MEXICO ENERGY
PARTNERS LLC

DISTRIBUTED GENERATION

AN OVERVIEW FOR PLANT MANAGERS

SPEAK WITH
AN EXPERT

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EXECUTIVE SUMMARY

Distributed Generation represents a strategic alternative for companies and users looking for greater control over energy costs, and environmental footprint. It involves producing electricity at the same site where it is consumed, generally through clean sources such as photovoltaic solar energy.

In Mexico, the current legal framework allows the installation of these systems under the a limited capacity of 700 kW as long as interconnection requirements are met. The actual benefits perceived depend in large extend to the specific conditions of each site, but it can generate direct discounts to energy billing up to 20% in the total amount.

This document provides an overview of the Distributed Generation scheme, addressing its technical fundamentals, the energy billing scheme in Mexico, the applicable regulatory framework, the basic operation of a photovoltaic system, and the user profiles with the highest adoption potential.

The ultimate purpose of this information is to provide a guide for users in the acquisition of technology like the one present as well as facilitate a basic understanding on technical details.

DISTRIBUTED GENERATION

Distributed Generation is a model that emerges with the purpose of complementing traditional generation systems. It is a way of producing electricity at the same location where it is consumed, rather than relying entirely on utilities that generate power at significantly distant locations from the end user.

In Mexico, this type of system has been adopted through photovoltaic solar panels of various technologies, primarily using designs that allow for fixed installation on rooftops or mobile setups on users' land.

Benefits

Cost reduction

Users can reduce costs by generating part of their own electricity.

No emissions

Solar panels dont generate emissions in their energy production process.

Greater access in isolated regions

It allows energy to be delivered to communities or locations where electrical networks have not reached.

Current landscape in Mexico (2024)

- **+518,000 active distributed generation contracts** (+26% vs. 2023)
- **4,448 MW of installed capacity** (mainly photovoltaic solar systems)
- **More than 8,000 million USD** in accumulated investment
- **Installed capacity in the industrial sector,** with 898.80 MW, represents approximately **20.2% of the total.**

TARIFFS IN MEXICO

The cost of electricity in Mexico depends on the type of user, their level of consumption, and the applicable tariff scheme. In general terms, the Federal Electricity Commission charges based on the following components.

Tariff components

Energy
Energy effectively consumed in kWh

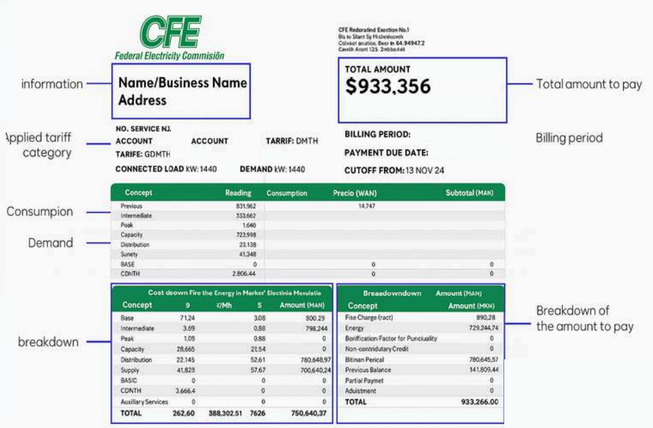
Demand
Charge for plant capacity

Maintainance
Technical support for system stability

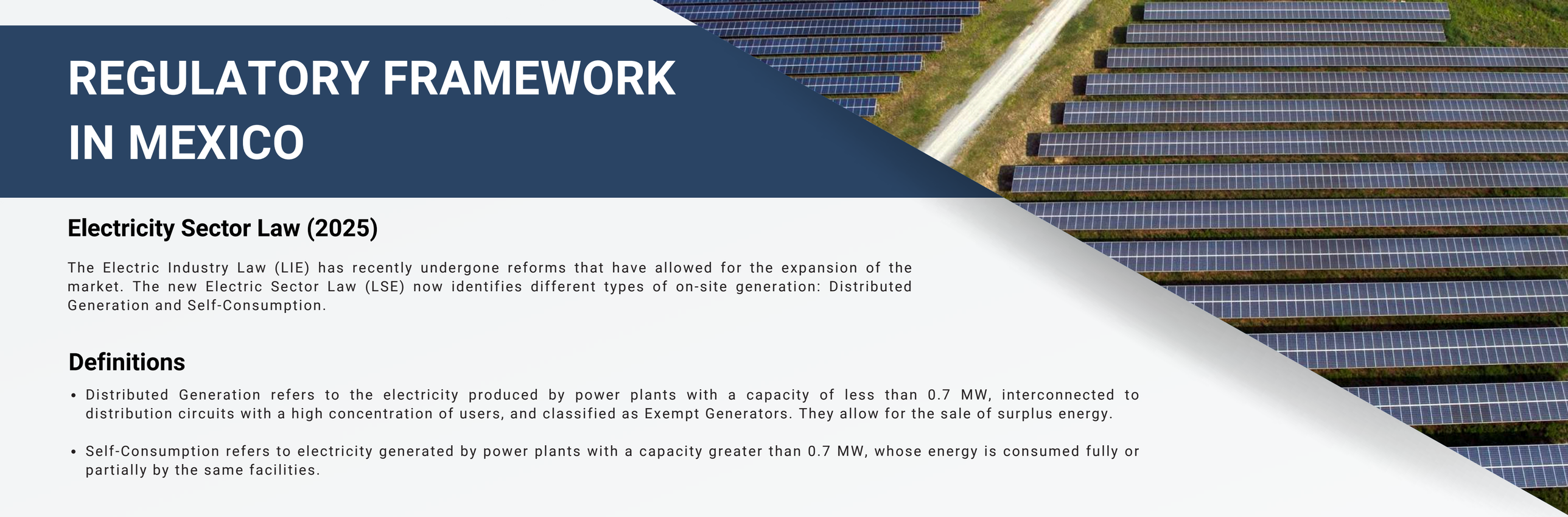
Transmission and distribution
Cost of transporting energy from the generating plant to the user

Most common tariffs

Segment	Tariff type
Residential	Tariff 1, 1A - 1F Tariff DAC
Industrial	GDMTO, GDMTH, DIST, DIT



REGULATORY FRAMEWORK IN MEXICO



Electricity Sector Law (2025)

The Electric Industry Law (LIE) has recently undergone reforms that have allowed for the expansion of the market. The new Electric Sector Law (LSE) now identifies different types of on-site generation: Distributed Generation and Self-Consumption.

Definitions

- Distributed Generation refers to the electricity produced by power plants with a capacity of less than 0.7 MW, interconnected to distribution circuits with a high concentration of users, and classified as Exempt Generators. They allow for the sale of surplus energy.
- Self-Consumption refers to electricity generated by power plants with a capacity greater than 0.7 MW, whose energy is consumed fully or partially by the same facilities.

Relevant Insights

Limited capacity to

700 kW

If the generation system remains below the 0.7 MW threshold, it is possible to connect directly without the need for permits beyond an interconnection agreement.

It can be used for

Selling or consumption

The National Energy Commission (CNE) is responsible for designing and determining the corresponding charges or payments for all schemes, including those related to the sale of energy from distributed generation.

Distributed power plants are

Exempt Generators

Distributed Generation power plants are allowed to operate without the need to request a generation permit, which reduces administrative burden and speeds up their integration into the electrical system.

OPERATION OF PHOTOVOLTAIC SYSTEMS

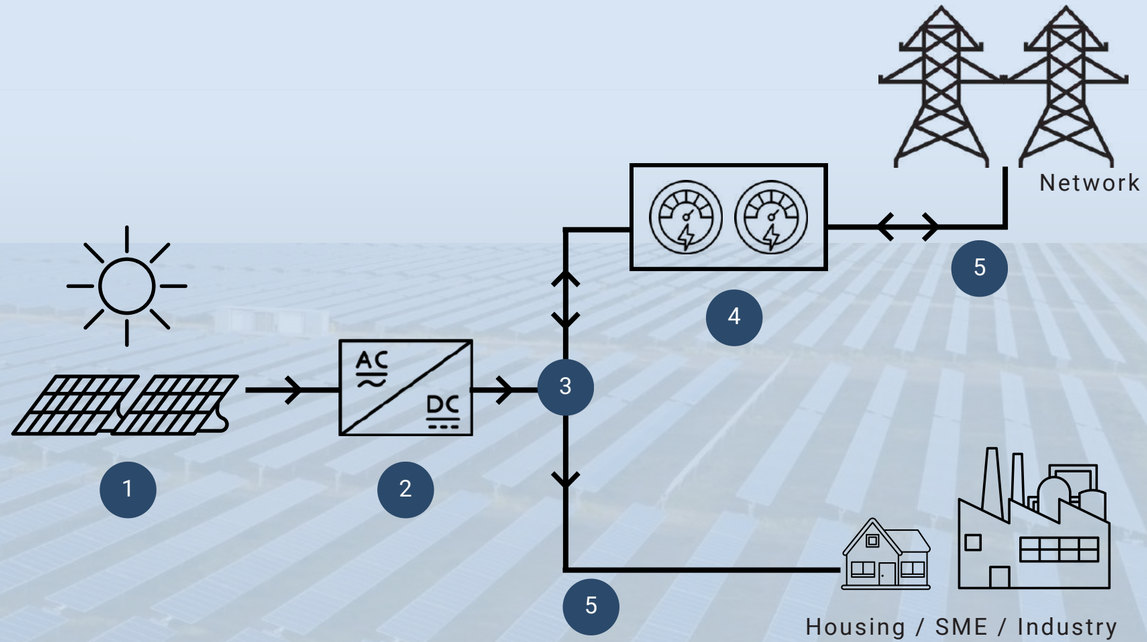
Main components of a typical photovoltaic system:

1. ***Photovoltaic Modules (solar panels):*** Capture solar radiation and convert its energy into direct current.
2. ***Inverter:*** A device responsible for converting the direct current generated by the modules into alternating current. It maintains a waveform compatible with the conventional electrical grid and consumer equipment.
3. ***Electrical Installation:*** A panel is used to distribute energy to the different circuits within the property and ensure safe operation through security measures. Some of these include breakers, insulators, and grounding systems.
4. ***Bidirectional Meter:*** A measuring instrument that records both the energy consumed from the grid and the surplus energy injected into it by the system. Its readings allow for the determination of billable balances.
5. ***Interconnection Grid:*** Electrical infrastructure that enables the exchange of energy between the generation system and the public distribution network.

General operating scheme

A characteristic feature of this type of technology is the direct current produced by the system's array. Its conversion to alternating current requires an inverter device that performs the transformation and maintains the necessary parameters. The energy output from this device can be consumed immediately by the installation or injected into the grid in case of surplus.

If the generation is not sufficient to meet the demand, the system draws energy directly from the grid. This exchange is commonly recorded by a bidirectional meter, which allows for accurate tracking for subsequent billing, whether in favor of or against the user.



IDEAL USERS

The adoption of distributed systems, especially through photovoltaic solar energy, is attractive only for certain user profiles. The relevant information to determine this condition is outlined in the following sections.

Essential requirements

Available space
A sufficiently large surface area is required to build a significantly sized installation. Typically, around 1,000 m² are needed to achieve a minimally usable capacity.

High electrical consumption
It is the only scenario where a tangible reduction is possible. The system must offset a considerable portion of their demand, allowing for efficient use of self-generated energy and minimizing reliance on the grid.

Suitable tariff profileo
Users with medium-voltage tariffs (GDMTO, GDMTH, or some low-voltage tariffs) are ideal candidates, as the potential savings under these tariff schemes are considerably higher.

Potential savings of

up to 20%

on the electricity bill

depending on the tariff profile and system sizing

Sectors with the greatest potential for utilization

Trade
Supermarkets, self-service stores, shopping malls, and convenience store chains that operate during the day and have large roofs.

Service sector
Hospitals, hotels, schools, corporate offices, and data centers, which maintain continuous operation and demand quality and stability in supply..

Light industry
Manufacturing companies, workshops, medium-sized factories, or assembly plants that have daytime production processes and constant consumption..

Agricultural sector
Irrigation units, packaging plants, automated farms, and agribusinesses that require power for pumping, cooling, or processing systems.

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