

How does integration affect the frequency stability of the Israeli power system?

The frequency stability of the Israeli power system is expected to be challenged as additional renewable energy sources are integrated. Currently in Israel, the integration of generation units and storage is not directed by policies that clearly consider how their distribution affects the frequency stability of the system.

How is the Israeli grid divided?

The Israeli grid is divided very distinctively between north and south. The map of the Israeli grid in 2025, shown in Fig. 1, illustrates this division very well.

Does the Israeli power system have the resources to maintain frequency stability?

One main conclusion is that the Israeli power system already has the required resources to maintain frequency stability in case a large generation unit is lost. However, to maintain a reliable system, policy makers should encourage that the existing and additional storage will contribute to frequency regulation when there is a risk of instability.

What types of power plants are used in Israel?

In addition, Israel has a mix of coal units, gas units, gas turbines, and jet turbines, which all have very different technical properties. The steam units (coal or gas) have long initiation times and thus are used for base load generation, since they cannot be shutdown and turned-on daily.

How does the IEC regulate natural gas distribution in Israel?

The IEC has a natural gas distribution law which regulates the distribution of natural gas in Israel to empower market competition. The discoveries of the Tamar gas field in 2009 and the Leviathan gas field in 2010 off the coast of Israel were important.

What is the optimal distribution of generation units in Israel?

The optimal distribution of generation units partly matches the available land in Israel. In the north, where available land is scarce, distributed RES may be installed using a dual-purpose approach on existing infrastructure, such as on rooftops and water reservoirs.

Israel's micro-grid pilot, which will be complete sometime in the next year or two, will run in parallel to the large stockpiles of diesel, coal and generators that it has been collecting.

Throughout Israel's history, securing the energy supply had been a major concern of Israeli policymakers. The Israel Electric Corporation, which traces its history to 1923, with the First Jordan Hydro-Electric Power House, is the main electricity generator and distributor in Israel. Petroleum exploration began in 1947 on a surface feature in the Heletz area in ...



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