WP 4:
Integrate new knowledge about climate risk in existing energy models

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WP4 - Overview

- **RQ**:

How can new knowledge about climate risks of a future renewable energy system be implemented in current energy models used in energy policy decision-making?

- **Contributors:** IFE, SINTEF, WNRI

- **Tasks:** Test the integration of new knowledge about climate risk from WP3 in two types of energy models: energy system models (IFE) and power market models (SINTEF).

Tasks

T.4.1 Specify the system preconditions for the selected energy models to be tested and how to utilise the results from WP3 (IFE, SINTEF)

T.4.2 Test implementation of the new knowledge on climate risks from WP3 in the selected energy (IFE) and power market models (SINTEF)

T.4.3 Workshop with all user representatives, presenting the results from test implementation (task 4.2) and discuss whether it is most sensible to include climate risk considerations in existing climate models and/or use separate dedicated climate risk models to ensure that sufficient consideration is given to how to reduce climate risk in important energy decisions (WNRI, SINTEF, IFE)

T.4.4 Reporting (IFE, SINTEF)

Outputs & Timeline

O.4.1 A popular report in Norwegian describing the results from testing the selected energy models (IFE)

O.4.2 A research article on the applicability of including climate risk assessments in current energy models (IFE, SINTEF)

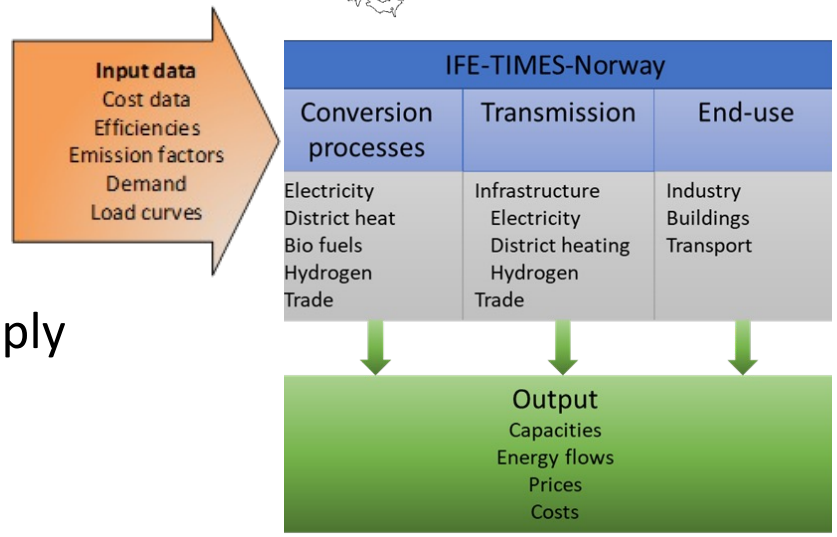
WPs and tasks	2023				2024				2025				2026				###
	q1	q2	q3	q4	q1	q2	q3	q4	q1	q2	q3	q4	q1	q2	q3	q4	q1
WP 4 Include climate risk in energy models																	
T. 4.1 Select energy models																	
T. 4.2 Test selected energy models																	
T. 4.3 Workshop#6																	
T.4.4 Reporting																	

IFE-TIMES-Norway model

- Minimizes the total discounted cost of the energy system

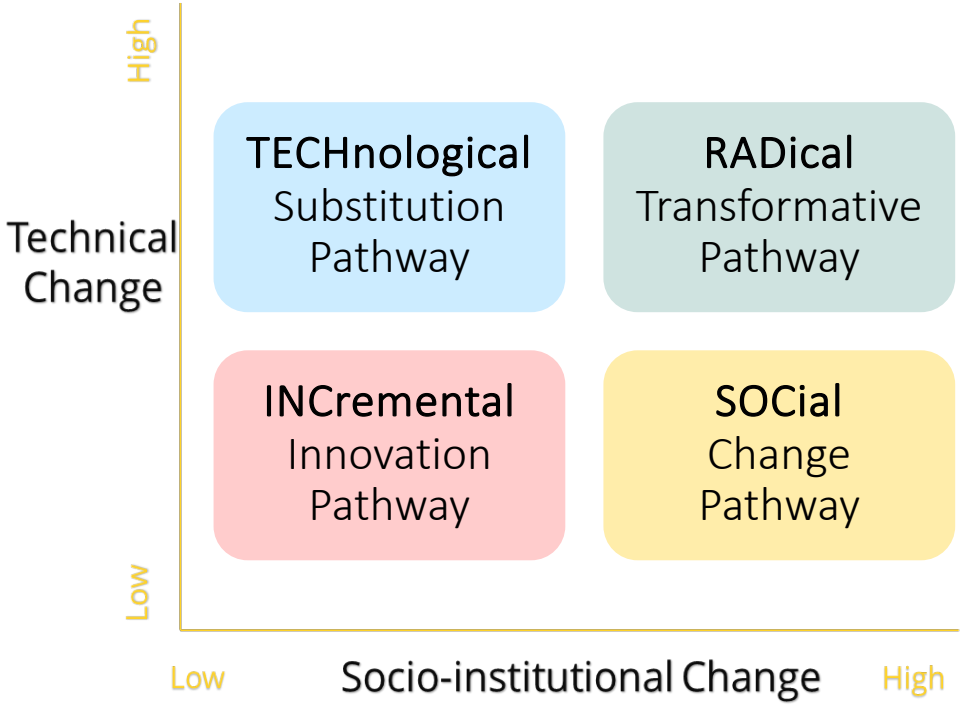
- Model specifications
  - Regions: 5 spot price areas + offshore regions
  - Model horizon: 2018 - 2050 (2060)
  - Time slices: 96 (24h x 4 seasons)
  - End-use sectors: Buildings, industry and transport
  - Diverse tech options, e.g.: VRES, DH, H_2, CCS, etc.

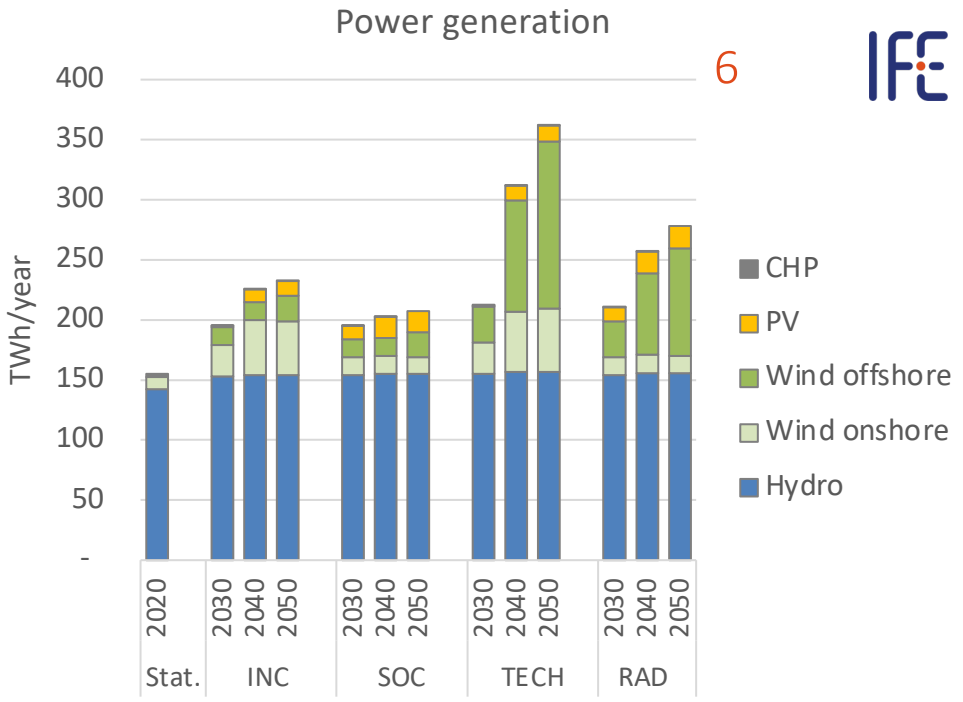
- Option for stochastic modelling of weather-dependent power supply and heat demand

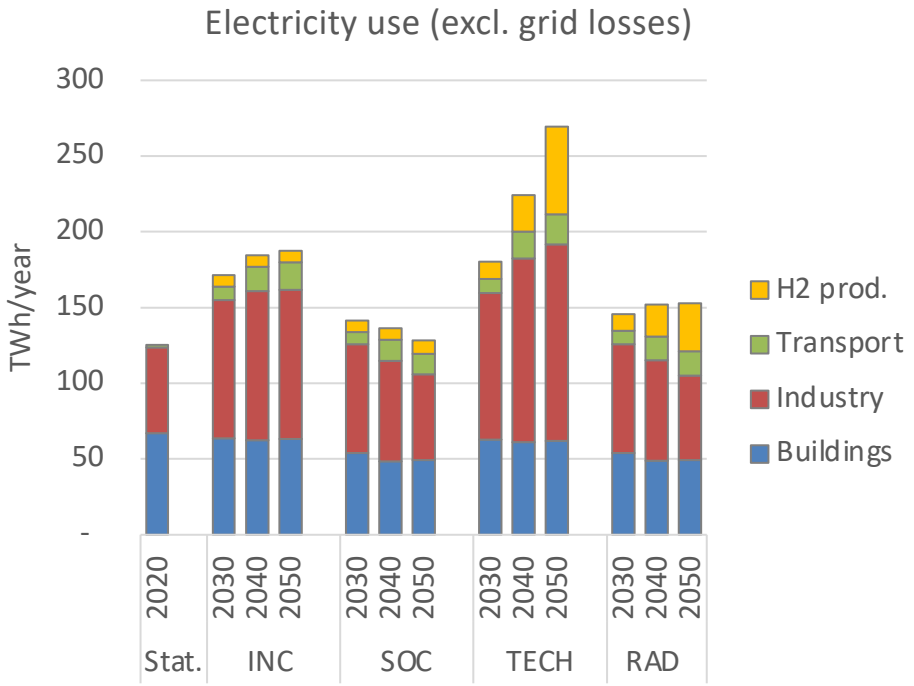


Documentation: IFE-TIMES-Norway v3
https://hdl.handle.net/11250/3058964

Example of IFE-TIMES-Norway outputs







NTRANS Norwegian Centre for Energy Transition Strategies scenarios: preliminary outputs.

Questions?