RGI – ENTSO-E climate adaptation survey and database: relevant insights to the framework

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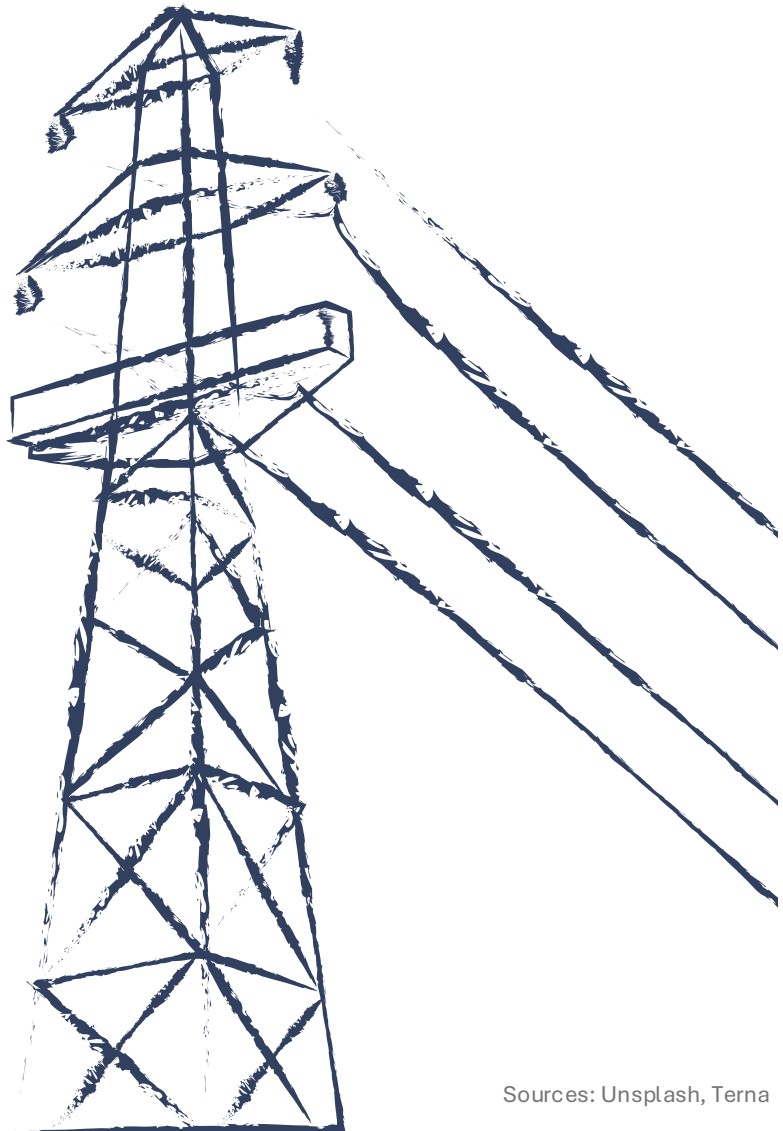

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Sources: Unsplash, Terna

Climate hazards and impacts on infrastructure: Knowledge gaps

Costs

Probabilities

What are the hazards / multiple-hazards?

What is the estimated damage?

What are the estimated measures before / during / after hazard(s) occurring?

Whether and how to assess inaction?

Database's elements and objectives

Mapping and structuring climate hazards and their impacts on electricity grid infrastructure across Europe

Providing potential corresponding adaptation and resilience measures

Initial assessment of costs (impacts & solutions), duration of hazards, rebuild time etc.

Collecting ideas/insights on assessing probabilities

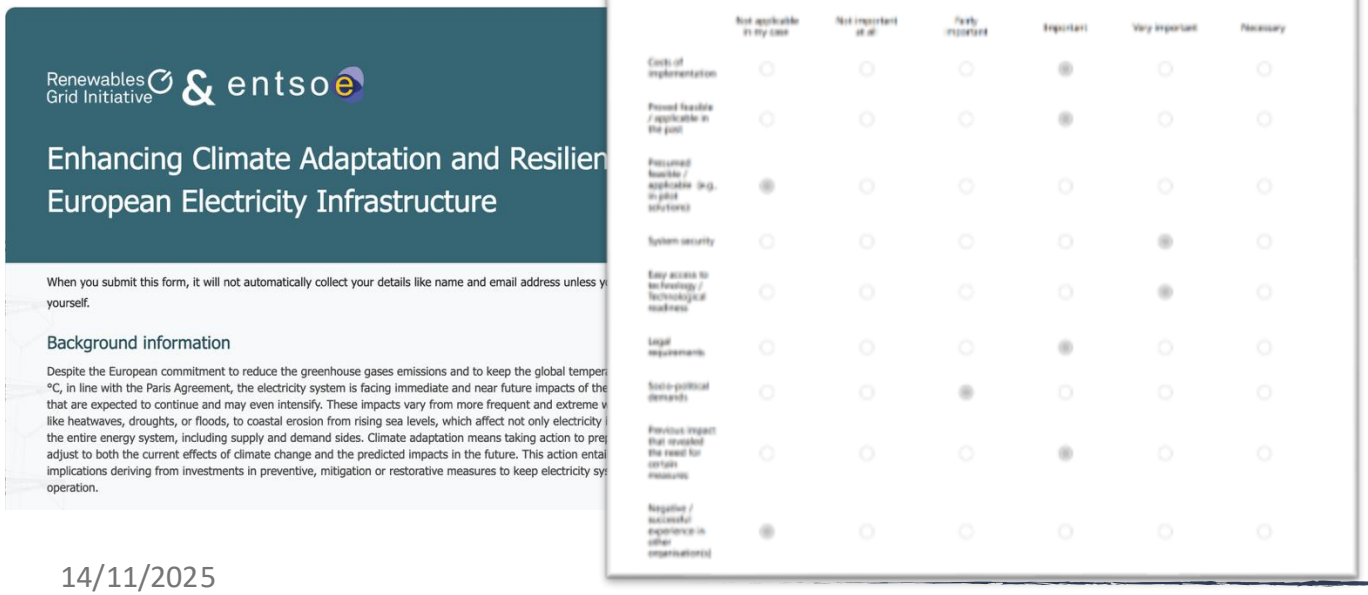
Providing case studies and knowledge-base

An **internal** reference point for the development of the framework to guide the indicator

A **stand-alone, public** database for grid operators, energy system planners and other stakeholders to accompany the TYNDP process and beyond

Developing a database: experts' survey & data search

- Duration: 28 July – 13 October 2025
- RGI & ENTSO-E Members, EU DSO Entity & E.DSO Members
- 14 replies: 12 TSOs (estimated), 2 DSOs (estimated)



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Survey results: initial qualitative assessment

* Not all respondents replied to all questions in the form *

Type of adaptation measures (prevention, mitigation, restoration):
All 3 measures: 6
Prevent & mitigate: 2
Prevent & restore: 3
Mitigate: 1
Prevent: 1

Using a consistent approach across hazards' type:
Yes: 10
No: 3

Addressing multi-hazards:
Yes: 7
No: 6

Level of assessment (asset vs. system):
Asset only: 1 (DSO)
Asset & system: 12 (TSOs + 1 DSO)

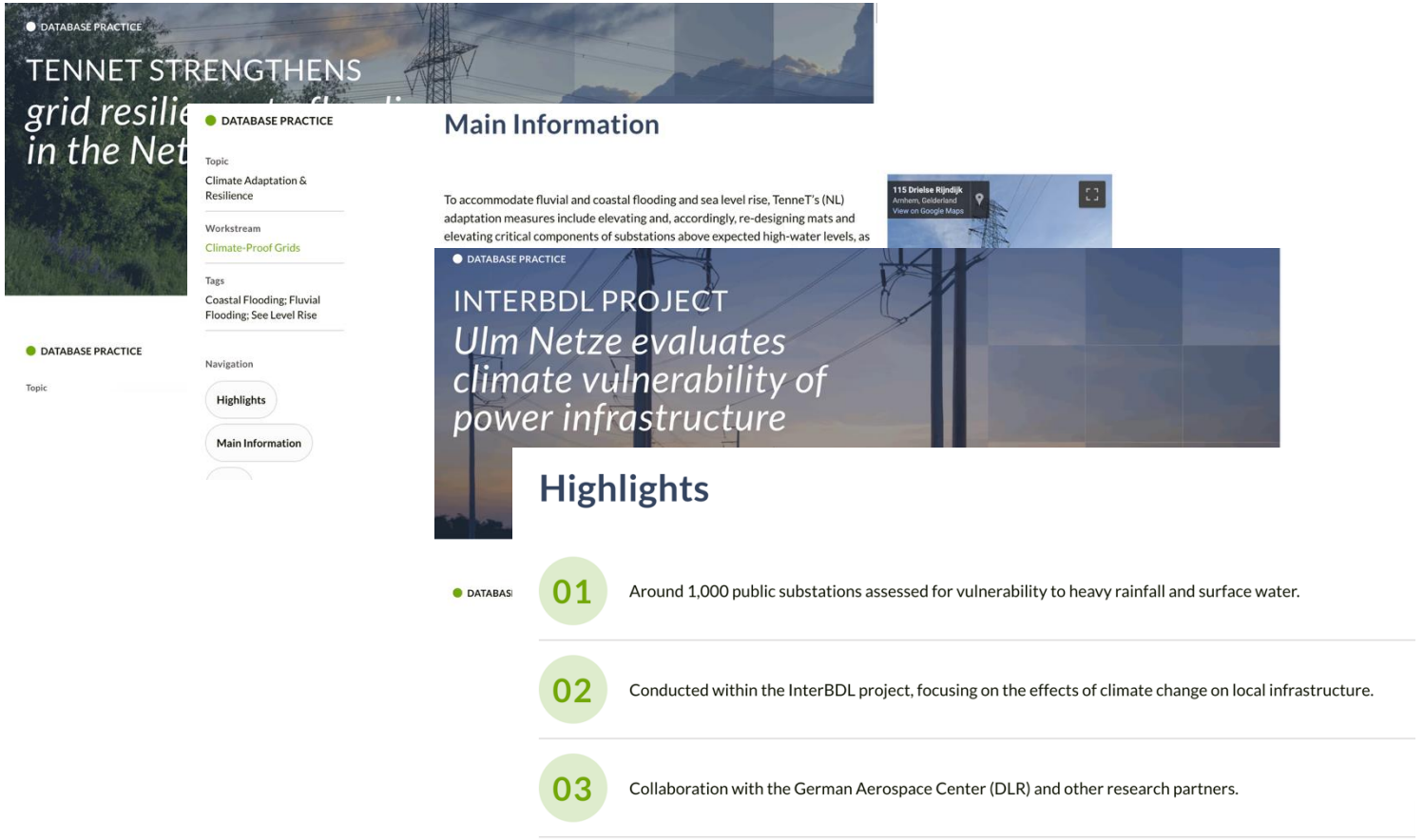
Considerations of costs and /or impacts of inaction:
Yes: 9
No: 5

Estimated rebuild time:
Highly dependent on type of hazard and infrastructure

Assumptions about probability (outage after hazards + duration of rebuilding):
Emergency stock and/or backup power supply: 2
Rebuild time (also + ENS, energy not supplied): 2
Predicted frequency of extreme events: 2
Depending on the hazard: 4
Not part of the assessment: 1

CAPEX/OPEX in calculation:
Capex + Opex: 7
Capex only: 3
Not sure: 3

Database: examples & next steps



What's next?

- Adjusting and updating existing cases
- Adding more cases from grid operators and other organisations

Spread the word: we are looking for more best practices!

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