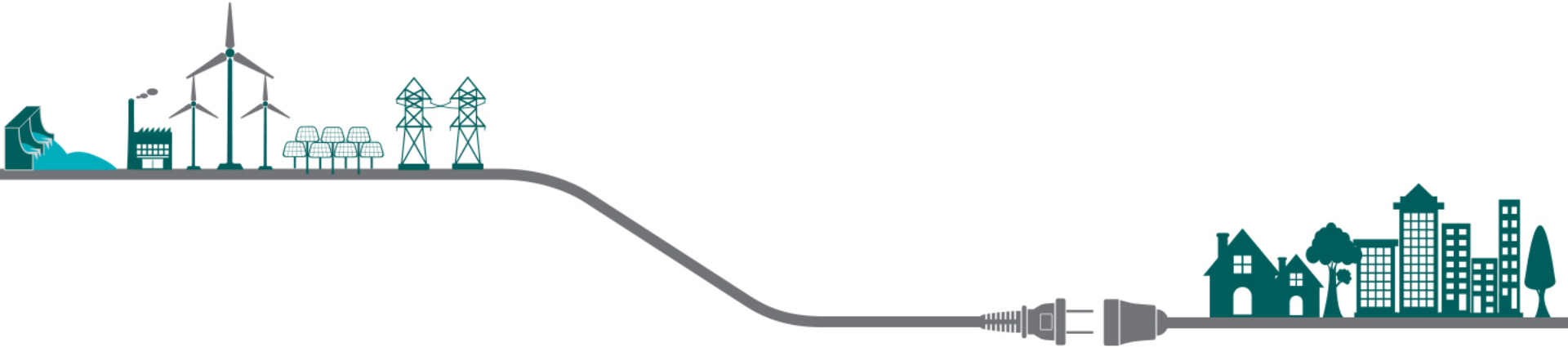


Idaho Power ATC



Presented by
Erik Schellenberg & Trevor Schultz

ATC Algorithms



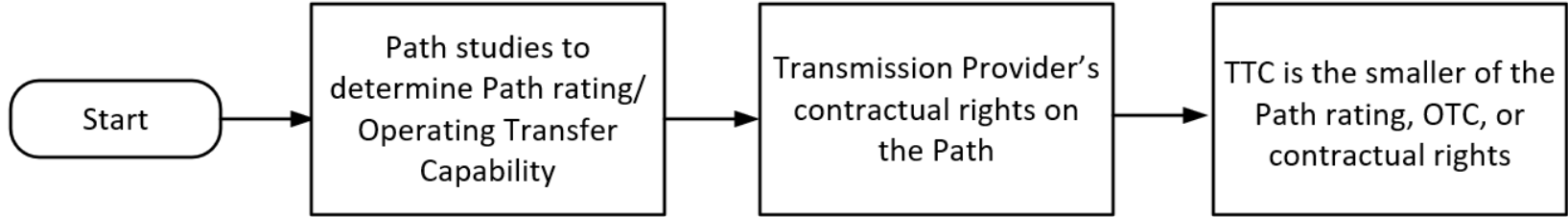
- From NERC Standard MOD-029-2a
 - Firm
 - $ATC_F = TTC - ETC_F - CBM - TRM + Postbacks_F + Counterflows_F$
 - Non-Firm
 - $ATC_{NF} = TTC - ETC_F - ETC_{NF} - CBM_S - TRM_U + Postbacks_{NF} + Counterflows_{NF}$

ATC Definitions



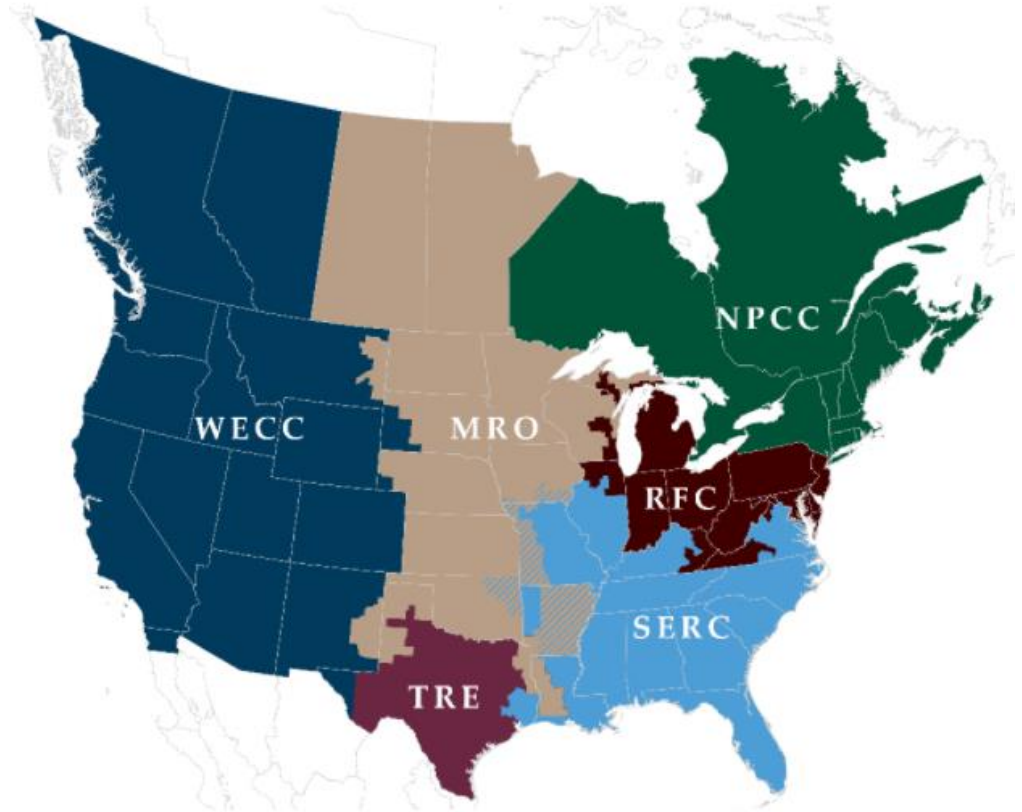
- **ATC_n** is the Available Transfer Capability
- **TTC** is the Total Transfer Capability
- **ETC_n** is the sum of existing commitments
- **CBM_n** is the Capacity Benefit Margin
- **TRM_n** is the Transmission Reliability Margin
- **Postbacks_n** are adjustments to ATC due to an annulment of a reservation
- **Counter-schedules_n (Counterflows)** is energy scheduled in the opposite direction for which ATC is being calculated

TTC



WECC

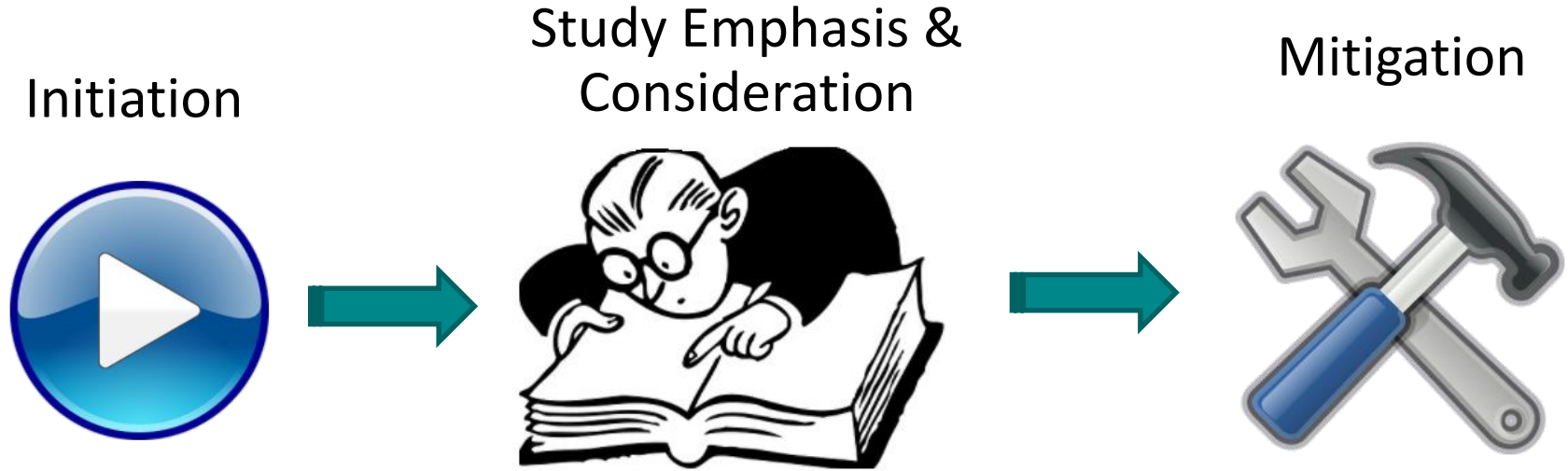
The Western Electricity Coordinating Council promotes Bulk Electric System reliability for the entire Western Interconnection system. WECC is the Regional Entity responsible for compliance monitoring and enforcement.



Path Studies

WECC Project Phases	Formation	Studies	Licensing	Construction
Project Coordination	Assessment & Review			
Path Rating Process	Phase 1 Proposed Rating	Phase 2A Planned Rating	Phase 2B Planned Rating	Phase 3 Accepted Rating
Progress Reports	Progress Reports are required throughout the entire Planning Process			

WECC Phases



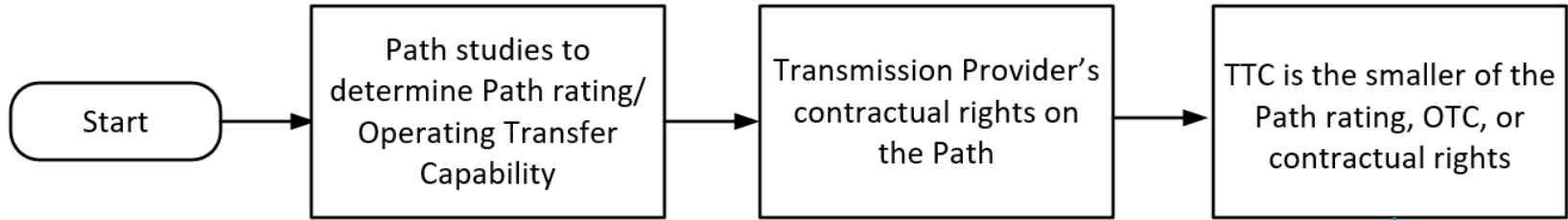
- Definitions
 - RAC: Reliability Assessment Committee (WECC Committee)
 - STS: Studies Subcommittee (WECC subcommittee)
 - PRG: Project Review Group

Base Cases



- WECC's base cases are computer models of projected or starting power system conditions for a specific point in time. These base cases include both steady state and dynamic data and contain very large amounts of data necessary to model power system behavior.
- These cases are imported into Powerflow software such as
 - PowerWorld[®]
 - GE PSLF[®]
 - Siemens PSS[®]E

TTC Recap



– Firm

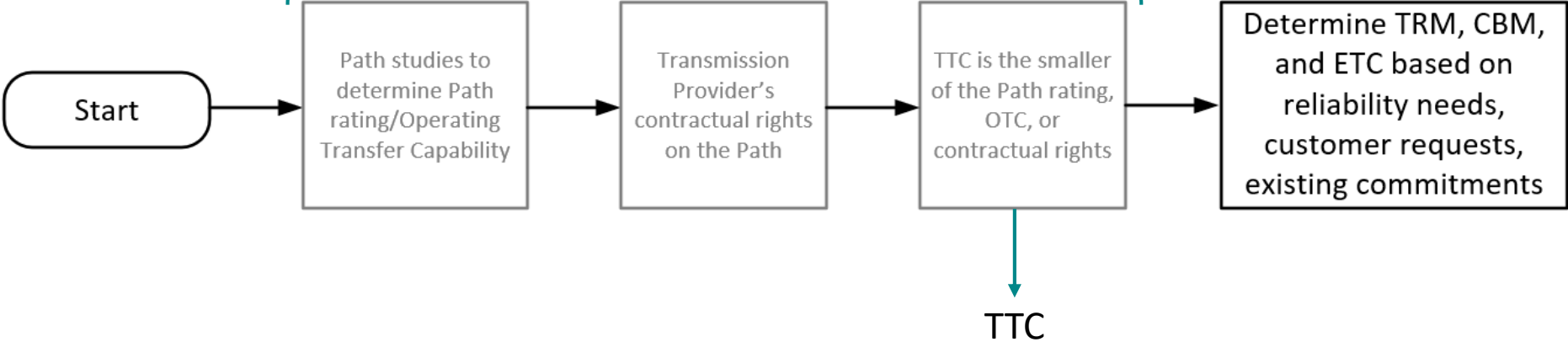
$$\bullet \text{ ATC}_F = \text{TTC} - \text{ETC}_F - \text{CBM} - \text{TRM} + \text{Postbacks}_F$$

– Non-Firm

$$\bullet \text{ ATC}_{NF} = \text{TTC} - \text{ETC}_F - \text{ETC}_{NF} - \text{CBM}_S - \text{TRM}_U + \text{Postbacks}_{NF} + \text{Counterflows}_F$$

Next Step

Where we've been



Existing Transmission Commitments



- For Firm ATC
 - Scheduling Horizon (Real-Time) & Operating Horizon (Preschedule)
 - $ETC_F = NL_F + NITS_F + GF_F + PTP_F + OS_F$
 - Planning Horizon
 - $ETC_F = NL_F + NITS_F + GF_F + PTP_F + OS_F + ROR_F$
- For Non-Firm ATC
 - $(ETC_F - ETC_{NF})$ Where,
 $ETC_{NF} = PTP_{NF} + NITS_{NF} + GF_{NF} + OS_{NF}$

NL = Native Load

NITS = Network Integration
Transmission Service

GF = Grand Fathered

PTP = Point to Point

OS = Other Reservations

ROR = Roll Over Rights

TRM



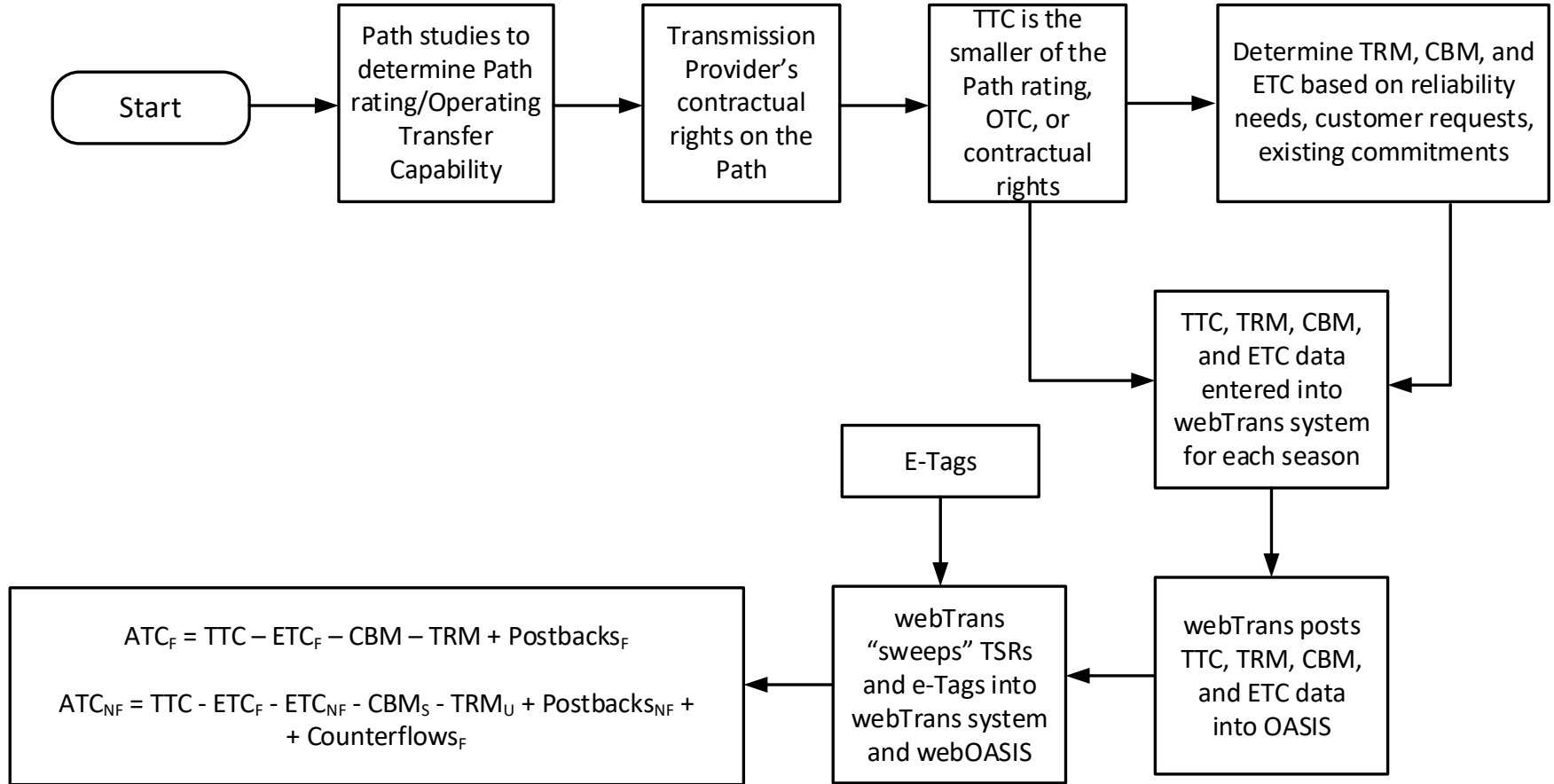
- Transmission Reliability Margin
- NERC MOD-008-1

CBM



- Capacity Benefit Margin
- NERC MOD-004-1

ATC



RECAP



1

TTC is calculated using WECC processes

TRM, CBM, & ETC feed into ATC

2

3

ATC is calculated and posted on OASIS
