Slice/Block Product

June 18, 2024

Objectives

Overview of how slice portion will work under a fixed system.

Discussion on how to approach financial settlements.

Slice/Block under Fixed System

Provider of Choice Fixed System

- The Provider of Choice Policy set the amount of power available at a PF Tier 1 rate for the rate period.
- The total amount of power available at a PF Tier 1 rate is determined by the CHWM calculation and subsequent CHWM adjustments.
- CHWMs will not be adjusted each rate period based on changes to firm resource output. Instead, the amount of power available at a PF Tier 1 rate will change based on forecast net requirements load and subsequent CHWM adjustments.

Fixed System By Rate Period

Each rate period BPA will:

1. Calculate total expected CHWM load (or power available at a PF Tier 1 rate)
   - Subsequent CHWM adjustments: Determine if any customer is eligible for an additional CHWM and adjust those that qualify.
   - Net Requirements Load: Calculation will determine if customer's have load up to their CHWM or if their expected load is less than their CHWM. For Slice/Block customers, this calculation would determine their slice percentage and their block portion.
   - The total amount of power available at a PF Tier 1 rate will not exceed 7,250 aMW unless subsequent CHWM adjustments, which then will be capped at 7,250 aMW plus subsequent adjustment amounts.
2. Determine what set of resources will be considered in the cost allocation to the PF Tier 1 cost pools.
   - This determination will set the resources that feed into the Slice Computer Application (SCA) through the hydro modelling or Balance of System (BOS) calculation.

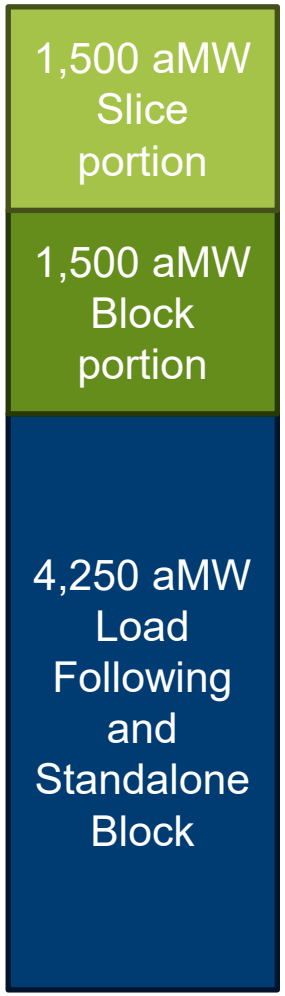
Fixed System: Hydro Projects Modeled in SCA

- For the SCA, BPA would include the six projects currently modeled in the SCA in the resources cost allocated to PF Tier 1 rates in every rate period.
  - The six resources modeled in the SCA are: Ground Coulee, Chief Joe, McNary, John Day, The Dalles, and Bonneville.
- BPA, through the SCA, would model the constraints and available output of the hydro projects to the customers.
- **Fixed System Outcome: The SCA modeling would not look different from today's SCA.**

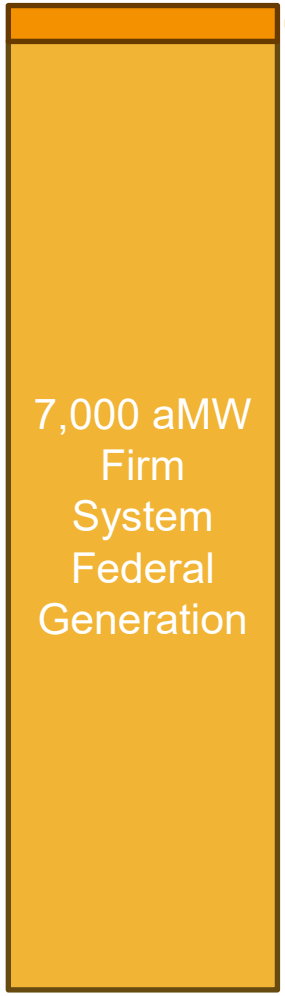
Fixed System: BOS Calculation in SCA

- The resources that would be included in the BOS calculation could change from rate period to rate period based on the amount of power available at a PF Tier 1 rate and what resources are determined to be cost allocated to the PF Tier 1 cost pool.
- BPA does not anticipate major changes to the BOS calculation based on these changes.
- **Fixed System Outcome: The BOS calculation output communicated to customers would look similar to today.**

Example 1: Fixed System Conceptual



Provider of Choice CHWMs by Regional Dialogue Product

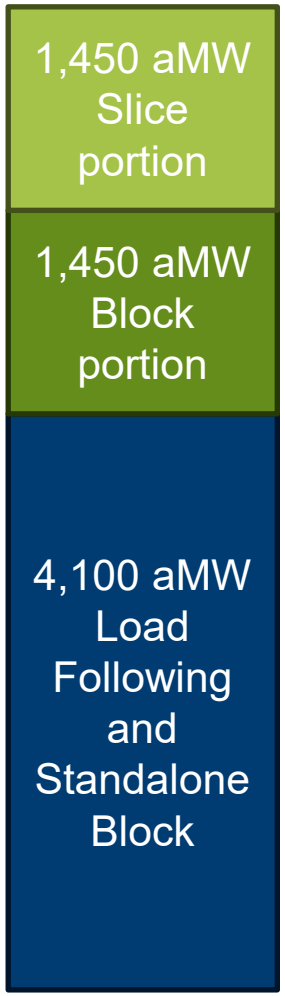


250 aMW acquisition required

Resources Cost Allocated to PF Tier 1 cost pool

- In the Provider of Choice Policy, BPA set aggregate CHWMs equal to 7,250 aMW.
  - Based on rough estimate of CHWMs and assuming customers make the same product elections, this would result in 3,000 aMW of load electing the Slice/Block product.
  - This would result in 20.6% slice portion (1,500 aMW/7,250 aMW = 20.6%).
- The total generation that would need to be cost allocated to the PF Tier 1 rate would be equal to 7,250 aMW.
  - In BP-24, the firm P10 generation is around 7,000 aMW. BPA would need to acquire 250 aMW of generation to meet the CHWM load.
  - Slice/Block customers' slice percentage would be made up of both the P10 firm generation amount and the resource acquisitions.

Example 2: FY 2023 Loads
(Firm output and Tier-1 load both less than 7,250 MW)

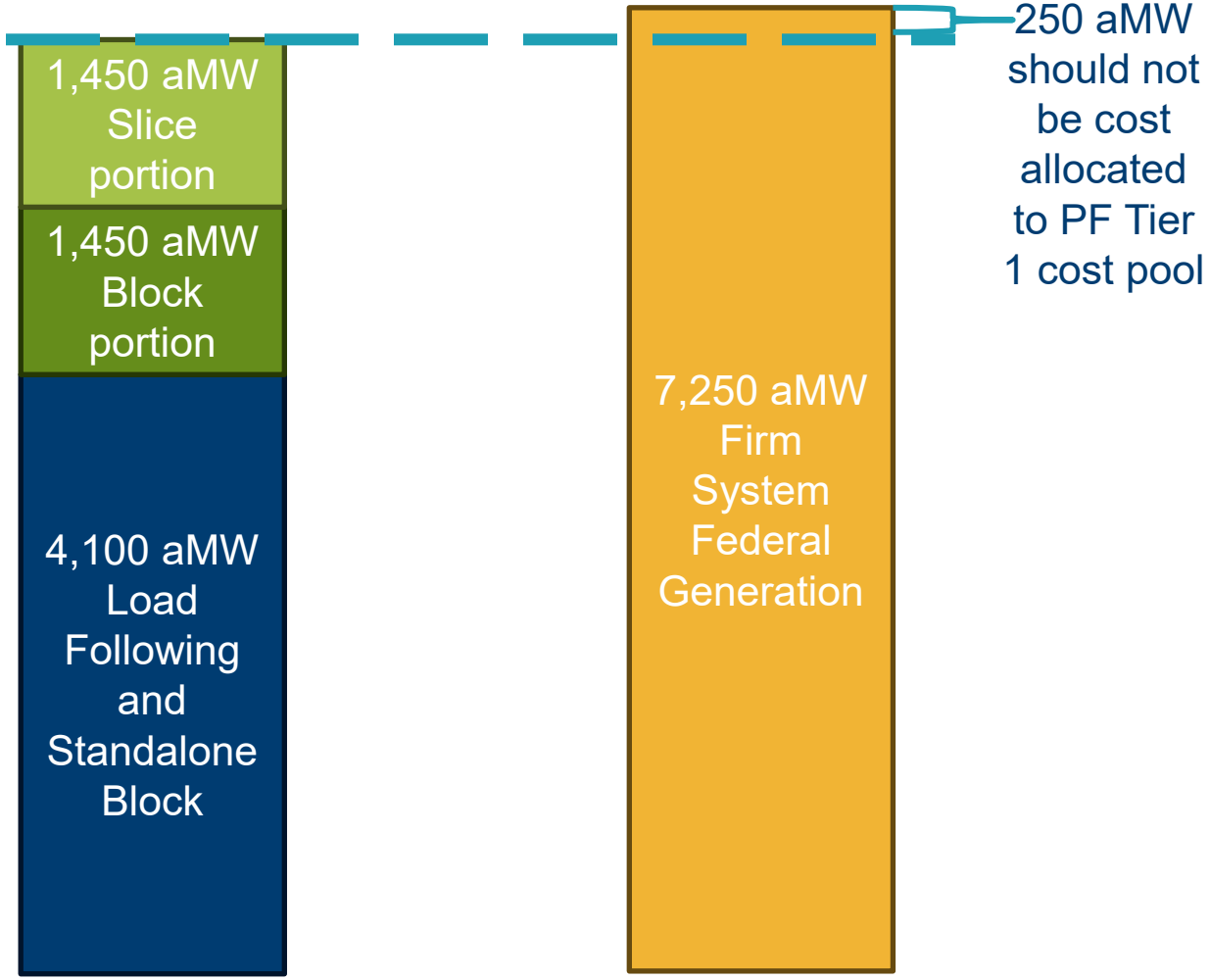


Provider of Choice CHWMs by Regional Dialogue Product

Resources Cost Allocated to PF Tier 1 cost pool

- Based on estimated CHWMs and FY 2023 loads, in this example BPA assumes there is only 7,000 aMW of load eligible to be served at a PF Tier 1 rate.
  - Assuming customers make the same product elections, this would result in 2,900 aMW of load electing the Slice/Block product.
  - This would result in 20.7% slice portion (1,450 aMW/7,000 aMW = 20.7%).
- The total generation that would need to be cost allocated to the PF Tier 1 rate would be equal to 7,000 aMW.
  - In BP-24, the firm P10 generation is around 7,000 aMW. BPA would not need to acquire any resources. The firm system would be what the slice percentage is based on.

Example 3: Firm Output > CHWM Load



Provider of Choice CHWMs by Regional Dialogue Product

Resources Cost Allocated to PF Tier 1 cost pool

- In this example, CHWM loads are equal to FY 2023 loads at 7,000 aMW.
  - Assuming customers make the same product elections, this would result in 2,900 aMW of load electing the Slice/Block product.
  - This would result in 20.7% slice portion (1,450 aMW/7,000 aMW = 20.7%).
- The total generation that would need to be cost allocated to the PF Tier 1 rate would be equal to 7,000 aMW. However, BPA's firm system generation is at 7,250 aMW.
  - Slice/Block customers' slice percentage would need to be limited to the total resources cost allocated to the PF Tier 1 rate. See next slide for proposed implementation.

Example 3 (cont.)

- BPA would need to model the slice portion of the product equal to the 7,000 aMW “Tier 1 system.”
- BPA would calculate two slice percentages: (1) Slice rate percentage and (2) Slice RTP percentage. In all other scenarios, the two percentages would be equal.
  - The Slice rate percentage would be set equal to the percent of the 7,000 aMW to calculate the share of the PF Tier 1 rate costs should be covered by Slice/Block customers. In the example, total Slice percentages would equal 20.7%.
  - The Slice RTP percentage would be based on slice share compared to total firm generation available. The lower percentage constrains the slice percentage to the actual share of the total system customers’ are entitle to and a way to model the constraint without changing the SCA. In the example, total slice percentage would be equal to 20% (1,450 aMW/7,250 aMW).
- In implementation, customers would be limited to their Slice RTP percentage for hydro modelling in the SCA and BPA would apply a percent reduction to its BOS calculation.

Financial Settlements

Settlements Caveat

- Materials presented around financial settlements are for discussion purposes.
- BPA has not concluded any concept presented can work nor has it ruled out any concept.
- Goal of today's discussion is to explore what may be feasible to implement.

EIM Slice/Block Settlement

- Reserves (balancing and contingency) are “off-the-top” obligations for the FCRPS, with the revenue credit going to Slice and non-Slice customers in the composite cost pool.
- Energy associated with contingency reserve deployments is tracked and accounted for, then deducted (pro-rata) from each Slice customer’s energy account (BOS Deviation Account). Energy associated with balancing reserve deployments currently nets to zero, but may not if offered into the EIM.
- Settlements shares EIM net dispatch benefits and energy impacts associated with balancing reserves with Slice customers. Implementation considered:
  - Pro-rata share based on actual deployments of balancing reserves and non-slice inventory. This would require data to determine share. Split could be based on monthly planning assumptions for reserves or actual operations data.
  - Priority deployment and allocation assuming non-slice inventory is used first, then balancing reserves.
  - Priority deployment and allocation assuming balancing reserves are used first, then non-slice inventory.

OFF THE TOP OPTION 1

Treat capacity and energy as off the top

The Gen Res Inc constraint includes the non-reg capacity, BOS deviation account is adjusted for associated energy, customers receive revenue associated with capacity and energy

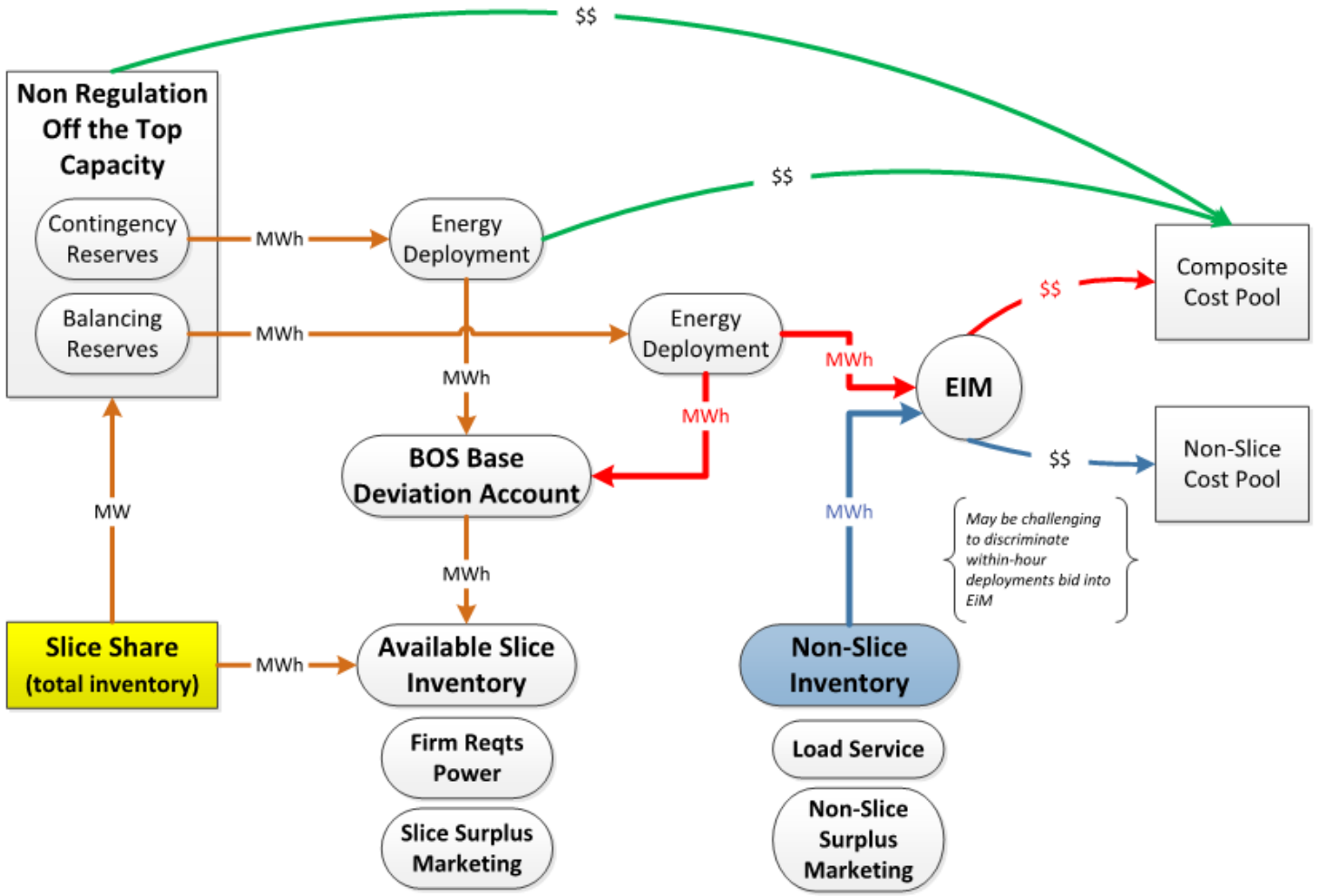


*Diagram originally published for Aug. 26, 2020, BP-26/TC-26/EIM Workshop.

EIM Settlement Example (cont.)

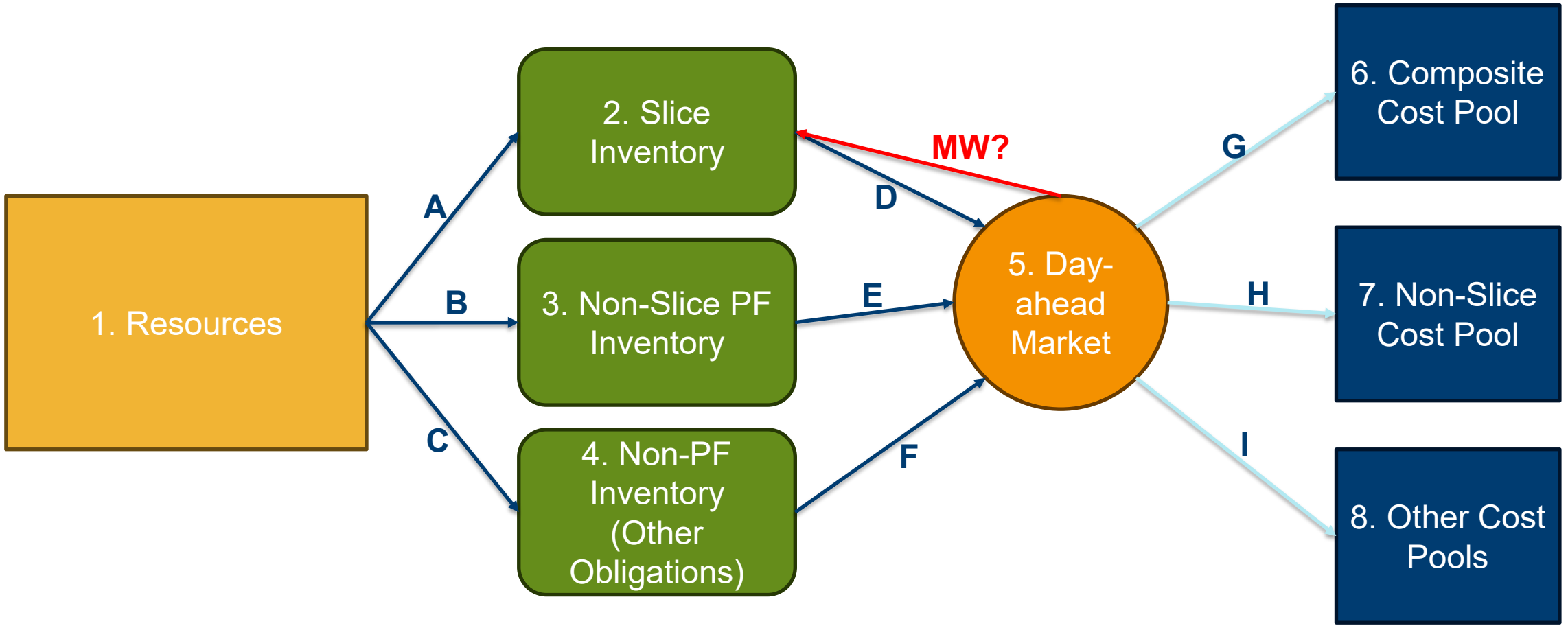
Option 1 Pro-Rata Balancing Reserves	NonReg Bal. Res. INC (MW)	NonReg Bal. Res. DEC (MW)	NonSlice Inventory INC (MW)	NonSlice Inventory DEC (MW)	Total INC Offered (MW)	Total DEC Offered (MW)	Total INC Deployed (MWh)	Total DEC Deployed (MWh)	Total INC Net Revenue ($)	Total DEC Net Revenue ($)	Composite Share INC (%)	Composite Share DEC (%)	BOS Base Adjustment (MWh)	Composite Cost Pool EIM Line ($)
Hour 1	400	600	0	0	400	600	400	0	$ 8,000	$ -	100%	100%	-400	$ 8,000
Hour 2	400	600	0	0	400	600	0	300	$ -	$ (6,000)	100%	100%	300	$ (6,000)
Hour 3	400	600	400	600	800	1200	400	0	$ 8,000	$ -	50%	50%	-200	$ 4,000
Hour 4	400	600	400	600	800	1200	800	1200	$ 16,000	$ (24,000)	50%	50%	200	$ (4,000)

- MWh settlements are done monthly.
- Financial settlements is calculated as part of Slice True-up and settled on an annual basis.

DA Settlement Questions

- What resources should be included when considering settlements?
  - Should it be limited to a certain set of resources? Percentage of the system?
- What time frame do settlements need to occur? Is it different for MWhs v. financial?

DA Settlement Flow Chart



= MW = $$