CARIS Phase II

Action Items from Oct. 11, 2012

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Rensselaer, N.Y.

DRAFT – FOR DISCUSSION PURPOSES ONLY

Action Items from October 11, 2012

- **Provide references which support installing wind as the first step for generic additions in the CARIS Phase II process**
- **Run 2022 with wind that would have otherwise been added in 2023 and 2024**
- **Run 2024 & 2032 with 250MW CC units in the vicinity of the wind**
- **Document the difference between the base case and the $5/ton CO_2 for 2024 & 2032**
- **Discuss the process for how we derived prices for the 3 gas regions**

Wind as Generic Addition

- **CARIS Manual Section 1.2.6 V. A. c.**

  "A representative generic combination of peakers and combined cycle units will be added as needed to maintain target ICL. Appropriate adjustments will be made in areas with a demonstrated favorability for renewable resources."

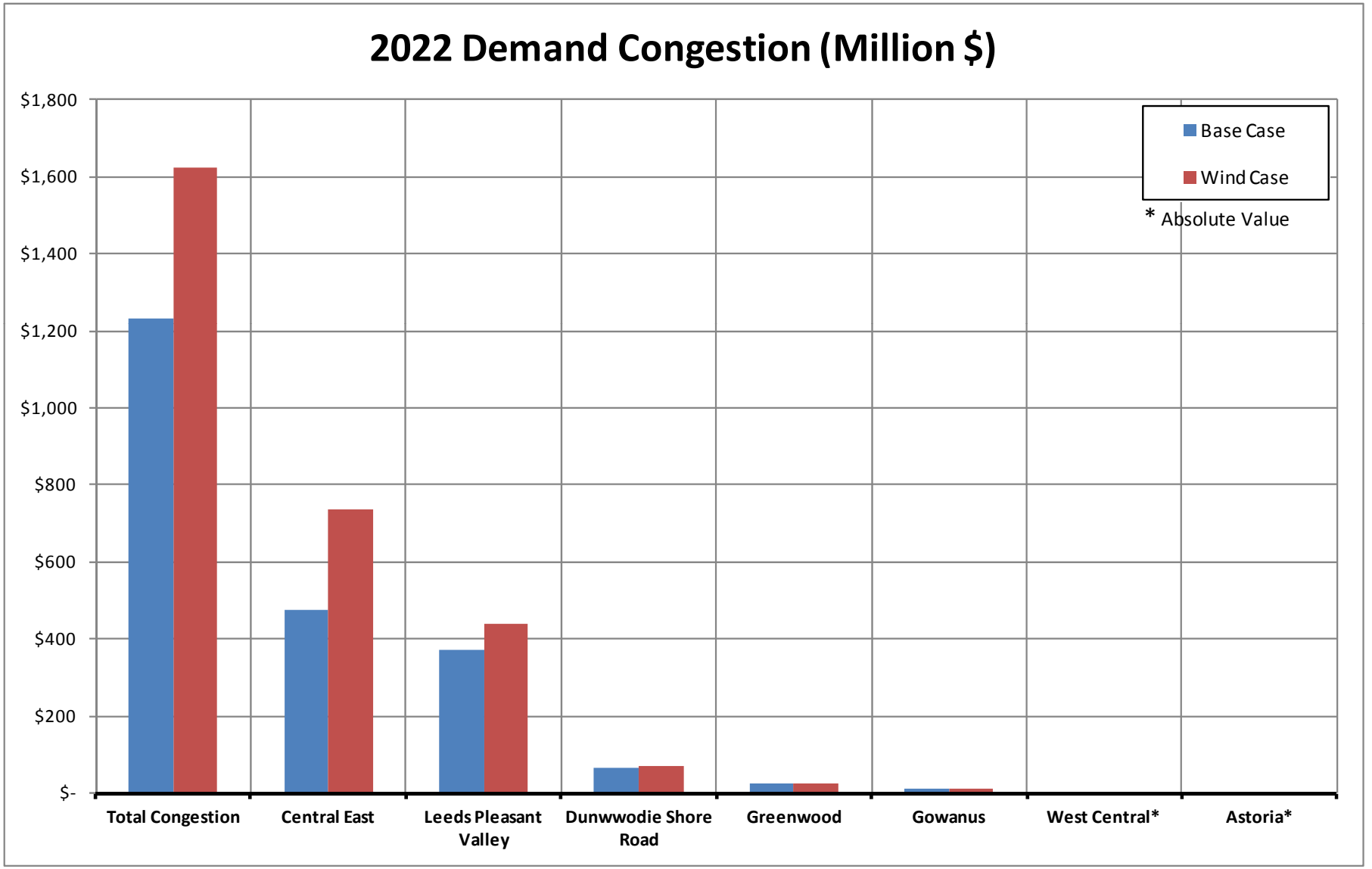
- **Oct. 15, 2010 ESPWG Presentation by Bill Lamanna**

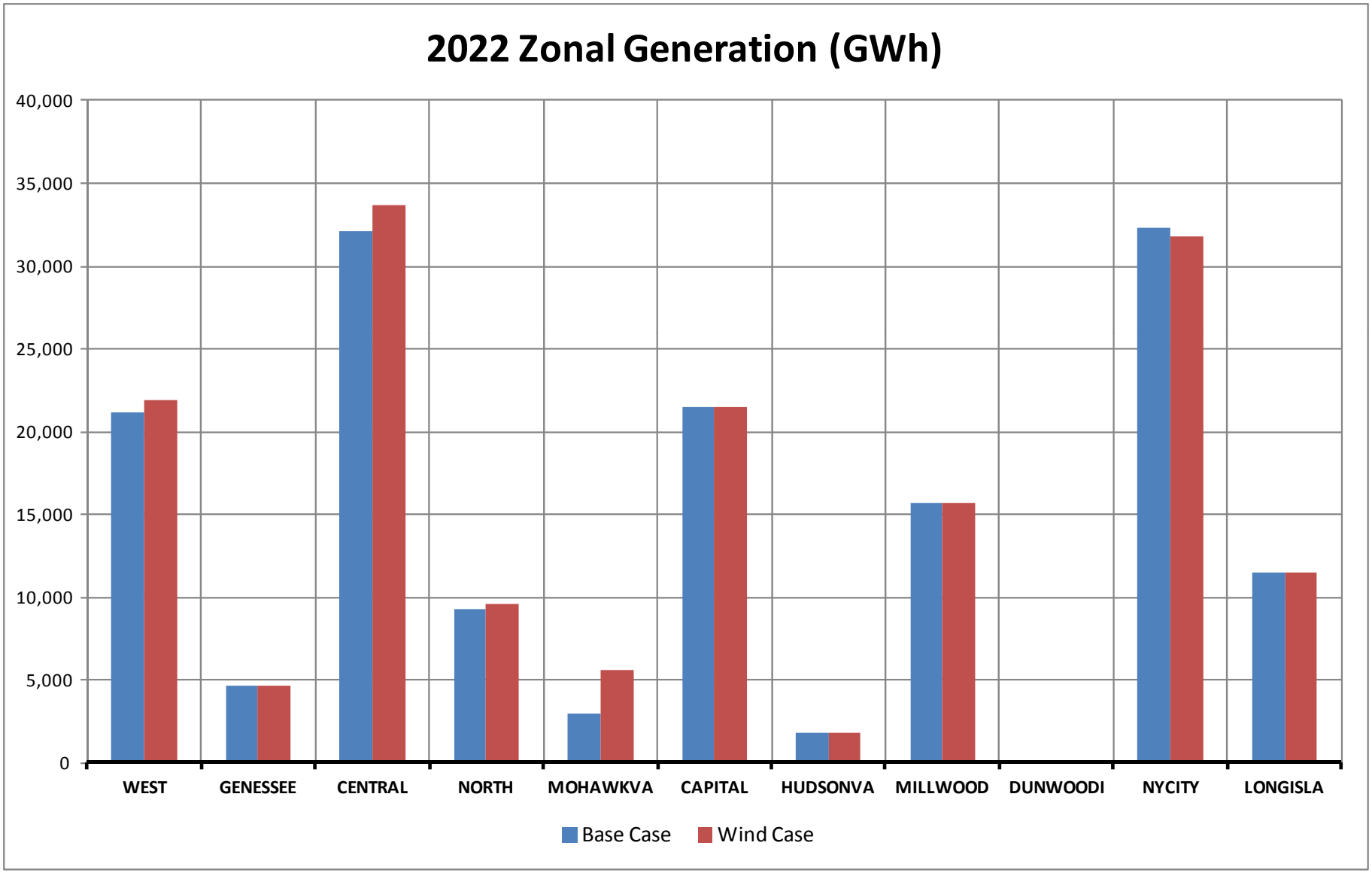
  "Add wind MWs from Queue to satisfy RPS and then add generic combined cycle (250 MW block) or peaker (100 MW block) to maintain a representative system measured against target reserve proxies ..."

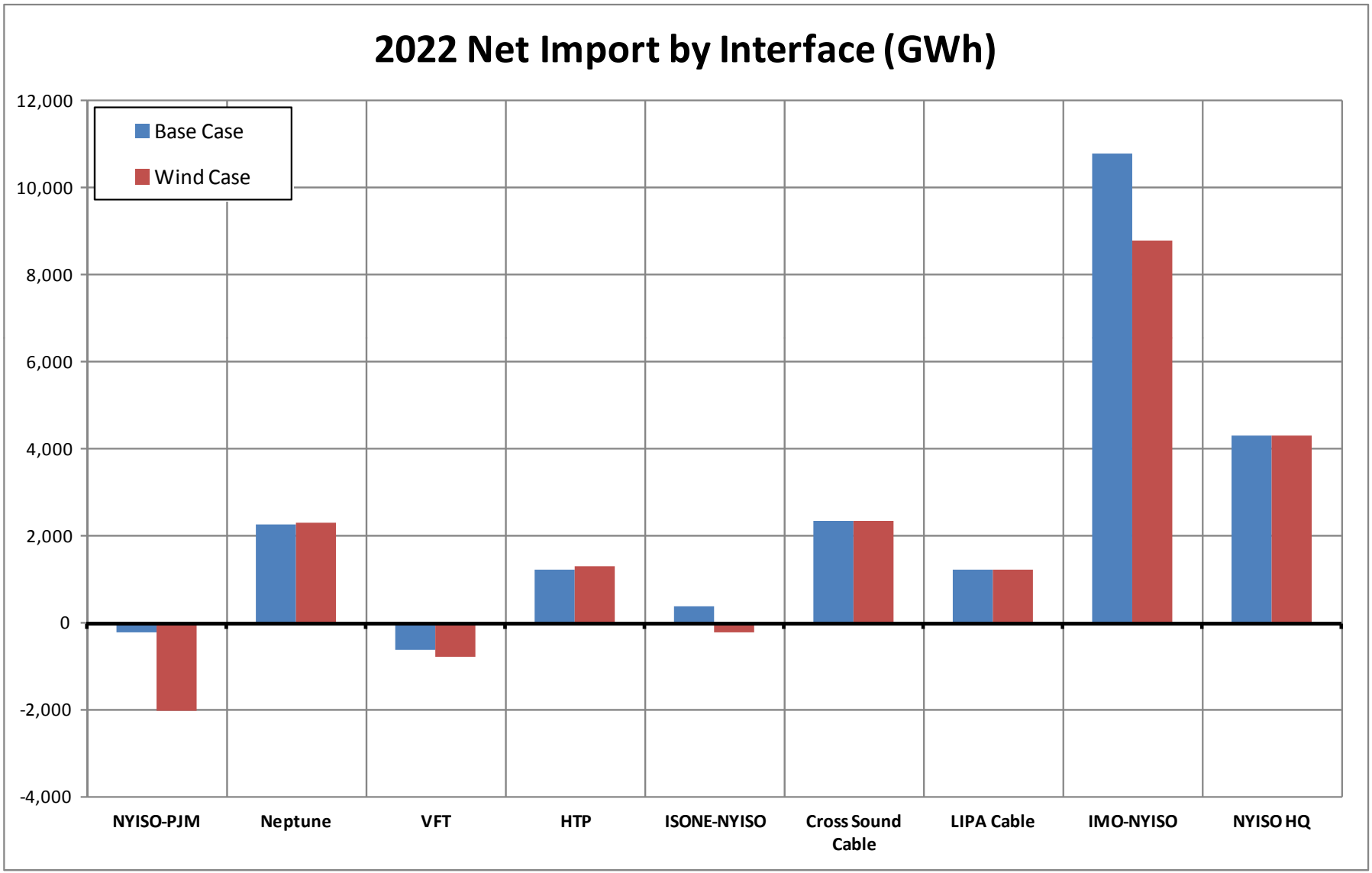
Sensitivities*

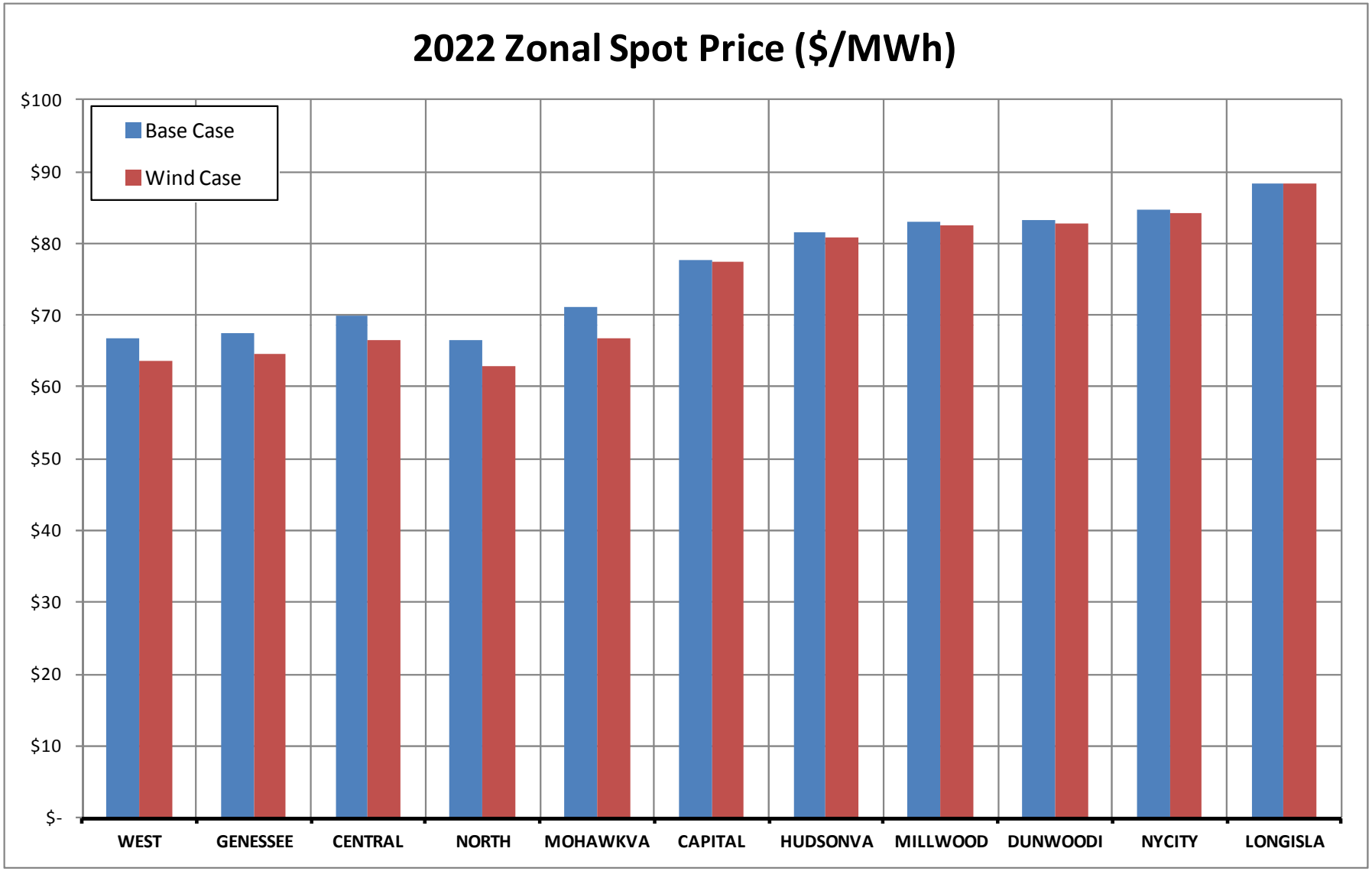
- **2022**
  - ***All Wind In-Service in 2022***
- **2024**
  - ***No Wind No Replacement:*** *Informational – not a representative system*
  - ***1 Generic CC – Capacity Replacement:*** *Replace 235.7 MW DMNC (2,357 MW Nameplate) with a 250 MW Combined Cycle*
  - ***4 Generic CC – Energy Replacement:*** *Replace ~7 TWh of Wind Energy with ~6 TWh of Energy from four 250 MW Combined Cycles*
- **2032**
  - ***1 Generic CC – Capacity Replacement***
  - ***4 Generic CC – Energy Replacement***

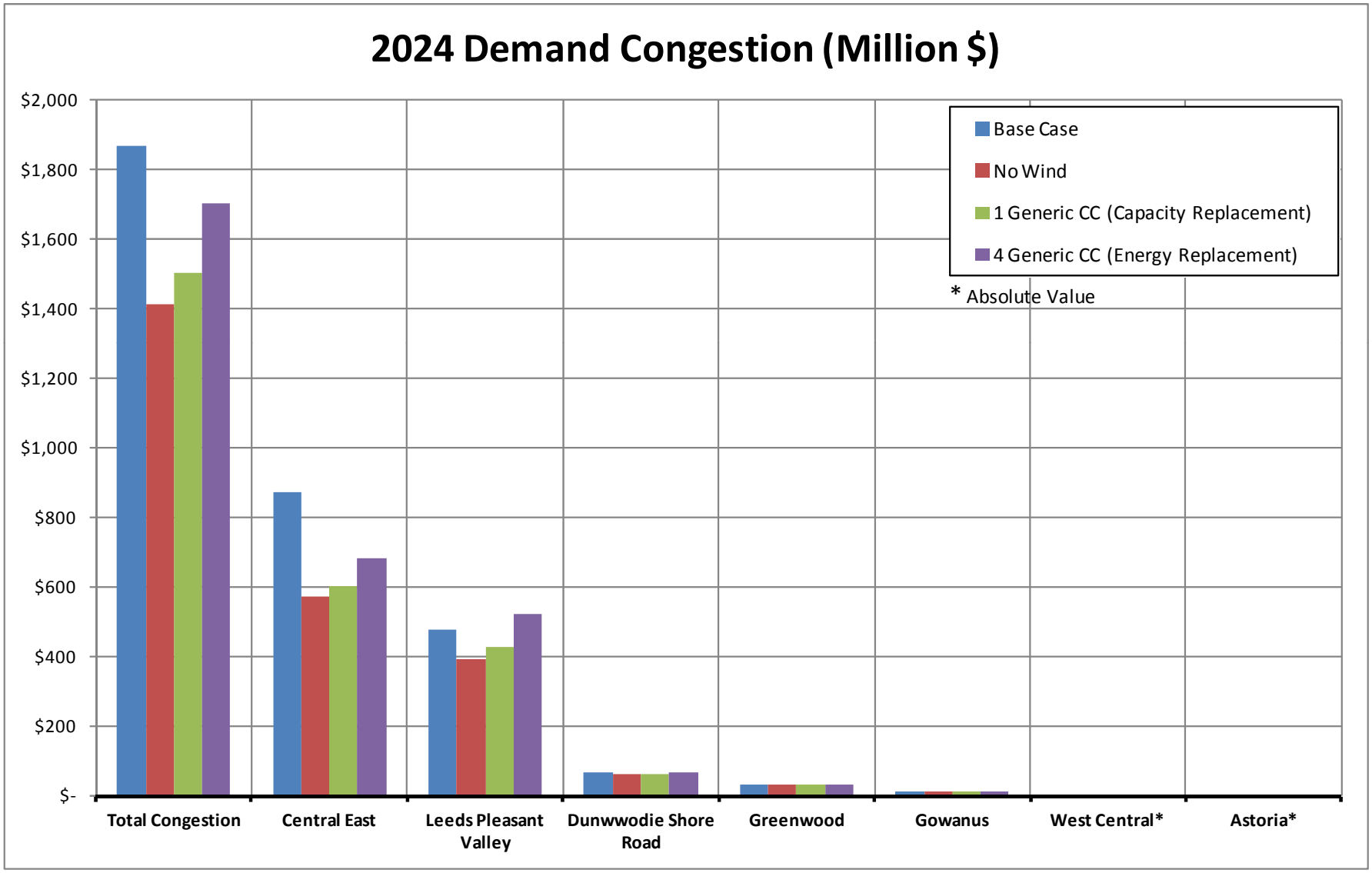
*** Base Case includes 2,357 MW Nameplate wind in 2023 and 2024**

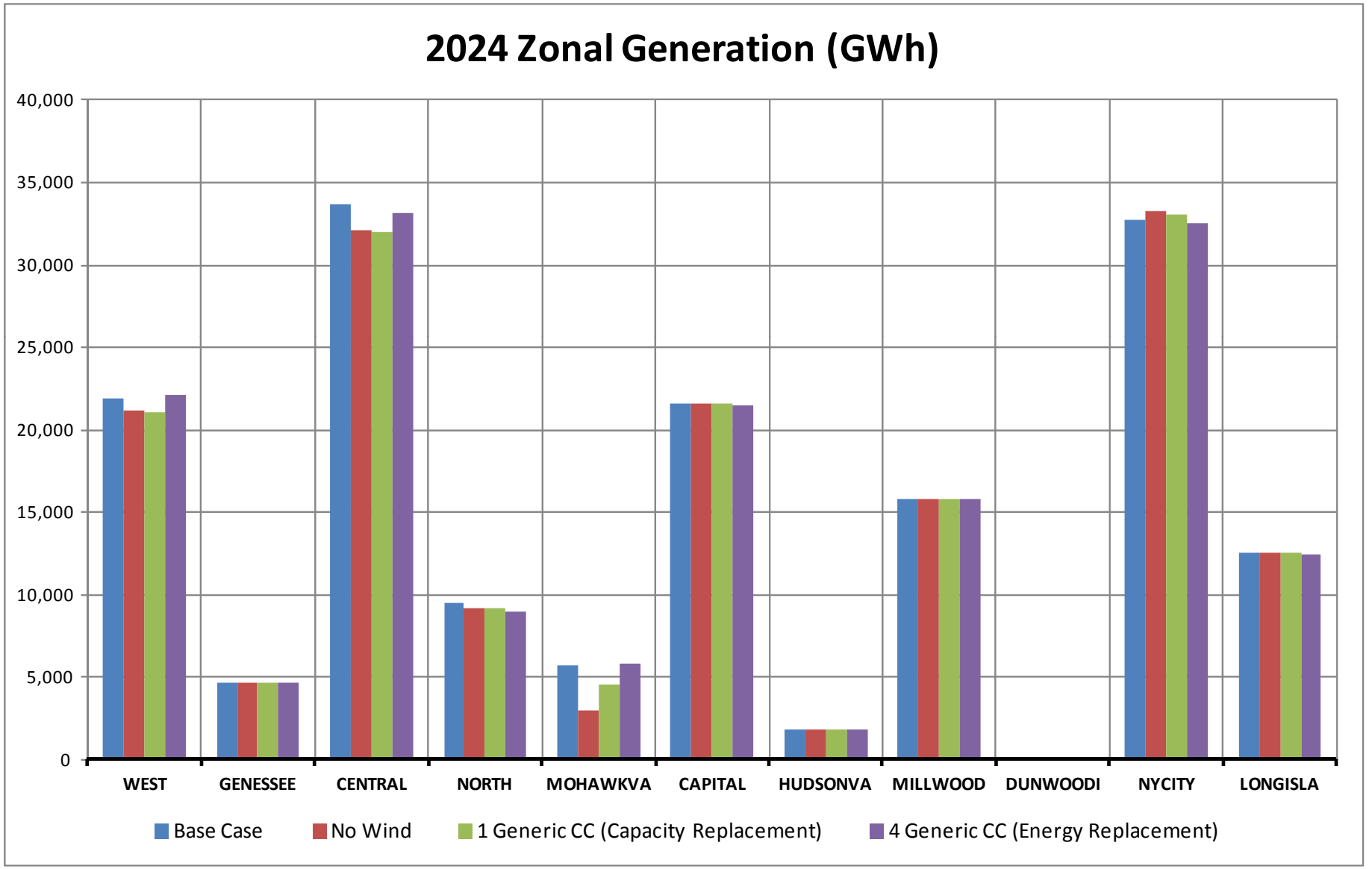


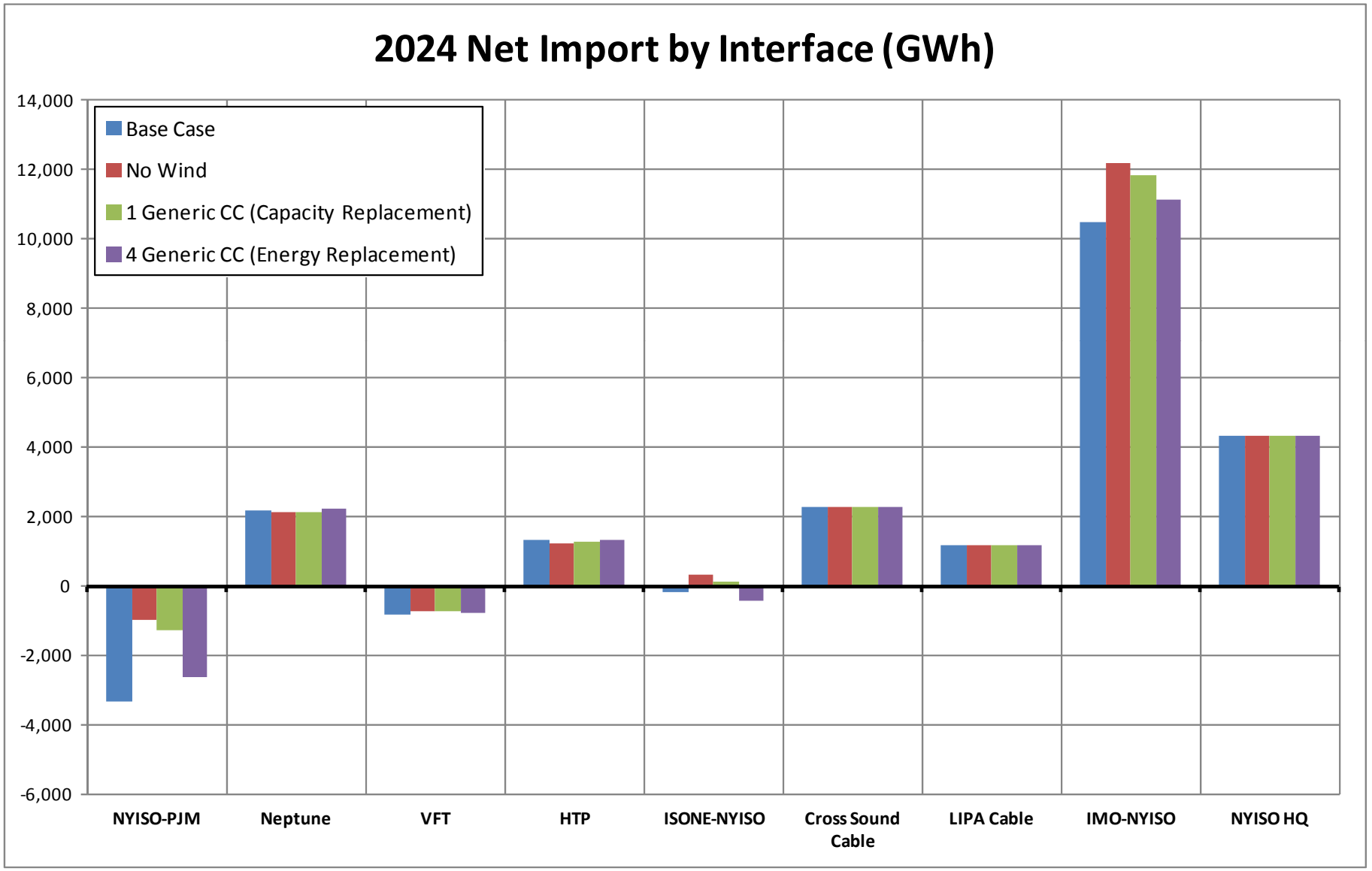


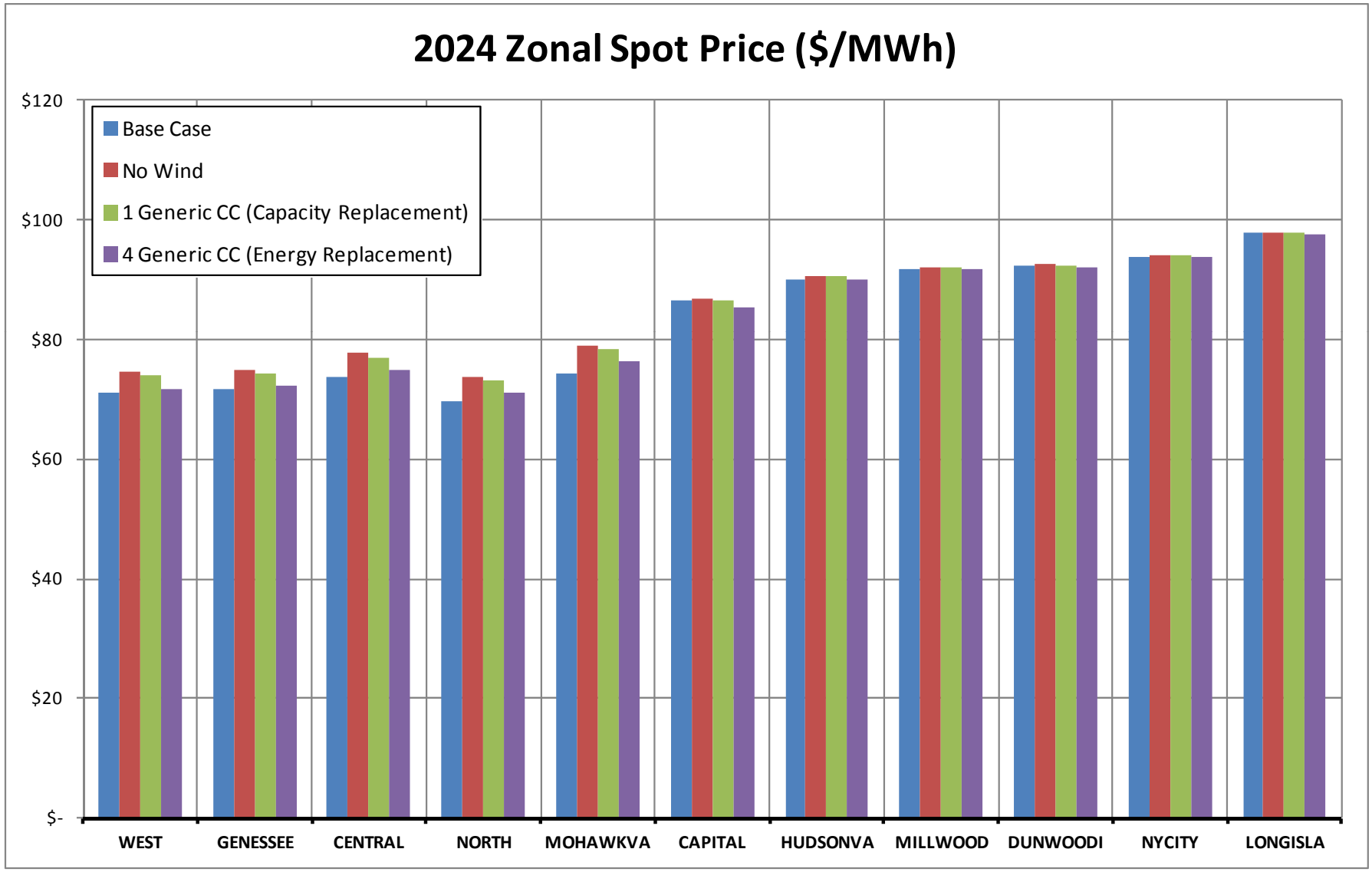


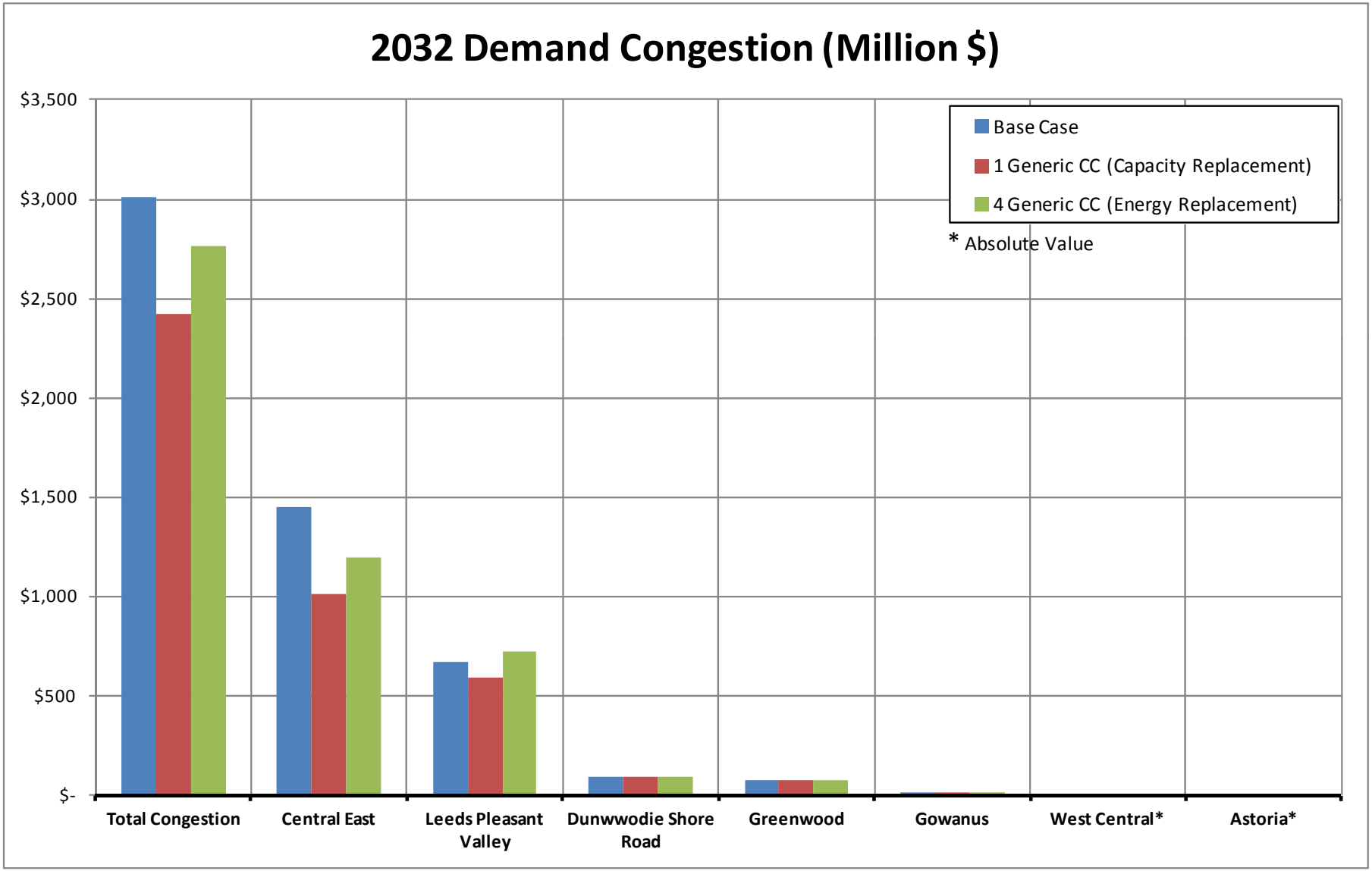


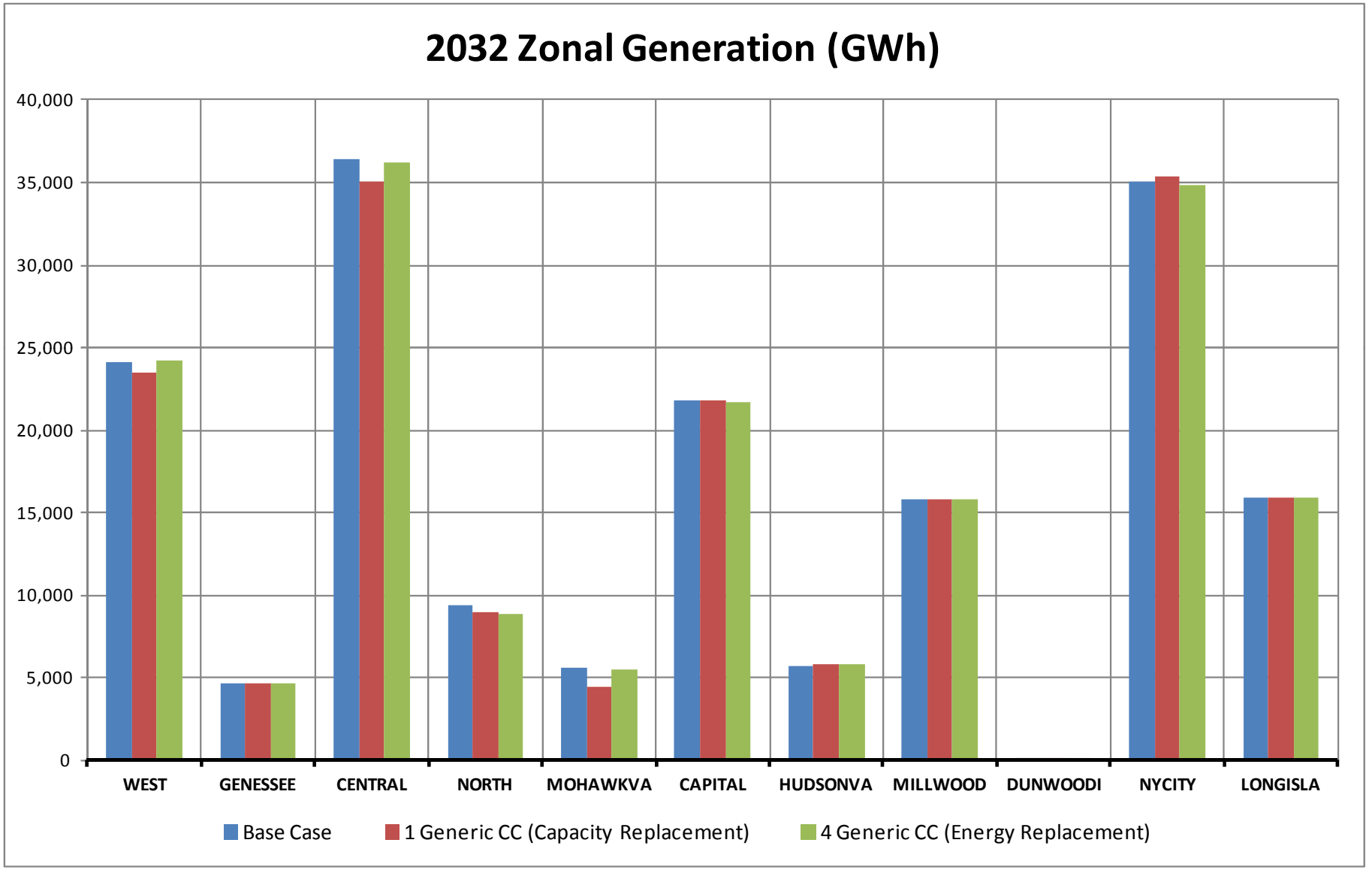


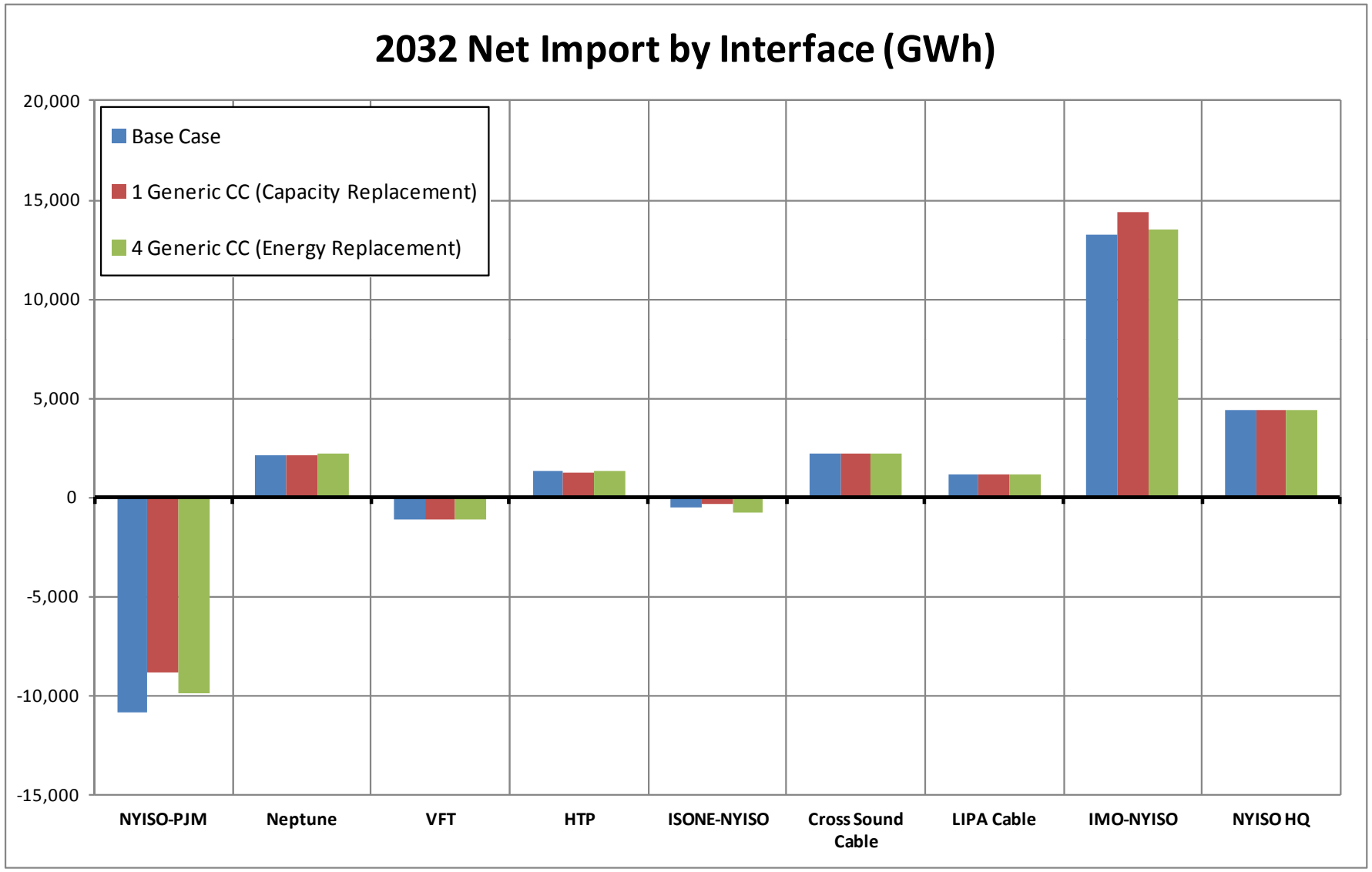


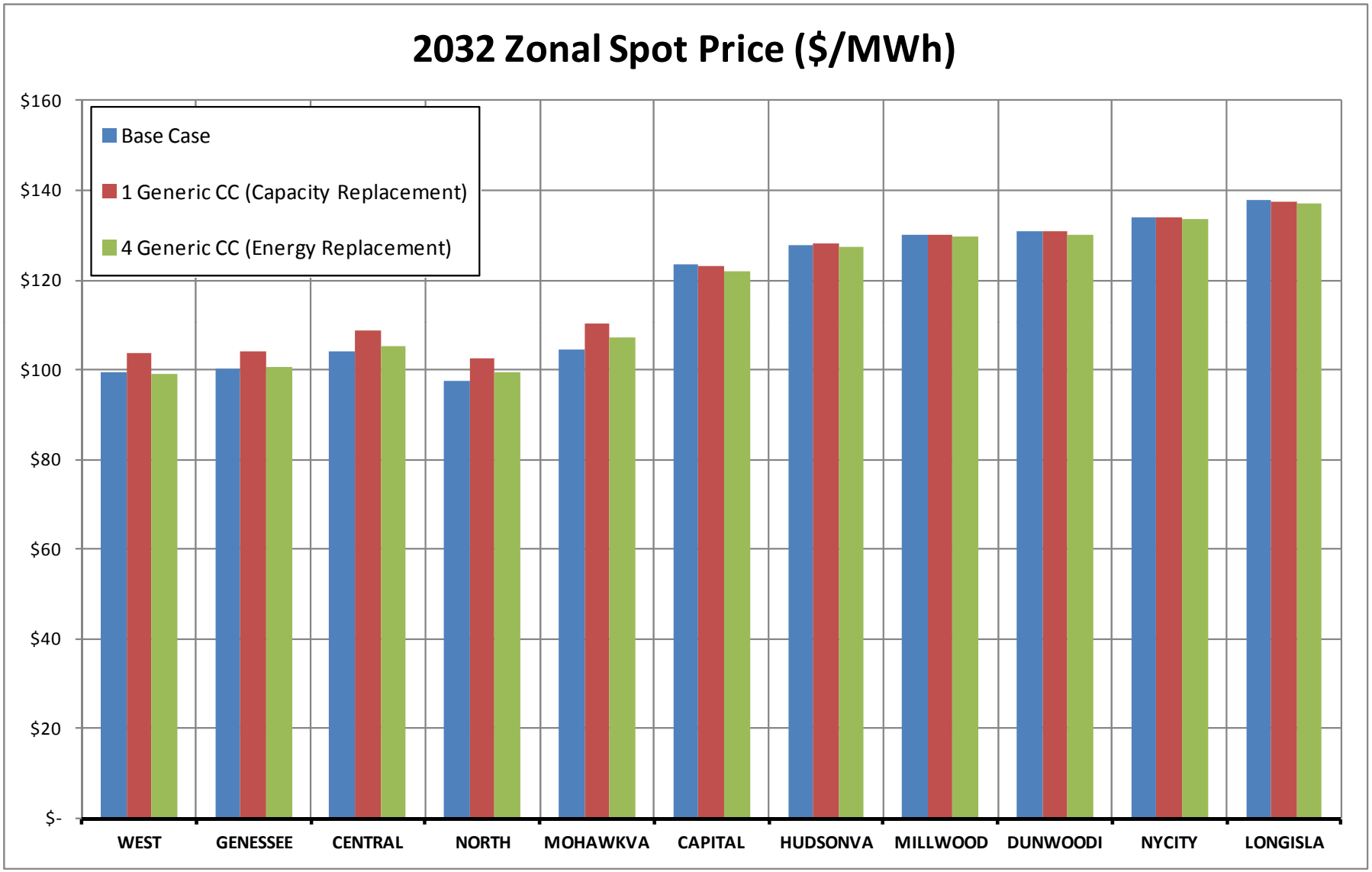




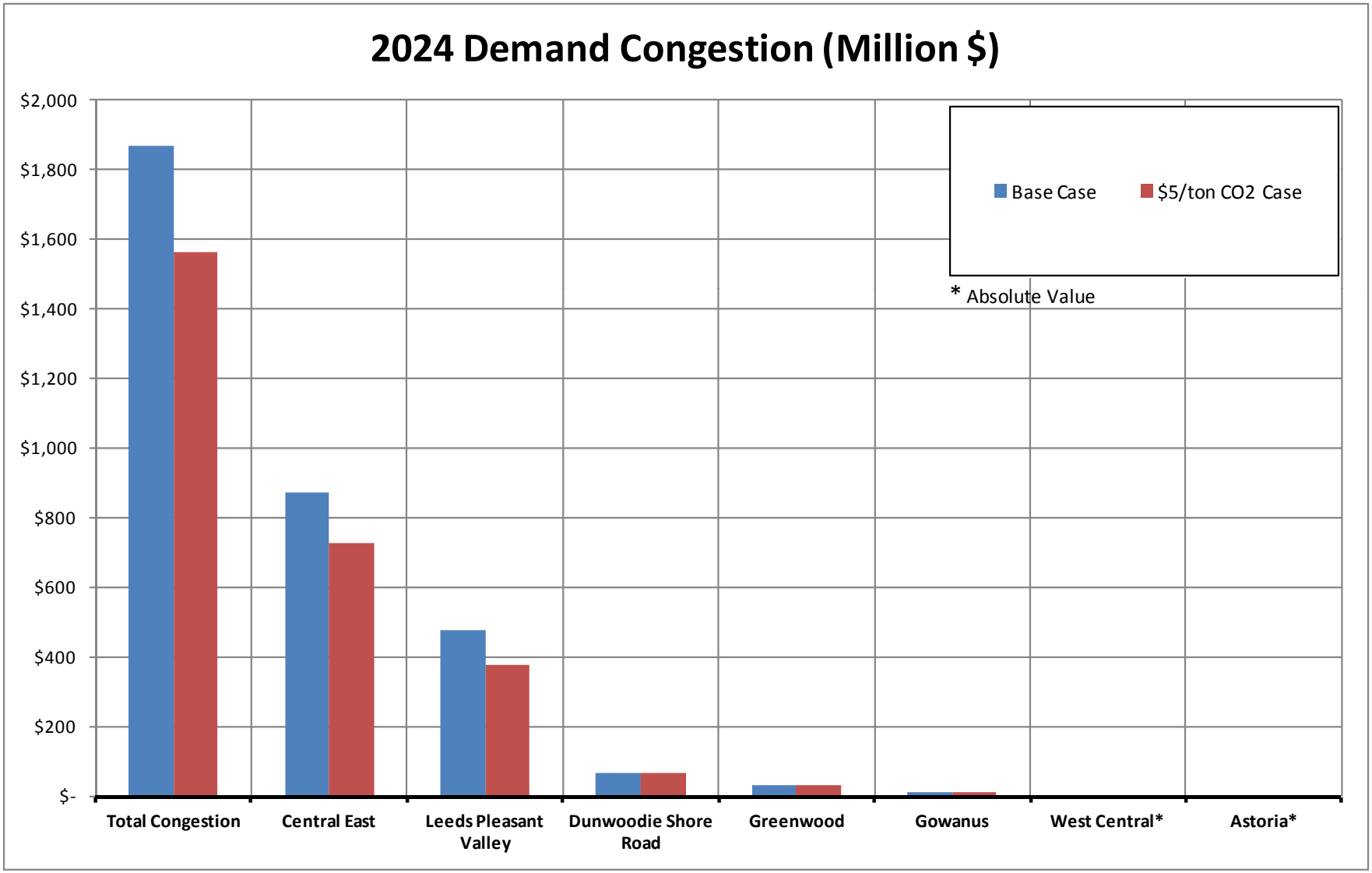


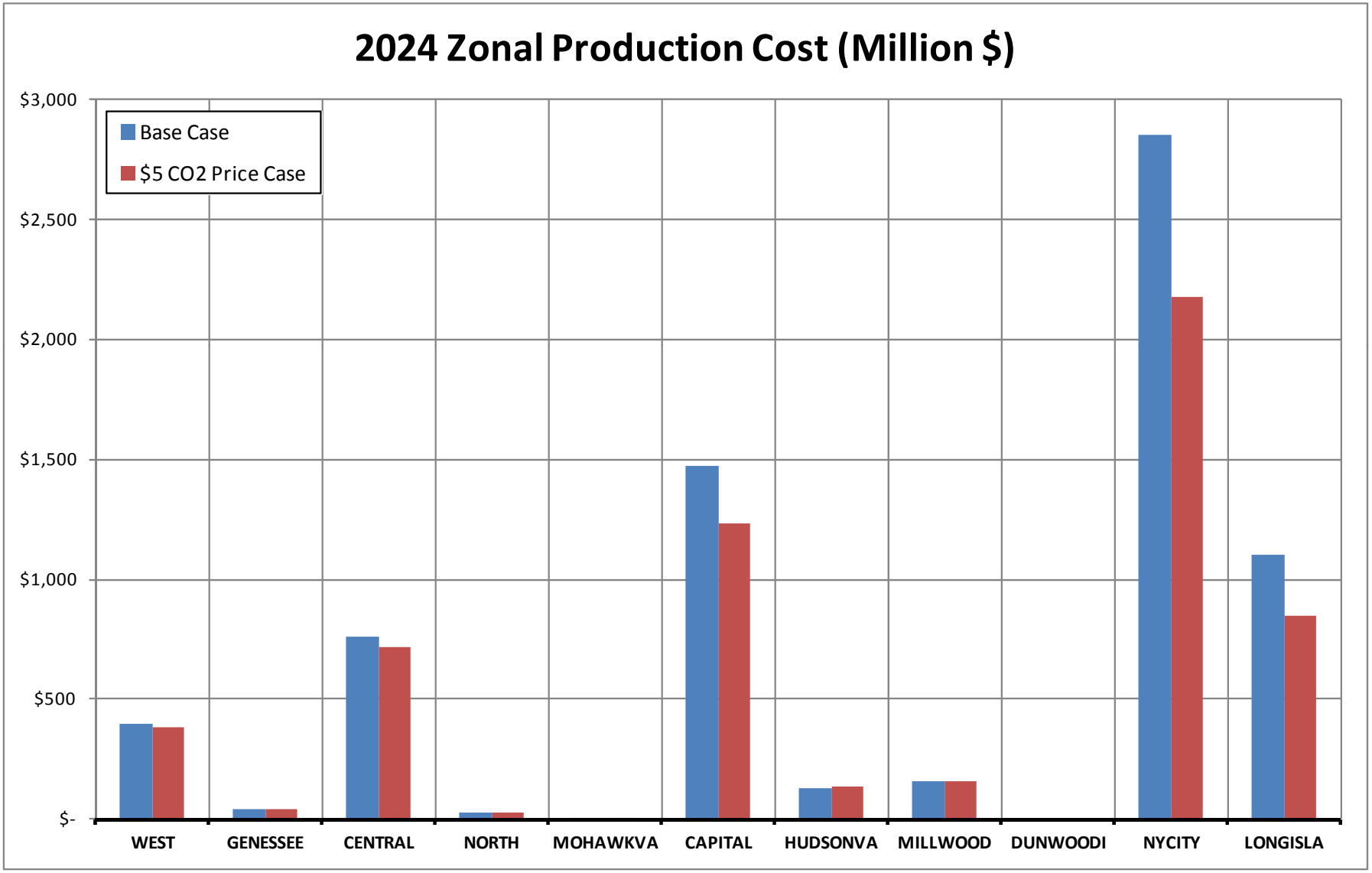


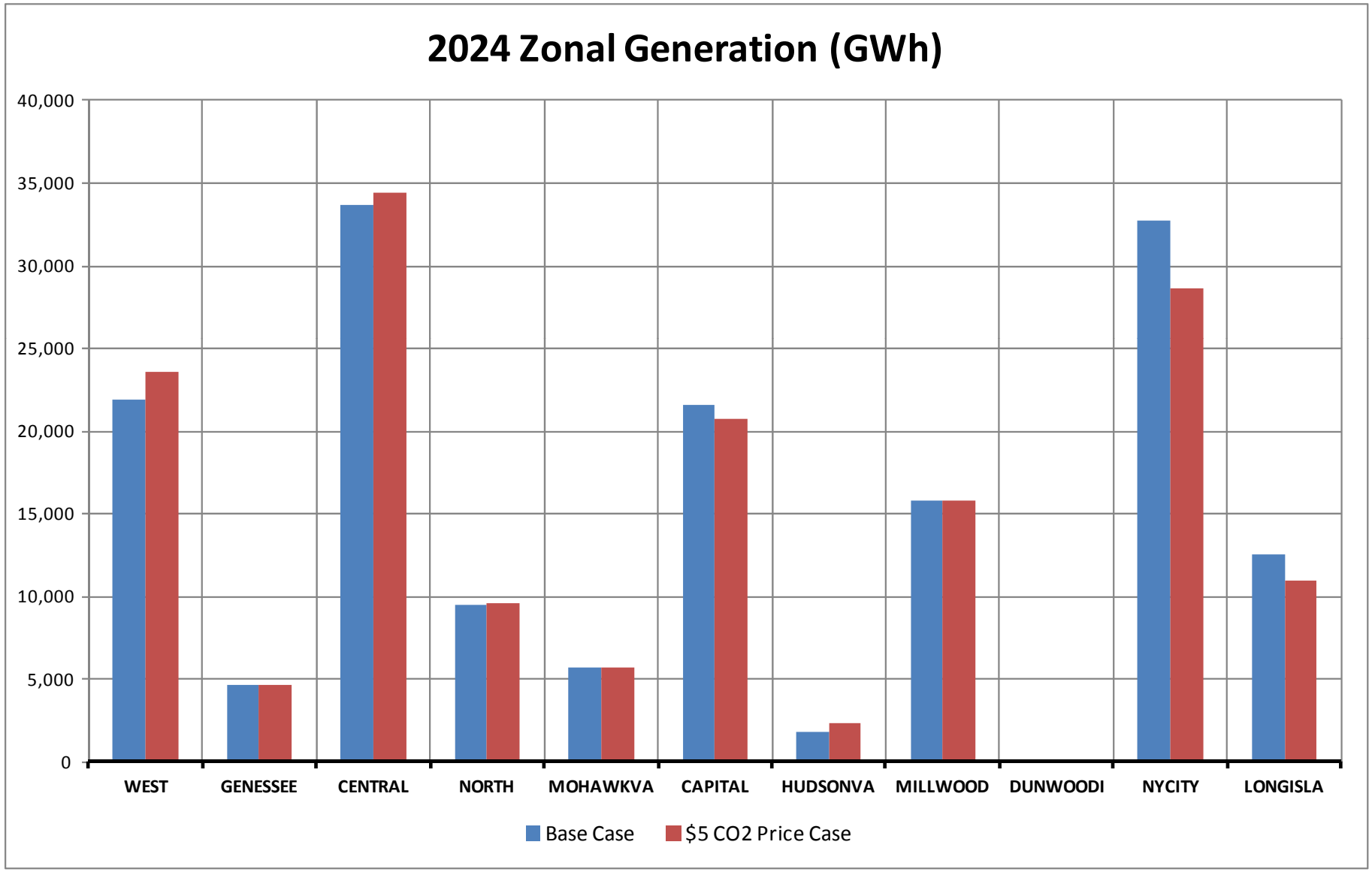


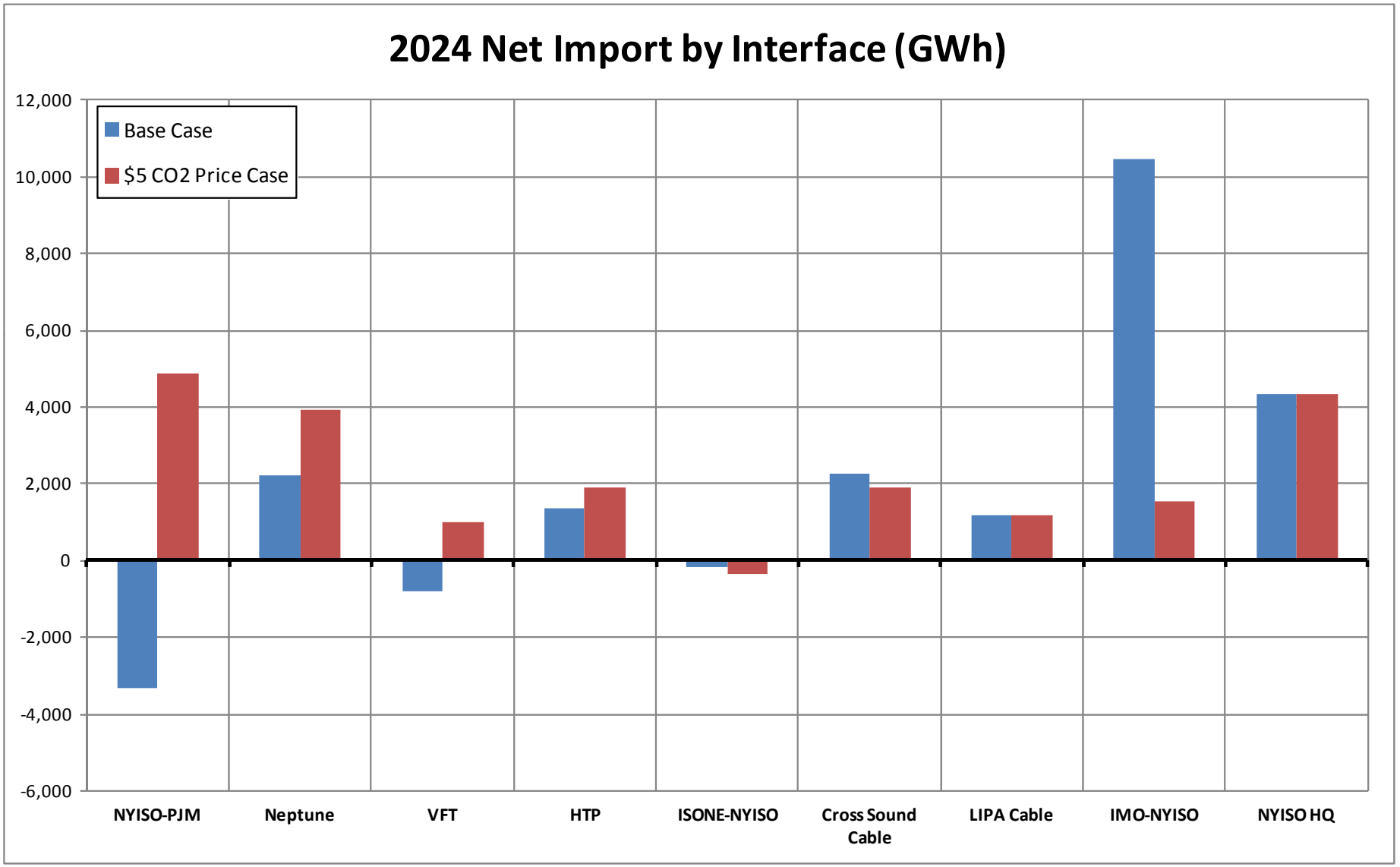


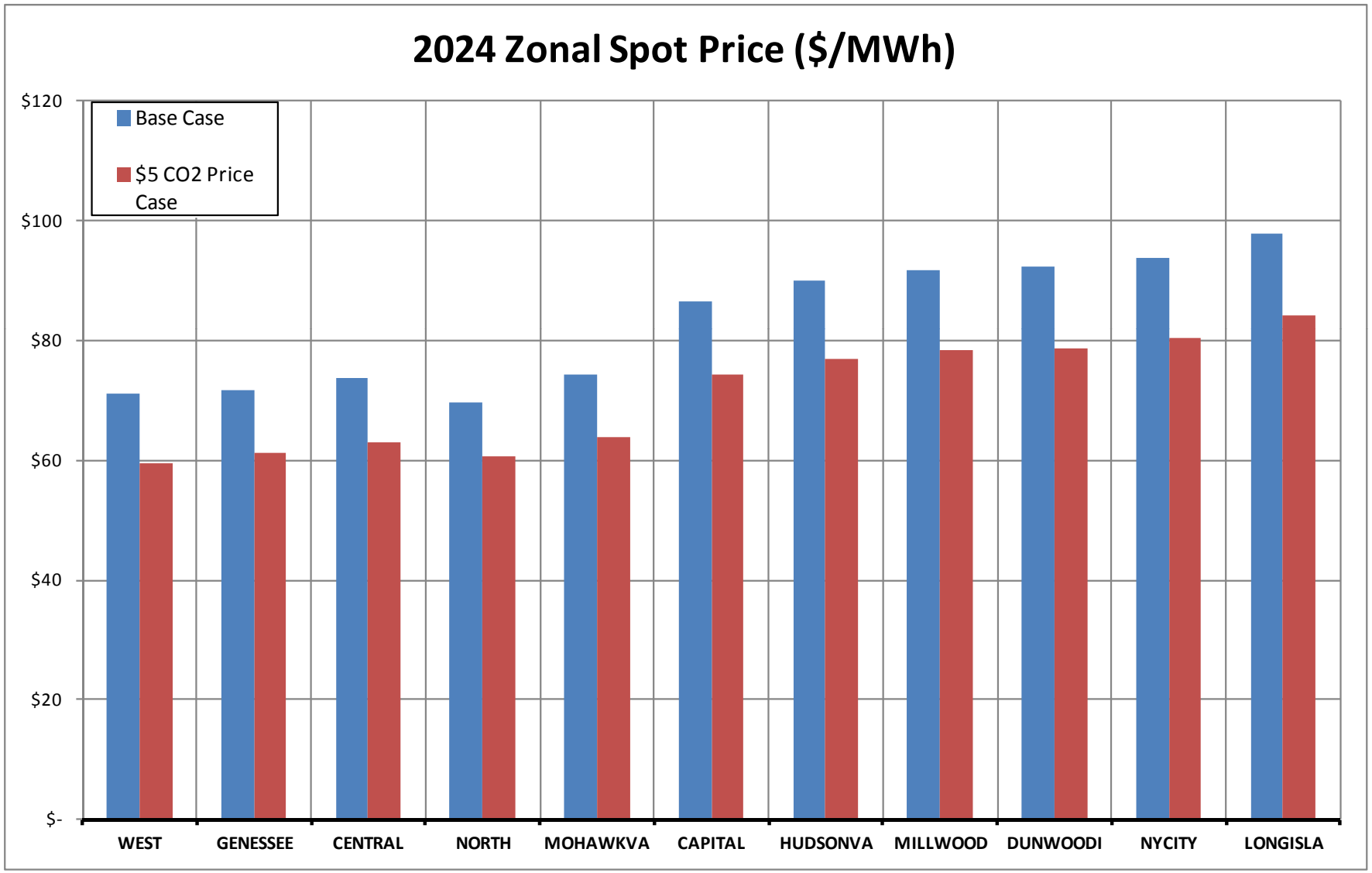
$5/ton CO_2 Price Sensitivity Results

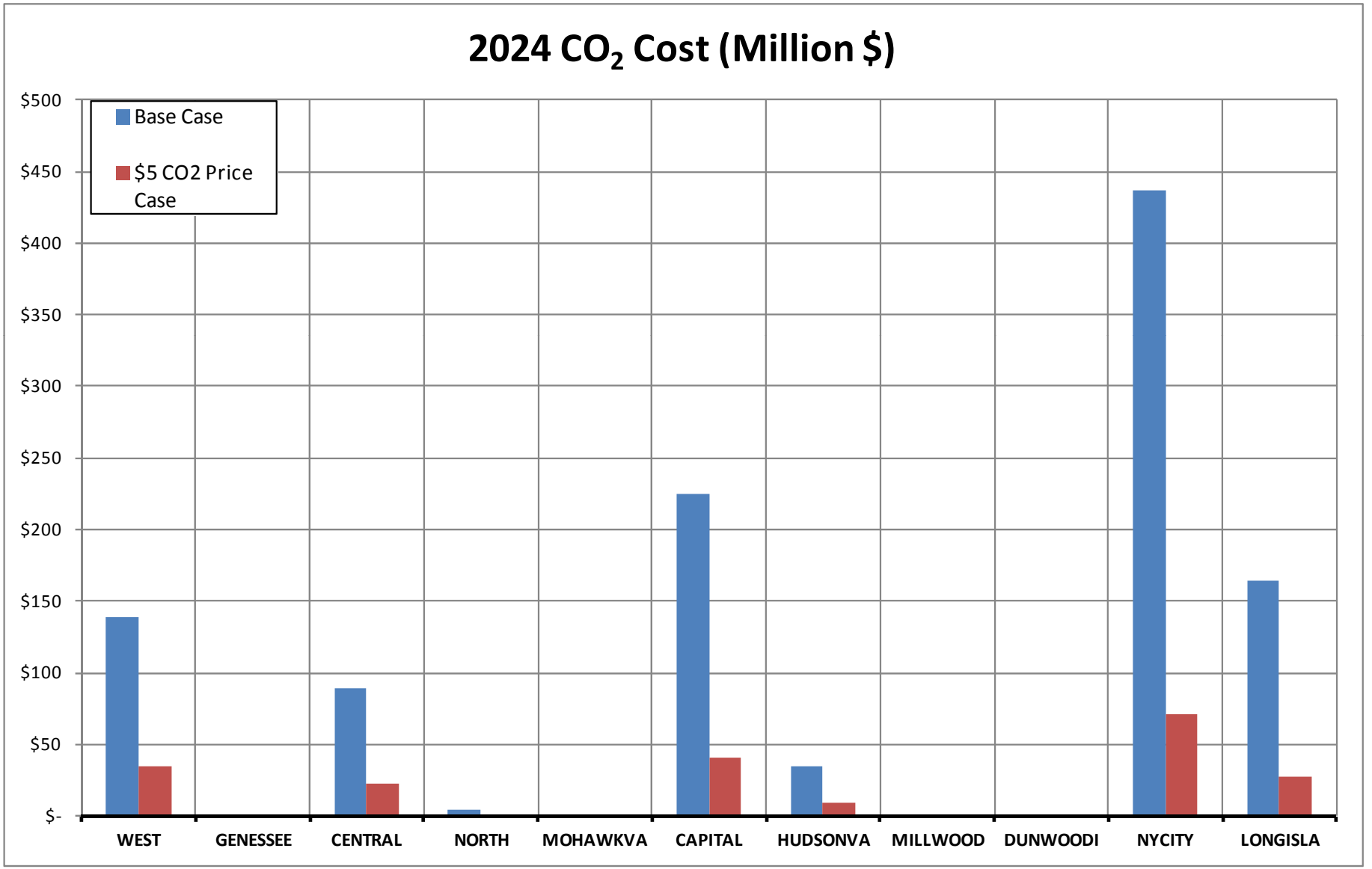


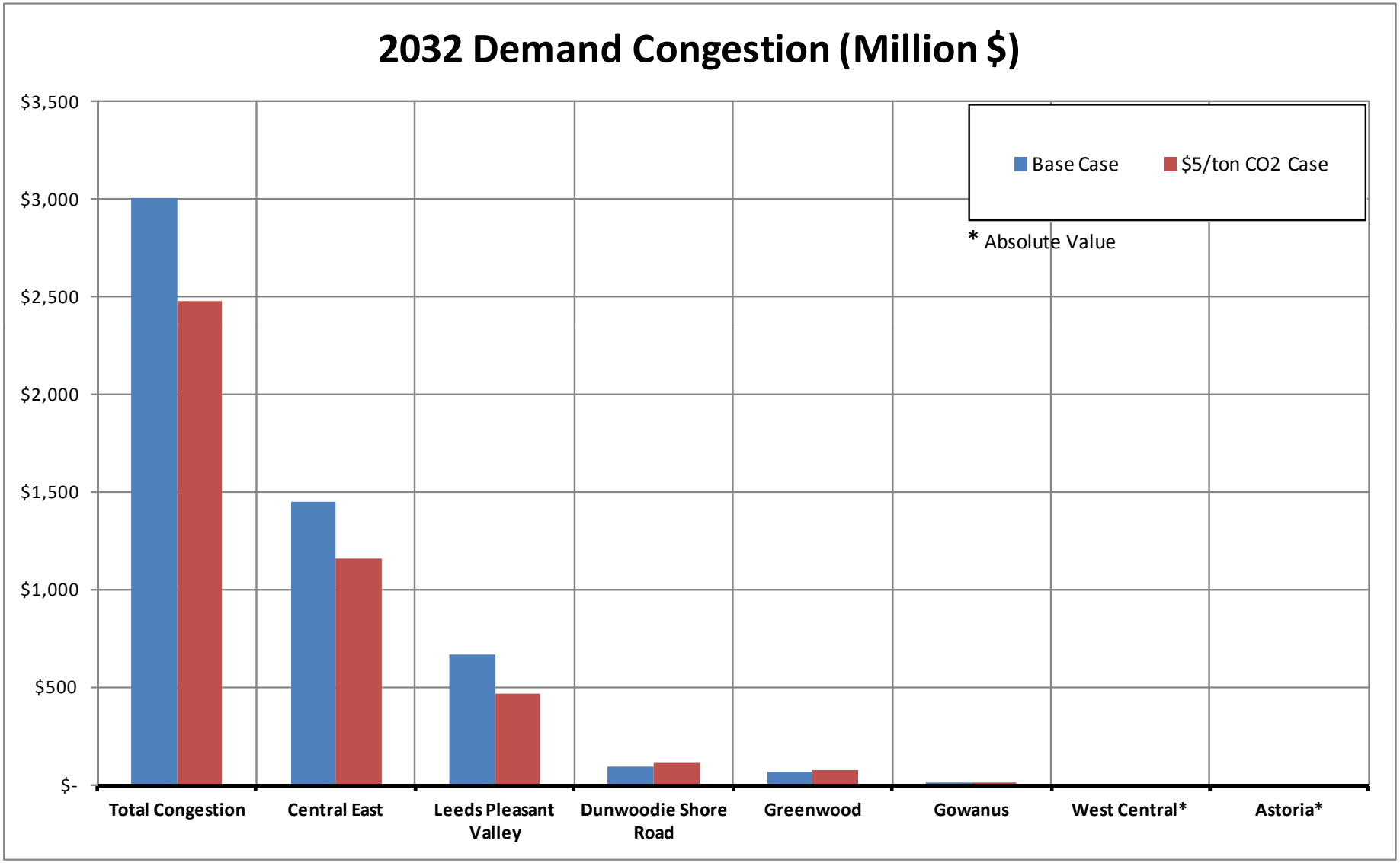


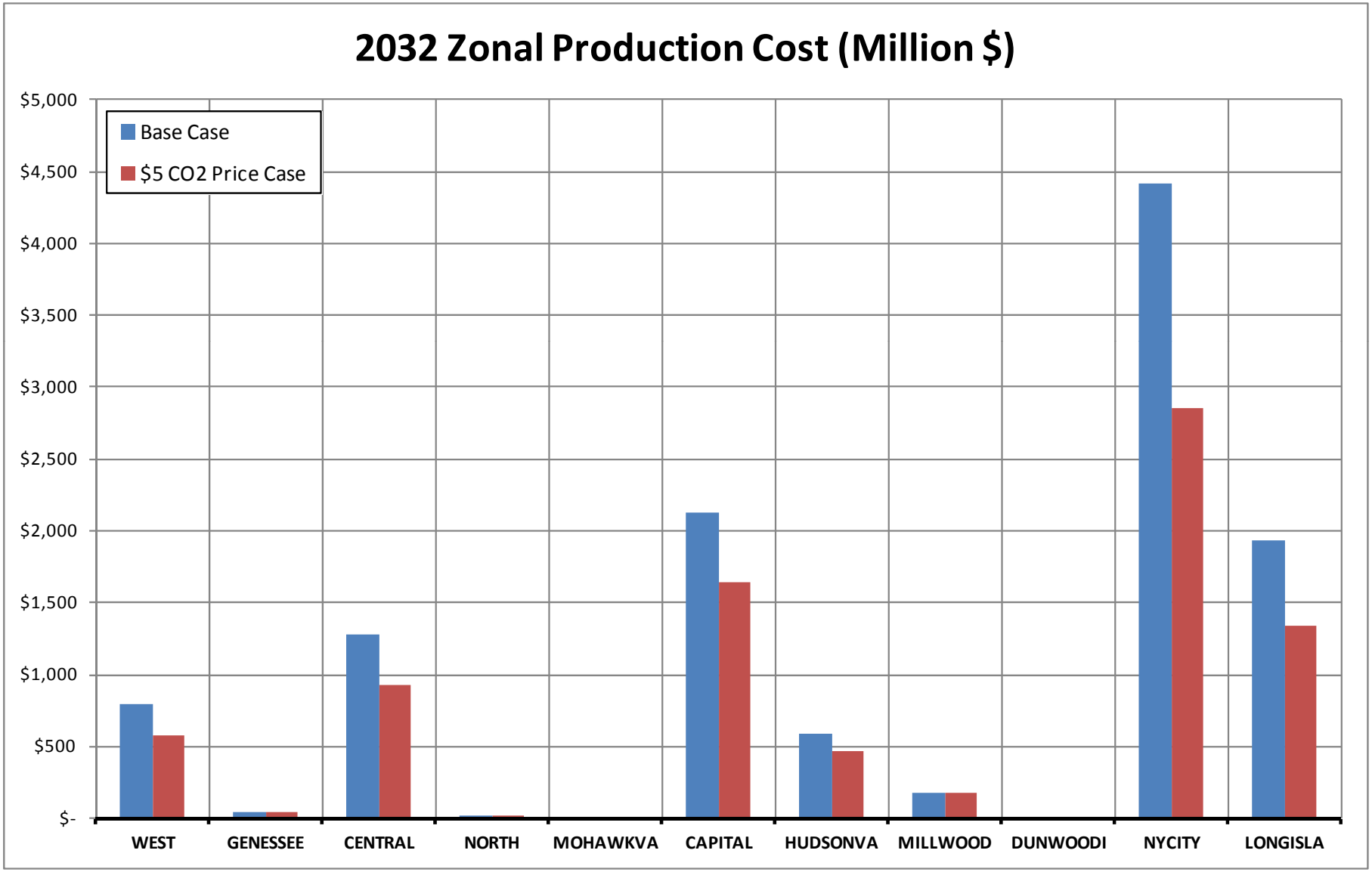


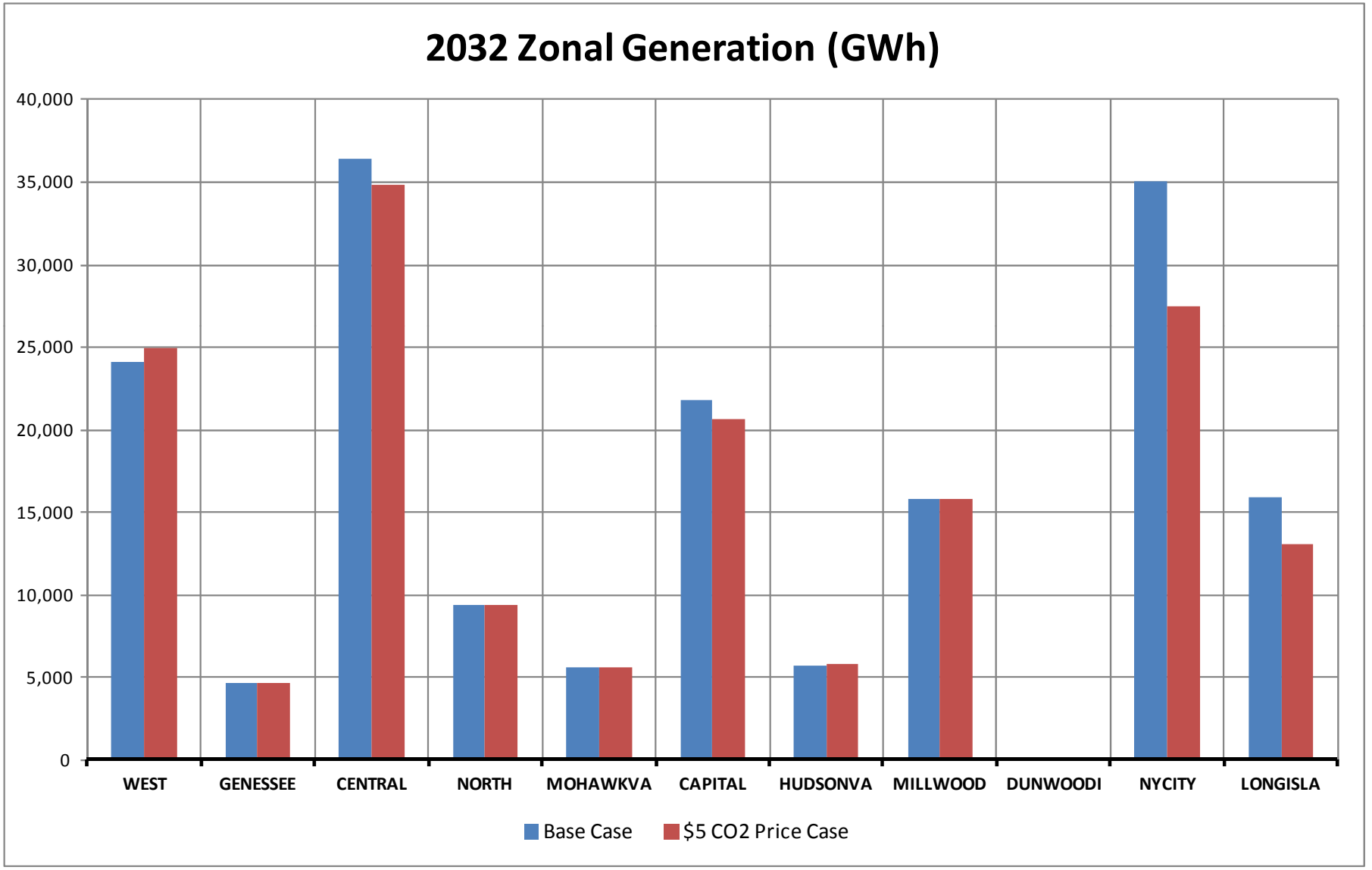


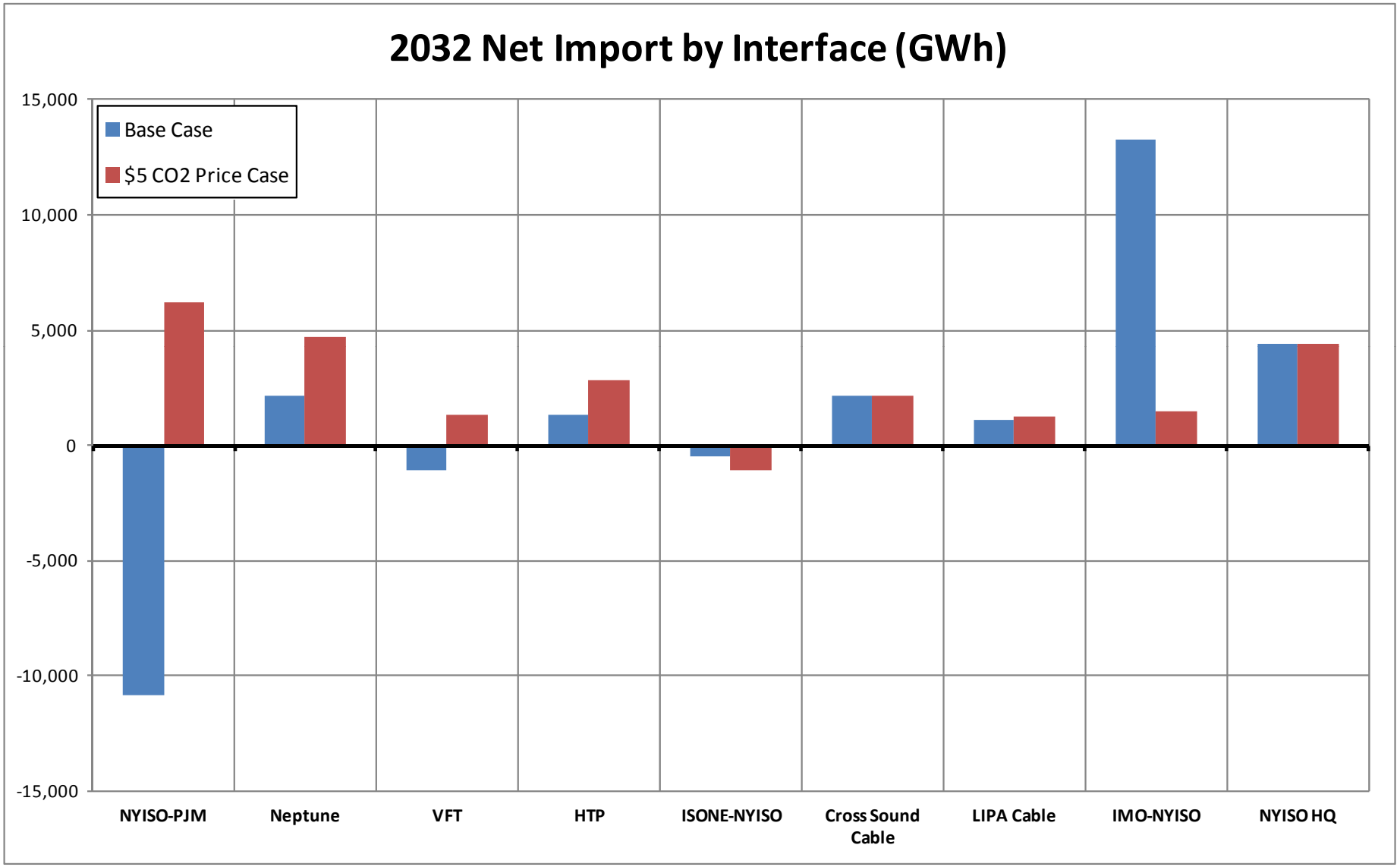


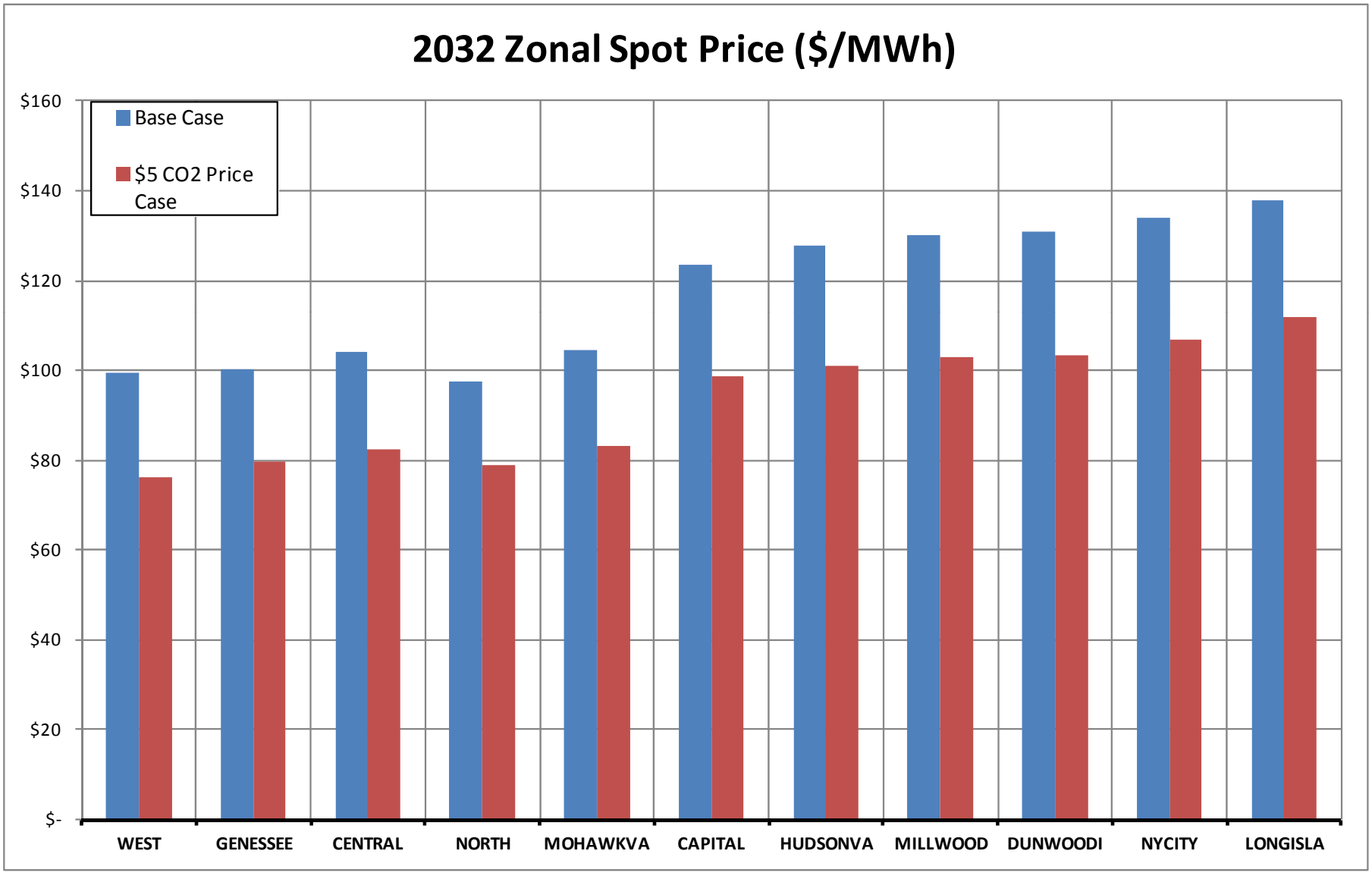


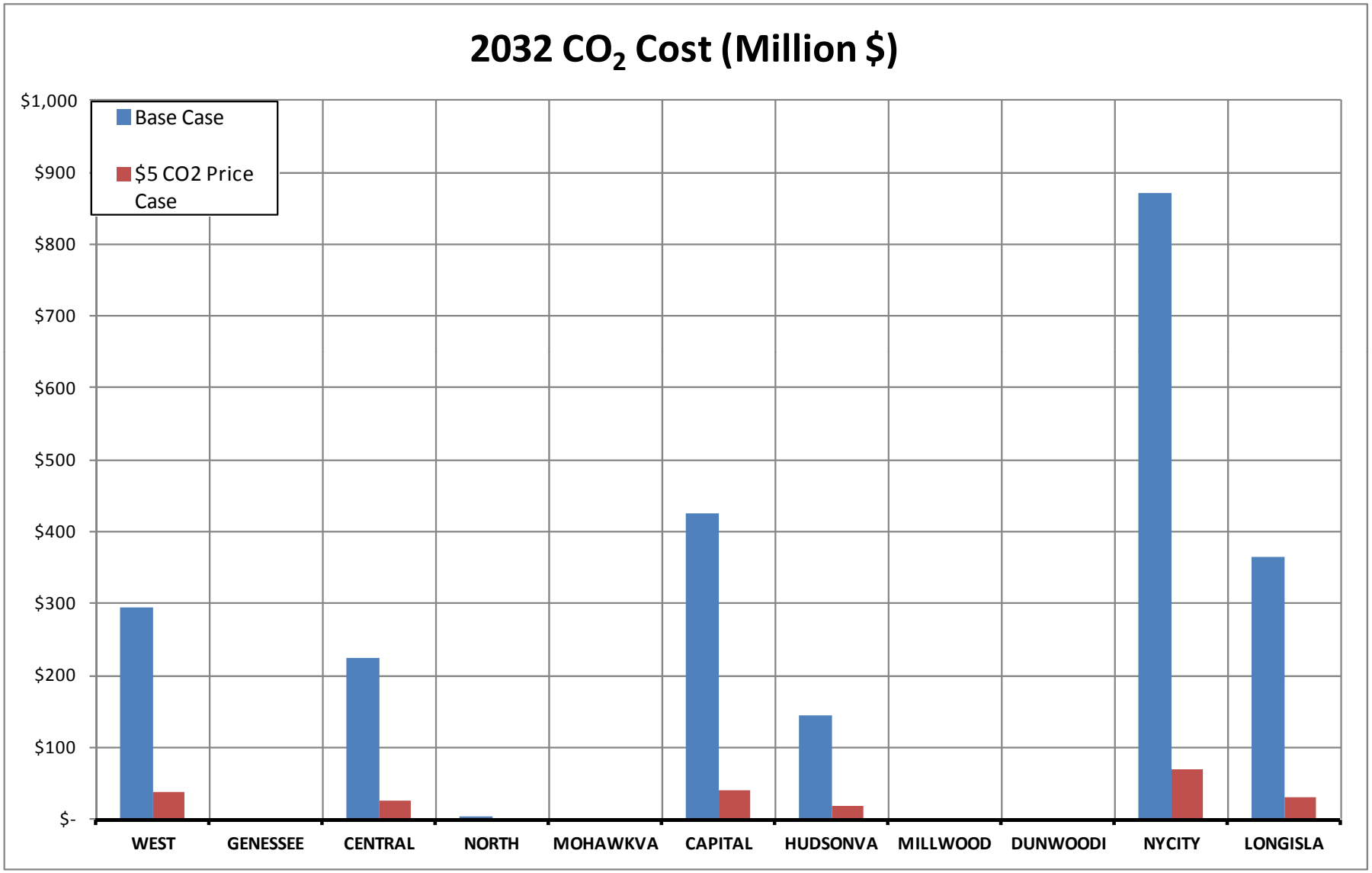












A 3rd Gas Price Region

- **ESPWG had requested a reexamination of Natural Gas Prices, especially in the context of Upstate**

- **Previously, the CARIS had a two-tiered representation in which the Upstate Zones (A – I) were proxied by the Tetco-M3 price and Downstate (J, K) were proxied by Transco Z6 (NY)**

A 3rd Gas Region (cont'd)

- **Review of publicly available information revealed that large units in the Upper Hudson Valley region acquired gas at prices higher than what was assumed in CARIS**
- **The pipeline hub that is most appropriate for these units is the Tennessee Z6**
- **Historically, Tennessee Z6 prices have been greater than Tetco M3 (now used for Zones A-E) and less than Transco Z6 (NY)**
- **The new 3-tiered system makes for a more accurate representation.**

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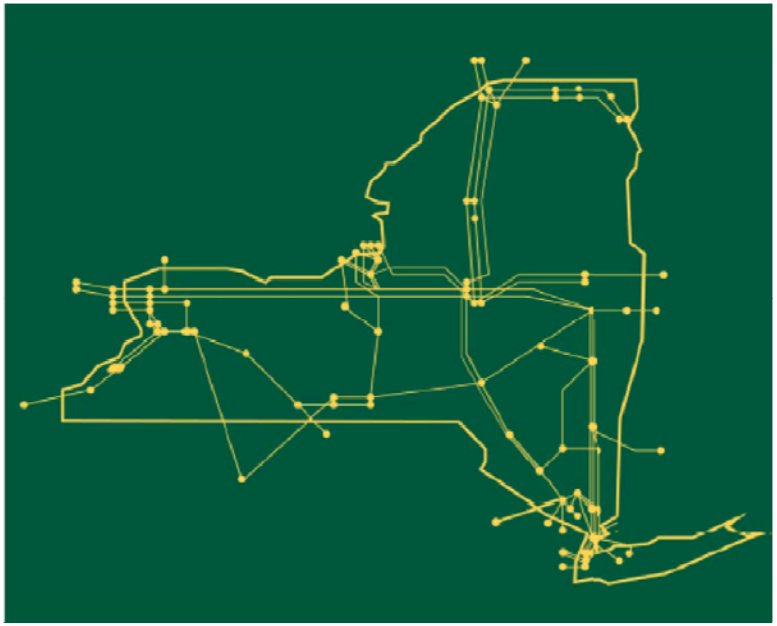

www.nyiso.com