Financial Plan Refresh

Public Workshop

Feb 9, 2022

Transmission Services

Executive Ownership: Jeff Cook, Vice President-Planning and Asset Management

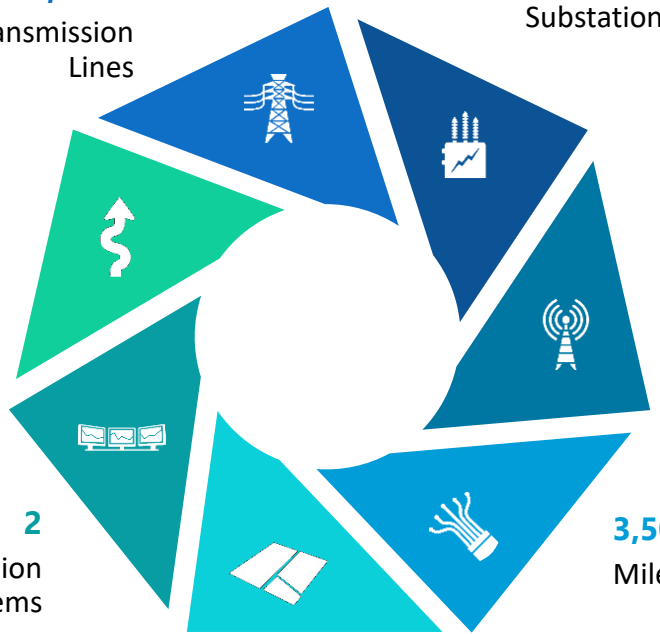
Today's Presenter: Jana Jusupovic, Transmission Asset Manager

Transmission

Capital Assets

15,000+
Circuit Miles of High Voltage Transmission Lines

260+
Substations



~12,000
Miles of access roads, bridges, culverts

732
Communication sites

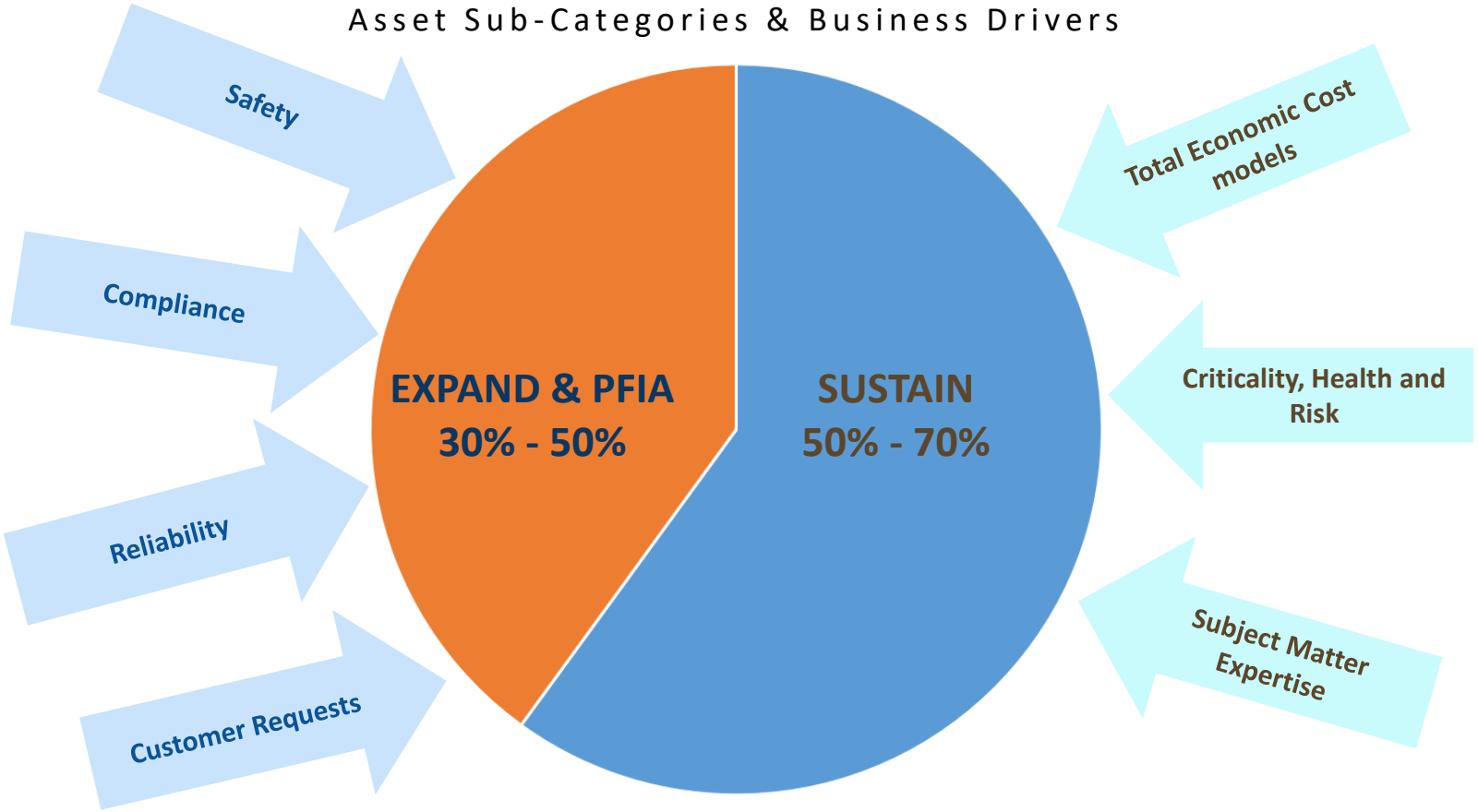
2
Control Centers with 85+ automation systems

3,500
Miles of Fiber

195,000+
Acres of Right-of-Way

Capital Program

Asset Sub-Categories & Business Drivers



Asset Criticality

1. Criticality, Health & Risk (CHR) - Scored impact dimensions include:
   a) Safety (completed)
   b) Reliability (completed)
   c) Environment- Pollution and Abatement, Natural Resources (completed)
   d) Environment- Cultural (not completed)
   e) Financial (not completed)
   f) Compliance (logic sheet completed, scoring not completed)

2. Asset specific criticality
   – Specific to assets in each individual asset program
      • Supports prioritizing asset replacements within that program

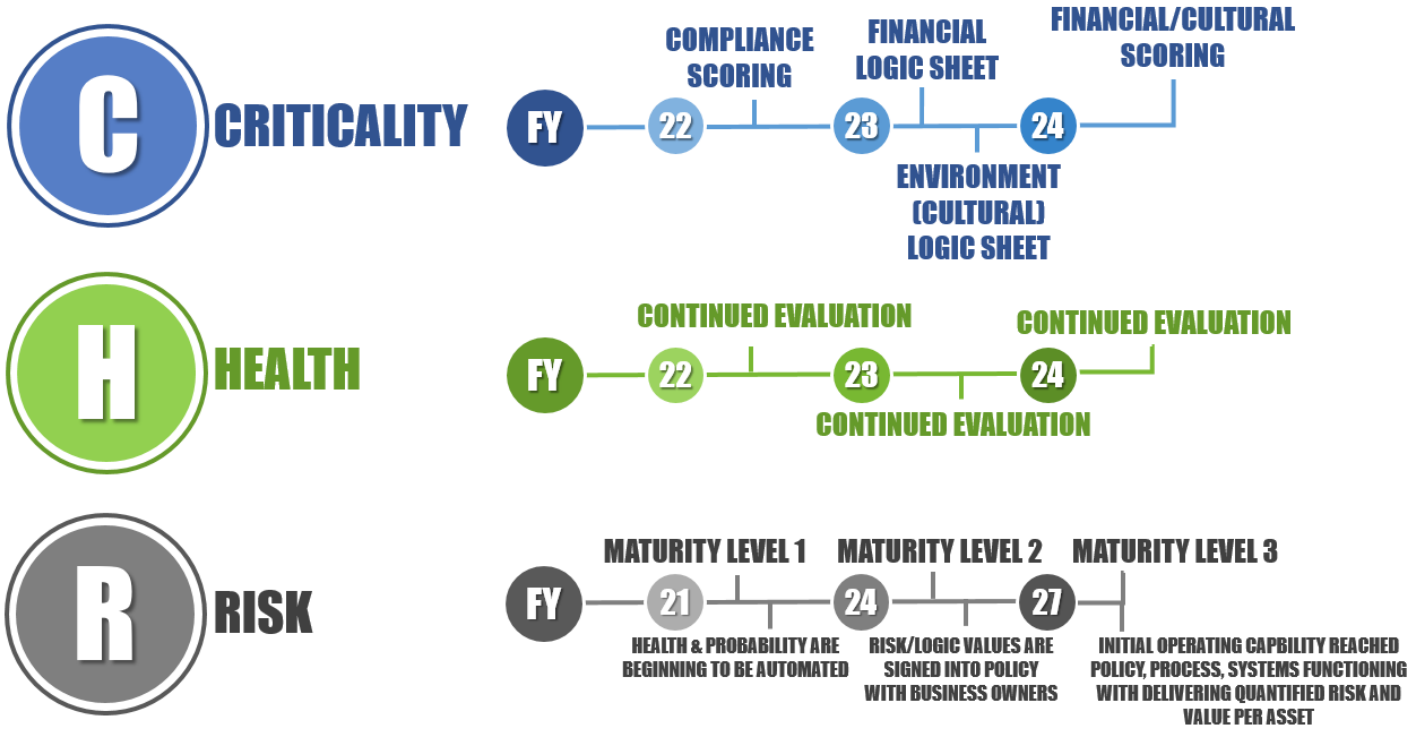
Asset Health

1. CHR- Asset Health algorithms applied to structured Cascade data
   a) The health score calculation:
      - Uses an age-based degradation model
      - Uses known condition information and a Reliability Modifier, if appropriate.
   b) Not all assets are incorporated into CHR at this time.
      a) Assets remaining to be added in are:
         a) Fiber, control center and power system control/system protection control
2. Asset specific health data
   a) Specific to individual assets
   b) Based on specific factors unique to certain assets
   c) Refreshed everyday

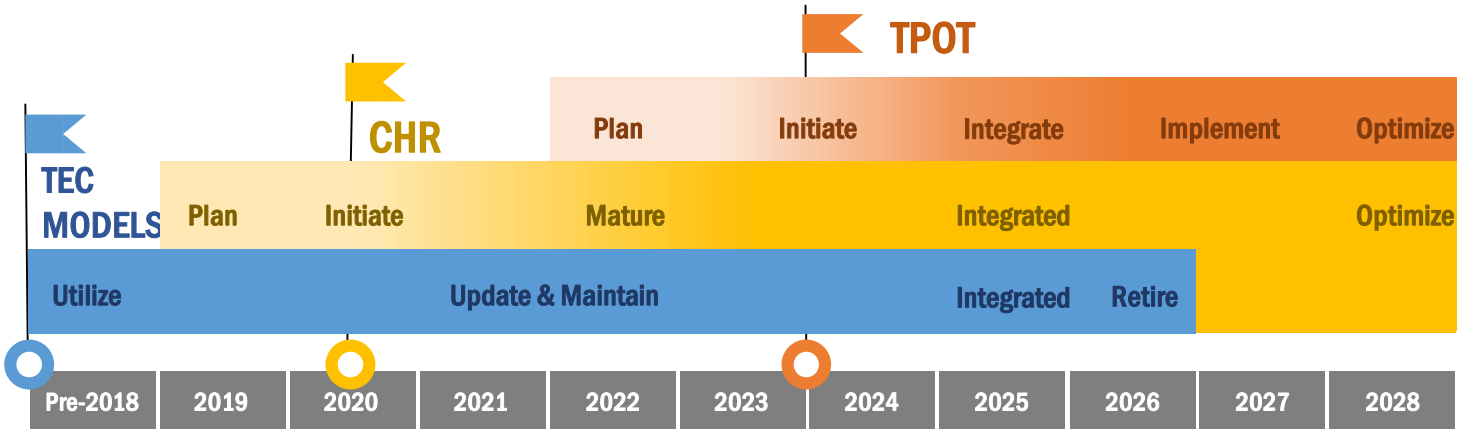
Assessing Risk

1. Risk matrices available for substation assets
    - Scored impact dimension to represent criticality; Scored from 1 to 7
    - Health scoring to represent likelihood; Scored from 1 to 10
2. Risk assessments consider the following:
    i. SME input
    ii. Health of assets
    iii. Outage data
    iv. Wildfire risk
    v. Cyber security
    vi. Criticality dimensions:
        i. Reliability, safety, environment, compliance, financial
    vii. Total Economic Cost data to allocate funds at an asset program level

CHR Maturity Roadmap



Asset Management Investment Decision Making Criteria & Tools



Transmission Current State

- Asset Managers initiate according to risk assessments within their sustain program areas
  1. Prioritization decisions based on asset data, subject matter expertise (SME), TEC models and CHR
  2. CHR is used as a component of decision making, but is not the only factor.
     a) Algorithms require further refinement to apply to more asset types
     b) Impact dimension scoring is not yet complete for all dimensions
     c) May not apply to all assets (exclusions have not been defined)
     d) Risk scoring continues to mature
  3. Program planning is impacted by lack of visibility into anticipated execution rates, at the asset level

Maintenance Planning

Priority 1

Emergency/unplanned work with a safety hazard, impacts delivery to customers, or curtails Transmission sales

Priority 2

Driven by regulatory and compliance mandates, time specific contracts, and financial goals.

Priority 3

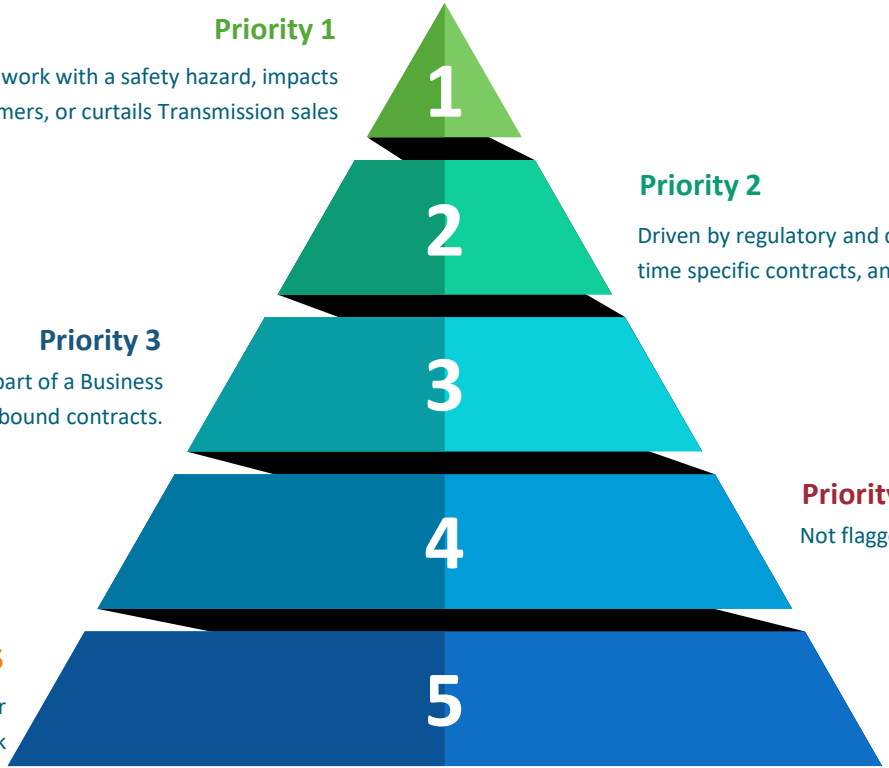
Self-imposed internal factors, part of a Business Case, non-time bound contracts.

Priority 4

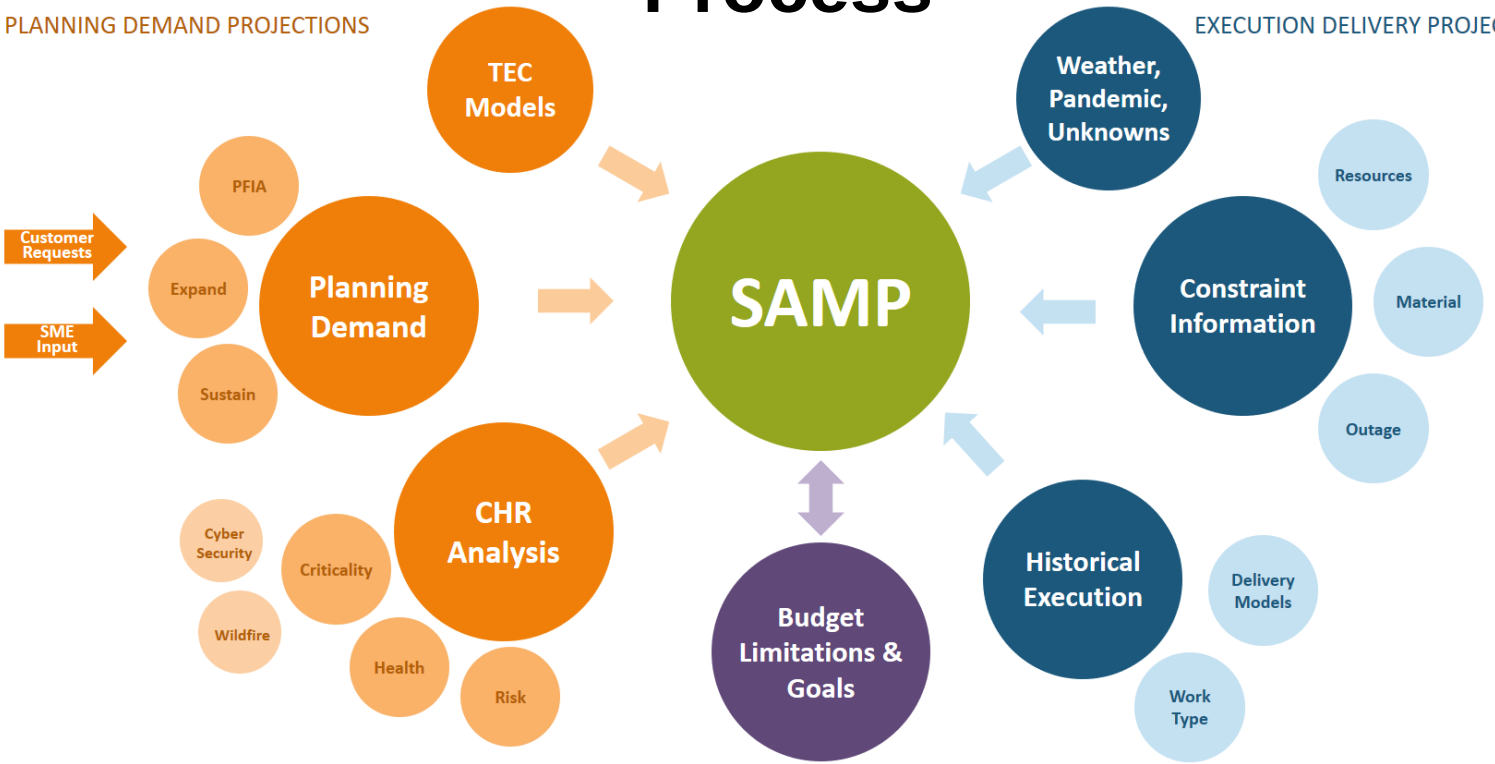
Not flagged as a high priority.

Priority 5

Assets that can go beyond their maintenance scheduled work



Transmission Asset Management Forecast Process



Transmission AM Forecast Process continued

- "Typical" projects (bundles) are generally very complex:
    1. Almost always include: multiple assets, multiple funding sources (capital/expense), a multi-year schedule, extensive outage planning, complex resource planning, numerous materials required
    2. Often include: environmental, land right and/or cultural planning factors/coordination, seismic planning considerations
- Historical "unknowns" that have impacted execution that made forecasting unusually hard
    1. Outage availability changes based on urgent system needs
    2. Cultural/environmental factors
    3. Weather (for example- fire danger)
    4. Resource constraints
    5. COVID-19 pandemic impacts to material and resource availability
    6. Customer projects

Questions?