



Distributed Generation Overview: Eswatini

Prepared under the Policy Catalyst Distributed Generation Window

The Distributed Generation Window is a technical assistance program for Sub-Sahara African regulators and utilities to facilitate the integration of Distributed Generation onto electricity networks.

Key points

- The country's total installed DG capacity is estimated at **30 MW**, which represents about **12.3%** of the country's peak demand.
- Eswatini has a **strong enabling environment** for Distributed Generation (DG), driven by the country's target to reduce reliance on energy imports.
- **DG permitting processes are in place**, but they have yet to be fully harmonized between the utility and the regulator.
- **No exports currently allowed**, although DG export credits are currently under review
- Existing tariffs are **not yet fully cost-reflective**

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Background

Distributed Generation definition according to the draft Embedded Generation Bylaws*:

“means a generation facility, often from renewable energy sources, with or without storage systems, owned and operated by an EG Customer, connected to and synchronized with the Distribution Network, generating power mainly for own use and may or may not inject surplus electricity into the distribution electricity network”.

* - Embedded Generation (EG) is the term used in Eswatini, not Distributed Generation (DG)

In 2023, Eswatini's peak electricity demand reached 234 MW, while the country's local generation capacity stand at 203 MW. This electricity supply deficit gap has made Eswatini a net importer of electricity, sourcing around 77% of its total energy needs from South Africa, Mozambique, the Southern African Power Pool (SAPP), and independent power producers (IPPs).

The installation of distributed generation (DG) systems has seen steady growth since 2020, increasing by approximately 38%¹ annually. By mid-2024, Eswatini's total installed DG capacity is estimated at **30 MW**, which represents about 12.3% of the country's peak demand. Most of these DG systems are commercial installations mostly ranging between a few kWp to 1 MWp in size. The Eswatini Electricity Company (EEC) estimates that 87% of all DG systems connected to the grid are registered. There is currently no coupling of DG systems with battery storage, as the absence of regular power outages or load shedding reduces the value proposition for storage solutions.

A key motivation for customers to install DG systems is to hedge against rising retail electricity tariffs, making the most of the favourable business case, although some initial calculations show only a moderate financial incentive i.e. a PV payback between 4 and 10 years for C&I customers. Note that existing tariffs are not fully cost-reflective, which may artificially inflate the business case or value proposition of DG. Nonetheless, tariffs for all commercial customer categories are reasonably unbundled.

DG Regulatory and Institutional environment

In the DG Support Program [White Paper](#), key building blocks for DG implementation are identified, including regulatory, technical compliance, permitting and capacity building areas – summarised in Figure 1

¹ Estimated DG installed capacity in 2022 was at 17 MW. Source: 2022/23 ESERA Annual Report: https://www.esera.org.sz/media/publications/docs/2022_23%20ESERA%20Annual%20Report_Final.pdf

FIGURE 1. BUILDING BLOCKS OF DG REGULATION AND PERMITTING

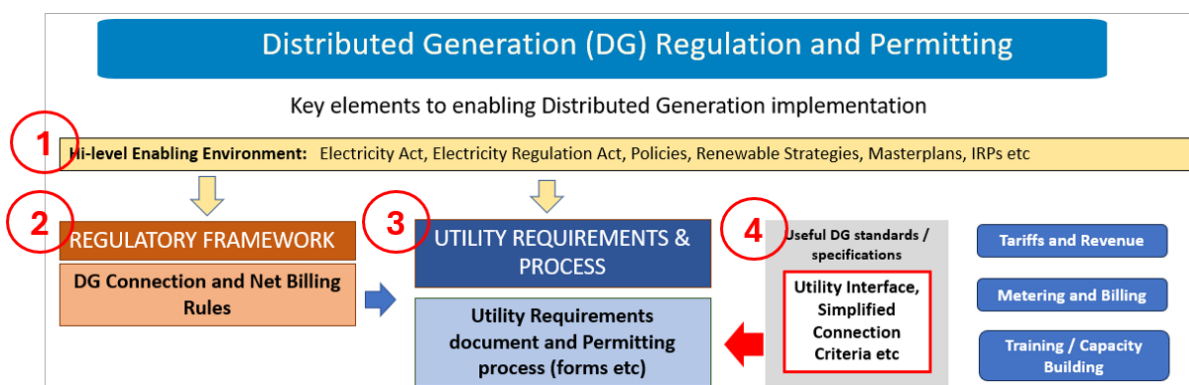


Table 1 provides a high-level overview across all these building blocks, highlighting relevant documents.

TABLE 1. High-level description of the DG enabling environment in Eswatini

BUILDING BLOCK	DOCUMENTS	NOTES
1. High-level enabling environment	Reducing reliance on energy imports is a top national priority, creating a strong, supportive environment for the growth of local distributed generation (DG) systems.	
	Short Term Generation Expansion Plan 2018 (2024 Draft version - pending acceptance of the Ministry)	Reducing electricity imports by expanding local clean energy generation capacity is a clear policy objective across these key national policies and strategies.
	National Energy Policy 2018	
2. Regulatory framework	Eswatini Energy Masterplan 2034 (published in 2018) (Draft Energy Masterplan 2050 published in 2024 and is awaiting Ministry approval)	
	ESERA has a strong conducive regulatory framework for DG under which 30 MW of DG capacity has been approved for connection to the grid. ESERA recently developed a more comprehensive draft EG ByLaws that are out for public review until September 2024. A dedicated national DG working group, consisting of representatives from EEC and ESERA, has been in operation since 2023 to oversee DG developments.	
	EG ByLaws 2024 (Draft)	The EG bylaws defines the minimum requirements for interconnecting on-site DG to the grid, which include, inter alia, eligible generation technologies, generation capacity limits, metering requirements, and billing and compensation arrangements.

3. Utility permitting process

Two parallel processes are currently in place for DG system approval. All DG installations require a letter of approval from the Eswatini Electricity Company (EEC), while systems exceeding 100 kWp must also obtain an exemption for a generation license from the Eswatini Energy Regulatory Authority (ESERA). Work is underway to streamline both permitting processes.

No exports allowed at the moment.

The processing timelines are generally around 30 days.

DG requirements documents

All EEC requirements and application forms are available [here](#).

DG export tariffs are currently under review and are expected to be introduced by the end of 2024.

4. Standards and specifications

All DG systems are required to comply with the technical specifications in the SZNS NRS 097 standards. These are the South African equivalent of the NRS 097 series adopted by the Eswatini Standards Authority. It sets all the technical, safety, and performance requirements for connecting DG systems to the distribution grid.