NM EPSCoR Smart Grid
VIRTUAL SUMMIT 7/29/21
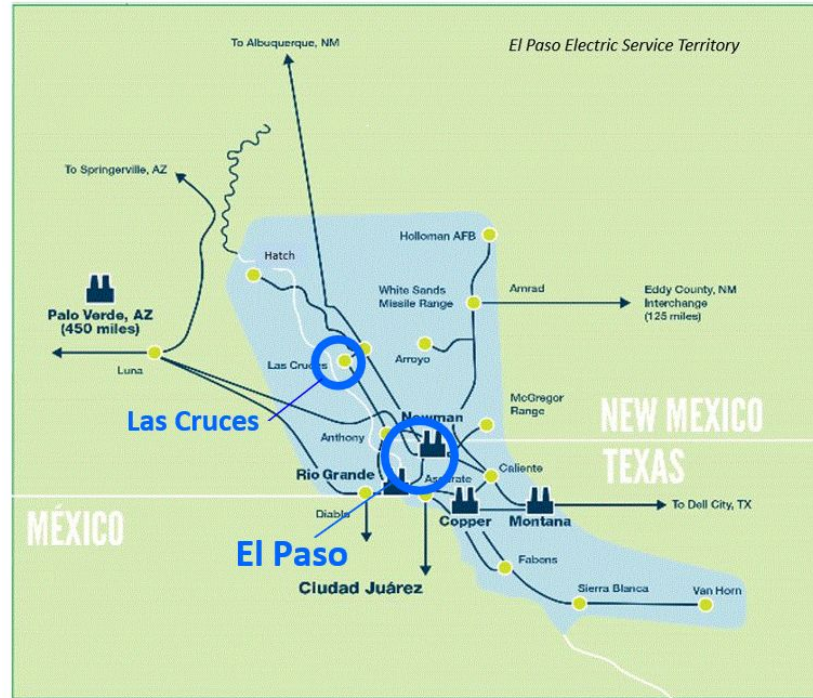
EPE Grid Modernization

Utility Overview

– EPE –

- Privately owned
  (Infrastructure Investment Fund)

- 10,000 miles^2

- 438k Meters

- SE corner of WECC

- Transmission
  345kV, 115kV, 69kV

- Distribution
  24kV, 14V, 4kV
  NM – 24kV & 4kV

- Summer Peaking
  2198 MW (2020)

El Paso Electric Service Territory

To Albuquerque, NM
To Springerville, AZ
Palo Verde, AZ (450 miles)
Hatch
Holloman AFB
White Sands Missile Range
Amrad
Eddy County, NM Interchange (125 miles)
Luna
Las Cruces
Arroyo
McGregor Range
NEW MEXICO
TEXAS
Anthony
Newman
Rio Grande
Accurate
Caliente
Diablo
Copper
Montana
To Dell City, TX
MÉXICO
El Paso
Fabens
Ciudad Juárez
Sierra Blanca
Van Horn

– EPE tech –

- Residential Solar DGs
  Total Systems: 21,040
  NM total: 6,252
  Avg Monthly Additions: 308

SMART GRID BASICS

- OMS

- GIS (T&D)

- ~~AMS/AMI~~

- ~~Distribution Automation~~

- ~~D-SCADA~~

- ~~Asset Mgt System~~

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EPE Grid Modernization

Strategic Plan and Roadmap

1 — Minimal Approach

Standards-Based Approach
- Modernize the standards EPE uses to drive projects, equipment, planning so that projects and work-orders going forward adhere to these new standards
- Slowly transforms the EPE grid over time through regular work pace
- Doesn't directly address transformative change like AMI, ADMS, DERMS, DERs, Storage, etc.

2 — Reliability Approach

Worst-Performing Circuits Approach
- Modernize Standards
- Identify and prioritize projects to proactively modernize the grid but proactively only focused on overhauling the areas of greatest need
- Identify complementary transformative projects to accompany grid investments such as AMI, ADMS, DERs, etc.
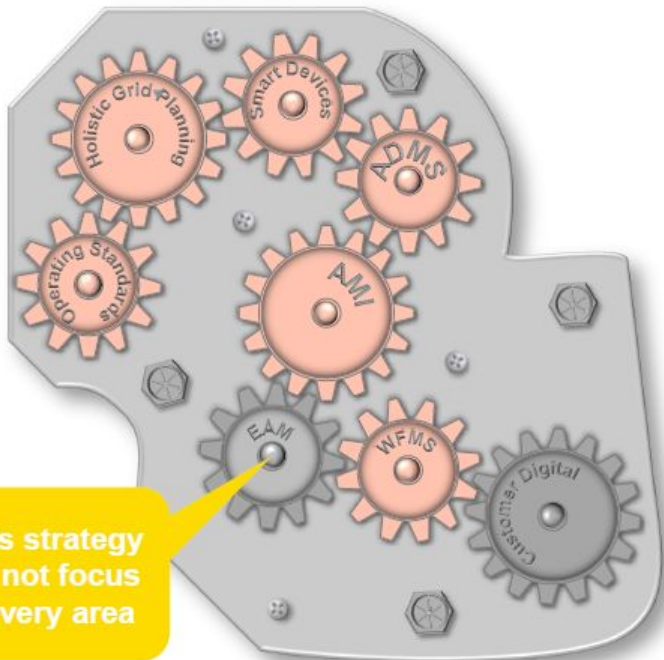
3 — Prepare for Future

Comprehensive Grid Mod Investment Approach
- Modernize Standards
- Establish a comprehensive investment plan to addresses modernization of all aspects of the Distribution, Substation, and possibly Transmission systems that includes enterprise projects for AMI, ADMS, Work Management, Inspections, Grid Infrastructure, etc. and lays out a long-term (10-20 years) investment Roadmap to present to board and regulators for approval

EPE Grid Modernization

Strategic Plan and Roadmap

Full-system investment plan developed to modernize EPE's infrastructure and operations

Gears labeled: Holistic Grid Planning, Smart Devices, ADMS, Operating Standards, AMI, EAM, WFMS, Customer Digital

EPE's strategy may not focus on every area

Establish new standards and identify prioritized projects across the system coordinated with modernized operational systems such as AMI, ADMS, & WFMS

EPE Grid Modernization

Strategic Plan and Roadmap

Crawl — Where we are

Walk

Run

Fly — Functional Micro-Grids
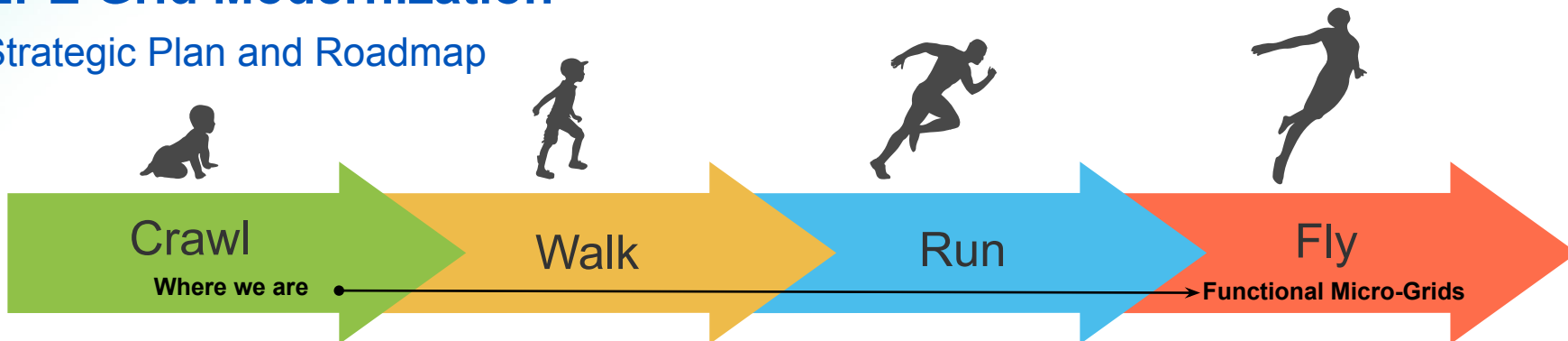
"With all thy getting, get first understanding"

- Vision definition
- Gap Assessment
- Technology
- Communications
- Training
- Organization

The Evolution Begins

- Master Plan & Roadmap
- Define systems, sequence & integration plan
- Define milestones of capabilities
- Define competency and training requirements
- Define CIP/Cyber requirements
- Define Organizatic Designati changes
- Identify impacted systems and procedures
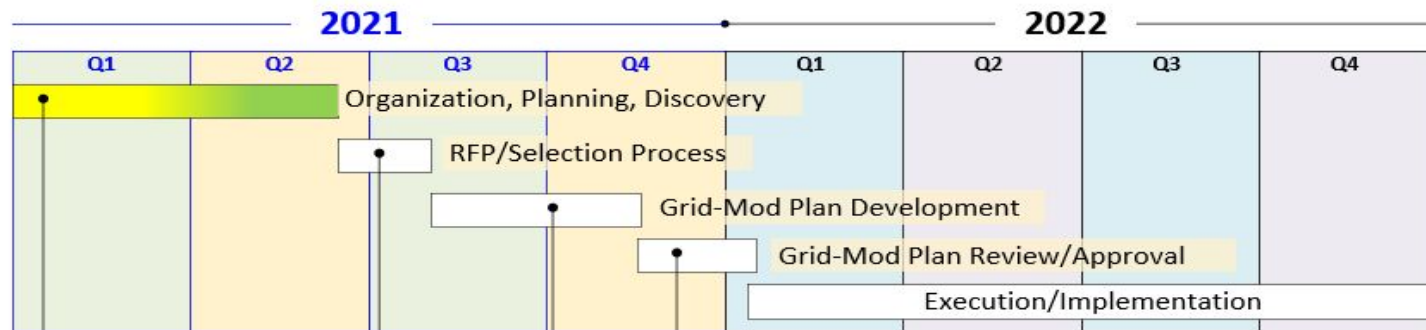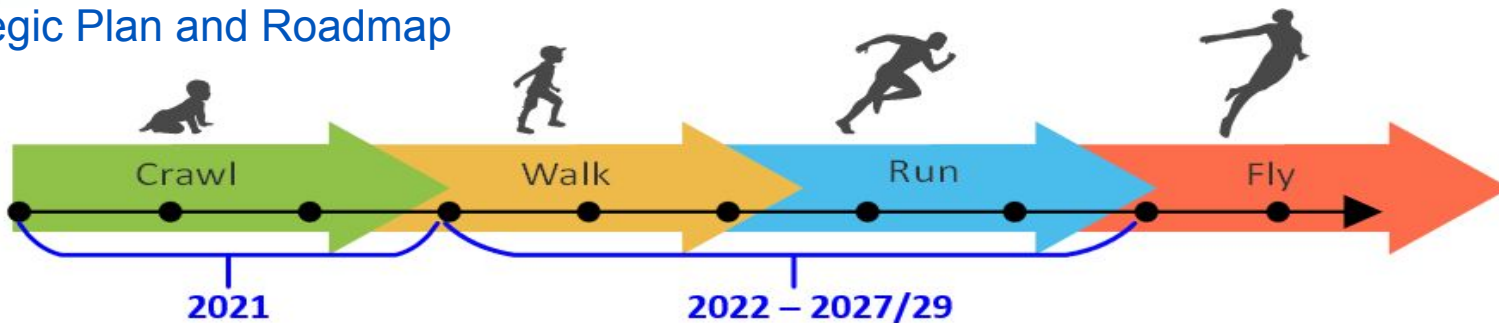
Distribution Automation

- Deployment
- Distribution Automation
- Remote monitoring & control
- Line sensing and line loading data
- Automated/remote sectionalizing
- DER state data
- AMS/AMI – Customer specific data
- Enhanced OMS data and outage notification.
- Grid ready EV, ES, DMS integration

Capability: Support multiple, concurrent, islanded microgrids

- Fully deployed OT (information & control)
- Fully deployed AI control systems
- Trained & Competent Controllers

- Fully developed CIP/Cyber protocols and systems
- New technology VIL, integration, version control, and deployment protocols.

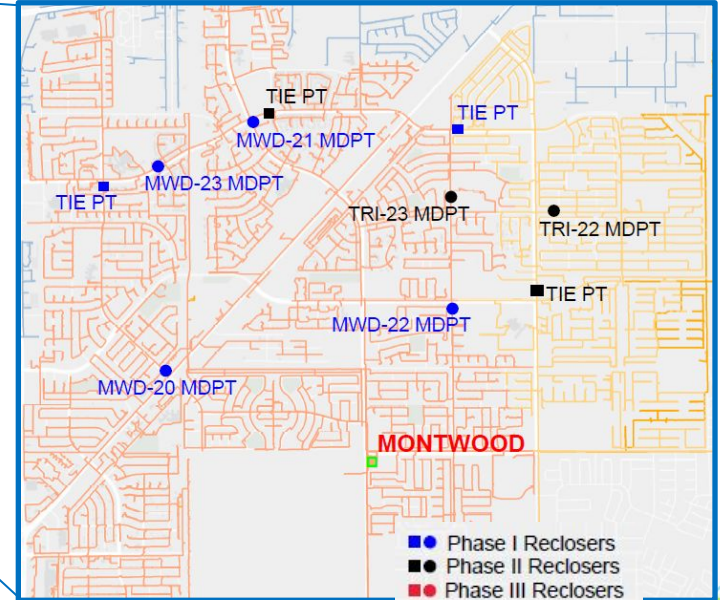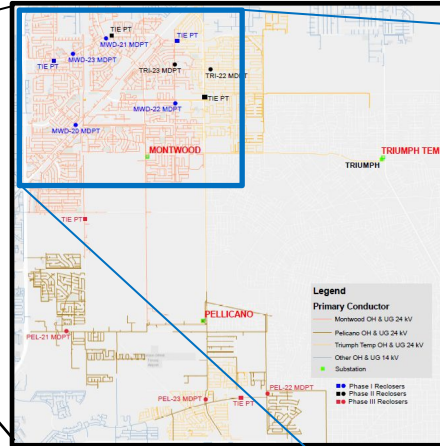# EPE Grid Modernization

Strategic Plan and Roadmap

Crawl — Walk — Run — Fly

2021 | 2022 – 2027/29

2021 | 2022

Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4

Organization, Planning, Discovery

RFP/Selection Process

Grid-Mod Plan Development

Grid-Mod Plan Review/Approval

Execution/Implementation

- Master Plan submittal for review, approval, budgetting.
- Consultant/MG Team work: Gap analysis, industry best practices, systems analysis, master plan development
- Process RFP responses, select consultant, hammer out contract (6 weeks)
- Define internal Grid Modernization Working Group to establish project charter, scope, and milestones for Master Plan and roadmap.
- Identify and qualify potential consultants to help define Master Plan and Roadmap.
- Prepare and issue RFP

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EPE Grid Modernization

Active Technology and Data Analytic Deployment Projects

- Eastside (El paso) 24 kV Distribution Automation:

  First demonstration of Grid Mod capability will be the automation of the Eastside 24 kV, enabling data a control capability of sectionalizing devices – (Montwood, Pelicano & Triumph Subs).
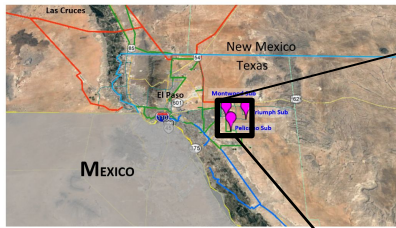

- **Phase 1: Montwood feeders Q2, 2021**
- Phase 2: Triumph feeder Q4, 2021
- Phase 3: Pellicano feeder Q1, 2022

EPE Grid Modernization

Anticipating Micro-Grids

"Future-Grid" infrastructure

- Working with subdivision developers to plan, and install, non-electrical infrastructure in anticipation of future micro-grid capability.

- Future-Grid plan will pre-define: Space for future battery storage, additional transformation to accommodate high density electric vehicles and distributed generation (solar), space for localized micro-grid control systems, public EV charging, 5G ready street lighting, etc.

- Restrictive covenants for all single-family homes in the subdivisions will require EV charging circuits to the garage or carport.
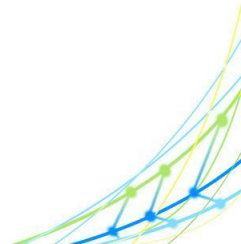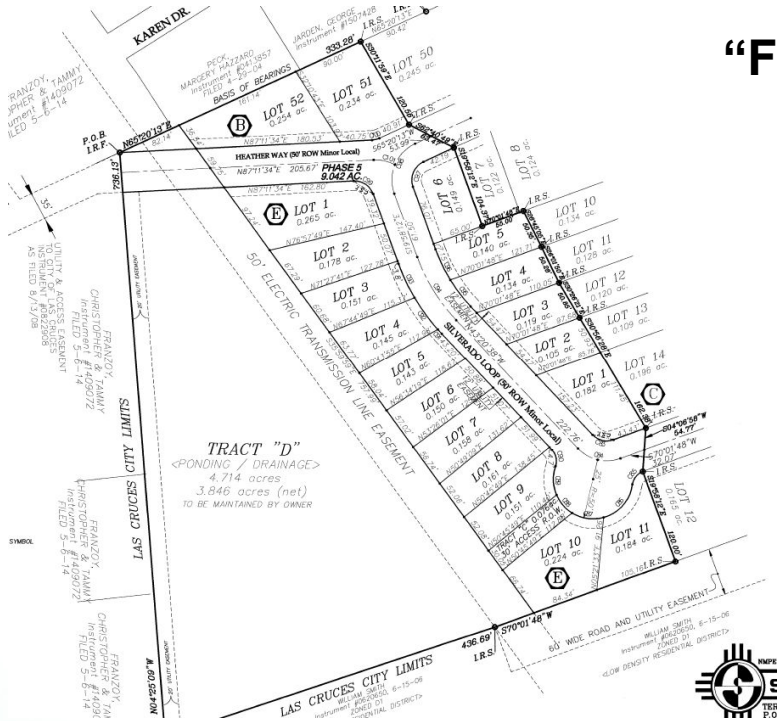
EPE Grid Modernization

Questions / Comments?