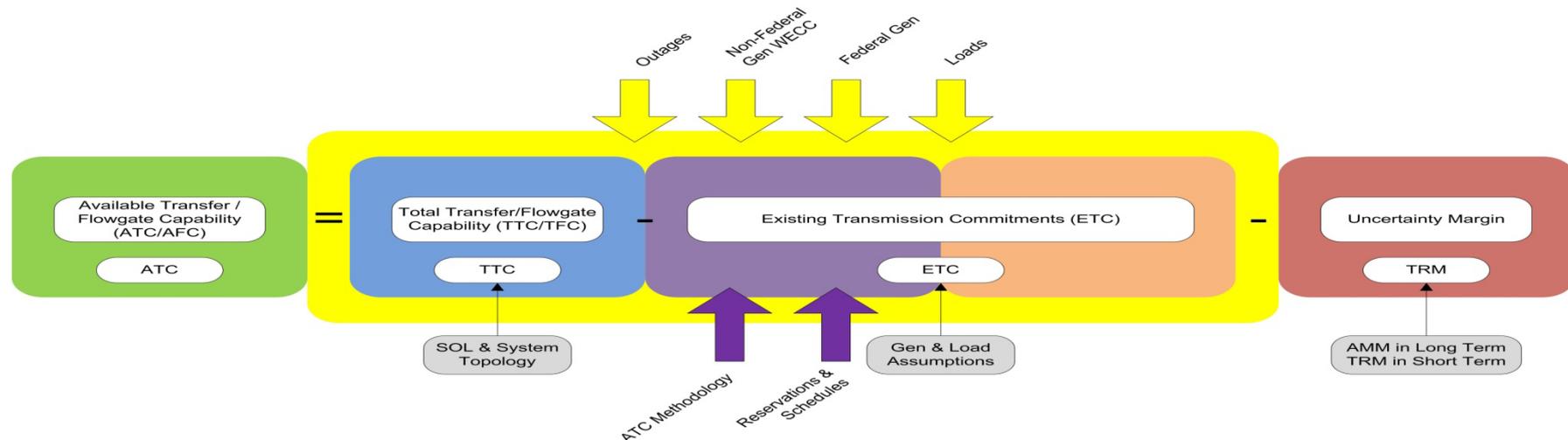


# Short Term ATC Methodology (STAR)



# Calculating Available Transfer Capability



$$\text{ATC} = \text{TTC} - \text{TRM} - \text{CBM} - \text{ETC}$$

- **ATC** (Available Transfer Capacity)
- **TTC** (Total Transfer Capacity)
- **TRM** (Transmission Reliability Margin)
- **CBM** ( Capacity Benefit Margin)
- **ETC** (Expected Transmission Commitments)

# Description of Project/Initiative

- Developing automation, to generate Firm ETC power flow base cases
  - Project seeks to further automate ATC calculations
  - Standardize calculation process
  - Accurate reflect transmission rights
  - Create a better view of transmission in the 0-13 month time horizon

# Current State

- *Seasonally*, produce *manual* ETC power flow base cases between updates
  - Use of PTDF process interim TSR
  - Effect, creates swings between ATC base line
  
- Have limited ability to run multiple scenarios
  - Doesn't reflect potential variability of transmission system
  - Calculation cannot be used to predict system flows
  - Conservative assumptions in TTC calculation
  - May leave transmission capacity under utilized

# Future State Goal

- Create multiple base cases for use in calculating transfer capabilities, ETC and potential expected flows
  - Move from seasonally, to monthly, daily and hourly
  - Interim TSRs reflected in hourly calculations
  - Minimize swings that occur with base lining
- Study a range of potential scenarios -- Variability
  - Hydro
  - Wind
  - Load
  - Generation dispatch patterns
- Develop a transparent Transmission Reliability Margin
- Ultimately, increase situational awareness to manage hourly sales and proactive congestion management;

# Drivers



## Effective Tools, Systems, Processes

System and grid optimization



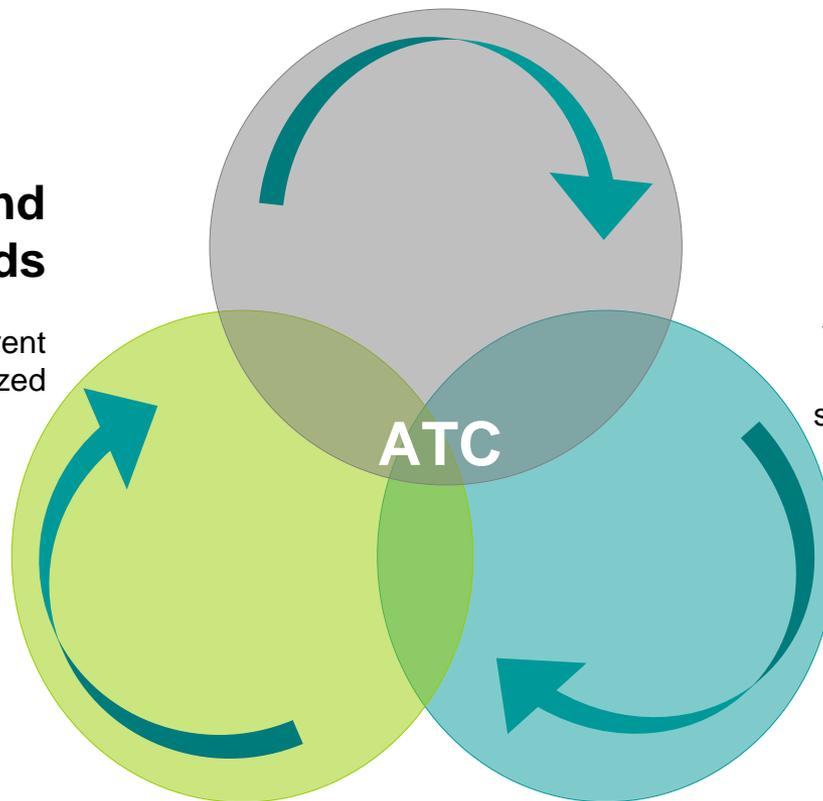
## Regulatory and Reliability Standards

System awareness, transparent calculations and standardized

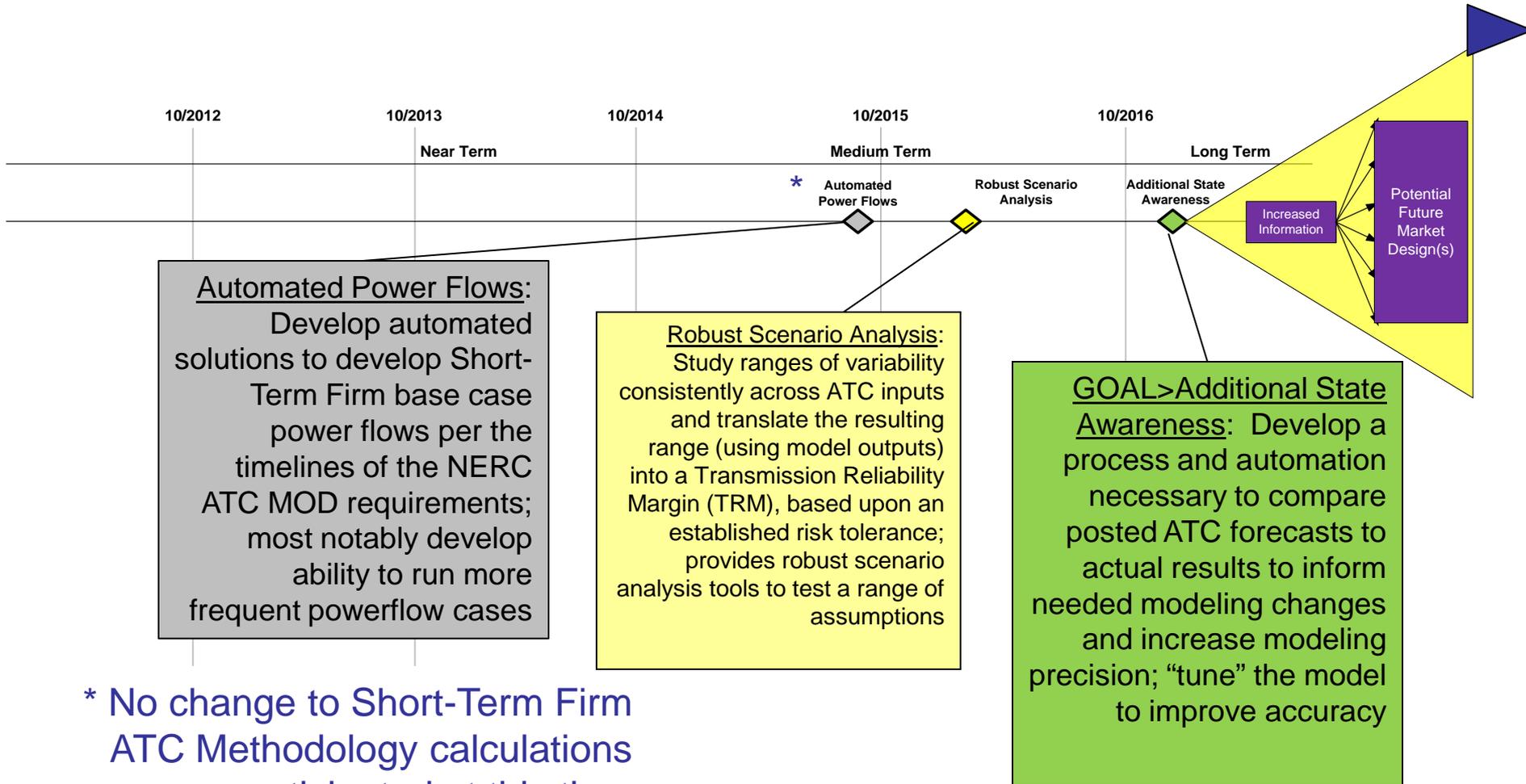


## Regional

Variable operational constraints require balance of complex stakeholder and customer needs



# Timeline



\* No change to Short-Term Firm ATC Methodology calculations anticipated at this time

# Interaction with Other Projects

- Managing Hourly Firm Sales
  - ATC used for Managing Hourly Firm Sales *may* shift in 2015
  - Managing Hourly Firm Sales is considered an interim practice to an Hourly Firm ATC Methodology.
- Short-Term Competition and Preemption
  - PCM implementation revisions to interact and reflect ETC power flows
  - Changes in Short-Term ATC may influence the volume of competition and preemption.

# Potential Customer Impacts

- Changes to ATCID
  - ATC ID updated to reflect calculation methodology.
- Changes to posted ATC
  - Changes in how ATC is calculated may increase or decrease the amount of posted ATC available for customers to acquire.
- *Other?*

# Next Steps

- Customer Engagement
  - Additional customer engagement planned in 2014 and 2015 through Customer Forums and other workshops.
  - Further customer engagement expected in mid to late 2014.
- Understand Impacts (Project Integration)
  - Continued assessment of project integration to consider impacts with ongoing and emerging projects.

# **Additional Information – STAR**

# Regional Drivers



- Region is experiencing immense change in its generation profile, causing new transmission and operational constraints.
- ATC methodology developed more than 10 years ago
- Require ability to analyze and assess the uncertainties created by:
  - Less flexibility in how the FCRPS is being operated
    - Biological Opinion changes
    - Increased balancing reserve obligations
  - Broader portfolio of non-Federal resources
    - Regional Dialogue
    - Renewable Portfolio Standards
  - Large-scale resource additions and retirements
    - New variable resources – wind and solar
    - Baseload retirements – coal and natural gas

# Regulatory and Reliability



- NERC ATC MODs require:
  - Calculation of future flows on our own system and neighbors'
  - Alignment in our planning and operations study models and capability calculations
  - ETC studies to include impacts of adjacent systems and the native or NT load at hourly, daily and monthly intervals
  - Transfer calculations performed on hourly, daily and monthly intervals and include updated generation and transmission outages, additions and retirements for the time period studied
  - Planning, operational and commercial calculations are consistent with the documented ATCID so calculations can be validated and replicated
  
- San Diego Outage Report identifies areas of improvement in operations planning and real-time situational awareness and is complementary:
  - Enhanced data sharing and communications among entities
  - Identify and plan for external contingencies
  - Improve use of real-time tools
  
- Competing FERC requirements for open access

# Effective Tools, Systems, Processes

- Transparent, automated and accurate transfer capability calculations provide benefits:
  - Greater transparency, visibility and ability to optimize transmission system usage
  - Informs decisions regarding builds or reinforcements – three-legged stool
  - Allows for quantitative analysis to better inform policy decisions
  - Availability reflects risk tolerance – capacity released as uncertainty in assumptions decreases
  - Automated interface between inventory management (TS) and operational awareness (TO) enhances response effectiveness for congestion events
- Flexible systems, tools and processes provide the foundation for potential future market designs

# Future State Roadmap

