

Mexican Experience in Reduction of Energy Losses



**March
2012**



Population:
112 million inhabitants

Area:
2 million km²

14° country world Wide



High Voltage: **30 056**

138, 115, 85 & 69 kV

Medium Voltage: **243 269**

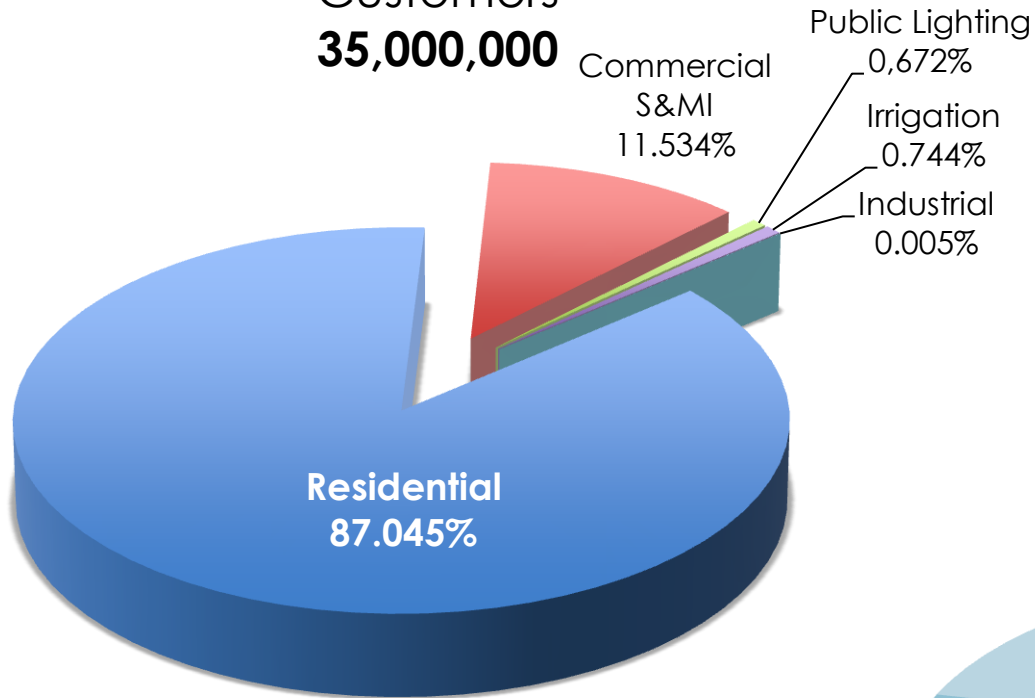
33, 23, 13.8 kV

Low Voltage: **150 301**

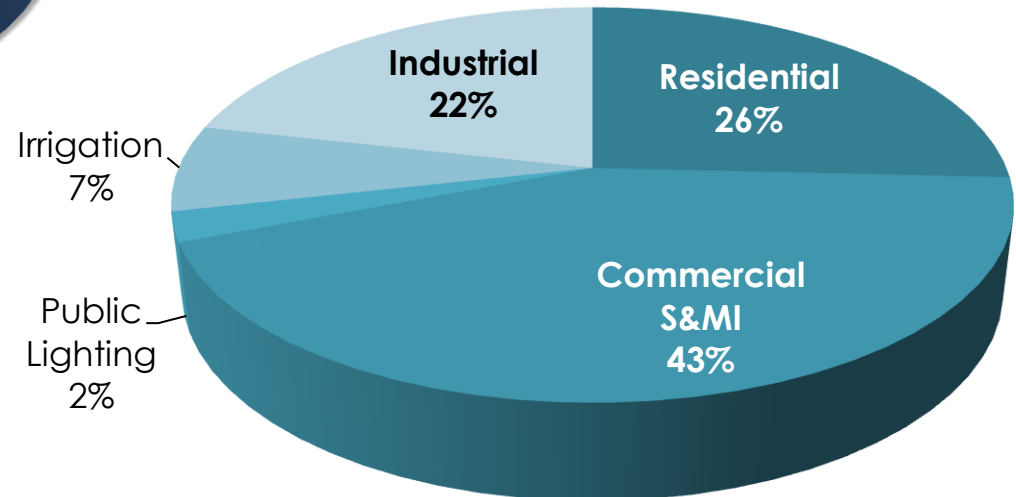
220 / 127 / 120 V



Customers
35,000,000

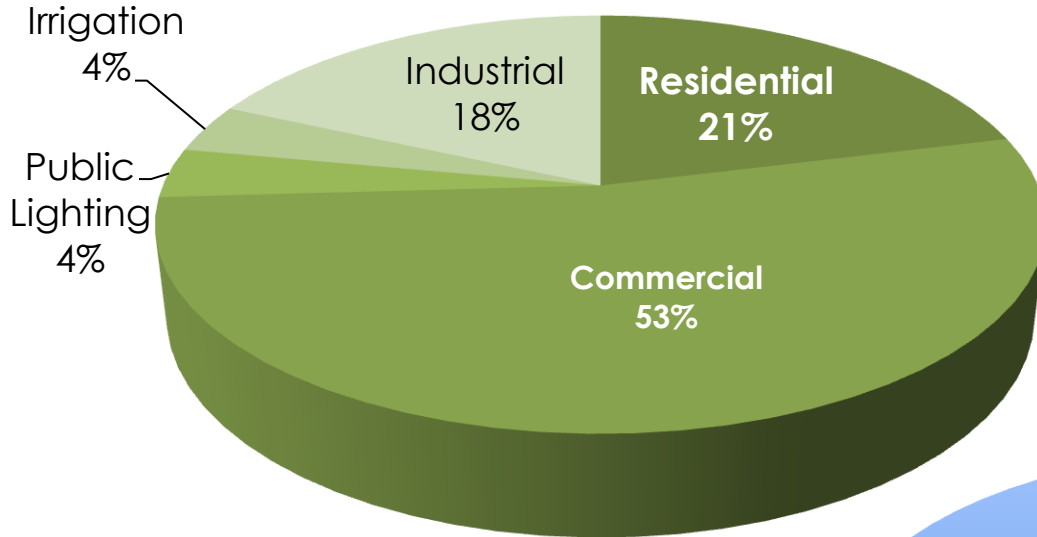


ANNUAL SALES
290,945 GWh

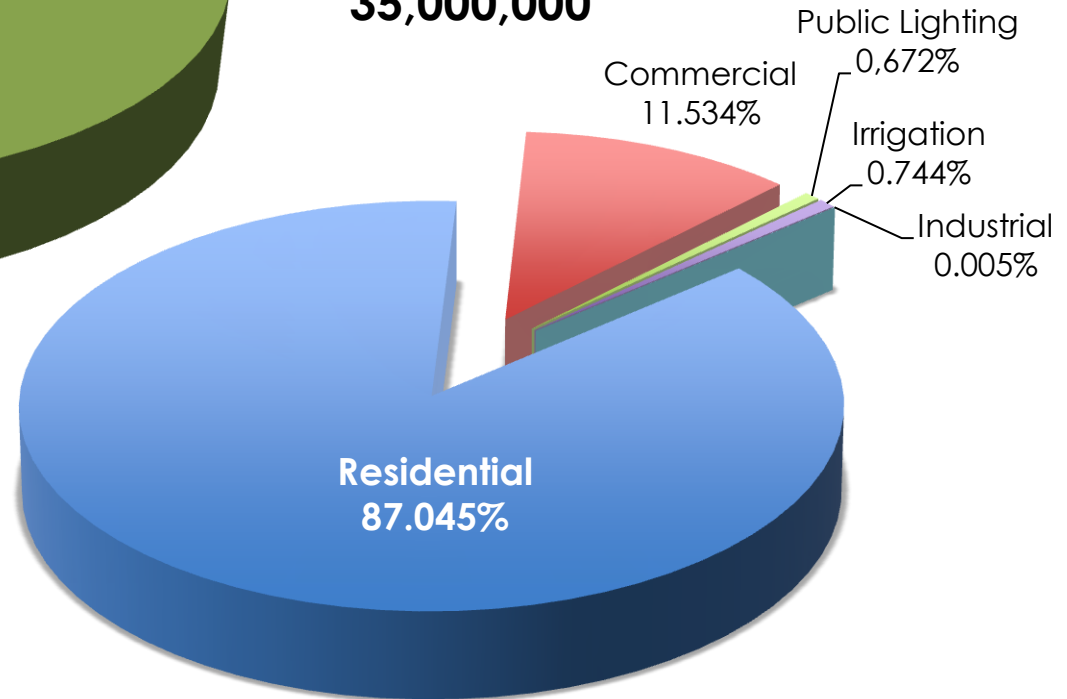




REVENUE \$ 22,235 Million dollars



CUSTOMERS 35,000,000





2011



Energy
Received



**Transmission
& Distribution**



Energy
Delivered

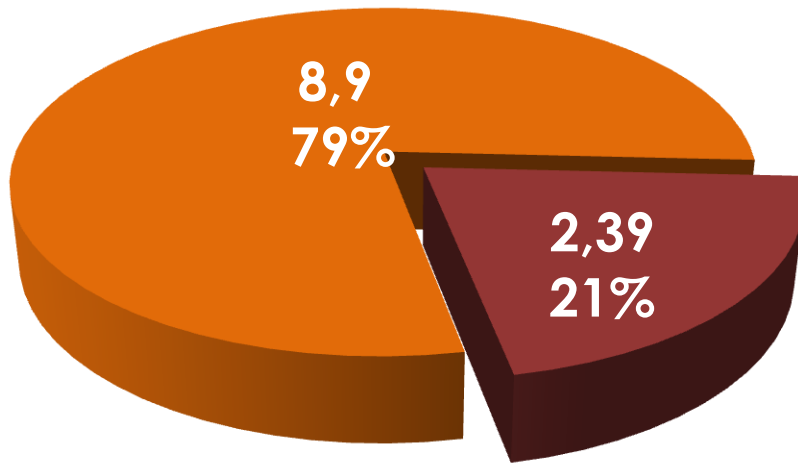


Energy Losses

29,528 GWh

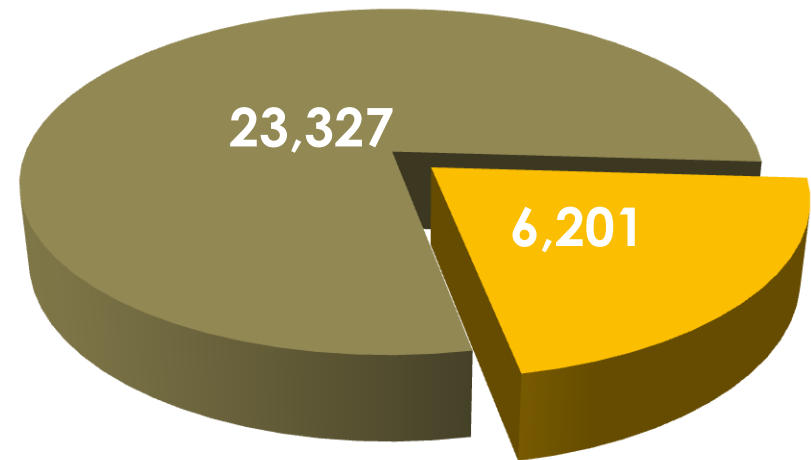


11.29%



Technical Commercial

29,528 GWh

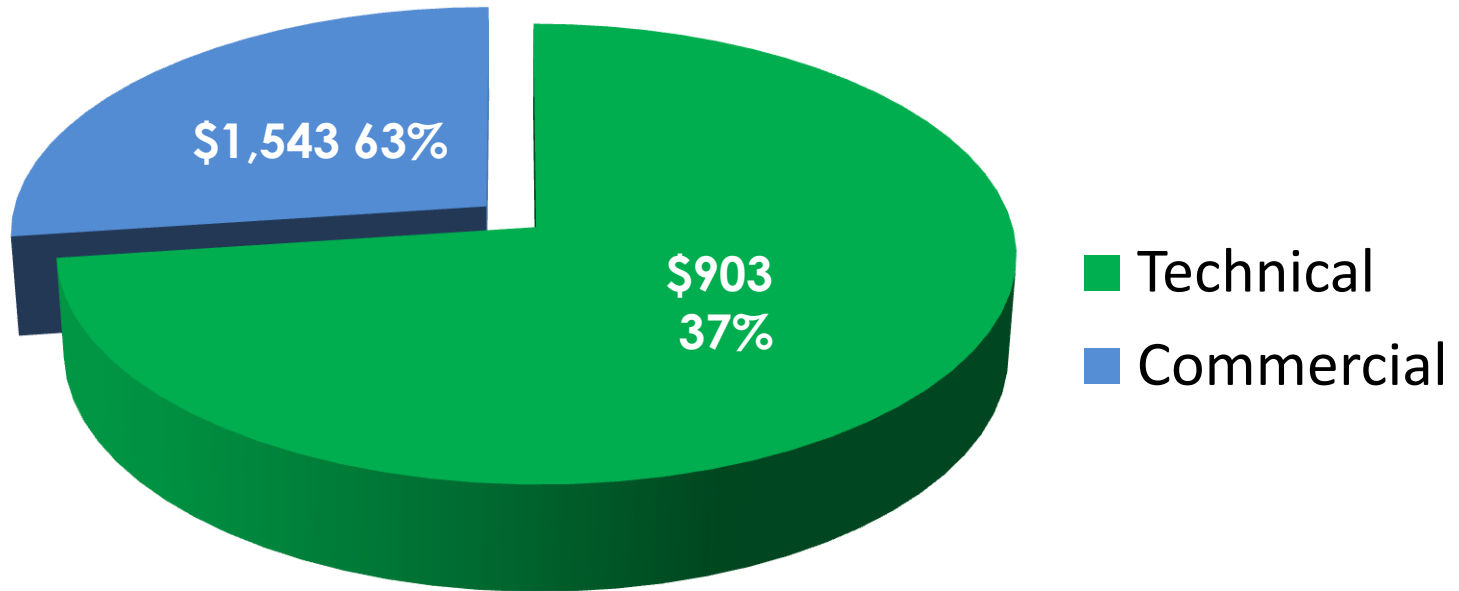


Transmission - Distribution

Technical Commercial



\$ 2,446 Million dollars

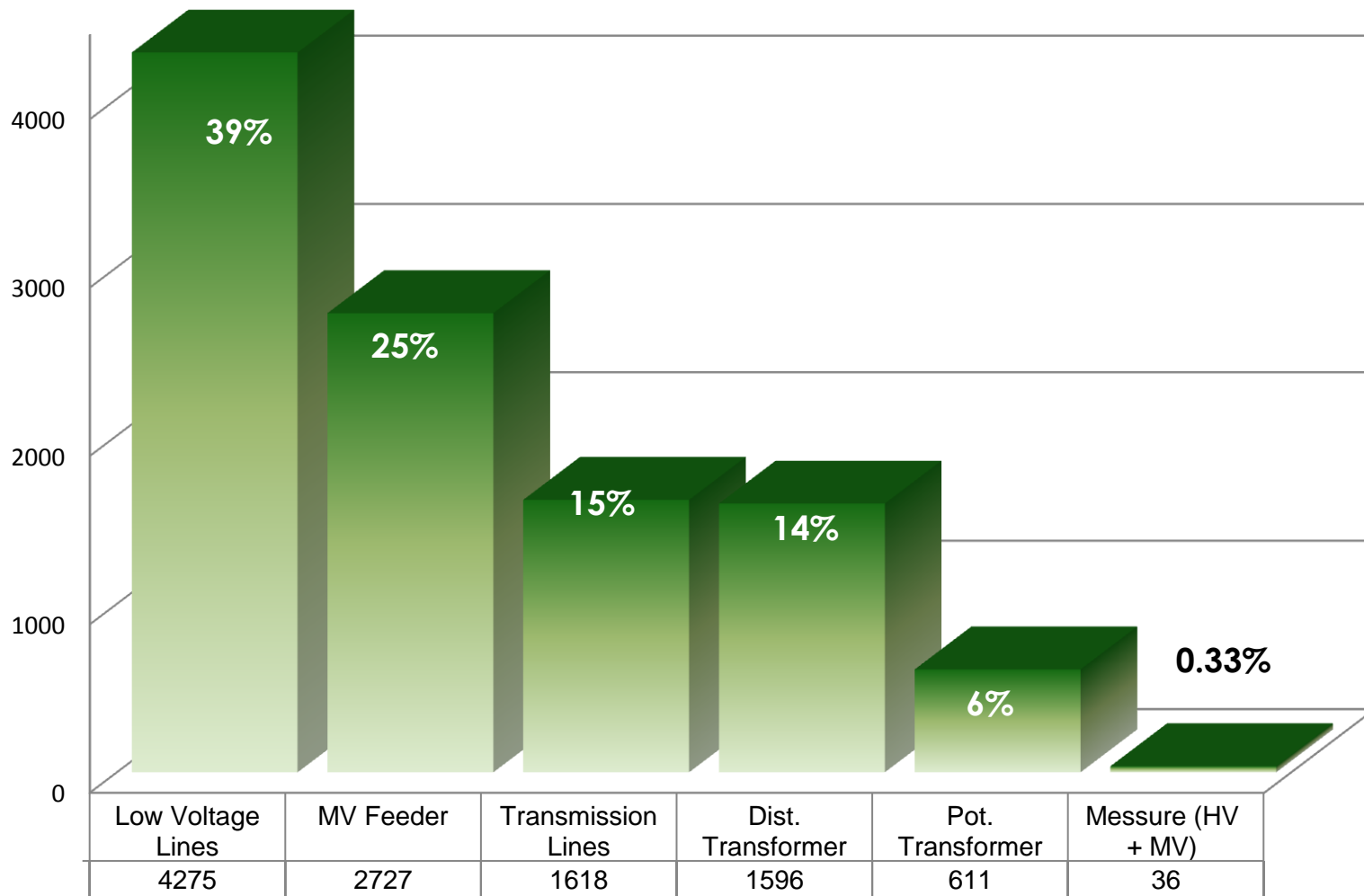


Transmission - Distribution





Distribution Network





- Systematic field assessments looking for irregular connections, Tampered or Damaged meters, unmetered consumers (both customers and irregular users).
- Use of boxes to seal customers connections.
- Construction of distribution networks less vulnerable to tampering and irregular connections.
- Replacement obsolete meters, CT's and PT's.
- Monitoring public lighting systems.
- AMI Projects.

Main Actions to Reduce Commercial & Technical Losses



Main Actions to Reduce Commercial & Technical Losses



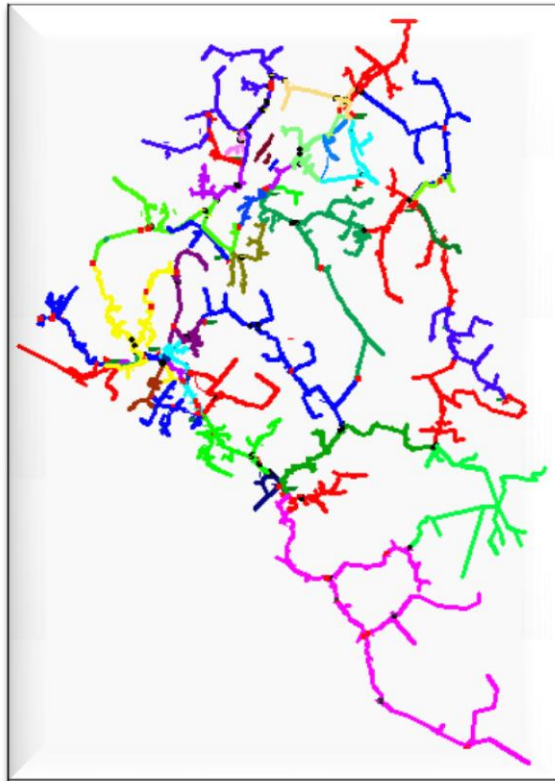
Main Actions to Reduce Commercial & Technical Losses



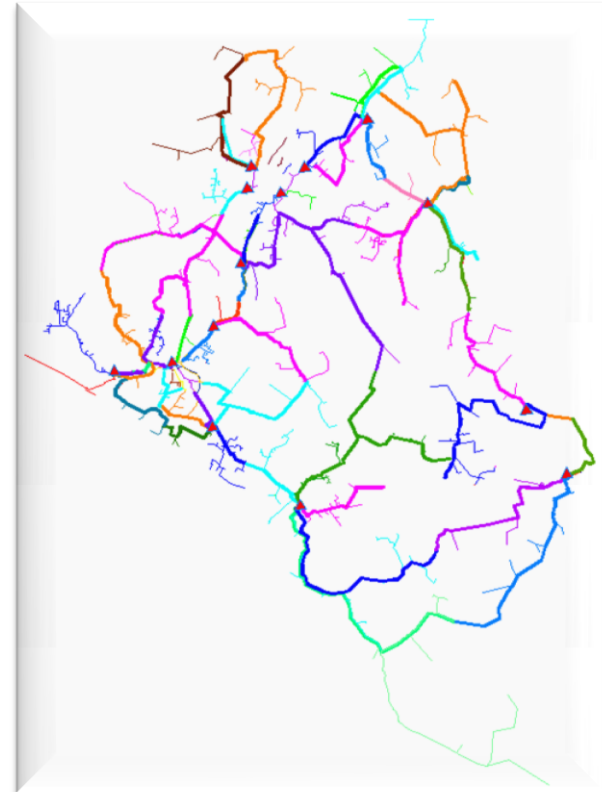


- ❖ Reconfiguration of distribution networks.
- ❖ Analysis of distribution feeders with highest losses.
- ❖ Reactive compensation.
- ❖ Demand management in distribution transformers.
- ❖ Efficient planning of electrical system.
- ❖ Development of the master plan.
- ❖ Construction of Substations.

Main Actions to Reduce Technical Losses



Before



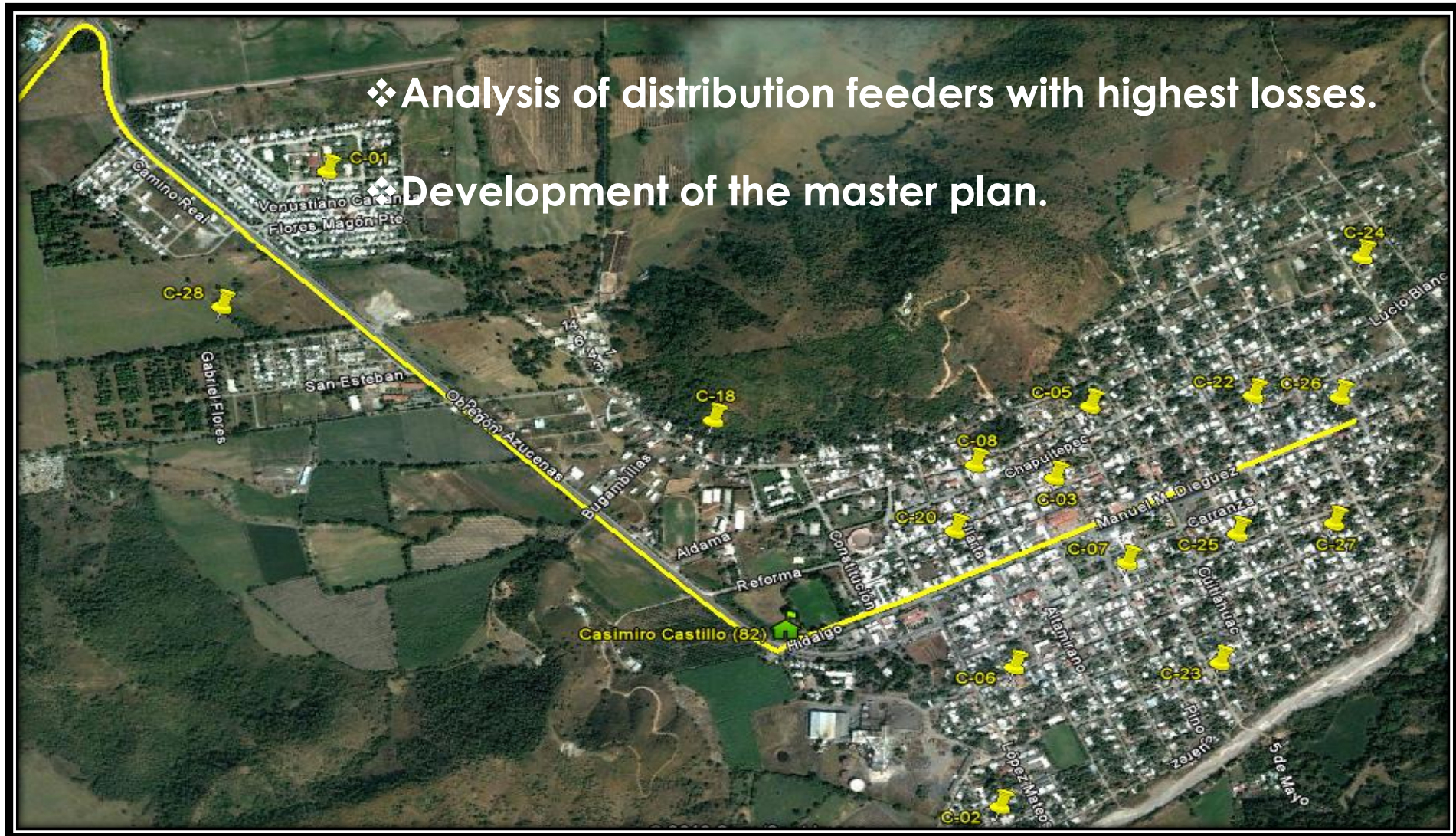
After

**Reconfiguration of Distribution
Network**



❖ Analysis of distribution feeders with highest losses.

❖ Development of the master plan.





San Juan Zitácuaro



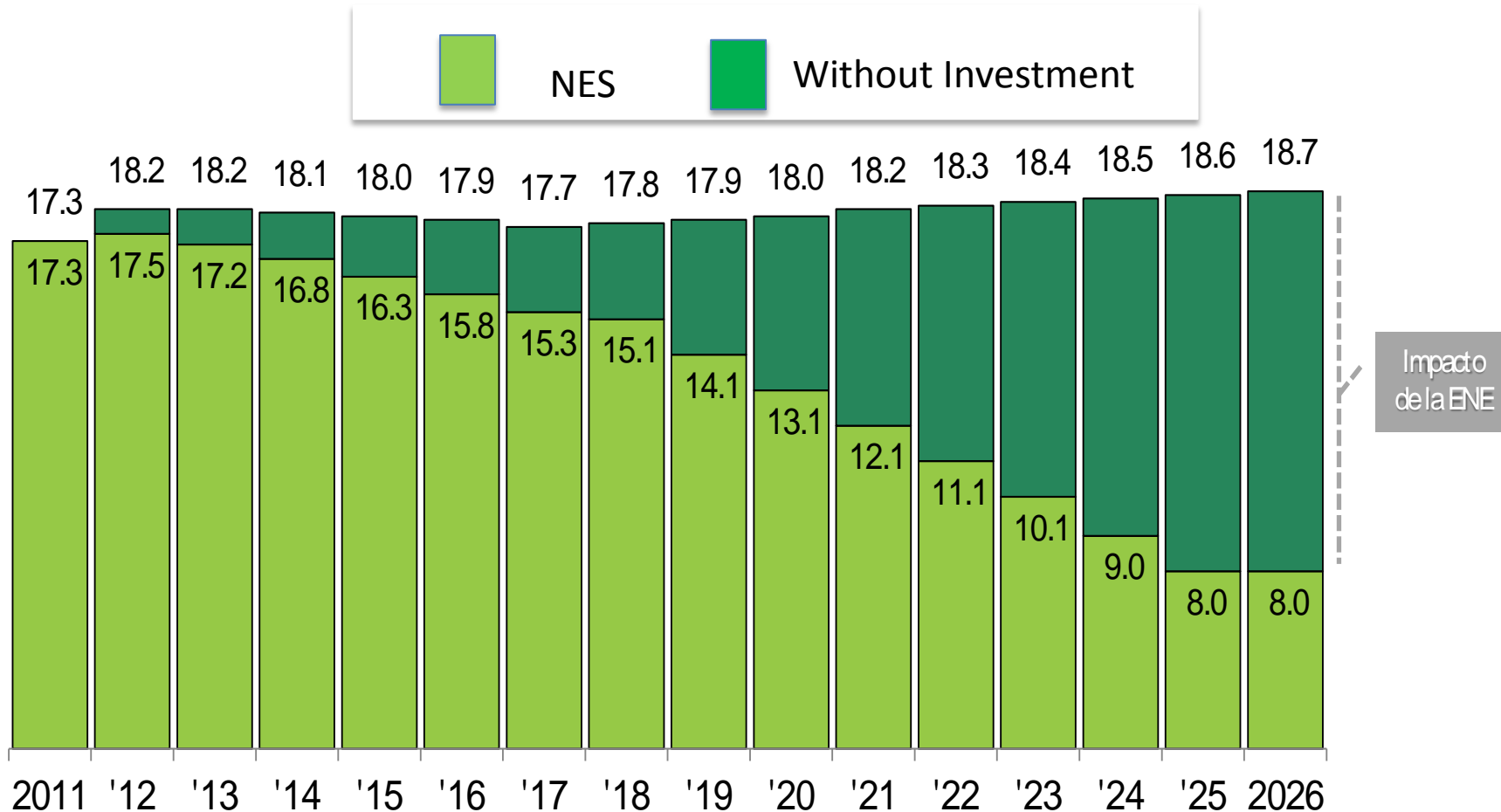
Monarca



Azufres



**Construction
of
Substations**



Estimated Investment

Tecnical Losses \$13,145 Million dollars
Commercial Losses \$ 7,442 Million dollars



Thank You very much

Any Questions?