Texas Nodal Process Timeline

The time-based baseline for high-level inputs and outputs across defined time periods, including cycle time and a closer look at the market processes

July 2nd 2008

Version history:

Aug 2006   **V1.0**   **TPTF approved**

Jul 2008   **V1.1**   **Update made based on MP feedback:**
                                      - see red box in slide 5: "updated to T" changed to "updated to T-1"

OBJECTIVES:

1. Establish a common understanding of Nodal inputs and outputs from a time-based perspective.
2. Understand the end-to-end timeline of the Nodal market.
3. Provide a high-level view of the volume of Nodal interfaces.

ASSUMPTIONS:

1. The *naming* of inputs/outputs follow protocols as best possible, and may be subject to change/re-categorization when the data dictionary is defined.
2. These diagrams may include *design* decisions that are not specified in Nodal protocols.
3. These diagrams may not include all the *exceptions* or alternative scenarios.
4. Processes and information from *retail* processes are not included.
5. Information specific to PUCT or protocol mandates, such as "*post to MIS*", are not reflected in this document as of yet (TBD).
6. The *network models* are distinct but "as much as practicable, have information consistent with the Network Operations Model", as specified in the protocols. They include the Network Operations Model (DAM and RT each have a separate version), CRR Network Model and the Annual Planning Model.
7. The *settlement point prices* (SPPs) and *aggregated base points* are calculated by MMS, not settlements.
8. Any required *reporting, extracts and analyses* are represented here under "extracts and reports (all)", and include compliance, monitoring, generation and load, settlement and billing, system operations and market operations.
9. The *CRR auction results* are represented and updated as part of the ownership records.
10. Cycle time for *financial payments* (and *invoices* for late fees, etc.) are not reflected.
11. The "asset and entity application" includes the *resource parameters*.
12. The "Notification of Suspension of Operations" may, but does not necessarily, result in an *RMR agreement*.
13. Certain external financial inputs– such as FIP and FOP, or other financial information needed to assess the Market Participant's ability to participate in the markets- are not represented in the baseline.

TIME PERIODS:

"Long term planning" = far in advance or annual processes
"Before day ahead" = months/days before the "Day Ahead"
"Day Ahead" = the day before the Operating Day (today)
"Up to end of Adjustment Period" = today up till end of Adjustment Period *(incl. last H-RUC)*
"Operating Hour" = the current hour ("T", in protocols)
"After" = after Operating Day

LEGEND:

1. Baseline view – *high level inputs and outputs for each time period, with their cycle times*
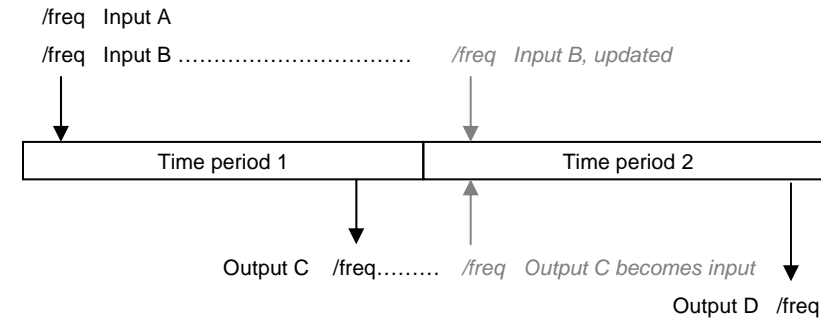
e.g. **"/mon"** = information is created, updated, or just used **every month**

Grey Italics = generally mean that it is a previous input/output that is an **input** into another time period

Black = the FIRST time the information appears

2. Market timeline – *the market timeline super-imposed on the baseline; key inputs/outputs highlighted*
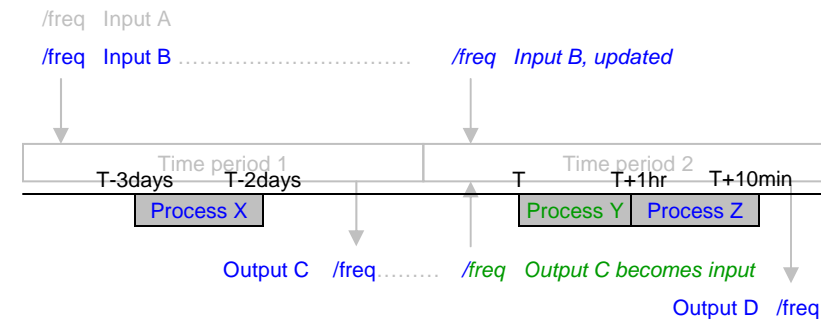
3. Market timeline (a closer look) – *a drilldown of highlighted inputs and outputs from 2.*

4. Market participant interface points
– *cycle time of baseline information that needs to interact (including "post to MIS") with market participants - currently available separately. (TBD)*

EXTERNAL INPUTS

Item	LONG TERM PLANNING	BEFORE DAY AHEAD	DAY AHEAD	UP TO END OF ADJUSTMENT PERIOD	OPERATING HOUR	AFTER
Asset/Entity registration & CRR Account holder applc.	/event					
CRR Auction bids and offers (for annual auction)	/yr	/mon New (for monthly auction)				
Annual Planning Model change requests (PMCRs/IDEVs)	/event					
Distribution Loss Factors (DLF)	/yr					
Black start unit bids	/yr					
Verifiable costs	/event					
Outage requests	/event					
Special action requests (incl RAP, SPS, RAPC, MP)	/event					
Transmission loss factors (TLF)		/mon				
Network Operations Model change requests (NOMCR)		/event				
Notice of Suspension of Operations		/event				
Weather and wind forecasts		/hr				
Current Operating Plan		/event	/event Used/updated	/event Used/updated	/event Used for monitoring only	/day Used
Offers and bids			/event	/event Used/updated/new	/5min Used/updated	/day Used
Schedules (self/output/DC) and self-arranged AS			/event	/event Updated	/event Updated DSR output schedule only	/day Used
Trades (energy, capacity, AS)			/event	/event Updated	/event Updated (energy only)	/event Update (energy trades only)/Used
QSE/TSP telemetry data (RTU/ICCP)					/10s	/day Used
Load meter data (TDSP)						/day
Generation meter data (EPS)						/day
Queries/disputes						/event

INTERNAL INPUTS & OUTPUTS

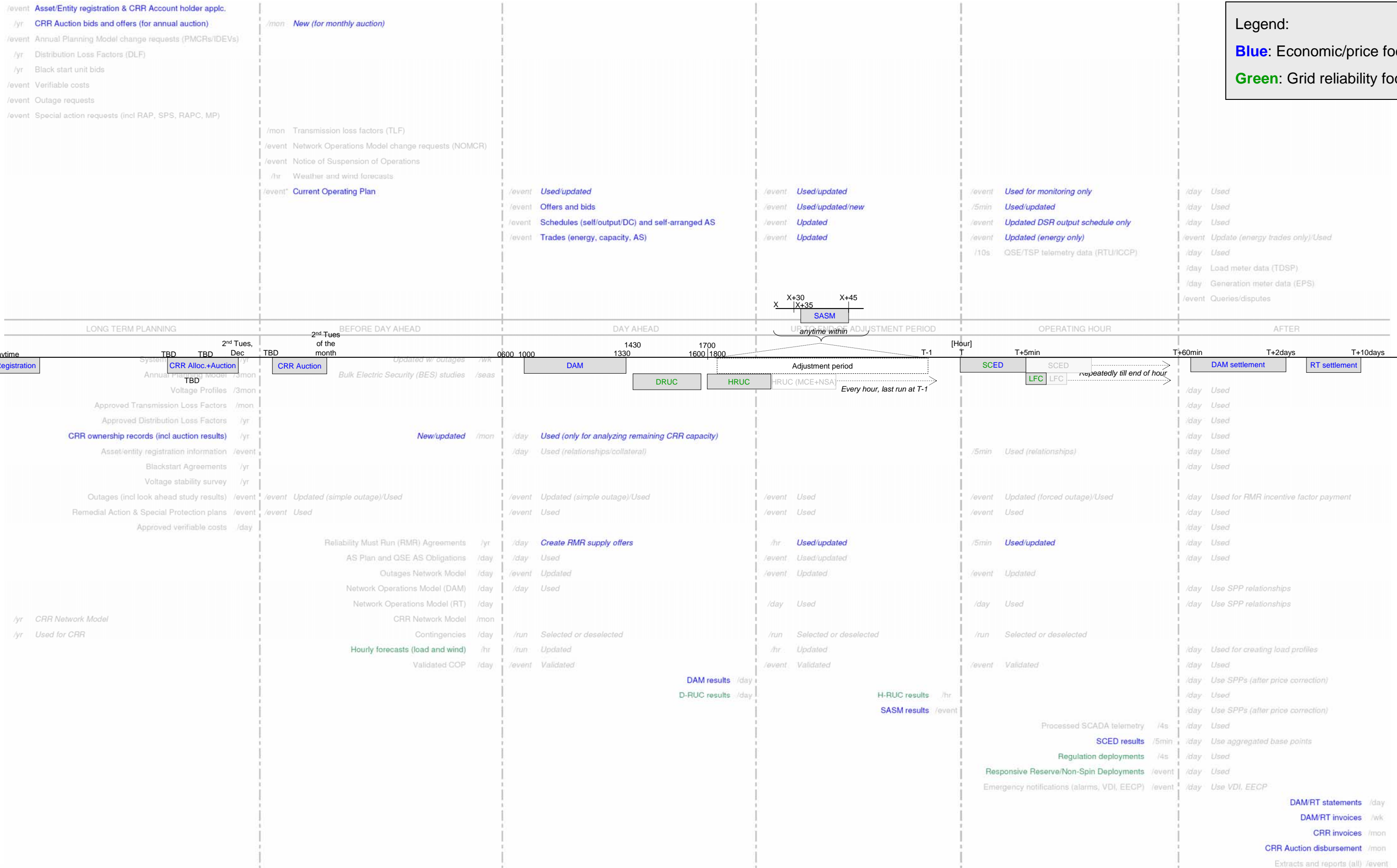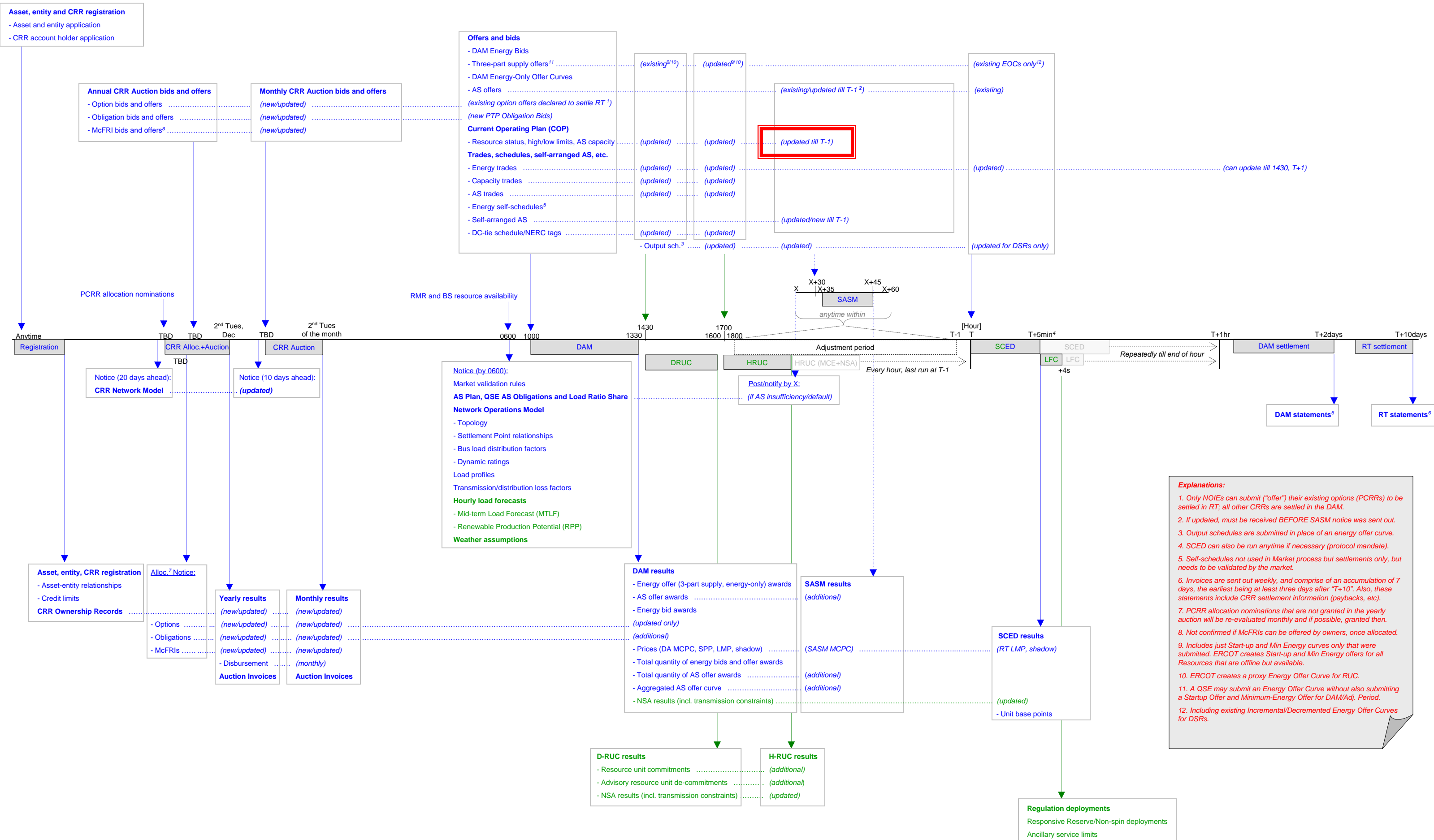| Item	LONG TERM PLANNING	BEFORE DAY AHEAD	DAY AHEAD	UP TO END OF ADJUSTMENT PERIOD	OPERATING HOUR	AFTER
System adaquecy report	/yr	Updated w/ outages /wk				
Annual Planning Model	/3mon	Bulk Electric Security (BES) studies /seas				
Voltage Profiles	/3mon					/day Used
Approved Distribution Loss Factors	/yr					/day Used
Transmission Loss Factors	/seas					/day Used
CRR ownership records (incl auction results)	/yr	New/updated /mon	/day Used (only for analyzing remaining CRR capacity)			/day Used
Asset/entity registration information	/event		/day Used (relationships/collateral)		/5min Used (relationships)	/day Used
Blackstart Agreements	/yr					/day Used
Voltage stability survey	/yr					
Outages (incl look ahead study results)	/event	/event Updated (simple outage)/Used	/event Updated (simple outage)/Used	/event Used	/event Updated (forced outage)/Used	/day Used for RMR incentive factor payment
Remedial Action & Special Protection plans	/event	/event Used	/event Used	/event Used	/event Used	/day Used
Approved verifiable costs	/day					/day Used
Reliability Must Run (RMR) Agreements		/yr	/day Create RMR supply offers	/hr Used/updated	/5min Used/updated	/day Used
AS Plan and QSE AS Obligations		/day	/day Used	/event Used/updated		/day Used
Outages Network Model		/day	/event Updated	/event Updated	/event Updated	
Network Operations Model (DAM)		/day	/day Used			/day Use SPP relationships
Network Operations Model (RT)		/day		/day Used	/day Used	/day Use SPP relationships
CRR Network Model	/yr CRR Network Model	/mon				
Contingencies	/yr Used for CRR	/day	/run Selected or deselected	/run Selected or deselected	/run Selected or deselected	
Hourly forecasts (load and wind)		/hr	/run Updated	/hr Updated		/day Used for creating load profiles
Validated COP		/day	/event Validated	/event Validated	/event Validated	/day Used
DAM results			/day			/day Use SPPs (after price correction)
D-RUC results			/day	H-RUC results /hr		/day Used
SASM results				/event		/day Use SPPs (after price correction)
Processed SCADA telemetry					/4s	/day Used
SCED results					/5min	/day Use aggregated base points
Regulation deployments					/4s	/day Used
Responsive Reserve/Non-Spin deployments					/event	/day Used
Emergency notifications (alarms, VDI, EECP)					/event	/day Use VDI, EECP
DAM statement/invoices						/day
RT statement/invoices						/day
CRR invoices						/mon
CRR Auction disbursement						/mon
Extracts and reports (all)						/event

Legend:

Blue: Economic/price focus

Green: Grid reliability focus

/event	Asset/Entity registration & CRR Account holder applc.
/yr	CRR Auction bids and offers (for annual auction)
/event	Annual Planning Model change requests (PMCRs/IDEVs)
/yr	Distribution Loss Factors (DLF)
/yr	Black start unit bids
/event	Verifiable costs
/event	Outage requests
/event	Special action requests (incl RAP, SPS, RAPC, MP)

/mon New (for monthly auction)

/mon Transmission loss factors (TLF)
/event Network Operations Model change requests (NOMCR)
/event Notice of Suspension of Operations
/hr Weather and wind forecasts
/event* Current Operating Plan

/event Used/updated
/event Offers and bids
/event Schedules (self/output/DC) and self-arranged AS
/event Trades (energy, capacity, AS)

/event Used/updated
/event Used/updated/new
/event Updated
/event Updated

/event Used for monitoring only
/5min Used/updated
/event Updated DSR output schedule only
/event Updated (energy only)
/10s QSE/TSP telemetry data (RTU/ICCP)

/day Used
/day Used
/day Used
/event Update (energy trades only)/Used
/day Used
/day Load meter data (TDSP)
/day Generation meter data (EPS)
/event Queries/disputes

LONG TERM PLANNING | BEFORE DAY AHEAD | DAY AHEAD | UP... ADJUSTMENT PERIOD | OPERATING HOUR | AFTER

X+30 X+45
X X+35
SASM
anytime within