



Discussion on EIM potential pricing modifications: Recognition of available capacity to resolve market infeasibilities in the EIM

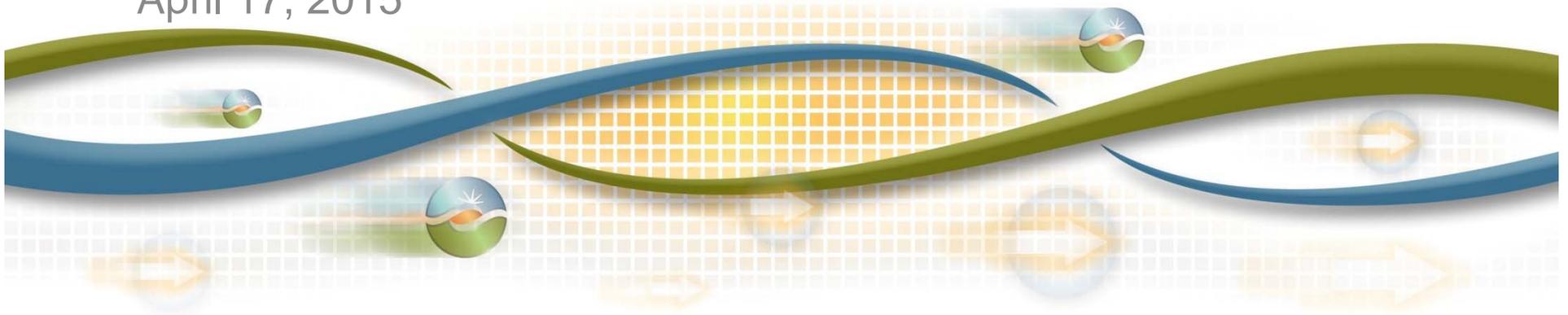
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Market Surveillance Committee meeting

General session

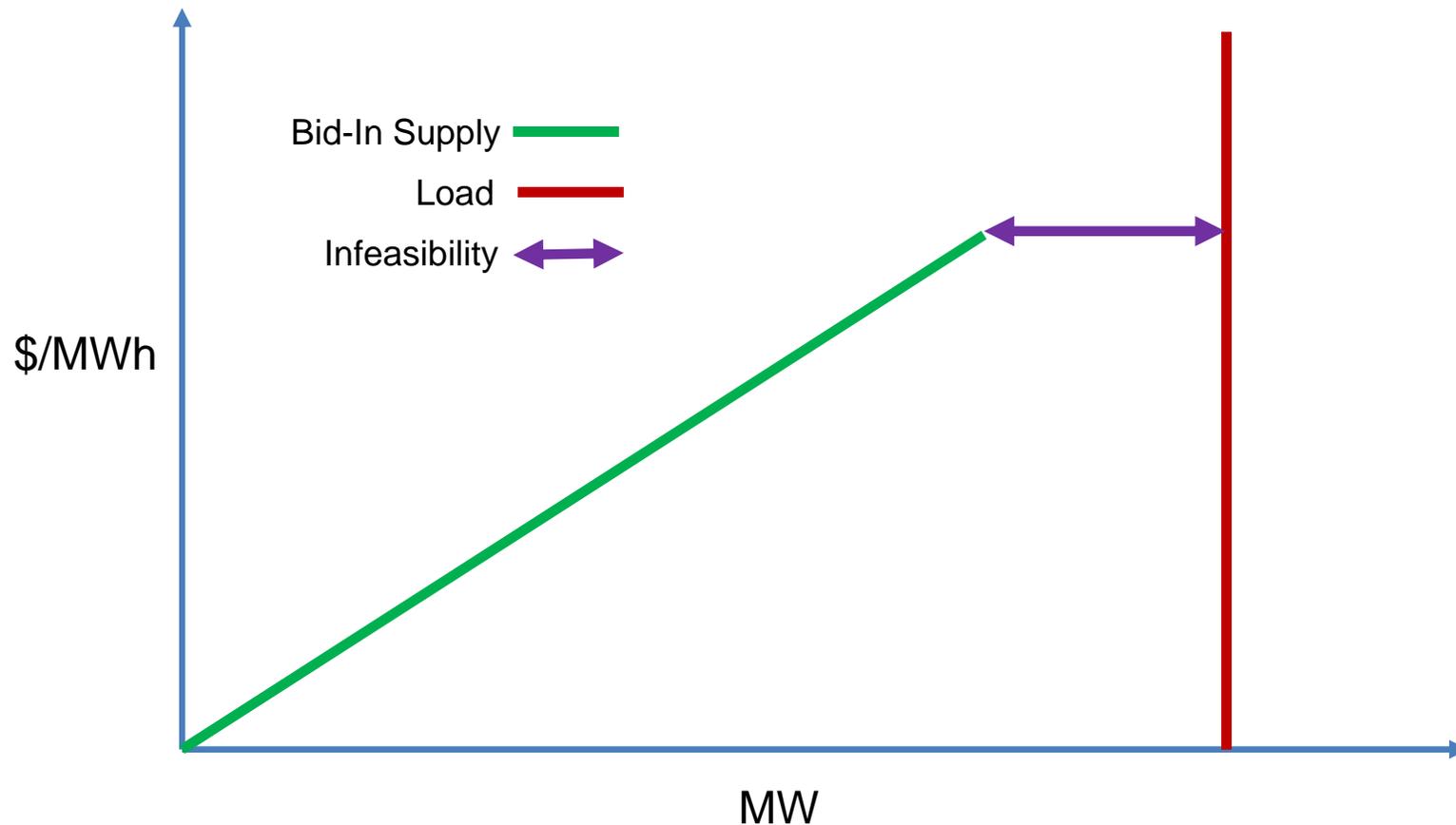
April 17, 2015



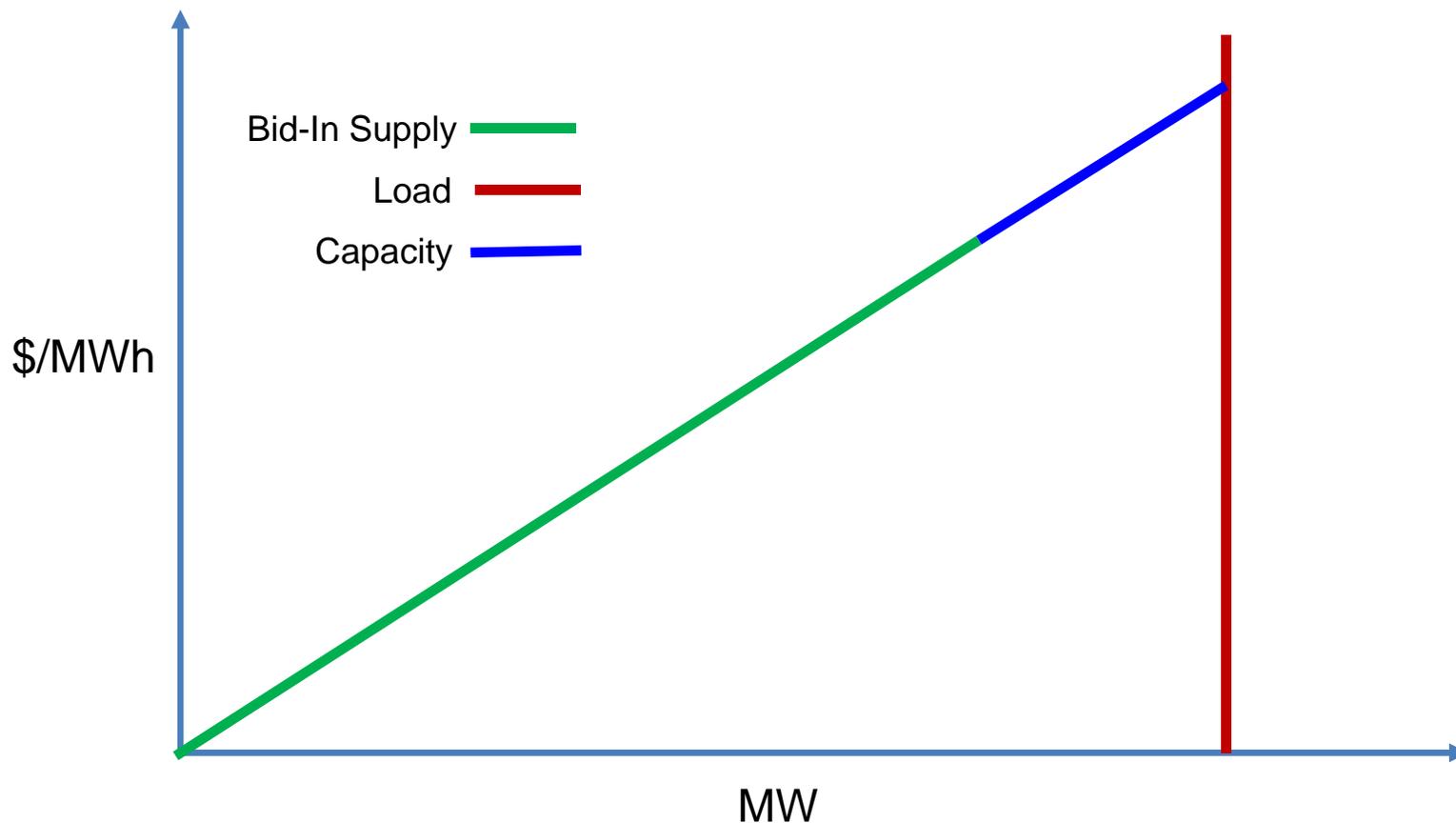
Objective of proposed design

- Recognize available capacity when there is a market infeasibility in an EIM BAA
- Available capacity is not used to support EIM transfers to other BAAs in the EIM
- Available capacity is released at the resource location to ensure congestion is resolved

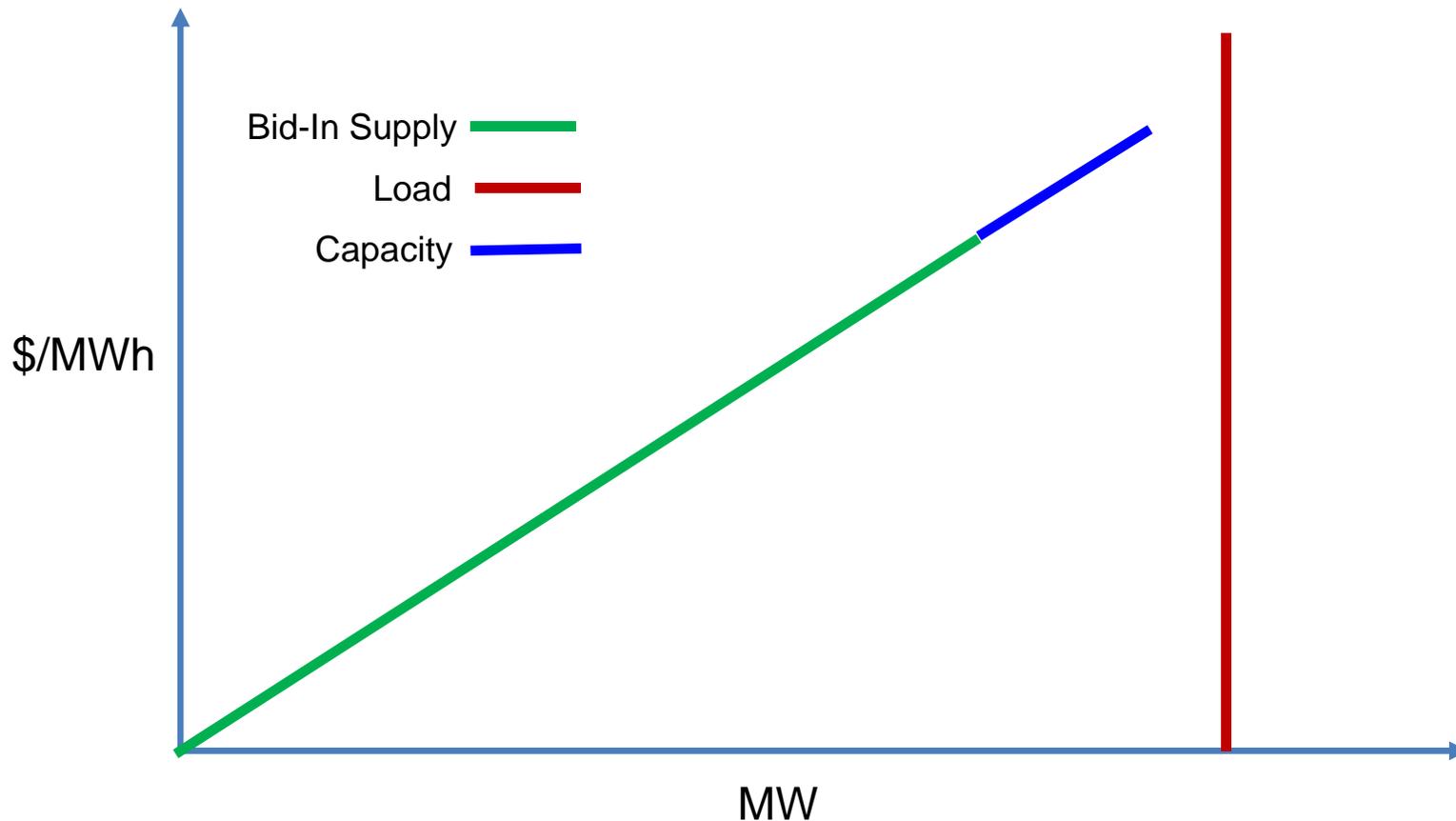
Current design prices infeasibility at the power balance relaxation parameter, not recognizing EIM BAA's available capacity



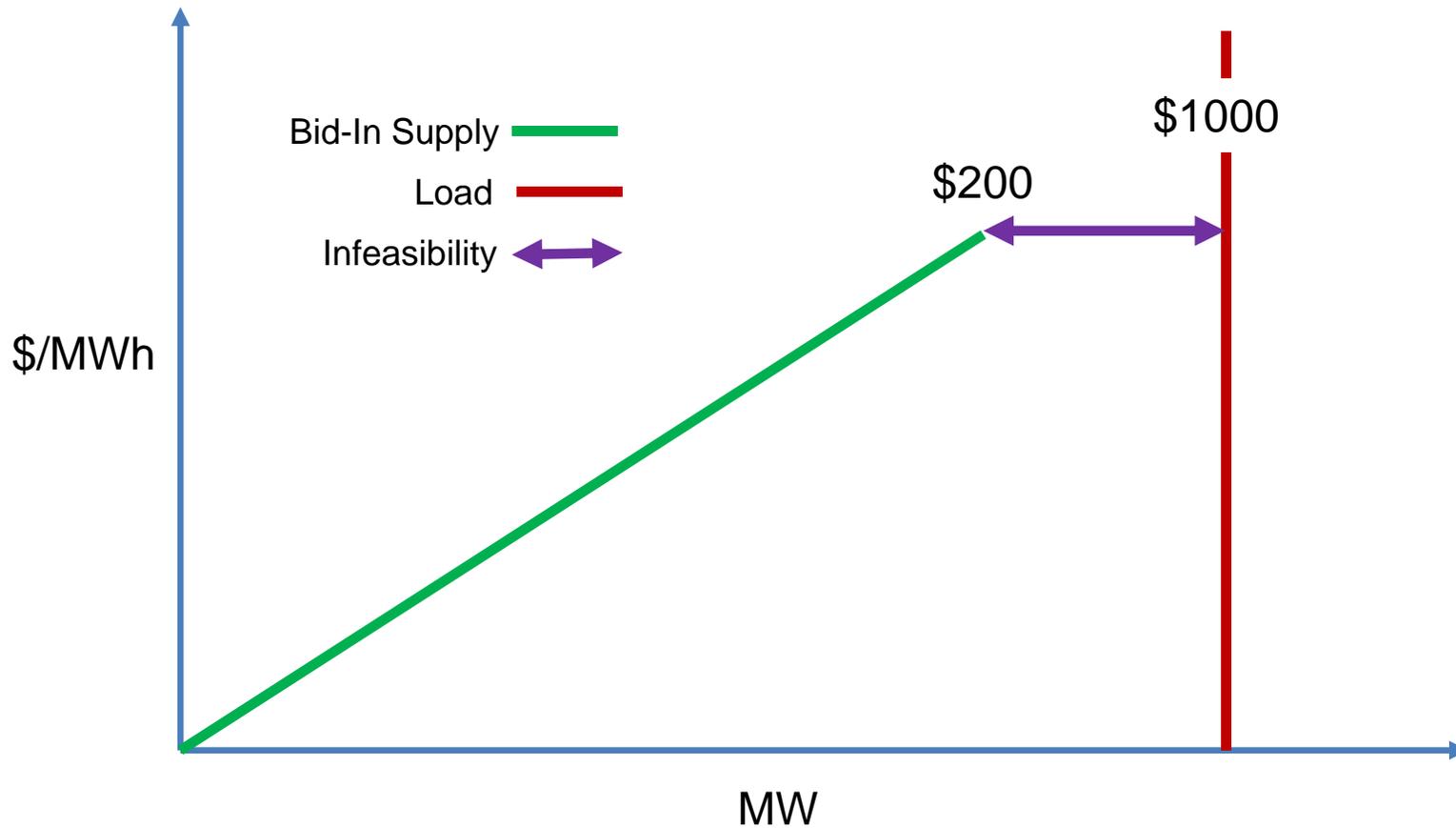
Release available capacity equal to the infeasibility determined in the scheduling run



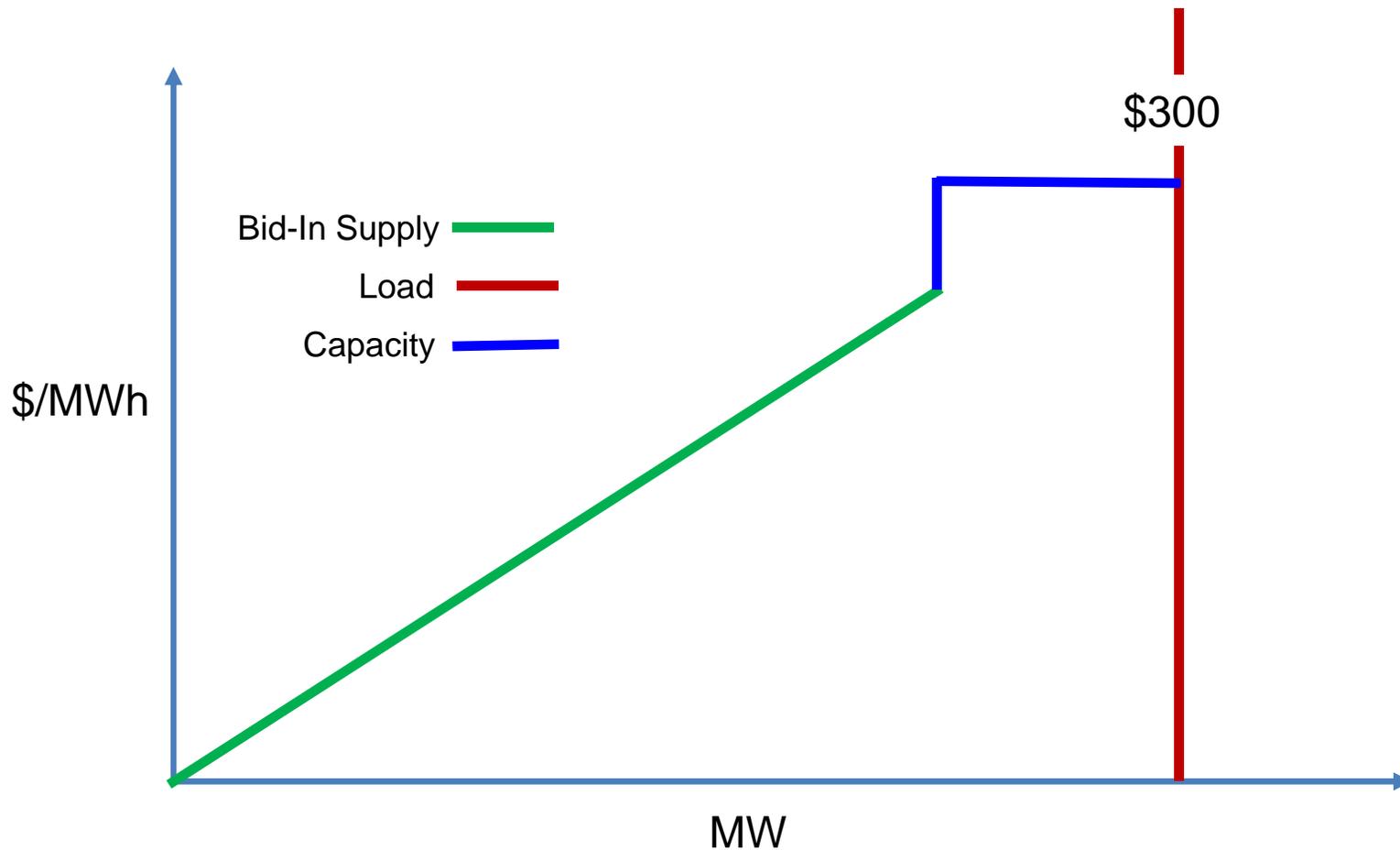
If available capacity is less than infeasibility, the price will be set by the power balance relaxation parameter



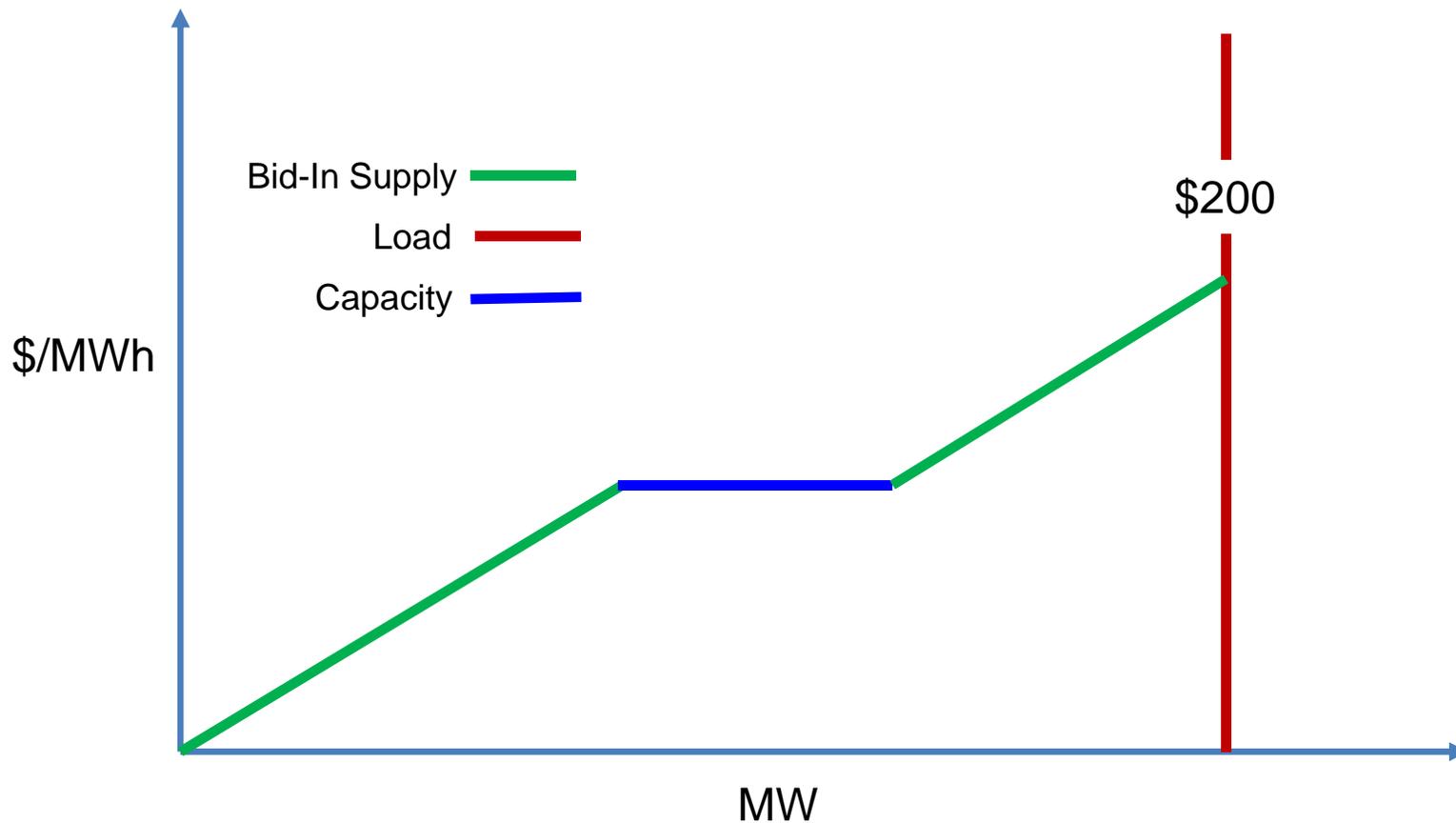
Current design prices infeasibility at the power balance relaxation parameter of \$1000 / MWh



Pricing Example 1 - Release available capacity equal to the infeasibility which is priced at \$300



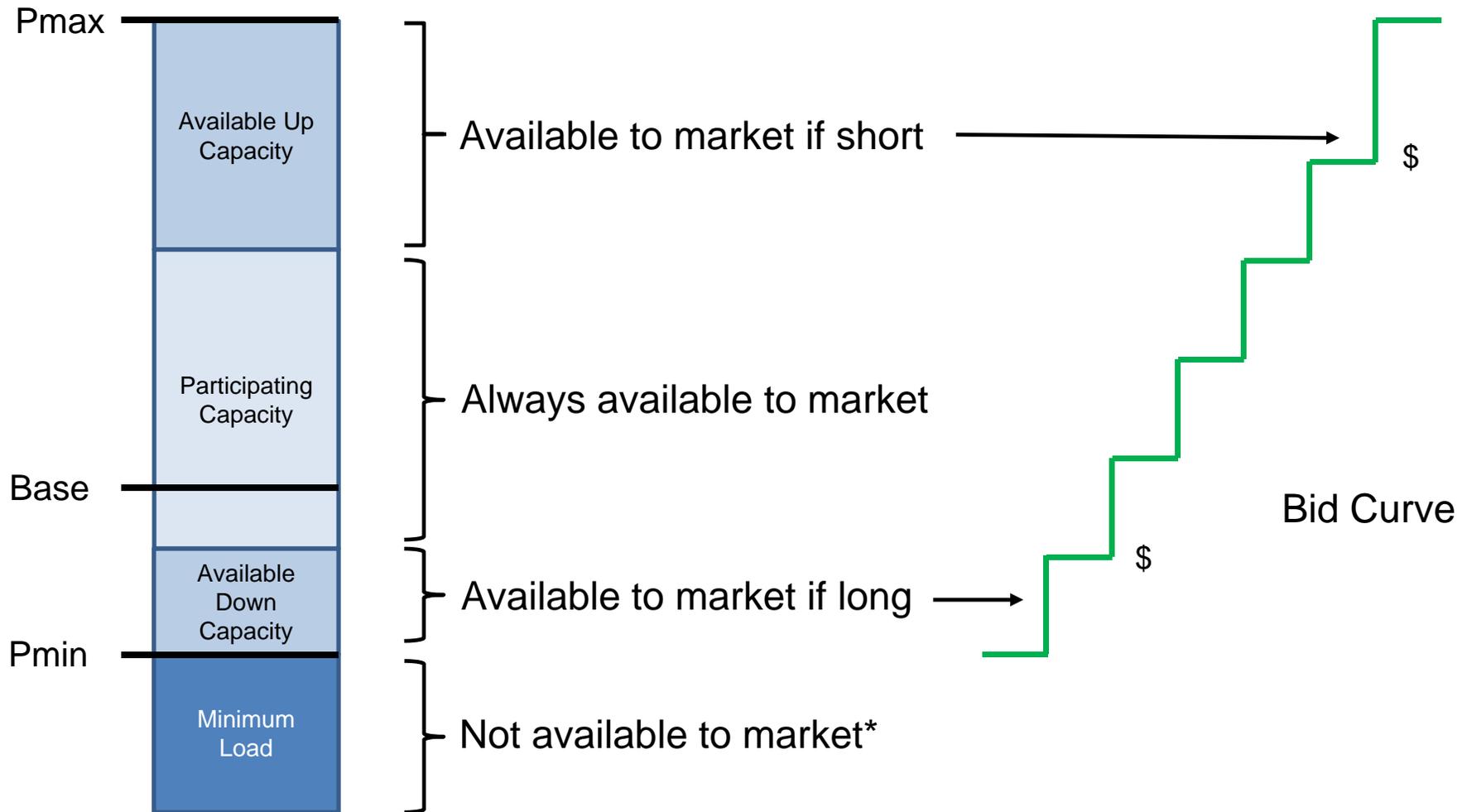
Pricing Example 2 - Release available capacity equal to the infeasibility which is priced at \$100



Amount of available capacity is communicated to ISO through hourly resource plan

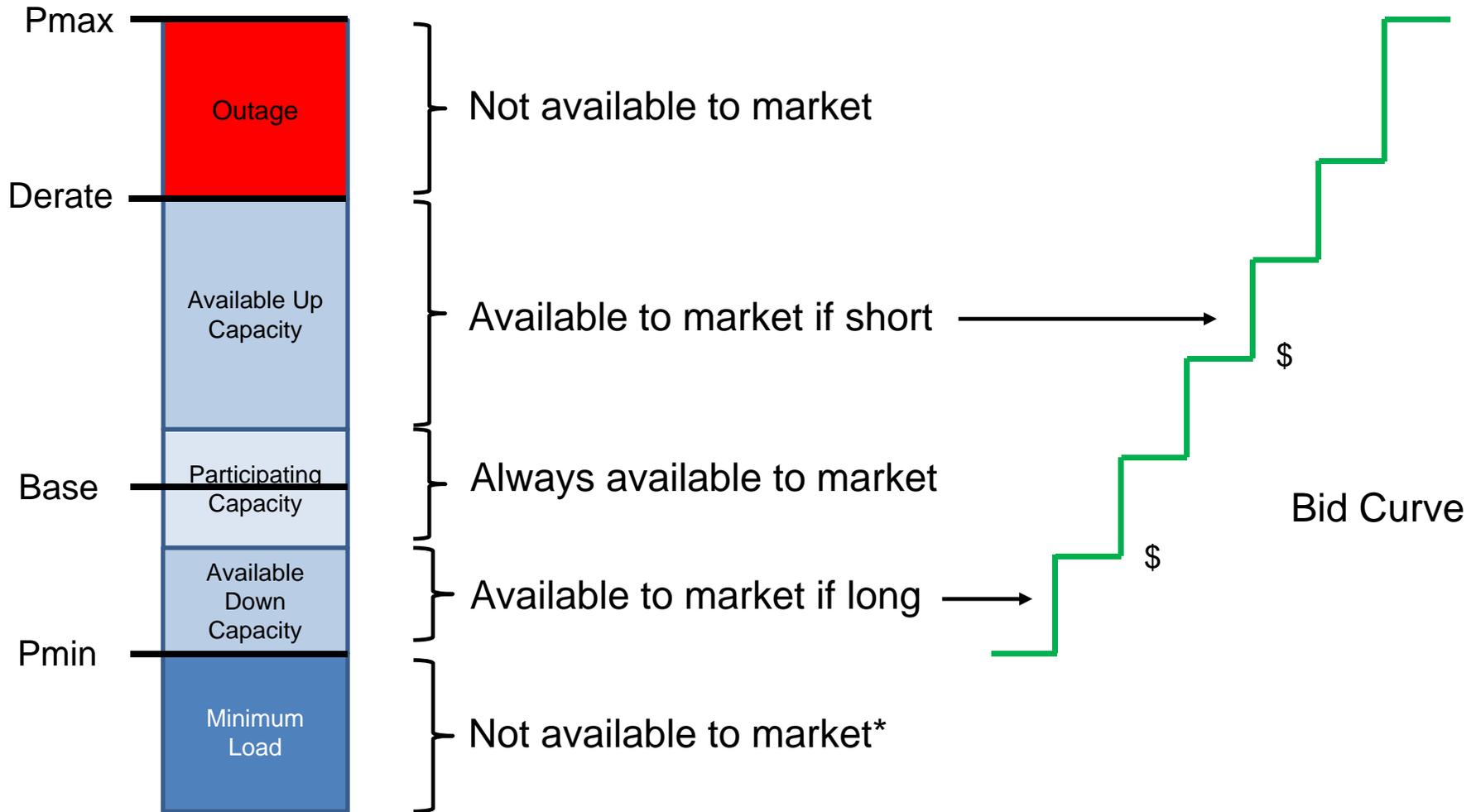
- For each resource specify,
 - Available capacity to meet shortfalls: Regulation up field
 - Available capacity to meet over-generation: Regulation down field
- Initial resource plans are due at T-75
- Resource plans are finalized by EIM entity at T-40
- An outage in real-time reduces the participating energy, before the available capacity to be used if infeasible

Available capacity is priced based upon resource's bid curve



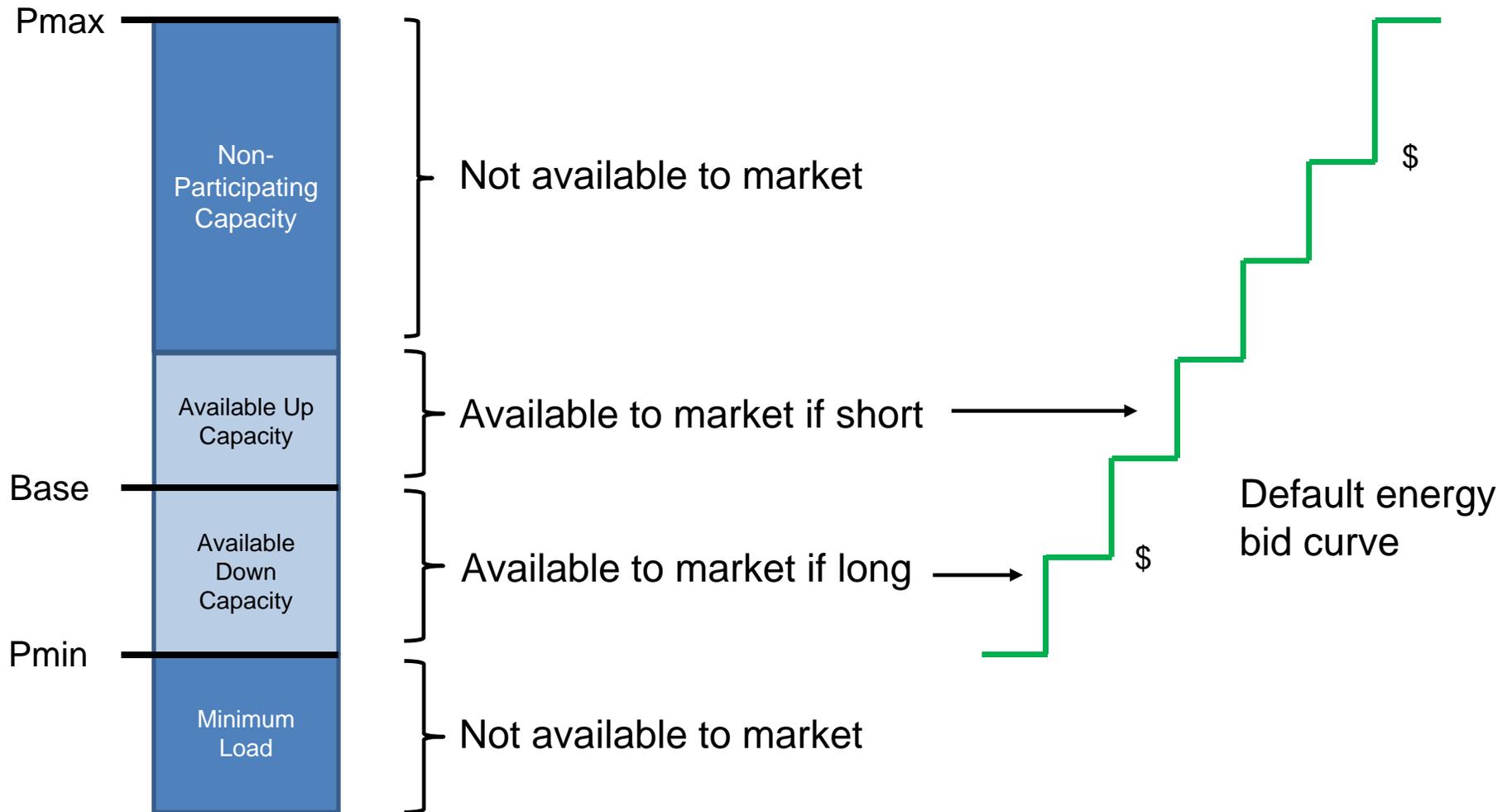
* Can't de-commit since the resource is providing regulation down

If an outage is reported, this reduces the participating capacity, but does not change available capacity



* Can't de-commit since the resource is providing regulation down

A non-participating resource available capacity uses the default energy bid



Bid price of available capacity

- Participating resources
 - Submit economic bids at T-75 for full output of the resource
 - Bids are subject to mitigation
- Non-participating resources
 - Use the default energy bid curve

Market formulation for shortfalls, in scheduling run

- Include available capacity bids
 - Respects the economic merit order of available capacity and allows resource specific awards
- Add a constraint that available capacity used cannot exceed the positive difference between BAA load and generation
 - Prevents use of available capacity to support EIM transfers
- Add a surplus variable to the EIM transfer equation at a high penalty price (ex. \$5,000)
 - If insufficient available capacity, ensures PBV maintained

Market formulation in the pricing run

- Use available capacity bids for resources with awards
- Limit available capacity dispatch to the scheduling run solution
- Reduce the load forecast by small tolerance to allow price discovery
 - No need to mathematically freeze EIM transfers, as this is accomplished via second bullet above
 - By not freezing, price can be set externally
- If available capacity was not sufficient, the \$1000 relaxation parameter will apply

Energy settlement when available capacity is used

- Participating Resource (EIM Participating Resource SC)
 - Same as an energy dispatch in the participating range
- Non-participating resource (EIM Entity SC)
 - Before October 1, 2015
 - If in FMM, settled as IIE at 15-minute price
 - If in RTD, settled as UIE at 5-minute price
 - After October 1, 2015
 - If in FMM, settled as IIE at 15-minute price
 - If in RTD, settled as IIE at 5-minute price