



How will climate change impact the energy system – main conclusions

Jenny Gode, Profu

Stefan Montin, Energiforsk
Ebba Löfblad, Profu
Thomas Unger, Profu
Peter Blomqvist, Profu
Johan Holm, Profu
Emil Nyholm, Profu
Martin Hagberg, Profu

Erik Kjellström, SMHI
Gustav Strandberg, SMHI
Julia Hansson, IVL
Annamaria Sandgren, IVL
Sofie Hellsten, IVL
Nathalie Fransson, IVL
Lisa Göransson, Chalmers
+ 3 master thesis students at Chalmers





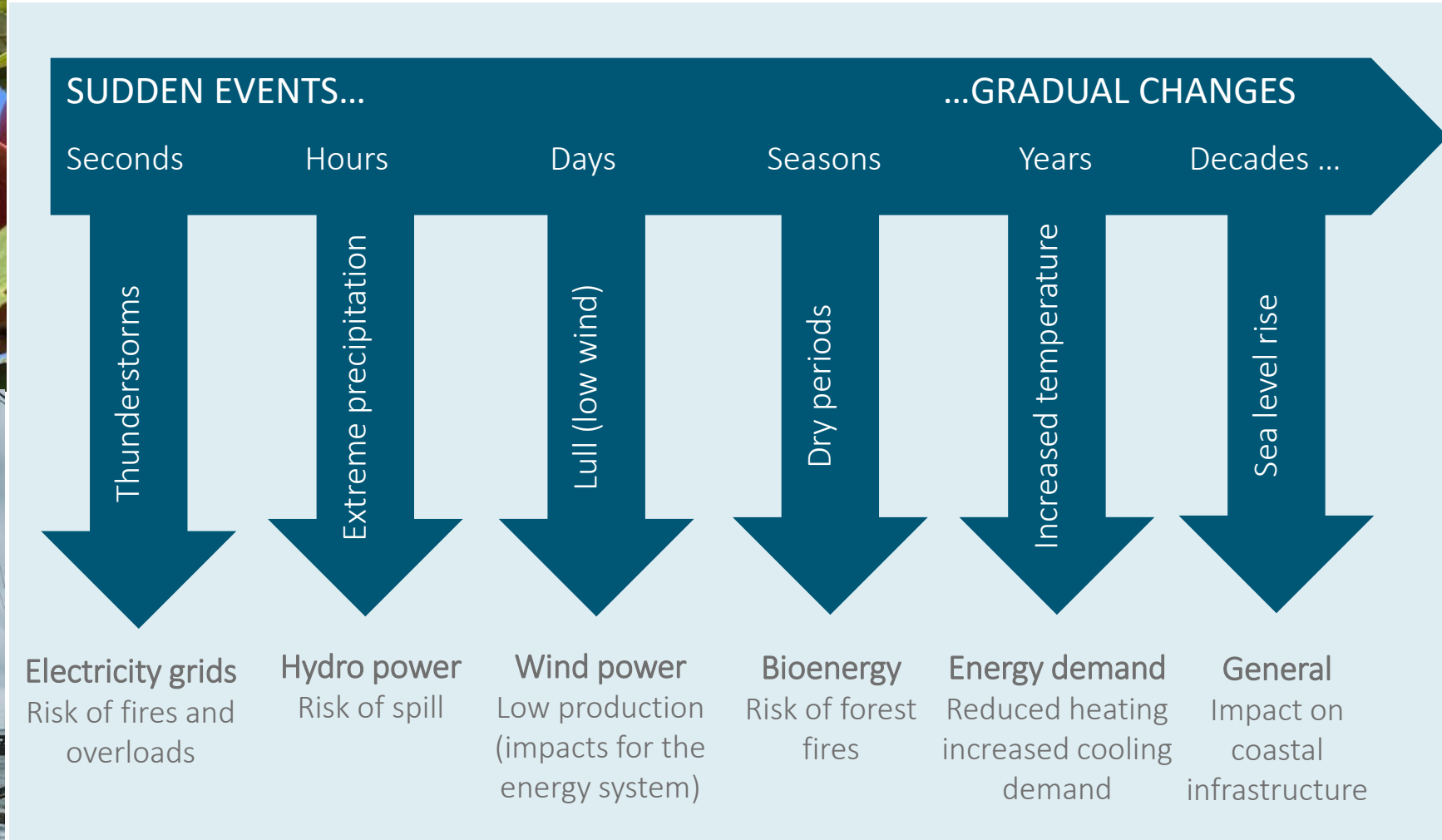
Manageable impacts for the energy system to 2040

*But important to prepare for climate change
in coming investments*





1. Sudden events and gradual changes



2. Other external factors often at least as crucial

	Impacts of climate change to ca 2040	Other external factors
Hydro power	Medium → large	Future electricity system and demand, environmental requirements and legislation
Wind power	Small (uncertainties)	Massive expansion, acceptance, permit processes
Nuclear power	Small	Politics, technical development, acceptance
Bioenergy	Medium	Competition for biomass, sustainability aspects
District heating/cooling	Large	Population development, energy efficiency improvement, competition
Electricity grids	Medium → large	Increased electricity demand → need for new investments



3. Possibilities to prepare and adapt

	Impacts of climate change to ca 2040	Examples of measures
Hydro power	Medium → large	Improved forecasts, production and water planning
Wind power	Small (uncertainties)	Increased knowledge of future wind climate, ice problems etc.
Nuclear power	Small	Indirectly: increased knowledge on future thunderstorm events, impact on external electricity grids
Bioenergy	Medium	Utilise increased growth and supply, e.g. increased storage capacity
District heating/cooling	Large	Seasonal heat storage, develop district cooling
Electricity grids	Medium → large	Improved thunderstorm forecasts, continued adaptation to weather events



Thank you!

jenny.gode@profu.se

Visit www.energiforsk.se to download the reports from the project
(in Swedish except the report on nuclear power)

