

BPA Wind Integration Team

Projects and Priorities

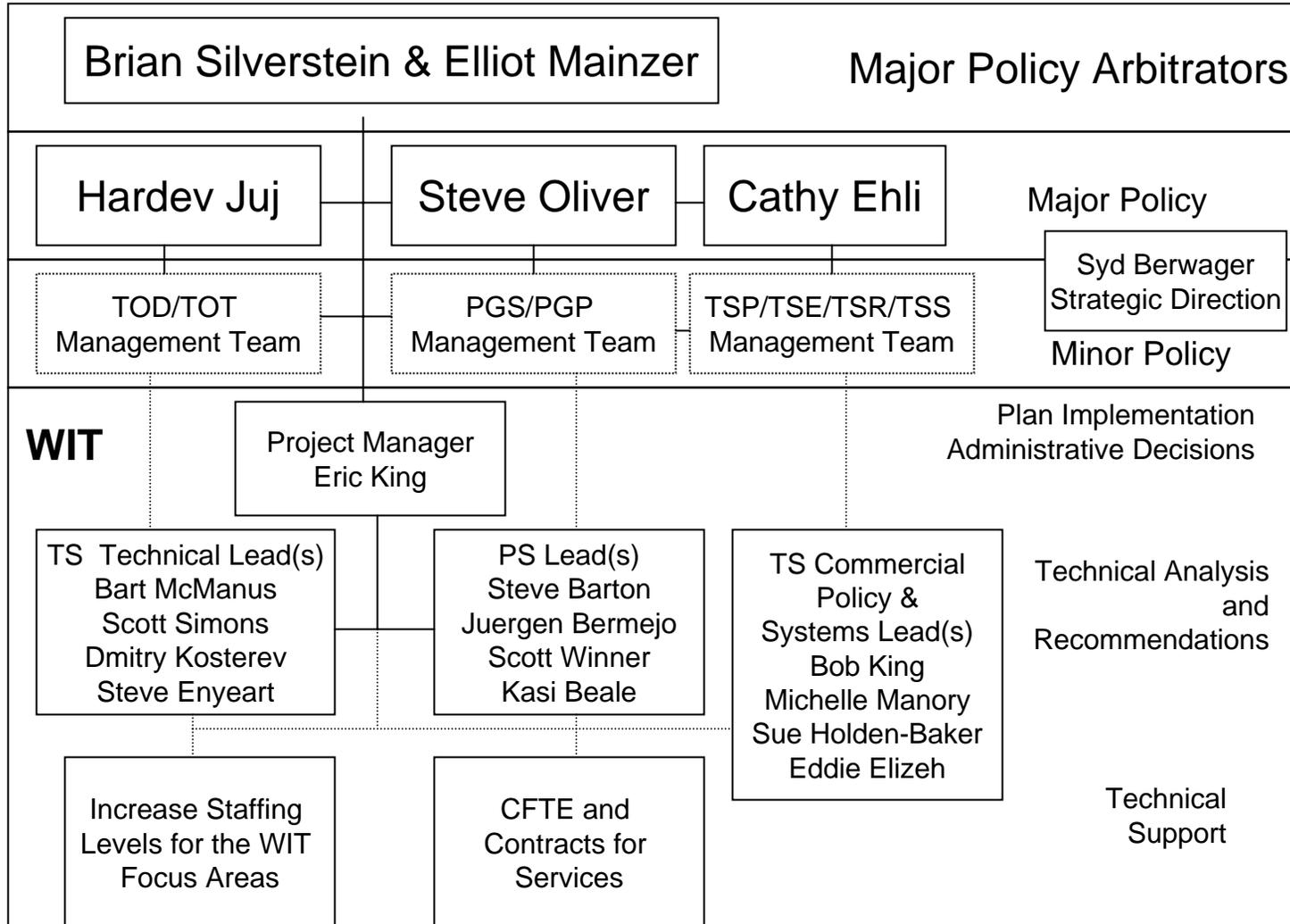
May 29, 2009



Wind Integration Team Structure Diagram

“Boxology”

Roles



New Operating Protocols (DSO 216 Implementation)

- Implement automated tools and communication protocols to limit wind generation to schedule or curtail e-Tags to actual wind generation in response to the amount of reserves deployed per the 2010/2011 Wind Integration Rate Case.
- This project, as planned for delivery October 1, considers the performance, allocates the reserves, and determines the corrective actions for each individual wind plant.
- The current scope does not provide wind generation owners the ability to manage generation imbalance through self supply or netting and it does not aggregate signals where a single owner operates multiple plants.



Dynamic Limits Study

- Determine the evaluation criteria and necessary requirements and establish a credible, repeatable, and timely methodology to allow dynamic scheduling in BPA's network system and inerties.
- This project does not identify dynamic limits of any particular generator, load nor implement dynamic scheduling.



Forecasting

- Install up to 16 additional surface observation sites, and improve BPA's ability to forecast wind power generation. Develop and deploy tools for dispatch and hydro duty schedules to achieve greater understanding and awareness of wind generation patterns and operational risks.



Third Party Supply Pilot

- Define criteria and processes for third party supply and establish a pilot project in November 2009 to test access to non-FCRPS generating resources for balancing reserves.
- Pilot Stage 1: Acquire and deploy load following and regulation capacity from two non-FCRPS generators in exchange for a payment. Set up and test business processes, data transfer/signaling processes, and operational data displays.
- Pilot Stage 2: Depending on results on dynamic limits for internal flowgates, expand the pilot to include additional providers.
- Later pilot stages may include demand-side resources such as DSI balancing reserve supply.



Self-Supply

- Develop systems and processes to enable customers to self-supply the within-hour balancing requirements from their own or contracted dispatchable resources for one or more wind generators.
 - Generators will be netted for the purposes of calculating wind limits and e-Tag curtailments.
 - If given a limit order, the customer will have the option of which dispatchable resources to limit. The generator owner/operator, not BPA, will deploy reserves needed for imbalance and following.
 - Customers may elect to have a continuous self-supply option. The generator owner/operator, not BPA, will deploy reserves needed for their within hour reserve requirements. The amounts will be calculated by BPA.



Sub-hour scheduling

- Develop of systems and processes to enable purchasing/selling entities to sell excess wind generation within the hour (on the half hour).
 - Allows wind generators to proactively mitigate limit directives that are part of the DSO 216 implementation.
 - Allows wind generators to minimize generation imbalance charges.



DRAFT - WIT Work Plan

