


1:1



1:1





Thanks!

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