Request for an offer

Forecasting resource and material needs for electricity grid expansion in the European Union

1. About RGI

Renewables Grid Initiative (RGI) is a unique collaboration between TSOs and NGOs from across Europe engaging in an 'energy transition ecosystems-of-actors'. RGI promotes fair, transparent, sustainable grid development to enable the growth of renewables to achieve full decarbonisation in line with the Paris Agreement.

2. Background

Disrupted supply chains and limited availability for strategic and critical raw materials are increasingly recognised as key bottlenecks in the timely deployment of electricity grid infrastructure needed to meet the EU's climate and energy targets. As global demand rises, competition for these materials grows not only between countries but also among strategic sectors – from renewable and low carbon energy to electric mobility, defense and digital technologies – raising concerns over Europe's strategic autonomy, industrial competitiveness, and the feasibility of reaching decarbonisation goals.

In this context, there is an urgent need to guarantee a stable supply of the materials needed for electricity grid infrastructure, which essential for integration of renewables and successful energy transition[1]. However, there is no clear consensus on the material demand associated with grid adaptation and expansion, the equipment components involved, and how it should be embedded into energy modelling and system planning processes[2].

In order to fill these gaps, RGI is seeking a contractor that is ready to assess future resource and material needs associated with electricity grid infrastructure modernisation and expansion. The objective of this analysis is to inform and facilitate discussions about the resource and materials needs of the future European energy system with a focus on electricity grids and the equipment components involved. At the same time, the analysis also aims at assessing the

[1] What the Critical Raw Materials Act, Net Zero Industry Act and the Green Deal in general are trying to address.

[2] See for example: https://publications.jrc.ec.europa.eu/repository/handle/JRC132889

impact of circular and efficiency measures when forecasting required resources for the energy transition.

3. Duration

The order must be completed within 6 months from the date of concluding the contract.

4. Scope

The analysis should forecast resource and material requirements for European transmission and distribution grids by 2050, while considering strategic grid equipment (see point 4a). It should also present intermediate requirements in line with the 2030 and 2040 EU climate and energy targets. The forecasts should be based on the three 2024 Ten-Year Development Plan (TYNDP) scenarios. Moreover, the commissioned study shall:

a) Evaluate components such as cable systems (including overhead lines, underground and undersea cables, as well as HVDC and HVAC and their accessories), transformers, substations (on- and offshore), offshore infrastructure at large, converter stations, towers, new technologies such as statcoms and filers, technologies to digitalise the grid, and any other essential components where relevant.
b) Consider all lifecycle stages: extraction, processing, manufacturing, deployment, and end-of-life.
c) Integrate resource efficiency and circularity and, if possible, sufficiency measures into the assessment, while providing a comparison what kind of impact is created by different measures. This should also reflect the forecast of availability of scrap material from decommissioned assets and other sources.
d) Assess supply chain readiness and identify critical bottlenecks, including social and environmental impacts, considering human rights, land and water use, emissions and ecosystem effects.

5. Tasks and responsibilities

The analysis should be presented as a report (15-20 pages long), including executive summary, methodologies, assumptions, results and policy recommendations. It will need to be complemented with a comprehensive set of visualisations of the results demonstrating resource and material requirements of six different decarbonisation scenarios. The data sets must be published under a Creative Commons Attribution 4.0 International License by the established deadline.

RGI will organise and host monthly meetings with the contractor to make sure that the work is proceeding as planned and to discuss preliminary/intermediate results. If needed, *ad hoc* meetings could be organised in order to discuss

pressing issues. In addition, the contractor will attend two small workshops with relevant stakeholders (a support expert group), to discuss the analytical approach and the results prior to publication. The contractor will consider and integrate inputs from both RGI and the expert group, prior to the finalisation of the report and supporting documentation.

Within the scope of foreseen tasks and responsibilities, the contractor will:

- Discuss and, if needed, integrate feedback from RGI and the support expert group of selected stakeholders on the approach applied and/or draft results;
- Ensure the visualisation of the generated data in an easily accessible online format to enable a straightforward understanding of the findings;
- Participate in at least 2 follow-up discussions, interactions or events convened by RGI to present and discuss the analysis' results. These will be different from the two workshops mentioned above;

All publications and communications must be in English.

Deliverables:

D1. A report presenting a forecast of resource and material needs to reach EU decarbonisation targets, with a focus on electricity grid infrastructure, complemented with a comprehensive set of visualisations.

D2. Presentations at the two small workshops with the expert reference group of selected stakeholders.

D3. Presentations at the two/three follow-up discussions, interactions or events.

6. Selection criteria

Offers will be evaluated according to the following criteria:

- The contractor has relevant experience in modelling the energy system, including electricity grids.
- Proven experience in materials forecasting and supply chain assessment within electrical infrastructure will be considered an additional advantage.
- Demonstrated knowledge of circular economy, environmental and social impact assessment are also desirable.
- Best value for money, including the cost-effectiveness and clarity of the proposed methodology.

The contractor will not retain any exclusive ownership of the work. The ability to deliver within the given timeline is essential.

7. Application process

The offer should be no longer than 5 pages. The offer will include the following:

- An initial project work plan, including a proposal for budget, timeline and key milestones.
  - Evidence of the contractor's suitability (see section Selection criteria).
  - List of relevant similar projects or publications authored/co-authored by the contractor.

8. Date and place of submitting the offer

The offer should be addressed to RGI and sent via email to nathalia@renewables-grid.eu and andrzej@renewables-grid.eu by **16 November 2025** at the latest.

9. Explanation mode

Each contractor has the right to ask RGI to clarify the content of the inquiry.

The contractor's questions shall be sent to the following email addresses: nathalia@renewables-grid.eu and andrzej@renewables-grid.eu. RGI shall provide an answer within 48 hours.

10. Procedure for announcing the awarded offer

Interviews with shortlisted applicants will take place within three weeks from the submission date, and the final decision will be shared via email, latest by **11 December 2025**.

11. Payment schedule

25% of the payment will be completed within 15 working days after undersigning the contract. The remaining amount of 75% of the payment, will be completed within 15 days of the satisfactory delivery of the final report.