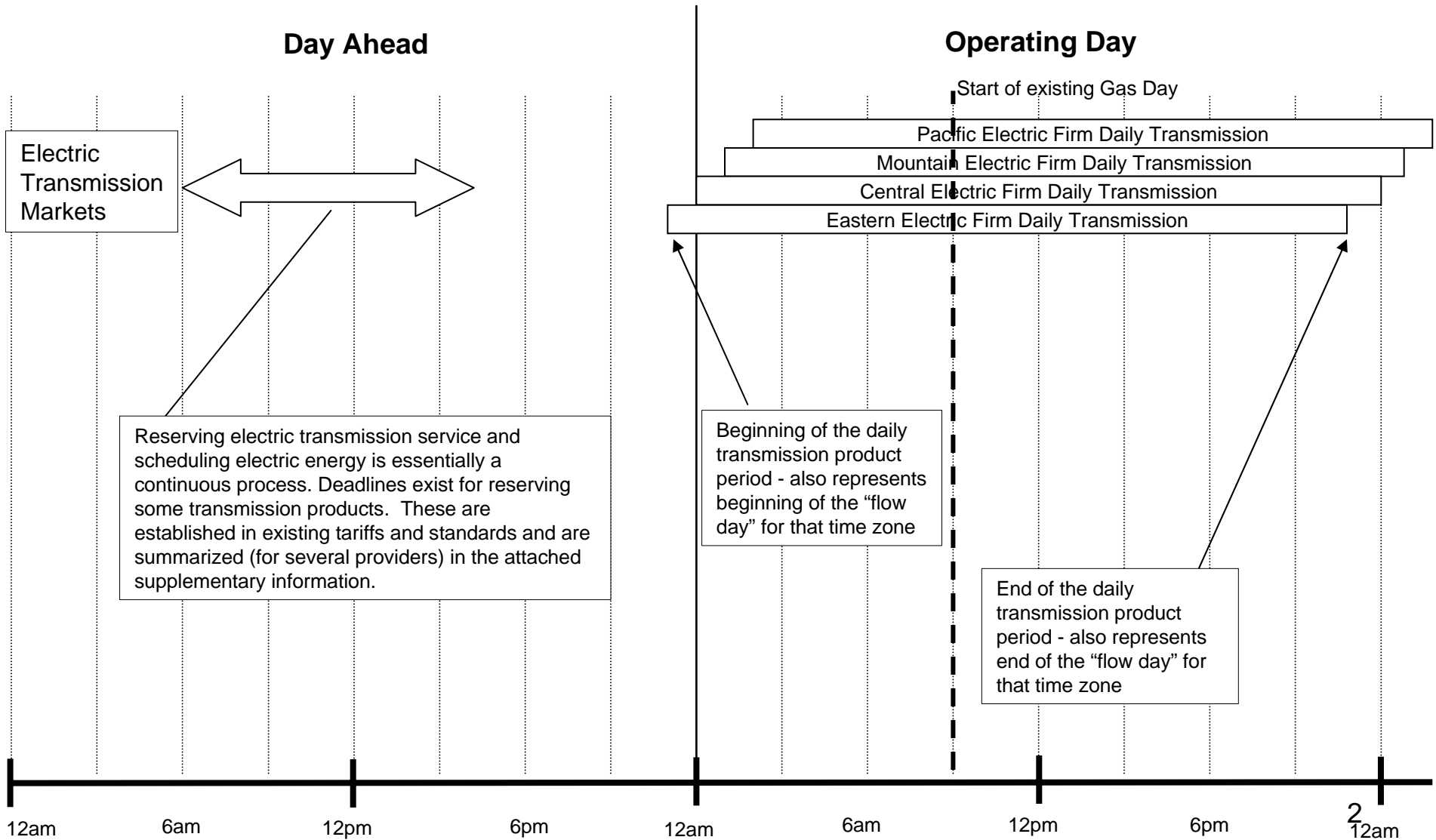


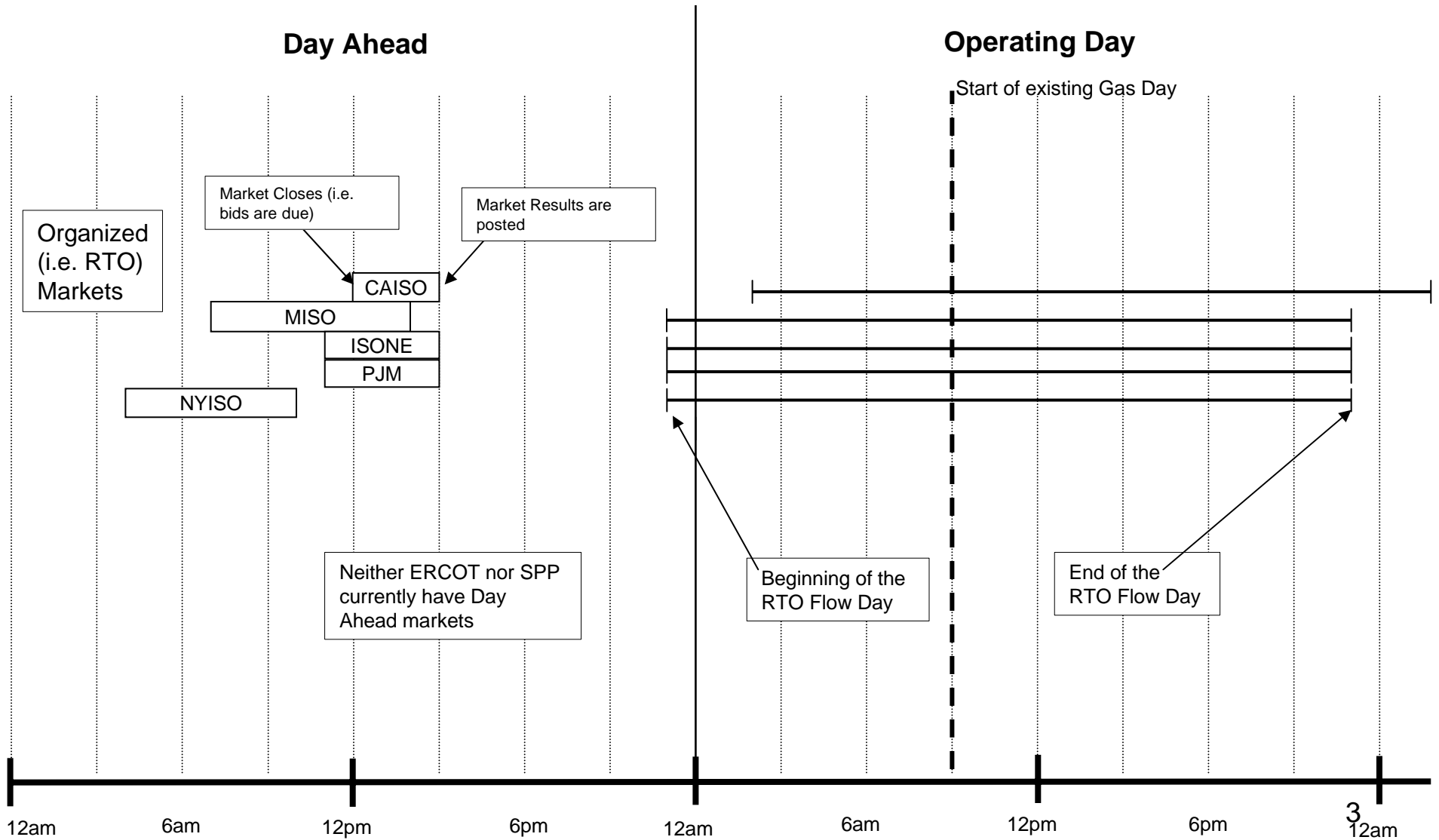
NAESB Request R04016: Standard Energy Day A Problem Statement Discussion

NAESB WEQ/WGQ
Business Practices Subcommittee
Jan 24-25 2005

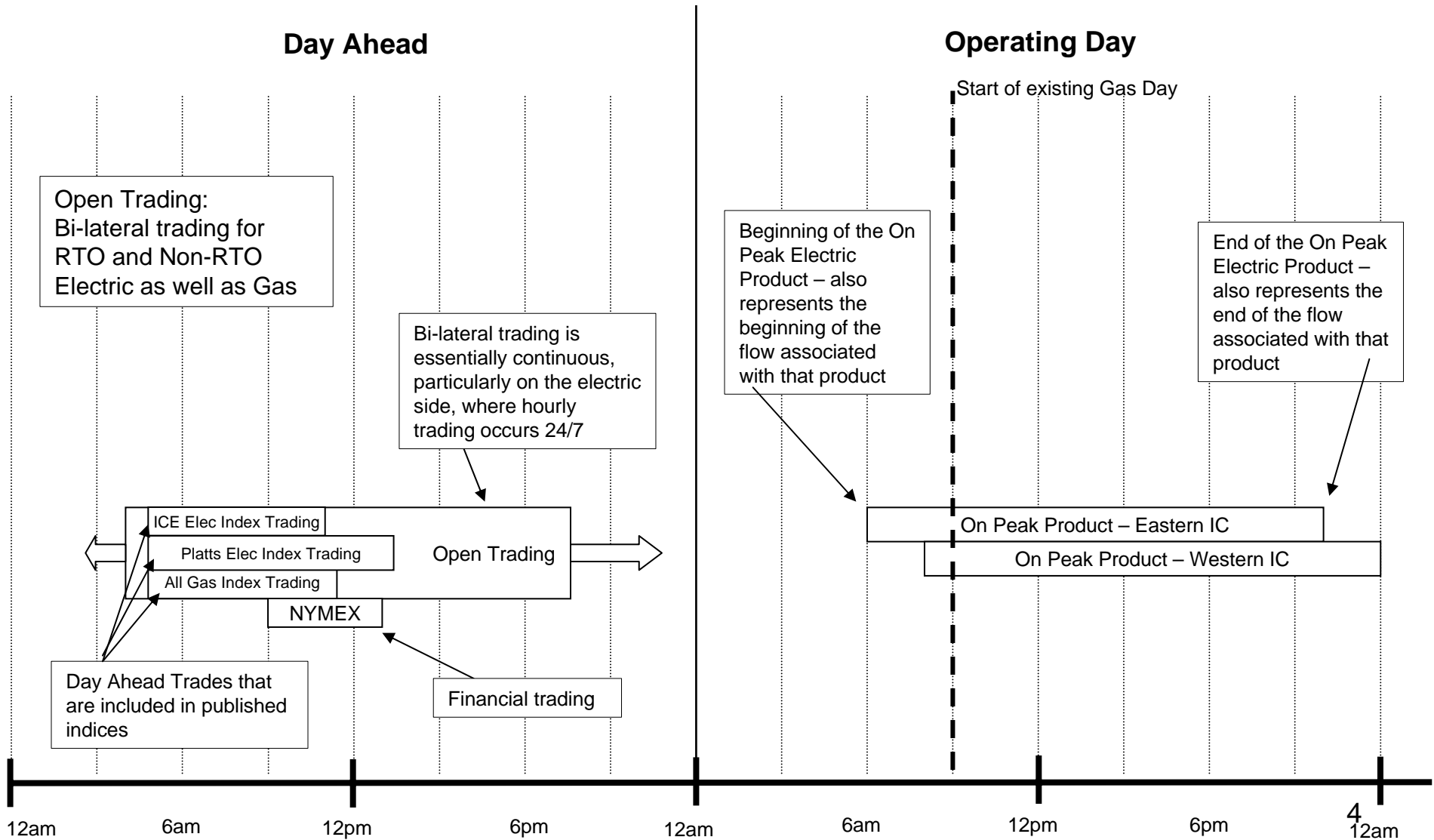
Current Processes Converted to Central Prevailing Time (CPT)



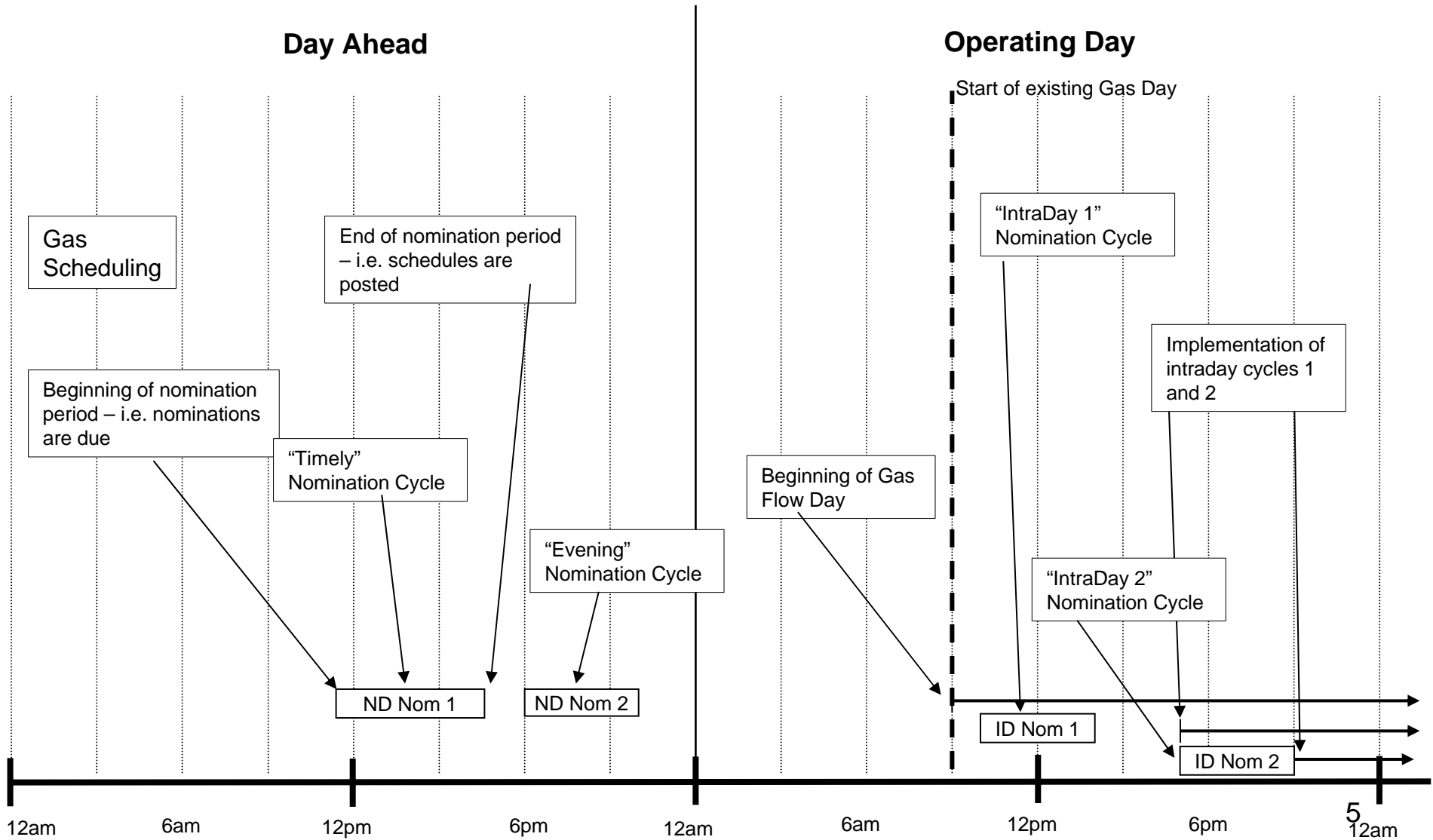
Current Processes -CPT



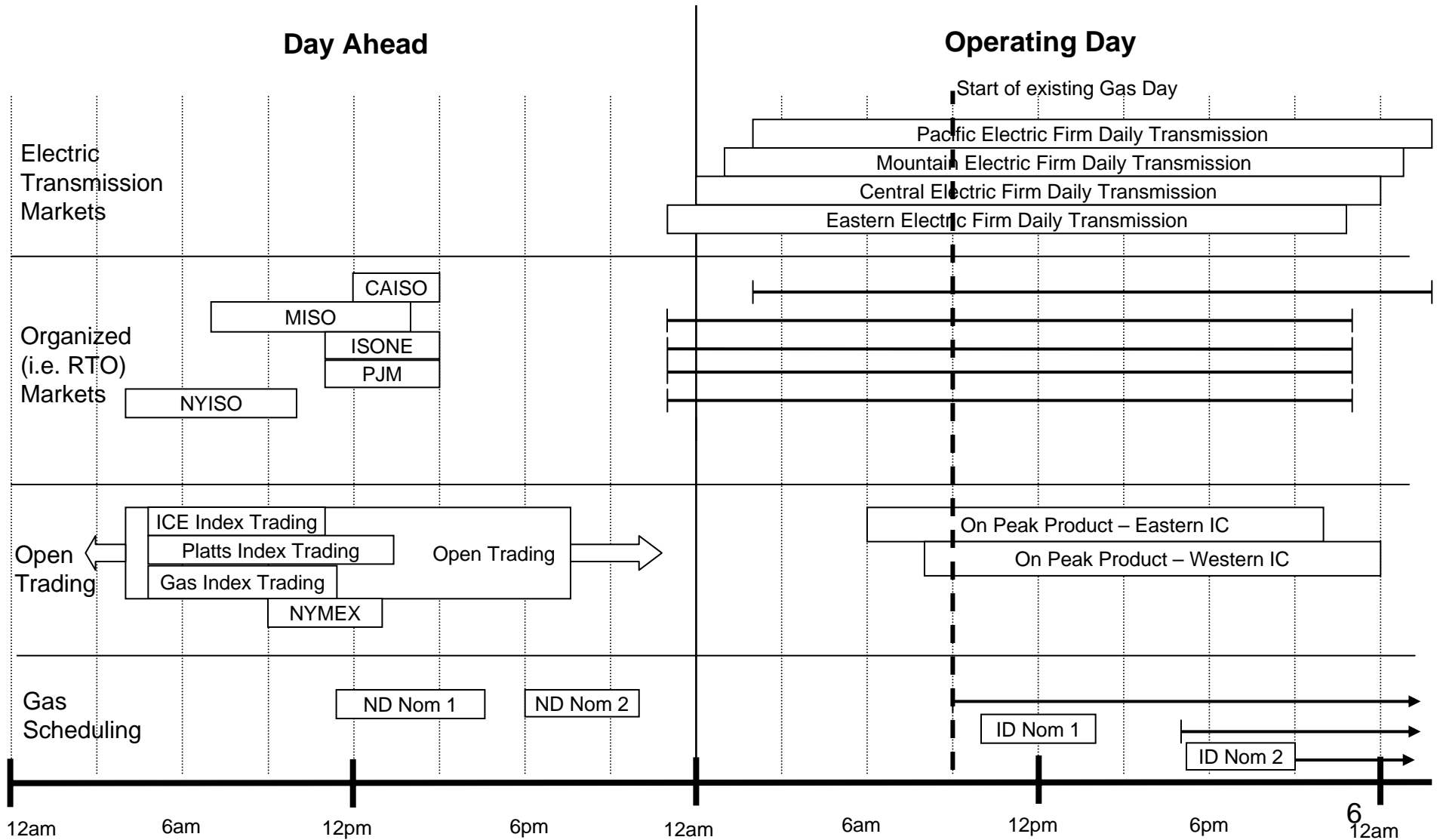
Current Processes - CPT



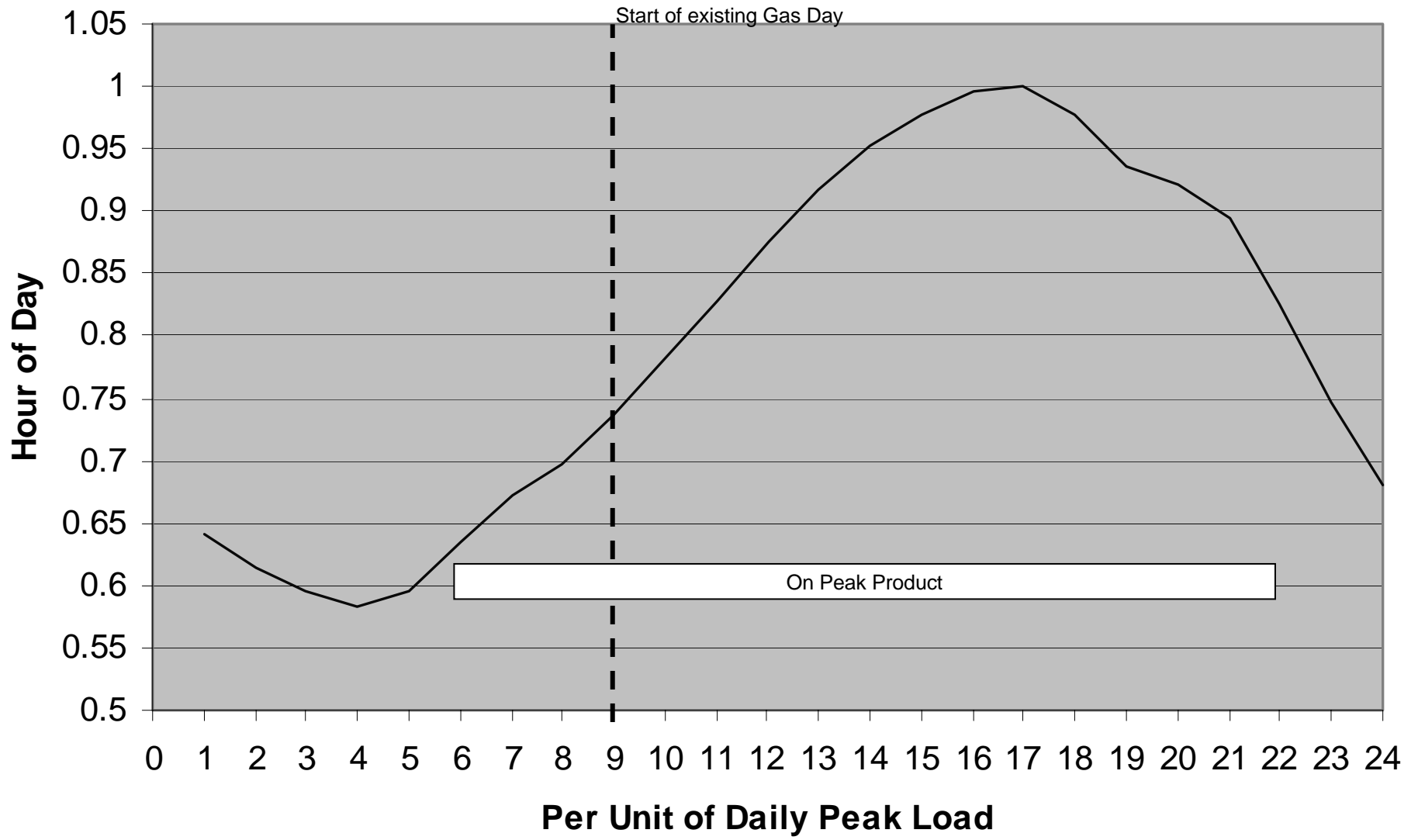
Current Processes - CPT



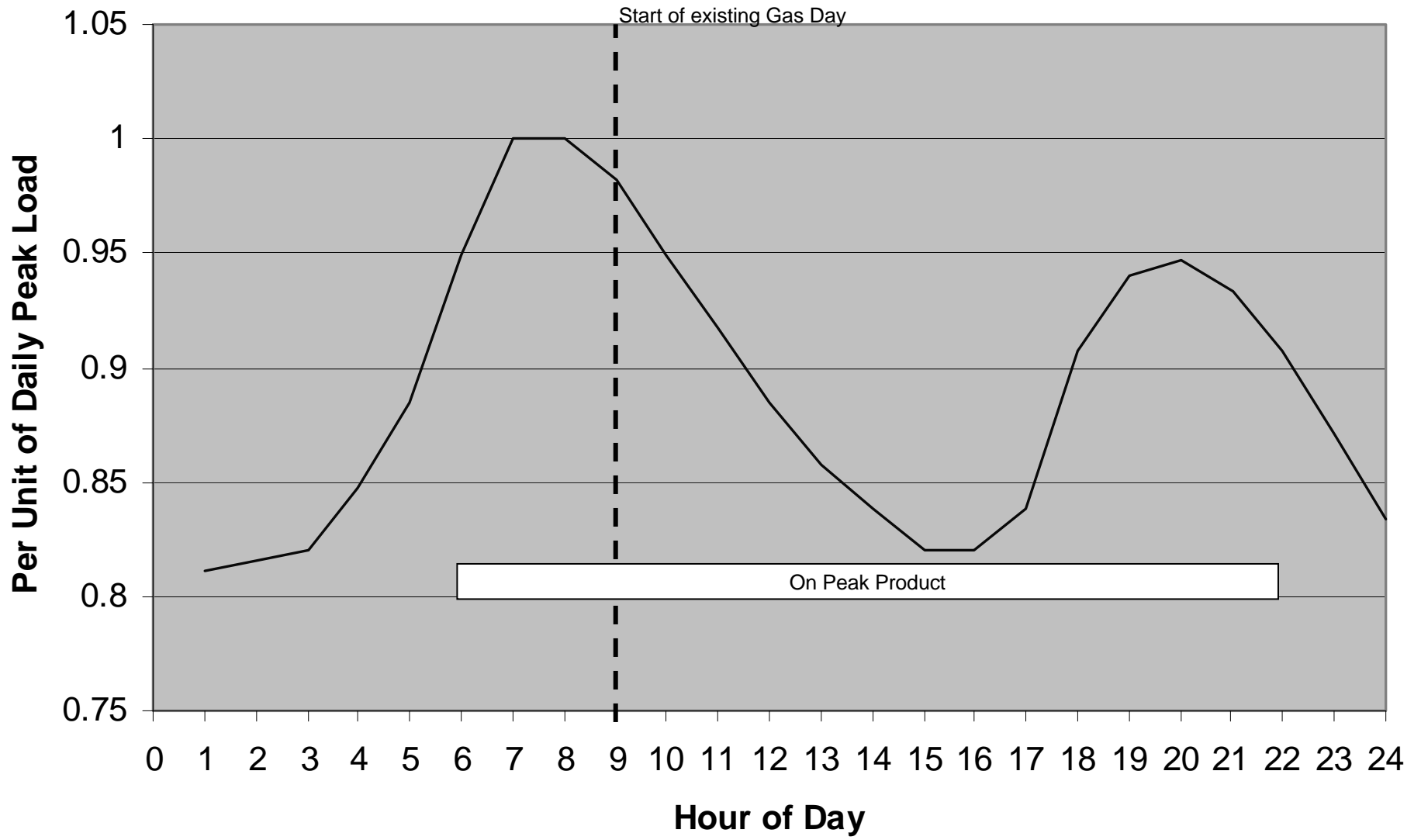
Current Processes - CPT



Typical Summer Load Profile



Typical Winter Load Profile



Impacts of Current Market Conditions

- For some industry participants, the existence of a substantive problem has not been well established. Additionally, the impact of a problem associated with the status quo may be more significant for some industry participants than for others.
- The following describes the impacts some industry participants may be experiencing with the status quo
 - Market risk associated with gas supply and nomination
 - Price uncertainty when market participants have two gas prices for one electric flow period
 - Pipeline imbalances if market participants choose to “lean” on the pipeline for the few hours just prior to the start of the Gas Day
 - Electric reliability concerns if generators needed to meet electric supply are forced to shut down due to pipeline Operational Flow Orders (OFOs)

Problem Statement

- The following problem statement for Request R04016 is derived based upon those impacts
 - The current “Gas Day” divides all of the following...
 - The “electric flow day” for all 4 North American time zones and all RTOs with established next day markets
 - Daily Firm transmission products for all transmission providers
 - The most liquidly traded “On Peak” electric trading products for both the Eastern and Western Interconnections
 - The “on peak” period for Summer and (especially) Winter load profiles
 - Nomination cycles are not well coordinated with RTO market timelines
 - Intraday nomination cycles provide limited benefit for intraday usage – especially with respect to committing peaking units
 - Transmission product seams issues exist when scheduling electricity between time zones

Gas Electric Coordination

Discussion of Issues

Issue: *Is a Standard Energy Day (SED) necessary to resolve the stated problem?*

Response:

- Price and supply risks for gas are being managed today through storage, pipeline management, and other risk mitigation strategies
- Many in the industry feel that the SED is not an appropriate solution

Issue: *Should existing RTOs timelines be standardized?*

Response:

- RTO timelines are reasonably consistent when converted to CPT
 - The exception, NYISO, was intentionally established by its own stakeholders to clear prior to the beginning of the PJM market period
- Other “timeline” issues are irrelevant to the SED discussion

Issue: *Should existing transmission reservation and scheduling timelines be standardized?*

Response:

- Electricity essentially has a continuous transmission reservation and scheduling process.
- Incremental improvements to reservation and scheduling timelines may be possible (R04020)

Discussion of Issues - Con't

Issue: *Should RTO Markets clear in time to nominate gas?*

Response:

- RTOs clear prior to the 6pm evening nomination cycle, but not prior to the timely nomination cycle
 - RTO Participants only have 1 shot at gas nomination
- RTO market participants have a choice of risks
 - Buy gas early for price certainty and risk the possibility of having excess supply if not selected in the market
 - Buy gas after the close of the market and risk the volatility associated with the lack of liquidity in the afternoon market
 - Interruptible gas transportation is only a risk management strategy and therefore not specifically addressed as part of the problem to be solved

Issue: *Should the electric quadrant change its product definitions to coincide with the existing Gas Day?*

Response:

- Products reflect demand profiles, not fuel scheduling limitations.
- Current product definitions represent the regional demand profiles in the east and west.
- This would be an unacceptable change to the electric industry creating significant problems without adding benefit

Discussion of Issues - Con't

Issue: *Will moving the Gas Day create significant safety issues?*

Response:

- Gas Standard 1.3.4 says that the Gas Industry is a 24 hour business
 - “All parties should support a seven-days-a-week, twenty-four-hours-a-day nominations process.”
- Existing Intraday Nomination Cycle #2 is implemented at 9pm
- Pipeline’s gas control is a 7x24 operation designed to balance and maintain pipeline activity (receipts, deliveries, compressors, storage, and line-pack)
 - Most producers very rarely change gas flow due to pipeline nomination cycle (produce maximum levels consistent with good reservoir operating requirements)
 - Although “trouble” call outs and flow plate replacements are more frequent during times of significant changes flow, changes in flow can usually occur without human intervention regardless of the time of day.

Issue: *Should gas nomination cycles be changed?*

Response: Gas Principle 1.1.2

- “There should be a standard for the nominations and confirmation process. Agreement notwithstanding, it is recognized that this is an interim step to continuous and contiguous scheduling.”

Conclusion

- A Standard Energy Day (SED) is not a complete, stand-alone solution for ensuring proper coordination between the gas and electric industries.
- A SED will require change by all parties in the industry.
- A SED *may* provide benefit by
 - Mitigating **supply risks** associated with the Gas Day splitting the electric flow days and the “On Peak” electric trading products
 - Mitigating **price risks** associated with the Gas Day splitting the electric flow days and the “On Peak” electric trading products
 - Reducing the potential **reliability risks** associated with OFOs that could result from imbalance
 - Eliminating **seams issues** associated with scheduling electricity across time zones by having the same “flow days”
 - Increasing **next day nomination flexibility** for RTO participants
 - Increasing **intraday nomination flexibility** for responding to unexpected changes in gas requirements associated with changes in electric demand

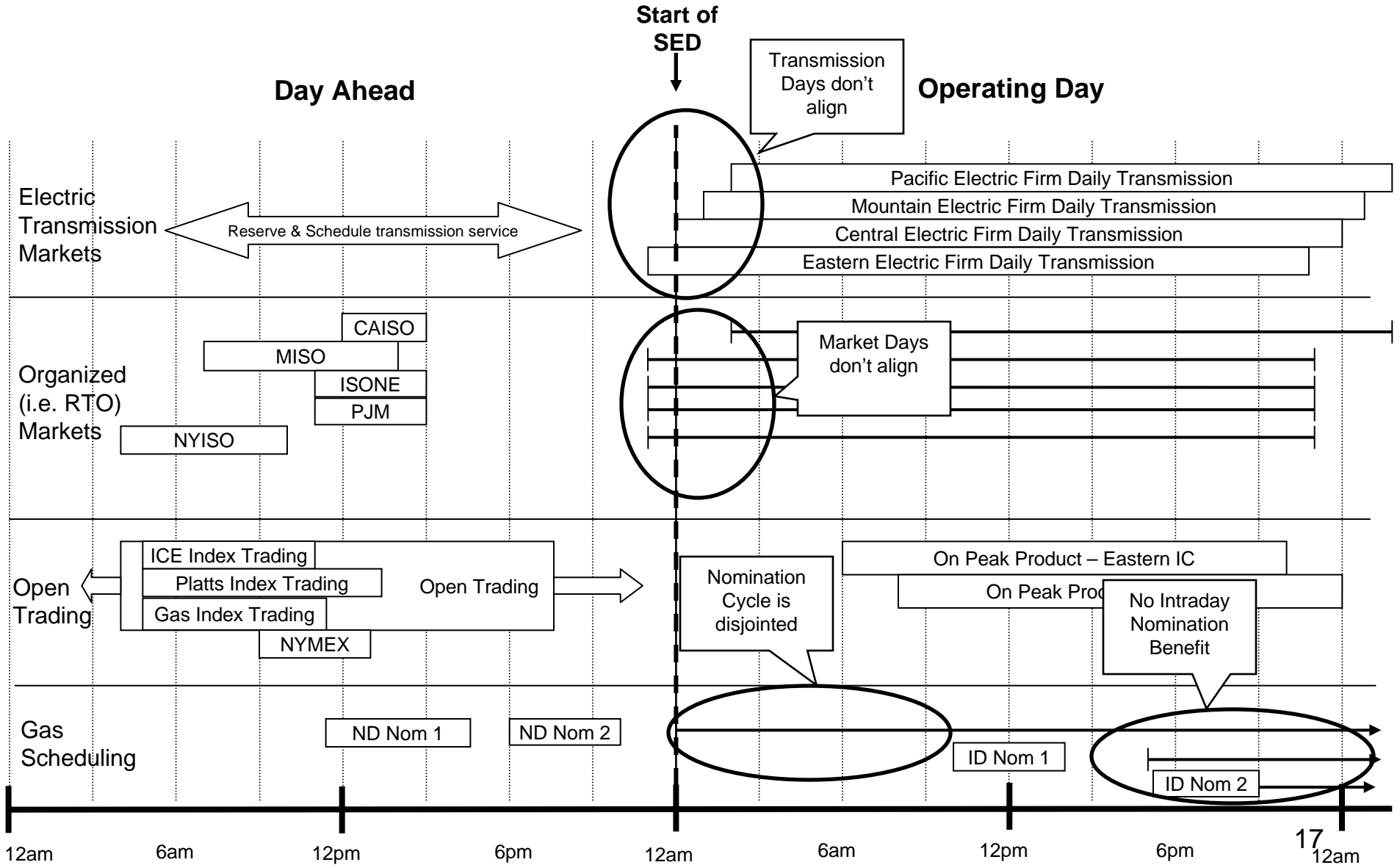
Criteria for a Successful SED

- Appropriately balance cost and benefit
- Synchronize gas and electric flow days for all market participants
- Encompass (as opposed to split) the “On Peak” electric demand period and trading product
- Maintain safety and reliability for all market participants

Given the problem statement and stated criteria, how could the “requested” Standard Energy Day be implemented and what would be its impacts on the industry?

“As Requested” Standard Energy Day

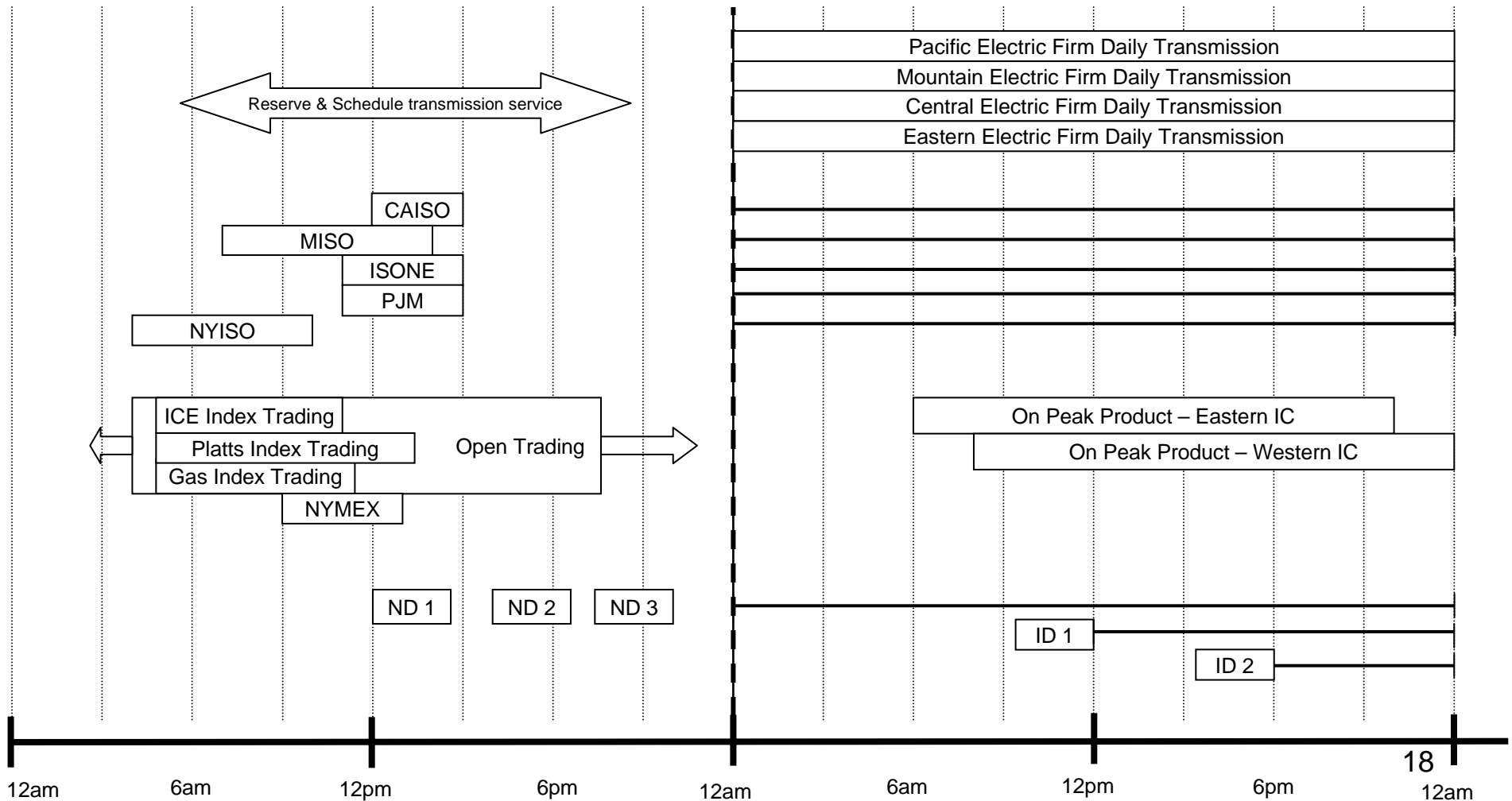
With Other Processes as They Exist Today



“As Requested” Standard Energy Day With “Straw-Man” Nomination Cycles

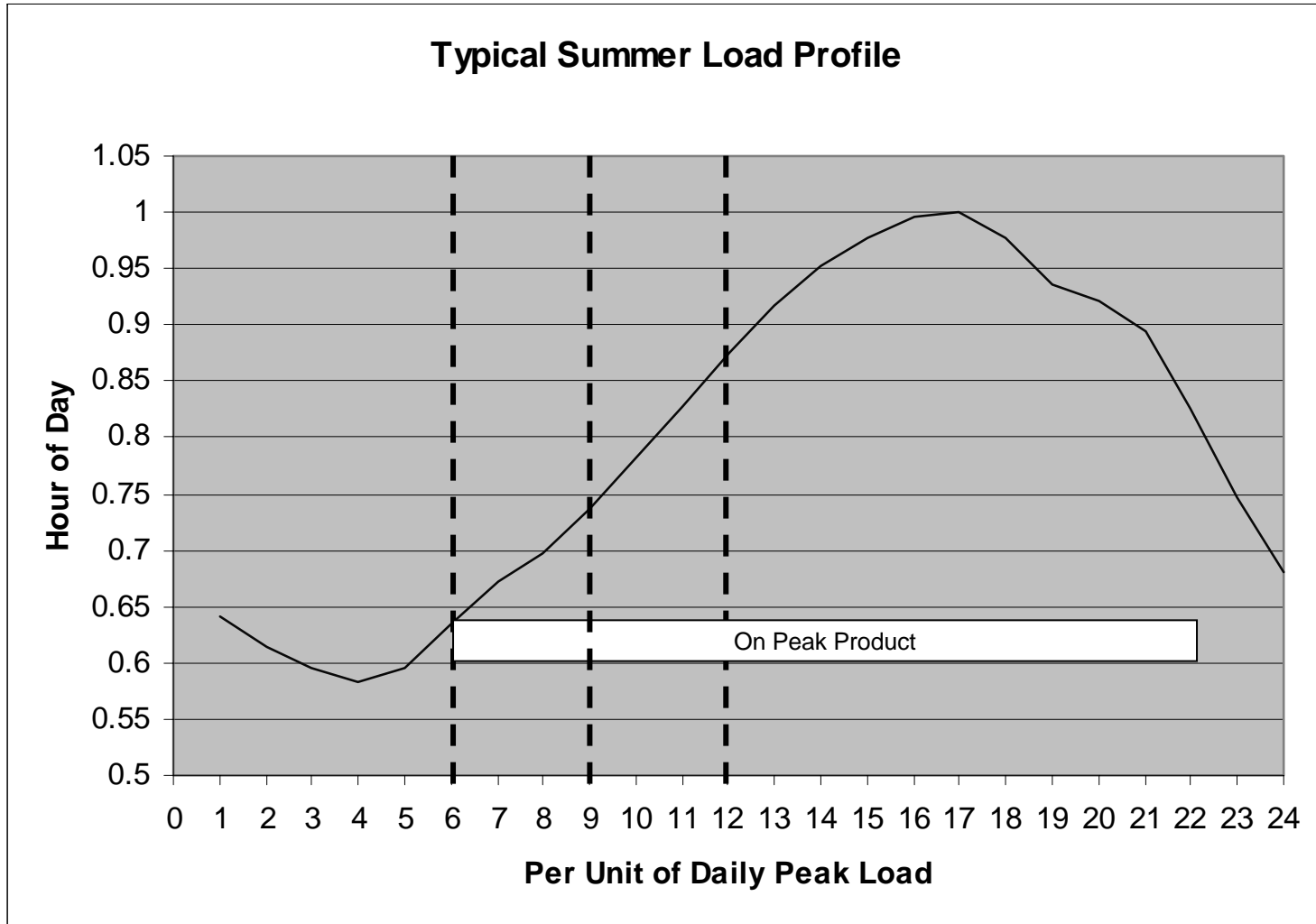
Day Ahead

Operating Day

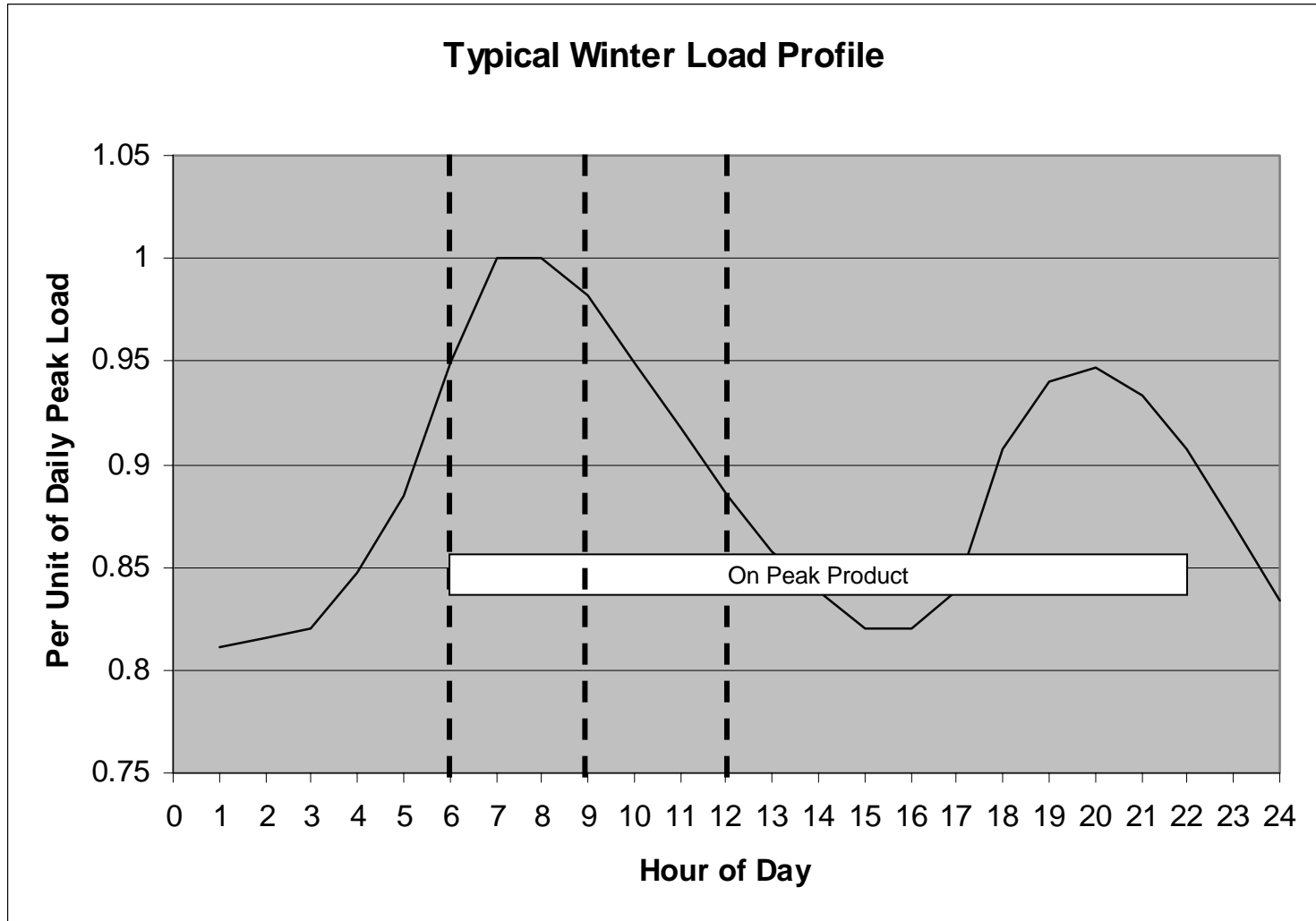


Impact of non-Midnight proposals on the WEQ

Alternative SEDs



Alternative SEDs



Questions?

Supplemental Information

“As Requested” SED for WEQ

1. All Transmission Providers shall be required to offer products that are consistent with the SED
 - Reservation timetables may need to be modified to be consistent with the SED
 - This should be a follow-up activity via R04020
 - Eastern time zone TPs must offer a 1am-1am Daily Firm product
 - Mountain time zone TPs must offer an 11pm-11pm Daily Firm product
 - Pacific time zone TPs must offer a 10pm-10pm Daily Firm product

2. All RTOs shall settle next day markets and schedules based on the SED
 - Timing of market clearing can remain unmodified or be standardized if appropriate
 - This should be a follow-up decision/activity via R04020

3. Products for Eastern and Western Interconnect remain unchanged, but are restated in terms of the SED
 - Eastern
 - On Peak: 6am-10pm (i.e. HE7-22) CPT
 - Off Peak: 12am-6am and 10pm-12am CPT
 - Western
 - On Peak: 8am-12am CPT (i.e. 6am-10pm PPT)
 - Off Peak: 12am-8am CPT

“As Requested” SED for WGQ

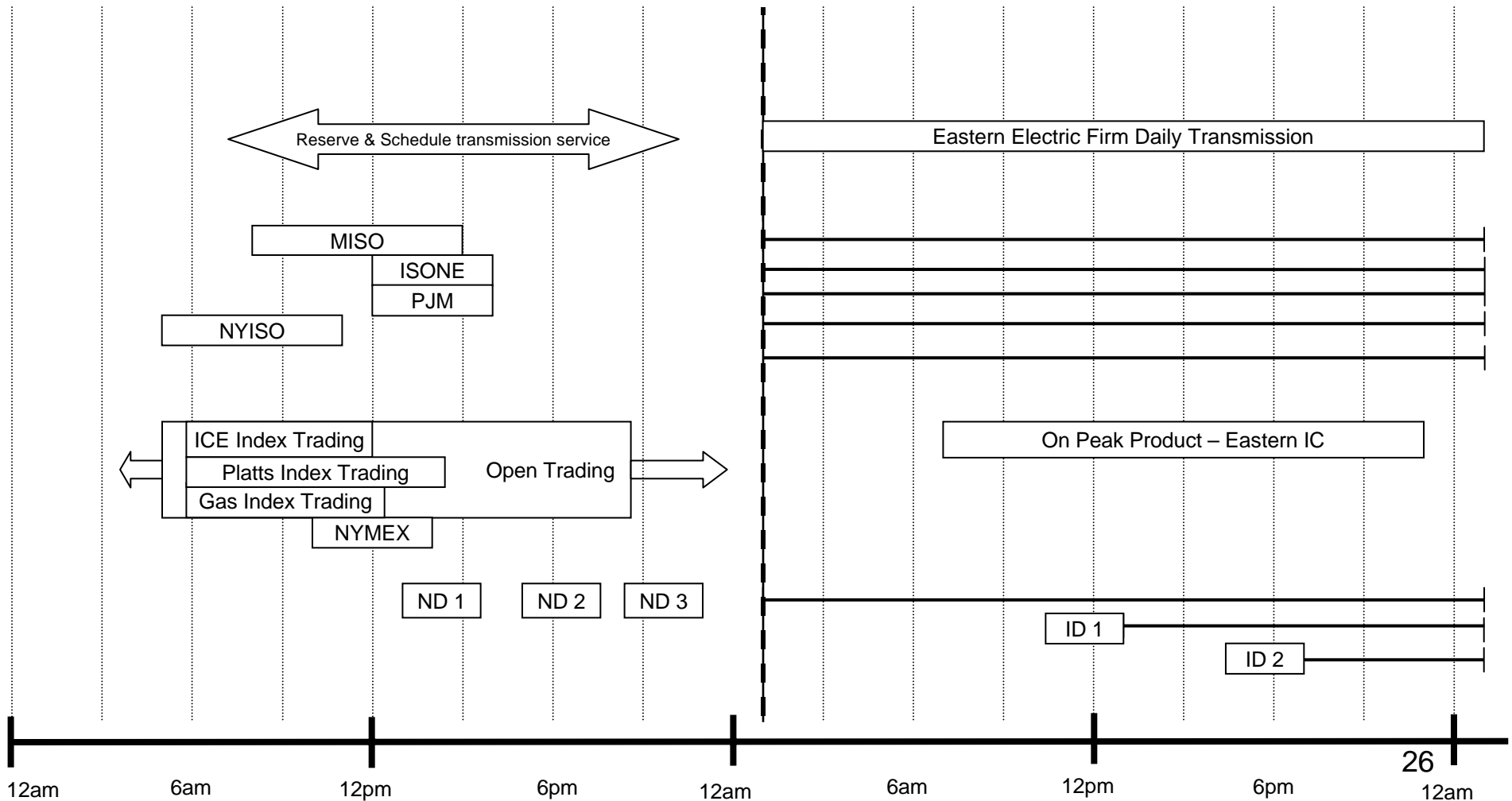
1. All suppliers and pipelines shall change flows based on the SED
 - Old: 9am, 5pm, 9pm
 - New: 12am, 12pm, and 6pm

2. “Straw Man” Gas Nominations as follows:
 - Old:
 - ND 1 (11:30am-5pm)
 - ND 2 (6pm-10pm)
 - ID 1 (10am-2pm) effective at 5pm
 - ID 2 (5pm-9pm) effective at 9pm
 - New:
 - ND 1 (12pm-2:30pm)
 - ND 2 (4pm-6:30pm)
 - ND 3 (7:30pm-10pm)
 - ID 1 (9:30am-12pm) effective at 12pm
 - ID 2 (3:30pm-6pm) effective at 6pm

“As Requested” SED Converted to “Real Time” for Eastern Time Zone

Day Ahead

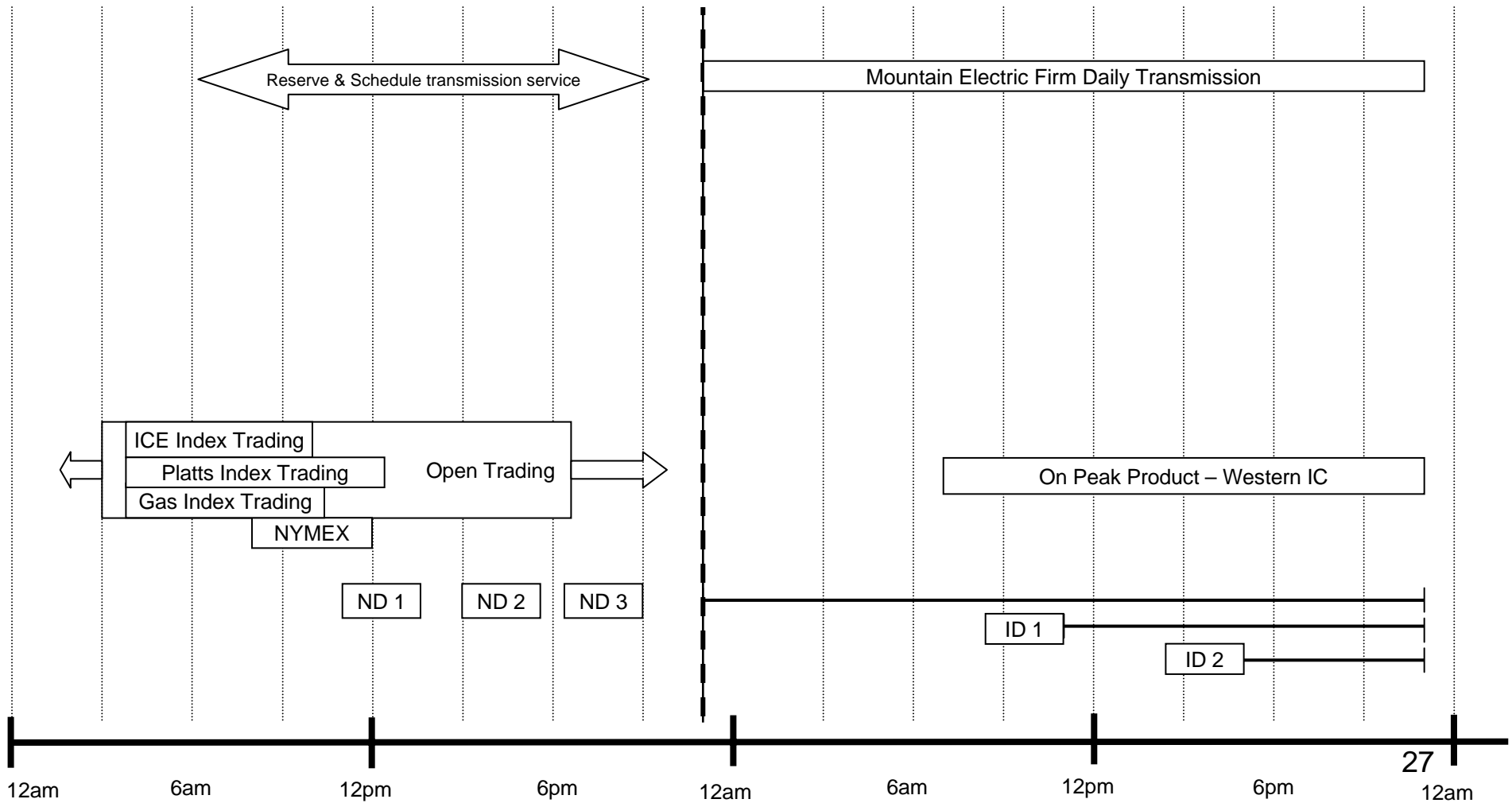
Operating Day



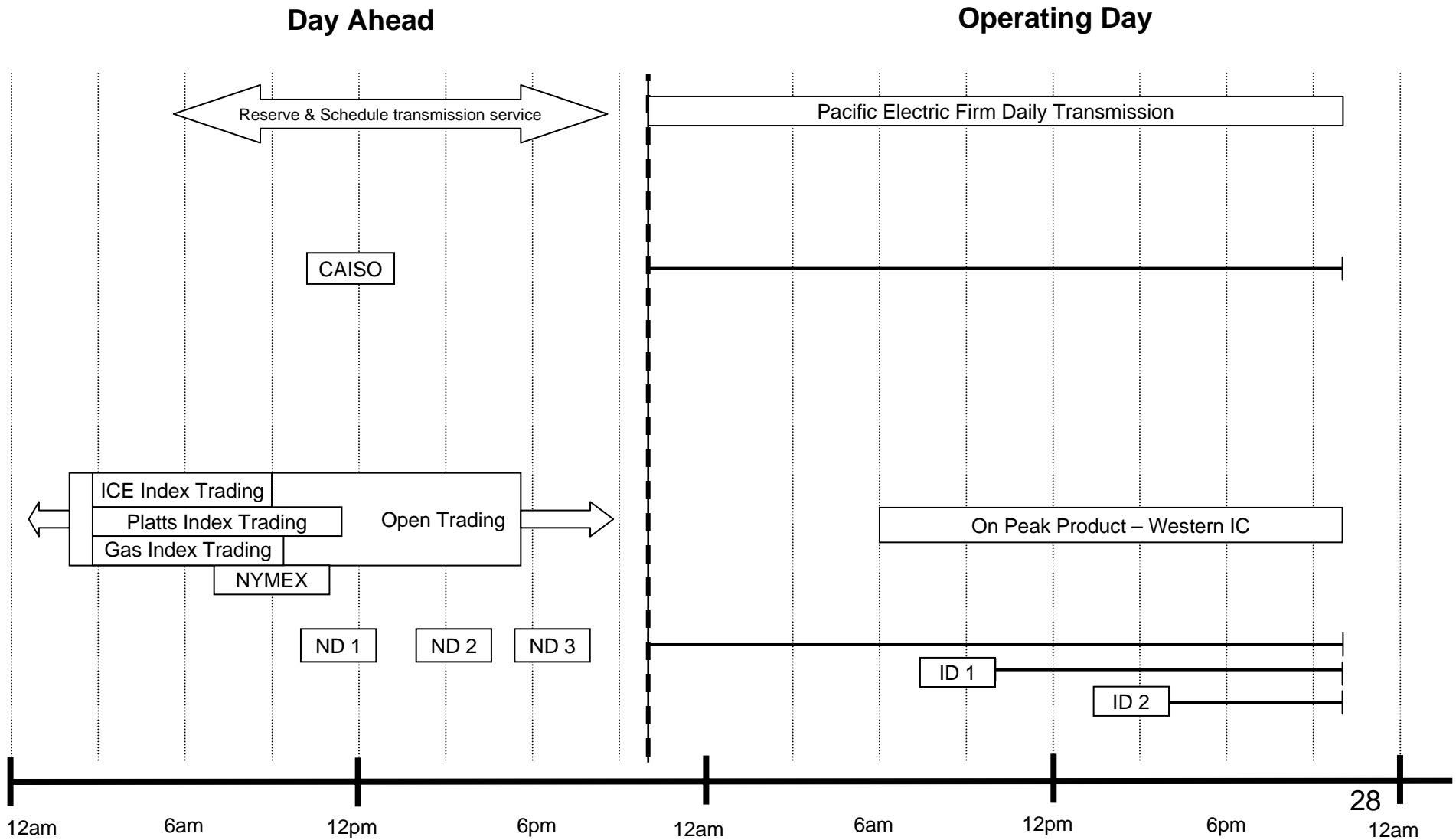
“As Requested” SED Converted to “Real Time” for Mountain Time Zone

Day Ahead

Operating Day



“As Requested” SED Converted to “Real Time” for Pacific Time Zone



Impacts for WEQ

- TPs must adjust OASIS postings to reflect the SED
 - Changes to product offerings will be necessary
 - Programmatic changes to OASIS should not be necessary
 - Billing changes should be minimal
- RTOs must settle next day markets based on the SED
 - Some programmatic changes to the market clearing will be necessary to account for the new definition of “next day”
 - Market participants will be required to adjust Schedules, bids, and offers based on the new definition of “next day”
 - Billing changes should be minimal

Impacts for WEQ – Con't

- Balancing Authorities will have to accept schedules based on the new definition of “next day”
 - Some configuration changes may be necessary, but programmatic changes should be minimal
- Trading Product definitions will have to be restated in terms of the new SED, but the impact should be negligible
- Other Impacts?

Impacts for WGQ

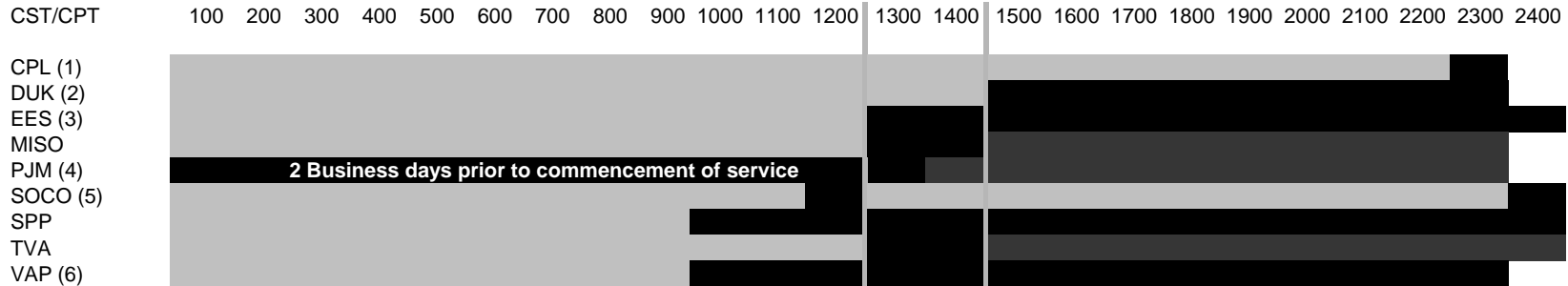
- Suppliers and pipelines must adjust flows at new times
 - Operational and possibly programmatic changes to accommodate new flow times
 - Potential for increased callouts during non-business (e.g. night-time) hours
- Pipelines must change nomination cycles
 - Nomination cycles shortened to 2.5 hours to avoid significant increases in scheduler workday – requires programmatic changes
 - Addition of a 3rd Day Ahead nomination cycle

Impacts for WGQ – Con't

- Intraday volume flexibility has been altered
 - Proposal increases flexibility for intraday increases in nomination
 - Old: Intraday cycles effective at 5pm and 9pm
 - New: Intraday cycles effective at 12pm and 6pm
 - Proposal reduces flexibility for intraday decreases in nomination
 - Old:
 - ID 1 can reduce by 2/3 daily volume
 - ID 2 can reduce by 1/2 daily volume
 - New:
 - ID 1 can reduce by 1/2 daily volume
 - ID 2 can reduce by 1/4 daily volume
- Other Impacts?

Day-Ahead Firm Transmission Timing Analysis

Daily Firm P/P



Reservation timing
 Schedule timing
 Next Day Firm not available

- CPL (1) *within negotiated time frame*
 In order to implement interchange schedules, tags must be accurate, complete, and time-stamped no later than 20 minutes prior to the start of the schedule.
- DUK (2) *In order to implement interchange schedules, tags must be accurate, complete, and time-stamped no later than 20 minutes prior to the start of the schedule.*
- EES (3) *New schedules or schedule changes must be submitted no later than 20 minutes prior to start. New schedules or schedule changes received after the twenty minute deadline will be deemed LATE and will be denied for anything other than emergency reliability reasons*
- PJM (4) *no later than noon, 2 PJM business days prior to the commencement of service*
 Pre-Scheduled Real-Time Transactions, (i.e. those transactions that will receive the Real-time LMP), must be submitted to the PJM OI by 1400 EPT (1200 on non-business days) of the day before the Operating Day Pre-Scheduled Real-time with Price Transactions, must be submitted to the PJM OI by 1200 noon EPT of the day before the Operating Day. These transactions are analyzed identically to unit-specific resources. For this reason, they are not permitted to change after 1200 noon EPT of the day before operations
- SOCO (5) *Reservations for the Transmission Customers Firm Point-To-Point Transmission Service must be submitted to the Transmission Provider no later than 12 noon of the day prior to commencement of such service. Reservations submitted after 12 noon will be accommodated if practicable*
 In order to implement interchange schedules, tags must be accurate, complete, and time-stamped no later than 20 minutes prior to the start of the schedule.
- VAP (6) *not later than day ahead by 10:00*
 Schedules for the Transmission Customers Firm Point-To-Point Transmission Service must be submitted to the Transmission Provider no later than 10:00 a.m. of the day prior to commencement of such service. Schedules submitted after 10:00 a.m. will be accommodated if practicable

Disclaimer: This document is for comparative purposes only. The information herein is the interpretation of Tariff filings and actual business practices, and is not intended to be an official representation of service timings.

Follow on Considerations

- Can nominations occur continuously?
- Should MISO timeline be changed?
- Should NYISO timeline be changed?
- Should transmission reservation timelines be standardized to be consistent with the SED?
- Should schedule implementation times be standardized to be compatible across regions?

Most of these are R04020 considerations...