

14/08/2022

Request for Information (“RFI”) from Israel Independent System Operator (“NOGA”)
for Consulting Services regarding Generation Expansion Planning with a growing share of Distributed Generation and Demand Side Management

1. NOGA - Israel Independent System Operator Ltd. hereby invites the public to provide it with information regarding a methodology for generation system expansion planning with a significant share of distributed energy resources (DERs) and demand side management (DSM).

The purpose of this request is to gather information from entities interested in participating in a future tender or competition process for a consultation project in this field, should one take place.

This procedure, including submission of a response (“**Response**”), does not constitute any obligation on the part of NOGA to publish a tender or other engagement process in connection with the project.

2. Company

NOGA - Israel’s Independent System Operator, a 100% government-owned company, manages Israel’s electricity system. Its responsibilities include operation, planning, and development of the electricity system while maintaining the reliability of electricity supply.

3. Objectives

NOGA would like to gain knowledge and receive recommendations regarding potential consultants with a worldwide experience and suggested methodologies and practices for Generation System Planning with significant share of DERs, to be implemented in the Israeli market.

NOGA intends to assess the capabilities of the Respondents to assist it in setting its above-mentioned planning methodology, when the following issues are of main concern:

- Challenges related to generation systems with a large amount of DERs, including renewable energy sources (RES) and energy storage systems (ESS).
- Proposed solutions for overcoming these challenges, including:
 - Possible demand side management activities.
 - Possible integration of new methods and technologies.

This RFI is a precursor to a potential Request for Proposal (RFP) for consulting services in the field of Generation System Planning methodology. The form of any such RFP has not yet been determined. This RFI does not pre-qualify parties to respond to any subsequent RFP, nor has a date for any such RFP been set.

This RFI is issued solely for information and planning purposes – it does not constitute RFP or a promise to issue an RFP in the future.

4. Background

4.1. The reform in the Israeli electricity sector

In May 2018 the Israeli electricity sector has undergone a reform, with a main objective to increase competition. Before the reform, the Israel Electric Corporation (IEC), owned by the Israeli government, was the sole electric utility in Israel, vertically responsible for the production, transmission, and distribution of electricity. Two main steps in the reform regarding IEC were:

- IEC's long-term planning division, and system management unit, moved to the newly founded NOGA – the Israeli ISO.
- IEC had to sell a significant share of its generation facilities to the private sector.

With other trends in the Israeli electricity market, the private sector share of total generation is expected to grow from about 30% in 2018 to about 60% by the year 2026.

4.2. The Existing System

By the end of 2021, the installed generation capacity in the Israeli power market was approximately 21 GW. About 11.6 GW of it was owned by IEC, and the rest by Independent Power Producers (IPPs).

The table below describes the capacity mix in Israel by the end of 2021, according to generation technology and grid level (transmission or distribution).

Generation Technology	Power Capacity (MW)		Generation Technology	Power Capacity (MW)	
	Transmission	Distribution		Transmission	Distribution
Steam Coal	4,840		OCJT (GO)	504	
Cogeneration	1,257		Pump Hydro Storage	300	
CCGT F (NG)	5,917		PV	475	2,212
CCGT E & Jet (NG)	2,073		Thermo-solar	272	
Steam (NG & FO)	1,340		Wind	109	27
OCGT (NG & GO)	1,570	12	Bio-Gas	27	
TOTAL	20,935				

4.3. Electric island

Israel is an "Electric island", the grid in Israel is isolated and is not connected to any system of the neighboring countries.

4.4. Central Planner

The Israeli ISO (NOGA) is responsible for planning the generation and the transmission systems. Once in a few years, NOGA publishes an integrated expansion plan that includes detailed information regarding the development of the system for the next 8-10 years.

In general, the current planning process contains:

- An examination of new candidates (generation and transmission)
- A risk analysis test for different scenarios
- A generation expansion plan that ensures that the growing demand for energy will be supplied
- A transmission expansion plan that enables the connection of all planned generation and storage units to the grid.

4.5. Wholesale Energy Market

The Israeli wholesale energy market is based on the principle of central dispatch (pool) with bilateral contracts on the transmission grid level. Every day, all the participants in the market (producers) have to submit their bids for the day-ahead and real-time markets. In case they have bilateral obligations, they have to submit their self-generation profile to NOGA. Then, NOGA optimizes the best economic solution under the system constraints, including reserve requirements. The outputs of the day-ahead optimization process is a half hourly dispatch schedule for all the generation units that are connected to the transmission grid, and system marginal prices. Producers connected to the distribution grid are not a part of the day-ahead or the real-time markets, and they usually operate based on a feed-in-tariff or self-generation regulations.

4.6. Distributed Energy

Israel's target of 30% renewable energy generation by 2030 drives a shift towards distributed energy generation and storage, which in turn introduces new challenges to NOGA. The main challenges are: large distances between generation and consumption regions, visibility and controllability of DERs, and introduction of new concepts such as prosumers and demand side management (DSM).

Israel's geography drives most RES to be built far from the center of electricity demand, which in turn will require a significant investment in both the transmission and distribution systems. More than 90% of planned RES will be PV units, and most of them will be built in the south and north.

Most planned RES and their supporting ESS will be connected to the distribution system, not under NOGA's direct control. Another management paradigm shifts for NOGA are DSM, and consumers that will integrate storage, potentially turning them into prosumers.

As a central planner, being responsible for the reliability of the electricity supply in the medium- and long-term, NOGA must carry out an in-depth and complex study in order to learn the field of distributed energy in combination with DSM. The outcome of this study will be a methodology for a long-term generation expansion planning process with a significant share of DERs and DSM.

5. Description of Required Information

Respondents are requested to provide information regarding their experience, professional capabilities, and details regarding the topics stated above (not limited to), which consists of services that were given to different power markets around the world. Each service should include: client's name, date, description of the provided service, team members, service duration, cost estimation of the service, and any additional information that could be valuable to NOGA in formulating an RFP

6. Communicating

- a. NOGA has appointed the following person as its RFI Coordinator:

Eti Brindt
Procurement Specialist
E-mail: etibrindt@noga-iso.co.il

- b. Unless specifically stated otherwise elsewhere in this RFI, all communications relating to this RFI shall be addressed to the RFI Coordinator in writing by e-mail.

7. Timetable for RFI

The following timetable lists the key dates (according to Israel time (GMT+3)) in this RFI process.

RFI release date	31/08/22
Respondent's deadline for submitting questions and clarifications	21/09/22
RFI closing Date	24/10/22

- a. NOGA may postpone the closing date at NOGA's discretion.
- b. NOGA is under no obligation to postpone the closing date for submitting a Response at the request of any of the respondents.

8. Clarifications

- a. The Respondent may direct questions or seek additional information in writing by e-mail prior to the deadline for submitting questions to the RFI Coordinator.
- b. Clarification questions, should be sent to the following email address: etibrindt@noga-iso.co.il
- c. NOGA may address clarification questions, but in any case, it is not obligated to do so.
- d. NOGA shall review the information provided by the respondents, and shall be entitled to contact all or some of the respondents to seek clarifications or additional information, at its discretion.

9. General Terms

- a. NOGA has the right to hold a meeting with the respondents, at its discretion.
- b. The purpose of this RFI is for gathering information only, as part of developing and formulating a project in this field, and it is not intended to act as a tender or competition process.
- c. This procedure, including submission of a Response, does not constitute any obligation on the part of NOGA to publish a tender or other engagement process in connection with any future project.
- d. Without derogating from the generality of the aforesaid, it is hereby clarified that NOGA has full discretion in determining the terms of any future engagement under the Mandatory Tenders Law, 5752-1992 and the Mandatory Tenders Regulations, 5733-1993 (the "**Regulations**"), if and to the extent published in the future, including without limitation the terms of the contract, pricing and any other matter relating to the engagement.

- e. Without derogating from the generality of the aforesaid, it is hereby clarified that any detail described or indicated in this RFI may be changed at the sole discretion of NOGA and is not meant to bind NOGA in any way.
- f. It is hereby clarified that this RFI does not constitute a tender or an invitation to make proposals, but an early request for information in accordance with the provisions of Section 14A of the Regulations. Therefore, the respondents are hereby informed that according to the provisions of the Regulations:
 - i. NOGA's Tenders Committee shall keep a record of any information received through the Responses and any discussions that have taken place with respondents.
 - ii. Responding to this RFI is not a prerequisite for participating in a future tender or competition process, should one be held, and will not confer any advantage on respondents. The respondents are not obligated to participate in any future tender or to engage with NOGA in any other way.
 - iii. Any information received through a Response to this RFI, on the basis of which a tender or other competition process was held in accordance with the Regulations, shall be subject *mutatis mutandis* to the right to review and access to information under Section 21(e) of the Regulations.
- g. The respondent shall bear all costs associated with preparing and submitting the Response and shall not be entitled to reimbursement and/or compensation and/or indemnity for any expenses and/or damages incurred in connection with the Response. For the avoidance of doubt, the respondent shall not be entitled to any consideration and/or any other payment in return for its Response to this RFI.
- h. This RFI shall be governed by and construed in accordance with the laws and regulations of the State of Israel. The applicable courts in Haifa shall have the exclusive jurisdiction with respect to all matters and all disputes arising in connection with this RFI.