

October 16, 2023

Request for Information (RFI) for Mobile Power Generation Units

****Update from date October 24, 2023 –**

Deadline for responses updated to - November 01, 2023 at 23:59.

1. General

NOGA - The Israel Independent System Operator Ltd. (hereinafter: "**NOGA**", "**the System Operator**") holds the license for managing the electricity system, as per the Electricity Sector Law, 5756-1996.

2. Background

- 2.1. NOGA hereby requests information regarding mobile generation units that will be connected to the existing electricity system, serving the purpose of increasing the energy availability and capacity, in accordance with the needs that will be defined from time to time, in routine and emergency situations.
- 2.2. **The requested information pertains to dual-fuel mobile generation units with a capacity ranging from 15 - 50 MW. The total accumulated capacity of the generation units will be approximately 400 - 500 MW.**
- 2.3. **NOGA seeks to incorporate these generation units in the shortest possible schedule.**
- 2.4. By virtue of its role as the System Operator and as the designated power authority, NOGA will decide on the location of these generation units, the need to operate them and, if necessary, the need to relocate them.
- 2.5. It is required that the technology of the proposed generation units be proven (non-prototype), and that there be extensive and proven experience in operating these generation units.
- 2.6. Accordingly, NOGA hereby requests information from the following entities:
 - 2.6.1. Israel Electric Corporation Ltd.
 - 2.6.2. Independent Power producers (IPP's).
 - 2.6.3. High voltage (161kv) and Medium voltage (12.6kV, 22kV, 33kV) consumers, with sites suitable for accommodating these generation units as specified above and in Appendix 1.
 - 2.6.4. Any other entity that has information as requested in this application.

- 2.7. Please note that NOGA is working with the Electricity Authority in order to formulate a commercial regulation suitable for the operational model of the aforementioned generation units in normal routine situation and during emergency: in an emergency, in accordance with the requirements of the System Operator in its capacity as the designated power authority, and in routine times, in accordance with the market rules that will be adapted to units of this type.

3. Schedule

- 3.1. RFI issuance date - October 16, 2023.
- 3.2. Deadline for responses - October 25, 2023 at 23:59.
- 3.3. NOGA reserves the right to extend the deadline for responses.
- 3.4. NOGA may review the responses as soon as they are received, even before the response deadline.

4. Requested information

NOGA requests information from entities with relevant experience and expertise as well as their ability to plan, procure, install, and operate generation units as detailed below. Respondents are requested to address the following issues in their answer:

- 4.1. Proximity to existing infrastructures: the possibility of installing the generation unit close to an existing infrastructure of the electricity grid (to the transmission system (161kV, 400kV) or to the distribution system (12.6kV, 22kV, 33kV)), and to an existing diesel and/or natural gas infrastructure.
- 4.2. Possible locations: the required locations are within an existing power plant sites, or in the area of a substation close to the aforementioned fuel infrastructures, or in an area close to the aforementioned electricity and fuel infrastructures. Respondents are requested to refer to the feasibility of such locations while detailing the proposed locations in the suggested site.
- 4.3. Availability of a substation: to ensure flexibility and shorten the installation time, it is necessary to examine the possibility of purchasing a mobile substation in addition to the mobile generation unit (switchgear that includes the transformer and the switching system with the main equipment required to connect the generation unit).
- 4.4. Connections to the electricity grid: NOGA requests information regarding generation units that are capable to connect to the grid (medium voltage – 12.6, 22, 33 kV) and/or high voltage (161 kV) and/or extra-high voltage (400 kV)) at a frequency of 50 Hz.
- 4.5. Technical requirements: The basic technical requirements for connecting the generation units are detailed in Appendix 1.
- 4.6. Timetables: NOGA wishes to examine an applicable solution in the immediate term (as early as possible). Therefore, respondents are requested to refer to:
- 4.6.1. Schedules for procuring the mobile unit and bringing it to Israel.

4.6.2. Schedules for installation, connection to fuel and electricity infrastructures.

Note: It is possible to provide information regarding second-hand generation units.

4.7. Potential generation units:

- 4.7.1. Unit type - manufacturer, model and technology.
- 4.7.2. Nominal power of the unit under ISO conditions, in both gas and diesel fuels (with and without water injection).
- 4.7.3. Required connection to the fuel source – diesel or gas infrastructure, and pressure at the PRMS outlet.
- 4.7.4. Required area for the generation unit, area for the transformer, for the switching devices and the area availability at the proposed site.
- 4.7.5. Ability to operate without the injection of Demin water to reduce NOx, including approval from the equipment manufacturer.
- 4.7.6. Unit Datasheets.

4.8. Fuel and water infrastructures:

- 4.8.1. Existing fuel infrastructures on-site, capable for supplying the mobile generation units.
- 4.8.2. Demin water infrastructures for NOx reduction.

4.9. Electricity network connection planning:

- 4.9.1. Available area for the mobile generation unit, transformer and switching devices.
- 4.9.2. Proposed electricity network connection (including the voltage level), including placement plans and electrical diagrams.
- 4.9.3. Required engineering planning for unit installation - reference to the technical requirements listed in Appendix 1.

5. Clarification questions

- 5.1. Requests for clarification will be accepted until the response deadline, as specified in section 3.2.
- 5.2. The requests will be forwarded to the email of the contact person specified in section 6. The clarifications will be distributed to the entire mailing list of this RFI.
- 5.3. NOGA will be entitled, at its sole discretion, to address or not address questions and / or requests for clarifications and / or part of them.

6. Contact person

All inquiries should be sent via email to Ms. Naomi Etzion: naomi.etzion@noga-iso.co.il, with a copy to Ms. Tammy Breuer: tammy.breuer@noga-iso.co.il, as well as to Mr. Itay Heidemann: itay.heidemann@noga-iso.co.il.

7. Right to make changes

- 7.1. Until the final response deadline, NOGA will be entitled to update the RFI.
- 7.2. NOGA will be entitled to meet with all or some of the RFI participants at any stage, including after the final response deadline.

8. General comments

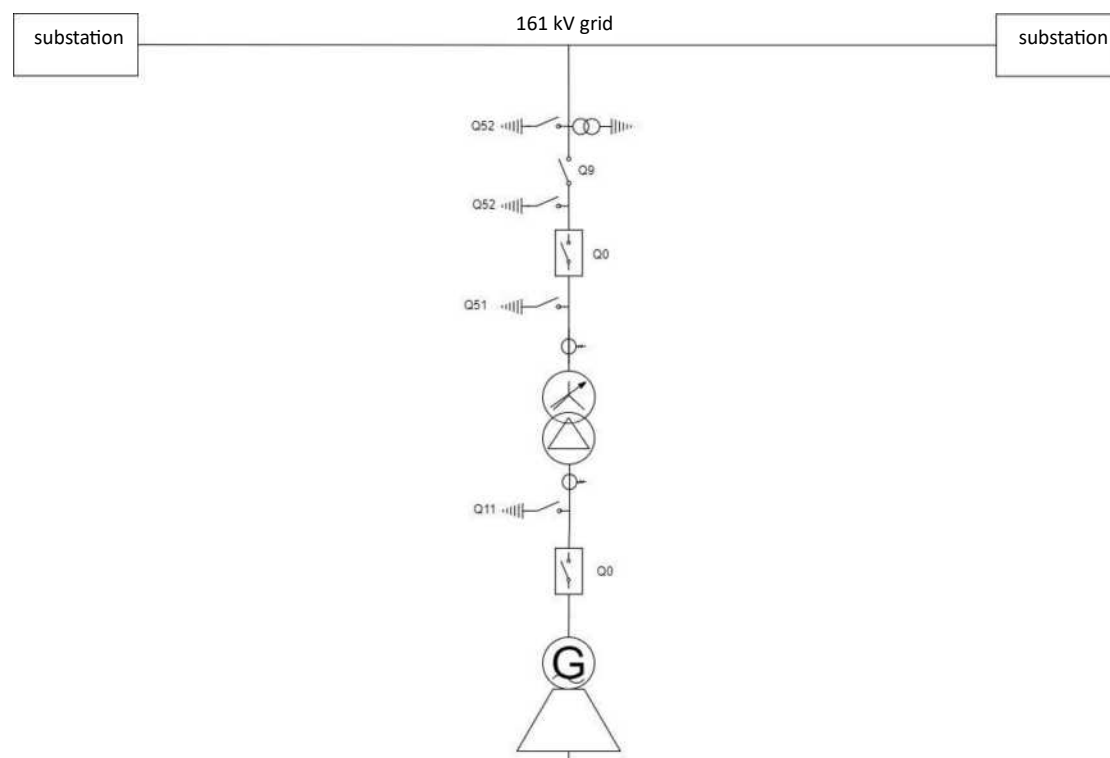
- 8.1. Responses should be provided in Hebrew or English.
- 8.2. It should be clarified that NOGA is not obligated to publish any tender and / or any process related to this request, and the purpose of this request is solely to obtain information.
- 8.3. The publication of this request for information is not intended to prevent any entity in the energy sector from contracting to purchase mobile generation units as detailed in this request, even before the deadline for submitting information, and subject to all laws.
- 8.4. This procedure, including the submission of the answer as part of it, does not constitute any obligation by NOGA, and / or to form a basis of any kind of contract between NOGA and the respondents in any way.
- 8.5. Without derogating from the generality of the aforementioned, it is clarified that every detail of the details indicated in this application is subject to be changed by NOGA, and it has no purpose to bind the company in any way.
- 8.6. It is hereby clarified that the request does not constitute a tender and / or an invitation to bid, but a prior request for information according to the provisions of Regulation 14A of the Mandatory Tenders Regulations, 5753-1993.
- 8.7. All expenses involved in the submission of the response shall apply to the respondent only, and in no case shall the respondent be entitled to a refund and / or any compensation and / or indemnification for expenses and / or damages incurred in connection with the response and / or the preparation and submission of the response.
- 8.8. NOGA does not undertake to use the information, in whole or in part, and the use of the information is subject to its sole discretion.
- 8.9. NOGA will examine the information received from the respondents and will be entitled to contact all or some of them, with a request to receive clarifications as well as any additional information.

Appendix 1

The generation unit will have the capability to connect to the grid using several methods. Any proposed solution must encompass all necessary considerations and include existing limitations, with details of the required equipment and execution method for the connection to the transmission grid (161kV, 400 kV) and/or to the distribution grid (12.6kV, 22kV, 33kV) while detailing the operational and electrical adjustments required in the facility for connecting the generation unit and detailing the required tests and infrastructure. It is clarified that the proposed unit should be connected to remote terminal equipment (RTU) to be provided by the System Operator.

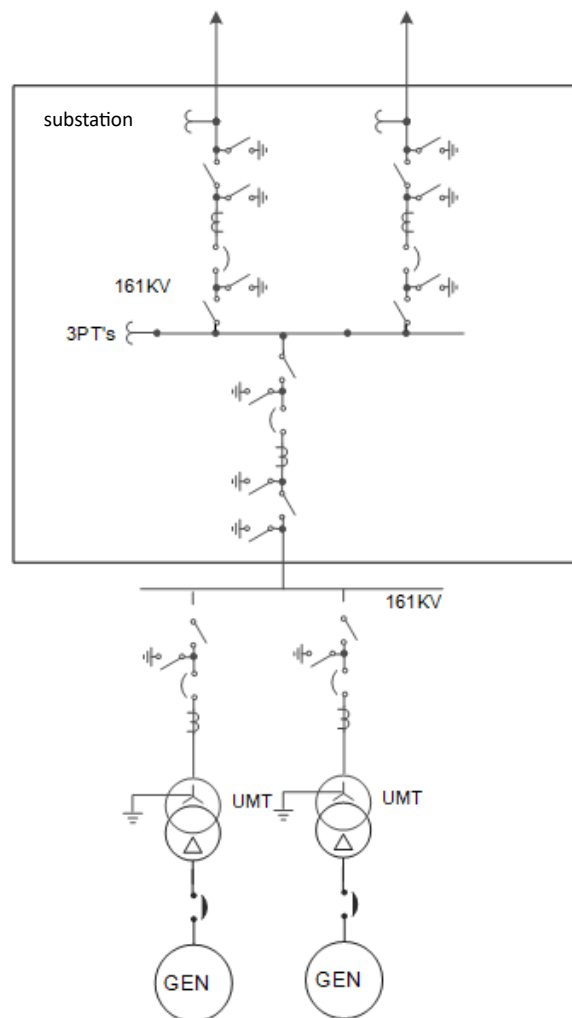
Here are some examples:

1. T connection - In this solution, the generation unit should also include the switchgear with the transformer field and the field required for the connection to the transmission system that will be proposed for this type of connection.



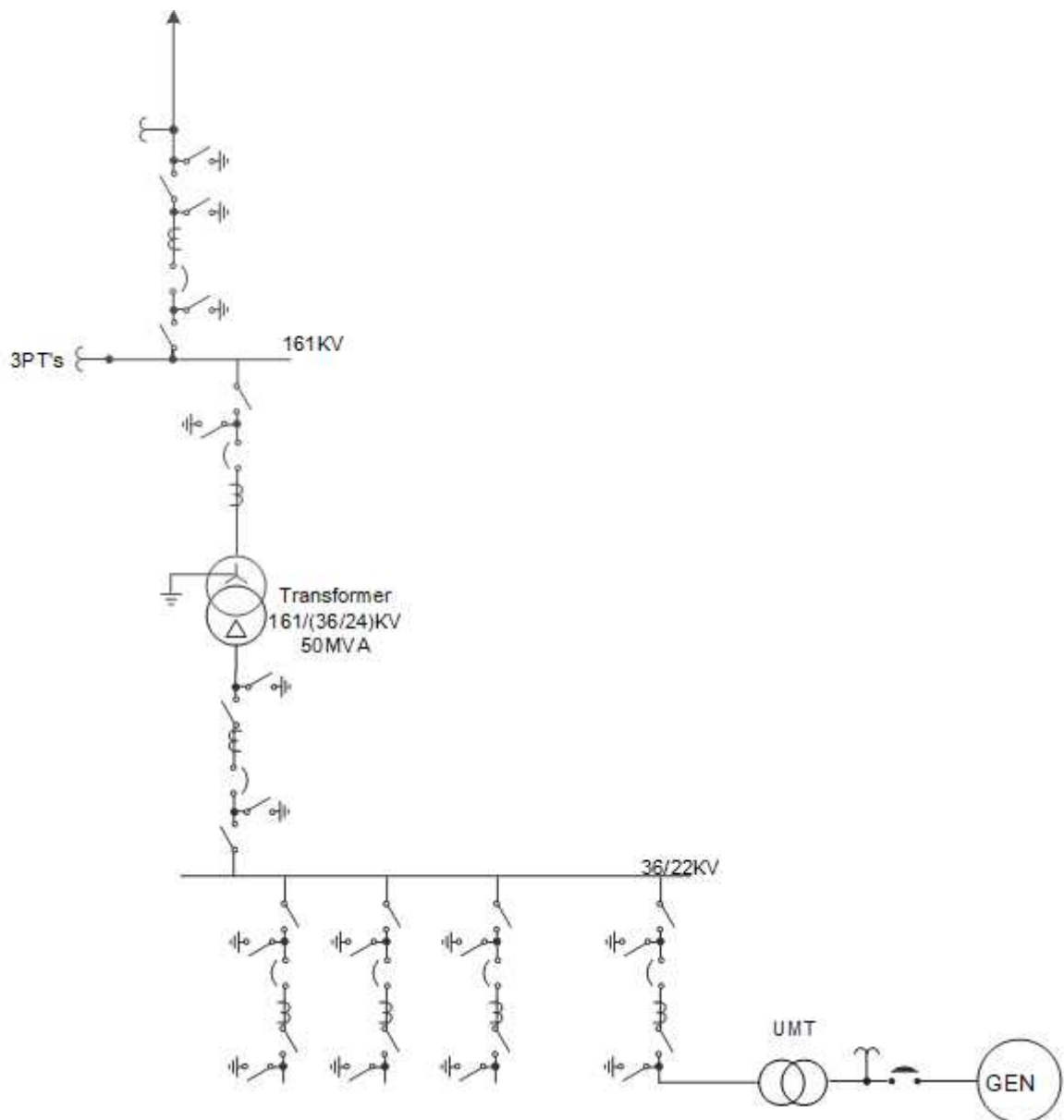
2. Connecting a mobile generation unit "instead" of a generation unit that is out of order (for example, due to damage in an emergency situation). Parallel connection to the generation unit based on the existing infrastructure.

3. A connection that allows multiple connections of generation units. Establishment of a busbar at the exit of the transformer field in the AIS (Air Insulated Switchgear) infrastructure. This allows the generation of additional power on the existing field.



4. Connection to a free high-voltage (161kV, 400kV) field in the substation - adding the generation unit, including the GSU (generator step-up) transformer, to a free high voltage field in the substation, or connecting a generation unit equipped with a switching system to a high voltage busbar in a free location in the substation, using the existing infrastructure of the substation in terms of grounding, supplies and communication infrastructures. A fuel infrastructure is required.

5. Medium voltage (12.6kV, 22kV, 33kV) connection: connection of the generation units directly to the medium voltage output of the substation (including private substations). A fuel infrastructure is required.



The respondent will provide a detailed plan for the connection type and the electrical, civil, mechanical, and infrastructure design requirements, based on the connection type.

In his proposal, the respondent will refer to the following issues:

In terms of high voltage connection:

The location of the mobile generation unit in relation to the high voltage circuit (it is critical for the design of the connection route to the high voltage transmission line). If the location of the mobile unit is more than 10 meters from the circuit, both on the vertical axis and the horizontal axis, it will be necessary to build post insulators in front of the mobile unit. For this purpose, it may be necessary to position a high-voltage pole in front of the mobile unit.

In terms of project execution:

- Civil works for positioning the mobile unit
- Organization of the area in terms of grounding
- Communication infrastructure
- Auxiliary services
- Security fences
- Interlocks and protections - changing the calibrations in the differential protections
- Metering
- Groundings

In terms of testing:

- Inspections and testing are required for entering into the utilization of the substation unit – high voltage field, with IEC.
- Inspections and testing of the generation unit with the Trading Department at NOGA company.
- Testing the communication systems with the Operation Department at NOGA company.

In addition, the respondent will address, among other things, the need for:

- Full high voltage field, busbar disconnecter, circuit breaker, current transformer, and output disconnector. Line earthing switch Q8 and earthing switches on both sides of the circuit breaker Q51 and Q52.
- Towards the generator, a main circuit breaker or a high voltage synchronizing circuit breaker and a unit transformer - GSUT are required, and earthing switches on both sides of the main medium voltage circuit breaker.
- It should be checked if it is possible to eliminate the unit circuit breaker – the main medium voltage circuit breaker and to use the high voltage circuit breaker as a synchronization circuit breaker. This is only after consulting with the equipment manufacturer. If possible, grounding switches are required on both sides of the unit's transformer.



- The units will be equipped with protections according to the requirements of the generation units.
- Ability to transfer system data for the purpose of obtaining approval of the equipment by NOGA company.
- The ability to perform black-startup of the unit and the ability to operate in an isolated electrical island.
- Diesel tanks are required for operating the unit.
- Initial estimate of the costs for installing the generation unit with details by sections - equipment, operation, etc.