

# ATC Strategy Integrated Plan

Transmission Services Customer Forum  
June 20, 2012

# Agenda

- ATC Policy Drivers
- ATC Components
- ATC Strategy Integrated Plan

# ATC Policy & Strategy Background

- ATC = Available Transfer Capability. BPA's available transmission left to market after taking into account committed uses
- BPA currently calculates ATC using a methodology developed in 2002-2004
  - New requirements that have emerged since 2004:
    - Renewables integration onto the transmission system
    - Changing resource needs of our customers
    - ATC calculations that must be fully automated and frequently updated (NERC ATC Standards)
- Changing policy drivers have put pressure on the re-evaluation of BPA's ATC Policy, Process and Systems development

# ATC Policy Drivers



## Compliance Requirements

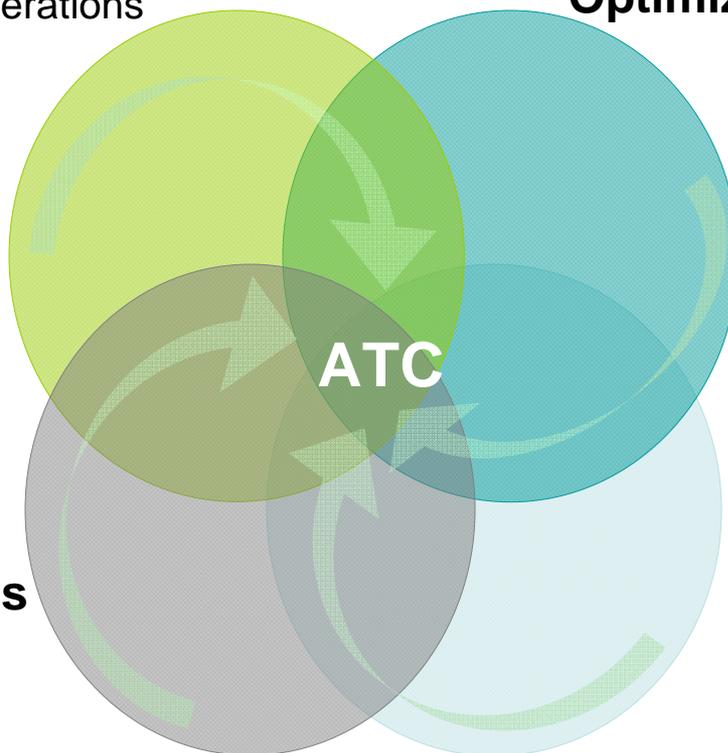
Reliability Standards for Operations  
NERC ATC Standards  
OATT Compliance

## National Agenda for Optimizing Transmission Grid



## Shifting Resource Conditions and Stakeholder Needs

## Changing Generation Profile



# National Compliance Mandate

- Only recently has BPA's ATC methodology been subject to national requirements for system awareness, transparent calculations and standardized practices
- Reliability Standards for Operations (Day ahead)
  - Ops Reliability Mandate
    - San Diego report and Arizona-Southern California outage findings
- NERC ATC Standards (0-13 months)
  - Purpose: Ensure that ATC calculations are performed by BPA to maintain awareness of ATC and future flows on our system and our neighbors' systems
  - Need to develop consistent and frequent models for ATC calculations
- OATT Compliance

# National Transmission Agenda

- System Optimization
  - Transition to a more flexible and resilient electric grid
  - Real-time situational awareness to ensure reliable operations
  - Establish much greater coordination among system operators
- BPA needs the ability to adapt to industry changes like never before in order to optimize transmission grid usage

# Benchmarking the Industry

- BPA staff took three benchmarking trips to PJM, Southwest Power Pool (SPP) & Tennessee Valley Authority (TVA)
  - Key findings from benchmarking trips concluded:
    - BPA has different challenges regarding market structure, variable generation and availability of data
    - Entities have similar markets, but operate differently from one another
    - Entities rely heavily on regionally supplied data (NERC IDC, SDX)
  - Staff found that all the entities we visited had heavily invested in systems, tools and processes for their inventory management process
    - Automation to building models quickly and frequently
    - Different organizational structures that supported more frequent modeling

# BPA's Changing Generation Profile

- Region is shifting from a more dispatchable generation pattern to a more variable one
  - Less flexibility in how the FCRPS is being operated
    - Biological Opinion (BiOp) changes
  - Broader portfolio of non-Federal resources
    - Regional Dialogue
    - Renewable Portfolio Standards
  - Large-scale resource additions and retirements
    - Wind Integration, Natural Gas, Solar & Coal
- BPA needs to consider this changing environment and re-evaluate existing ATC policies, systems, data and assumptions when calculating ATC

# BPA's Shifting Regional & Stakeholder Needs

- BPA Transmission must respond to more complex stakeholder and customer needs
  - NT Planning Policy for long-term requests
    - Incorporating uncertainty due to various Resource forecasts
    - BPA Transmission is obligated to meet long-term load growth and to plan for non-federal resource needs
  - NT Redispatch Policy
    - Customer resource designations may change based on policy selected
    - Reliability margin development needed
  - Network Open Season
    - Evaluating current policy to adopt improvements
  - Balancing Authority Consolidation Project
- Coordination of policies established across Agency is necessary

# Responding to Policy Drivers Will Support Multiple Agency Priorities

## ■ BPA's Strategic Direction Report:

Preserve and enhance transmission assets while anticipating and adapting to industry developments and regulatory change

- *Addresses the risk of manual process breakdowns*

Agency  
priority

Expand balancing capabilities for variable generation

- *Supports efforts to provide balancing reserves, which we may exhaust by 2013*
- *Helps us prepare for possible market changes*

Agency  
priority

Foster operational excellence

- *Meets the demands of business operations efficiently and effectively through standardized, continuously improved systems and processes*

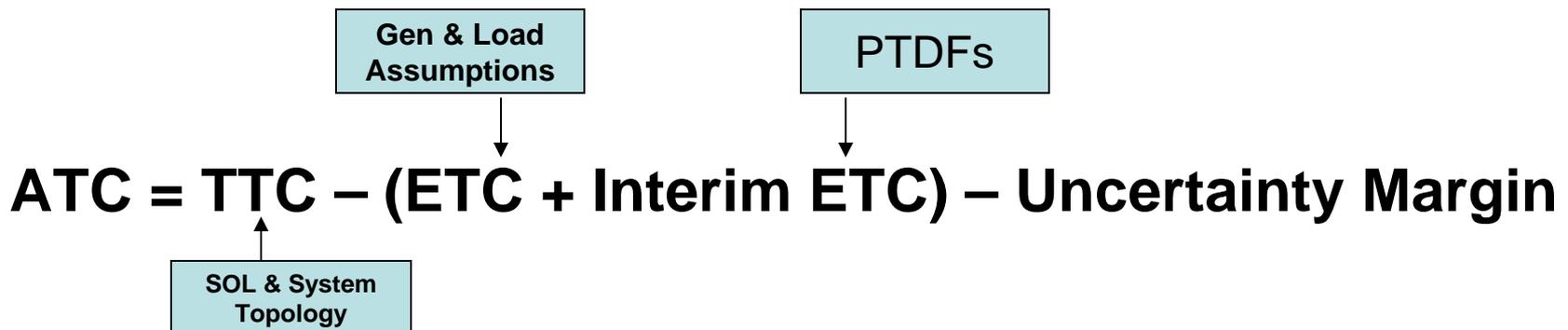
Agency  
priority

# ATC Components



# What Drives ATC Calculations?

- ATC is the foundation of BPA's commercial market operations
- Inputs into the ATC calculation
  - System Topology
  - Generation
  - Load



# ATC Components

- **Total Transfer Capability (TTC)**
  - System Operating Limits established for reliability reasons
  - Subject to Reliability Mandates
  - Tools and Policy needed for optimization
- **Existing Transmission Commitments (ETC)**
  - Expected flows on network flowgates informed by existing contract rights
  - Calculation process that feeds the ATC base cases with modeling assumptions about existing commitments to transmission service
  - Subject to NERC ATC Standards in 0 – 13 month horizon
  - Most policy impacts to ATC are incorporated into the modeling assumptions that go into the ETC calculation for the beyond 13 month horizon

# ATC Components

- Power Transfer Distribution Factors (PTDFs)
  - Used to calculate interim ETC (proxy flow impact)
  - Incorporates outage information in the 0-2 weeks time horizon
  - Calculated using Powerflow base case
  - Policy direction to support various agency policy directives
- Uncertainty Margin
  - Captures uncertainty in assumptions made about ATC inputs
  - ATC Methodology Margin (AMM) and Transmission Reliability Margin (TRM)
  - Incorporates Agency risk tolerance into ATC calculations

# ATC Strategy Integrated Plan



# ATC Strategy Integrated Plan

## Approach To Date



March

- Developed problem statement, objectives, and meeting scripts to guide discussions with agencies leading initiatives thought to impact ATC
- Conducted meetings with agencies leading initiatives known to impact ATC
- Created database to capture information



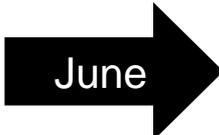
April

- Continued meetings with agencies leading initiatives known to impact ATC
- Developed ATC Strategy Integrated Plan template
- Produced first draft of ATC Strategy Integrated Plan



May

- Prepared first draft of integrated policy roadmap
- Produced ATC educational materials
- Incorporated policy initiatives onto Future State roadmap



June

- Customer Forum presentation
- Prepared ATC Strategy Integrated Plan presentation
- Presented first cut of plan and key conclusions to agencies with impact on ATC

# Policy Alignment with ATC Components

## First Round of Initiative Interviews

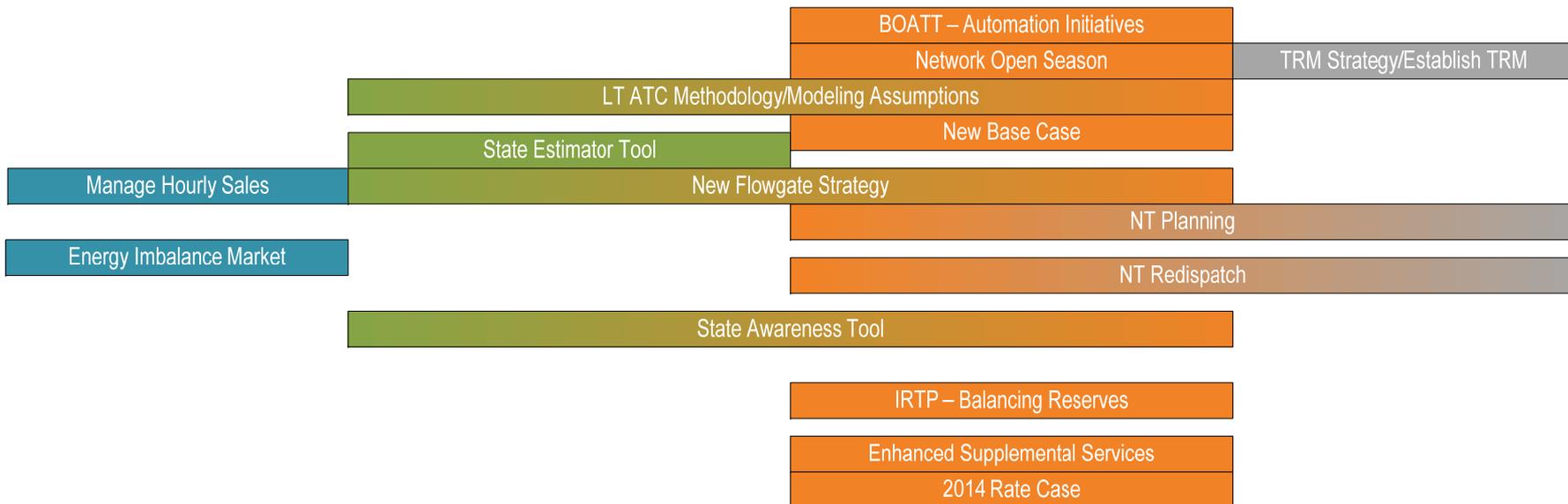
ATC =

TTC

ETC

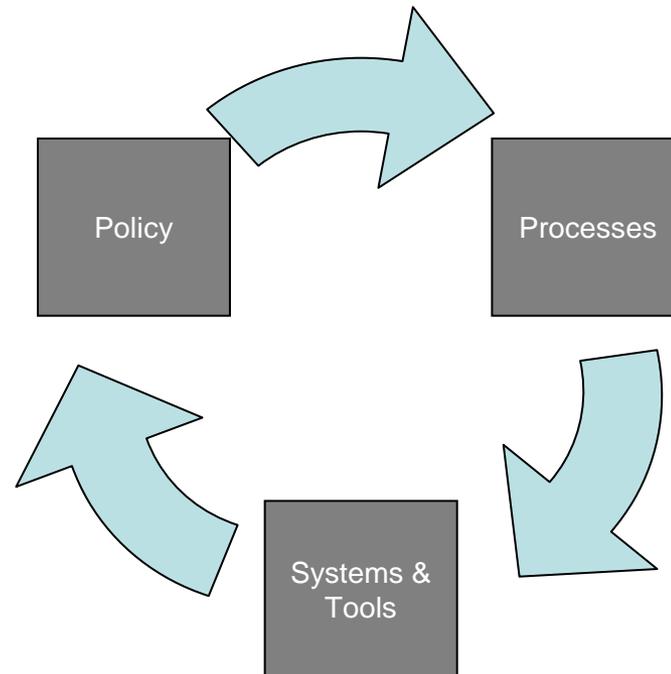
Uncertainty Margin

Policy Initiatives



# Future State

- Linking policies to needed tools, process and system improvements for ATC calculations at the individual ATC component level
- Policy will inform multiple recommendation paths based on management prioritization of business and policy needs
- Identifying dependencies on specific tools and processes for near-term policy success



# Next Steps

- Fall 2012
  - Roadmap of policy and business tools implementation timeline
  - Develop first cut of timeline for re-evaluating Long-Term ATC Methodology