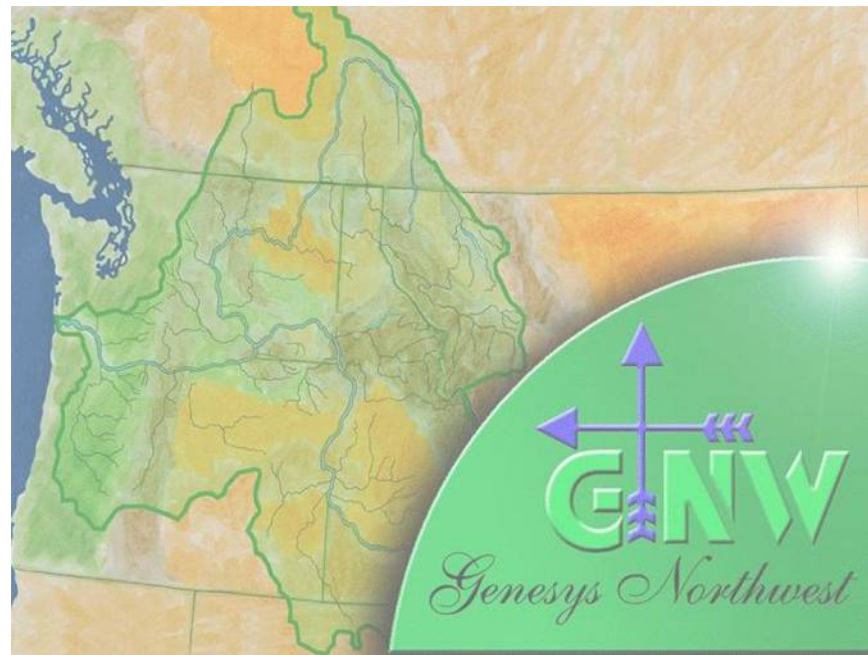


GENESYS Model Enhancements



RAAC Technical Committee Meeting
February 12, 2015
John Fazio

Enhancements

- **14-Periods (split April and August)**
- **Revised window length (7 days)**
- **Revised purchase-ahead logic**
- **Revised hydro pricing?**
- **Potential Future Improvements**

GENESYS

Dispatch Overview & Purchase-Ahead Logic

For each Period

Get hydro block sizes
Build resource stack
Build load stack
Dispatch – get hydro energy for month
If deficit, allow purchase-ahead for the month

For each Window (Sun-Mon)

Window hydro energy = period energy times (historical average week load/period load)
If deficit, allow purchase-ahead for the window

For each Day

Daily hydro energy = window energy times (daily load/window load)
If deficit, allow purchase-ahead day

For each Hour

Available hourly hydro energy is derived from shaping the daily energy into the hourly shapes constrained by the peak vs. energy curves
Dispatch hydro dynamically with thermal resources
If deficit, will use SW spot market first then borrowed hydro

Purchase Ahead Logic

- **Period** – if deficit, set amount of purchase-ahead energy for every off-peak hour to the monthly deficit divided by the number of off-peak hours (i.e. spread out the purchases)
- **Window** – if deficit, spread the amount of purchase-ahead energy over all window off-peak hours and add to any existing purchase ahead amount
- **Day** – if deficit, spread the amount of purchase-ahead energy over all daily off-peak hours and add to any existing purchase ahead amount
- **Hour** – spot market purchases only, during hour of shortfall

Purchase Ahead Resources

- Total amount of purchase in any hour, including spot market, is limited by the South-to-North intertie transfer capability (currently using 3400 MW)
- Off-peak hours are defined to be:
1am to 6am and
11pm to 12am

Potential Future Enhancements

- **3-Node analysis**
(logic complete but need better data)
- **Redevelop hourly hydro shaping**
- **Improved hydro pricing (for dispatch)**
- **Adding a SW demand market**
- **Uncertainty in SW import availability**
- **Uncertainty in intertie capability**