

Vermont Public Power Supply Authority

Vermont's Net Metering Program

Melissa Bailey

VPPSA Members

Barton Village, Inc. Electric Department (1893) 2,170

Village of Enosburg Falls Water & Light Department (1896) 1,706

Town of Hardwick Electric Department (1897) 4,492

Village of Hyde Park Electric Department (1894) 1,383

Village of Jacksonville Electric Company (1904) 700

Village of Johnson Water & Light Department (1894) 944

Village of Ludlow Electric Light Department (1900) 3,758

Village of Lyndonville Electric Department (1894) 5,664

Village of Morrisville Water & Light Department (1895) 3,986

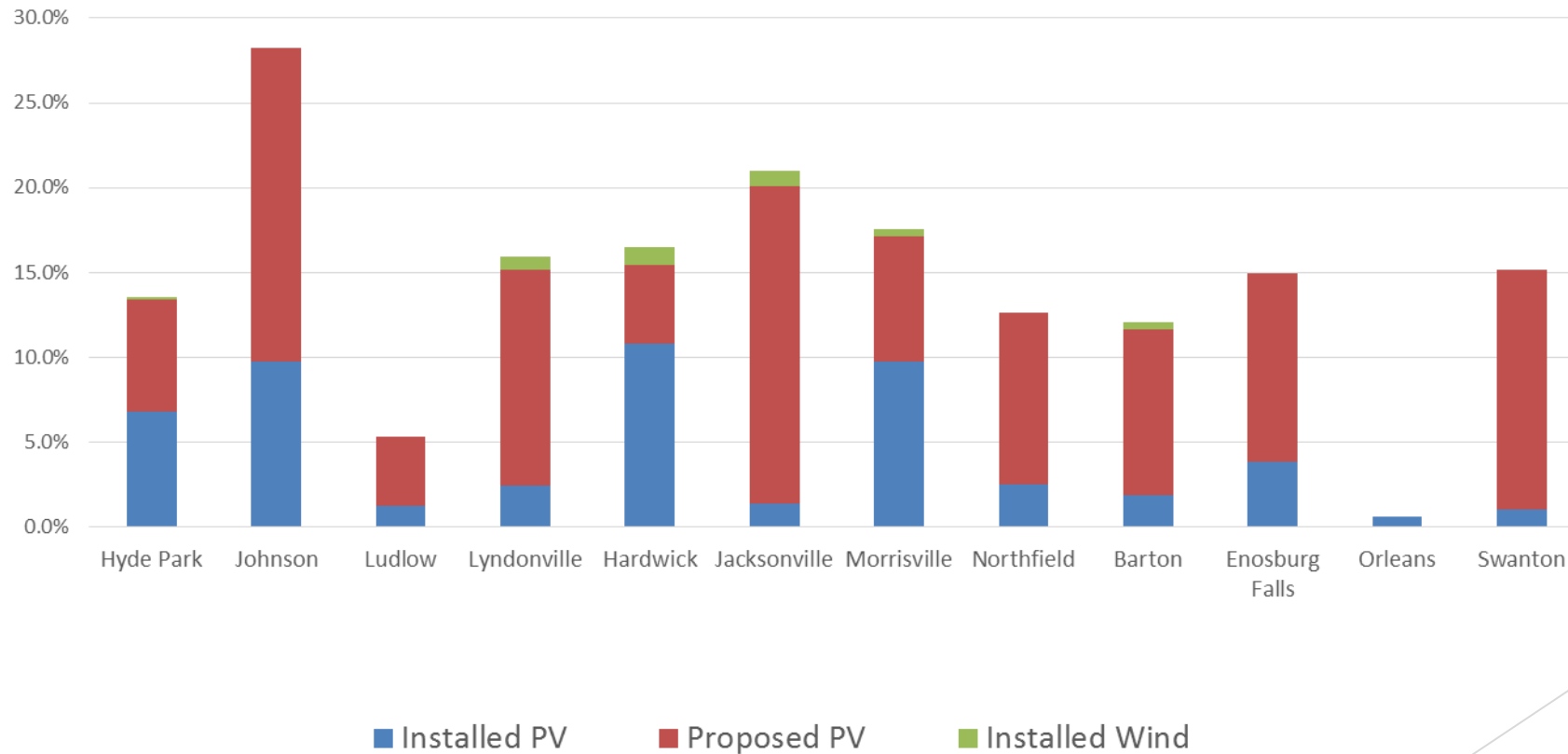
Northfield Electric Department (1894) 2,223

Village of Orleans Electric Department (1925) 669

Swanton Village, Inc. Electric Department (1894) 3,632

VPPSA Net Metering

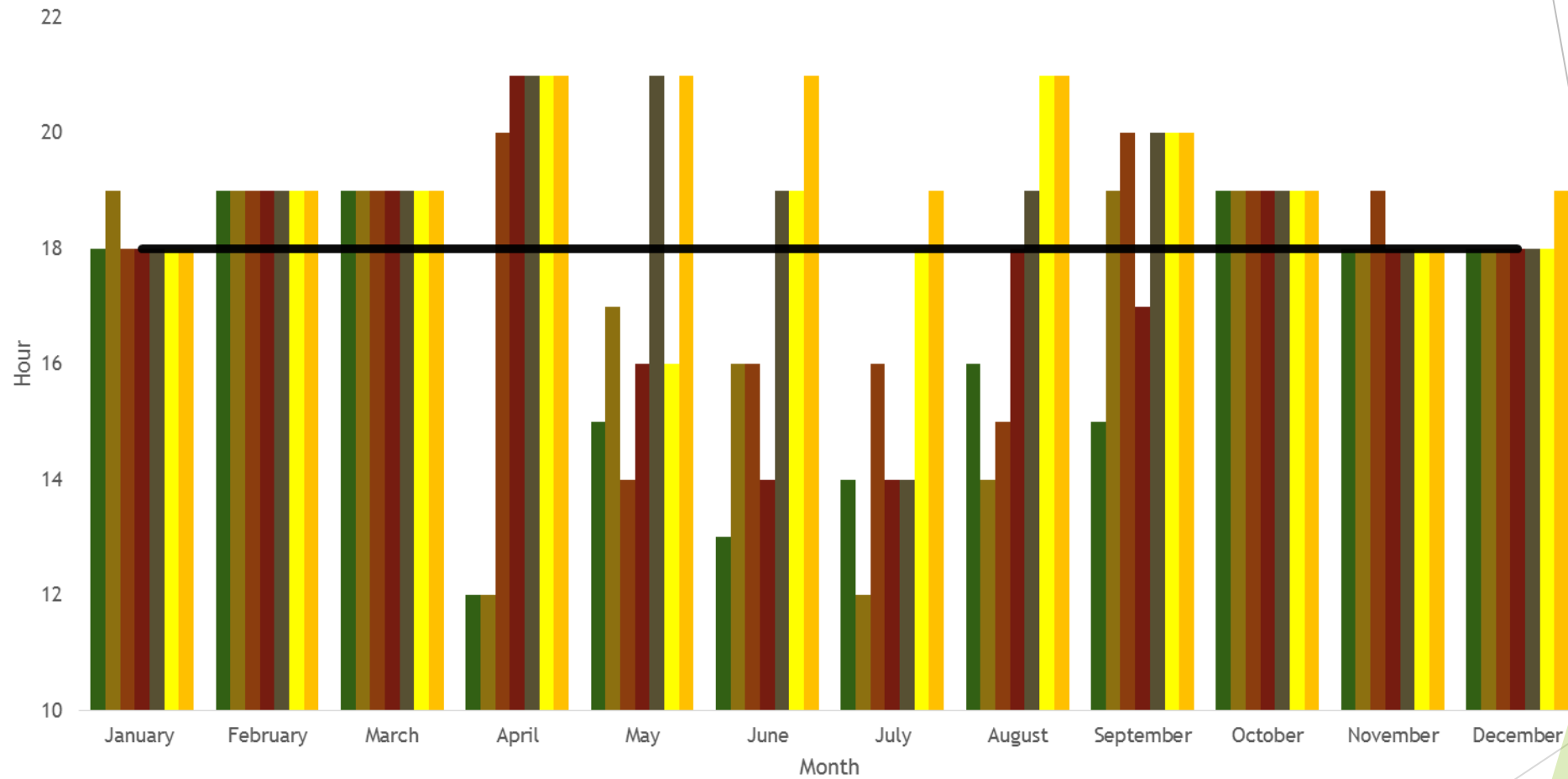
Net Metering Capacity as % of 2016 peak



Impact of Net Metering on Transmission Costs

- ▶ Regional (ISO-NE) transmission charges are assessed based on each utility's load at the time of the **monthly state peak**.
- ▶ In the past, those peaks typically occurred during afternoons when solar net metered generation was high.
 - ▶ Solar deployment in Vermont and across the region has pushed peaks later into the evening when there is little solar generation.
- ▶ Transmission benefits from additional net metering systems have been drastically reduced. Additional solar generation provides little benefit in terms of avoided transmission charges.

VT Monthly Peak Load Hour for 2010-2016

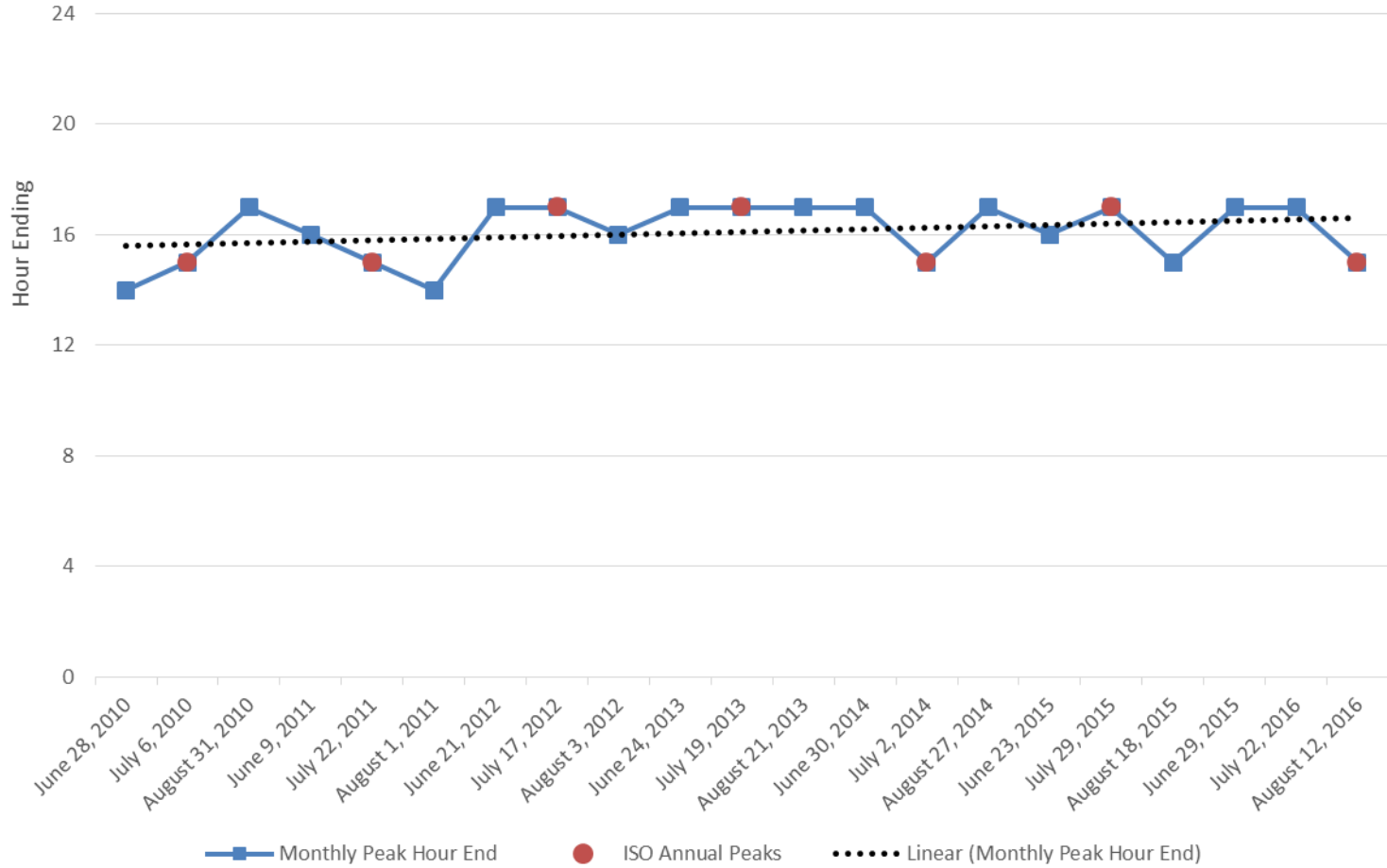


Legend: 2010 (dark green), 2011 (olive green), 2012 (brown), 2013 (dark red), 2014 (dark grey), 2015 (yellow), 2016 (orange), 6 P.M. (black line)

Impact of Net Metering on Capacity Costs

- ▶ Regional (ISO-NE) capacity charges are assessed based on each utility's load at the time of the **annual regional peak**.
- ▶ The New England peak still occurs during the afternoon, but it is shifting to later in the day.
- ▶ Net metered systems continue to generate capacity savings for utilities, but the value of these savings is decreasing.

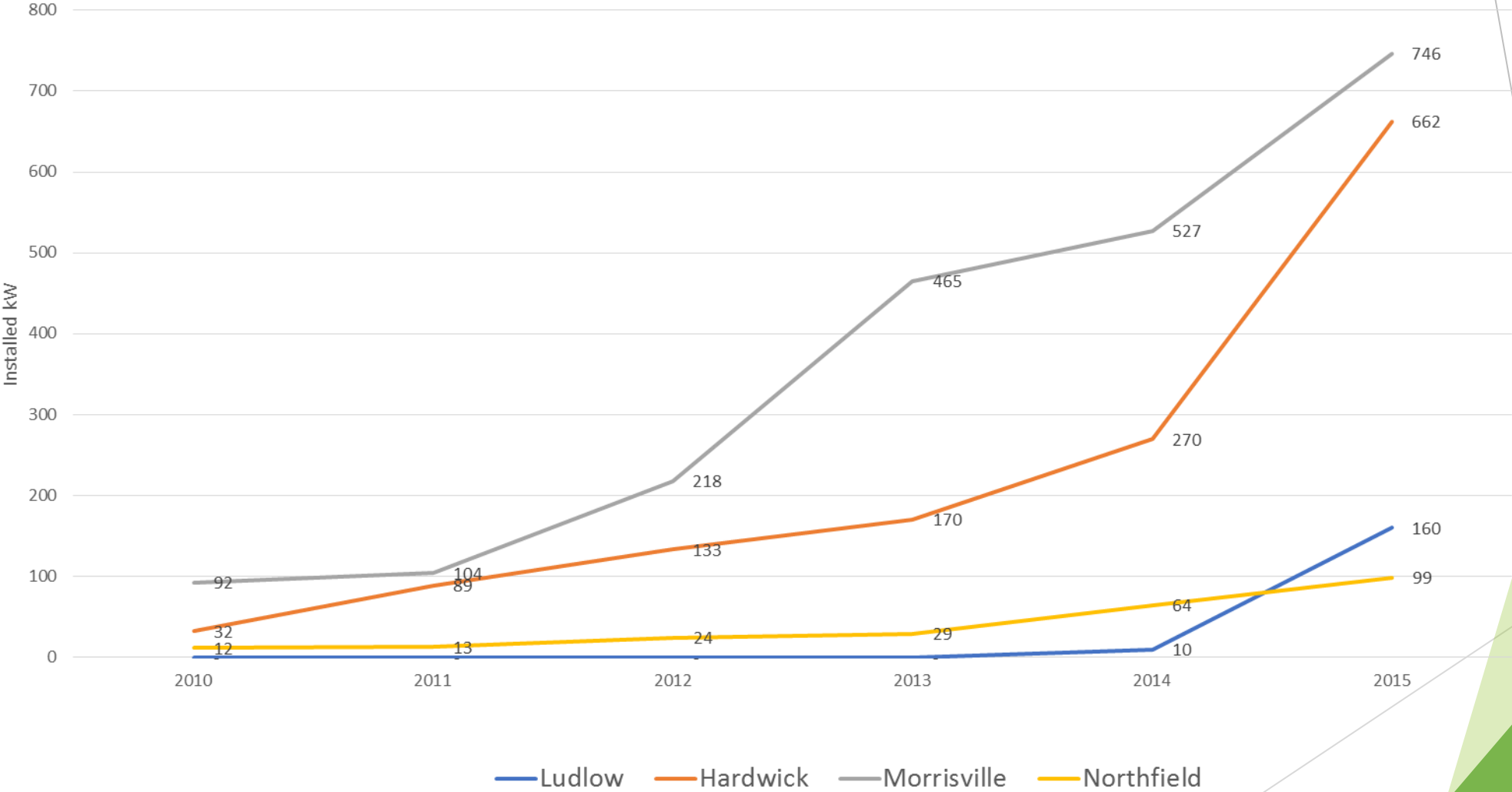
ISO New England Summer Month and Annual Peak Trend



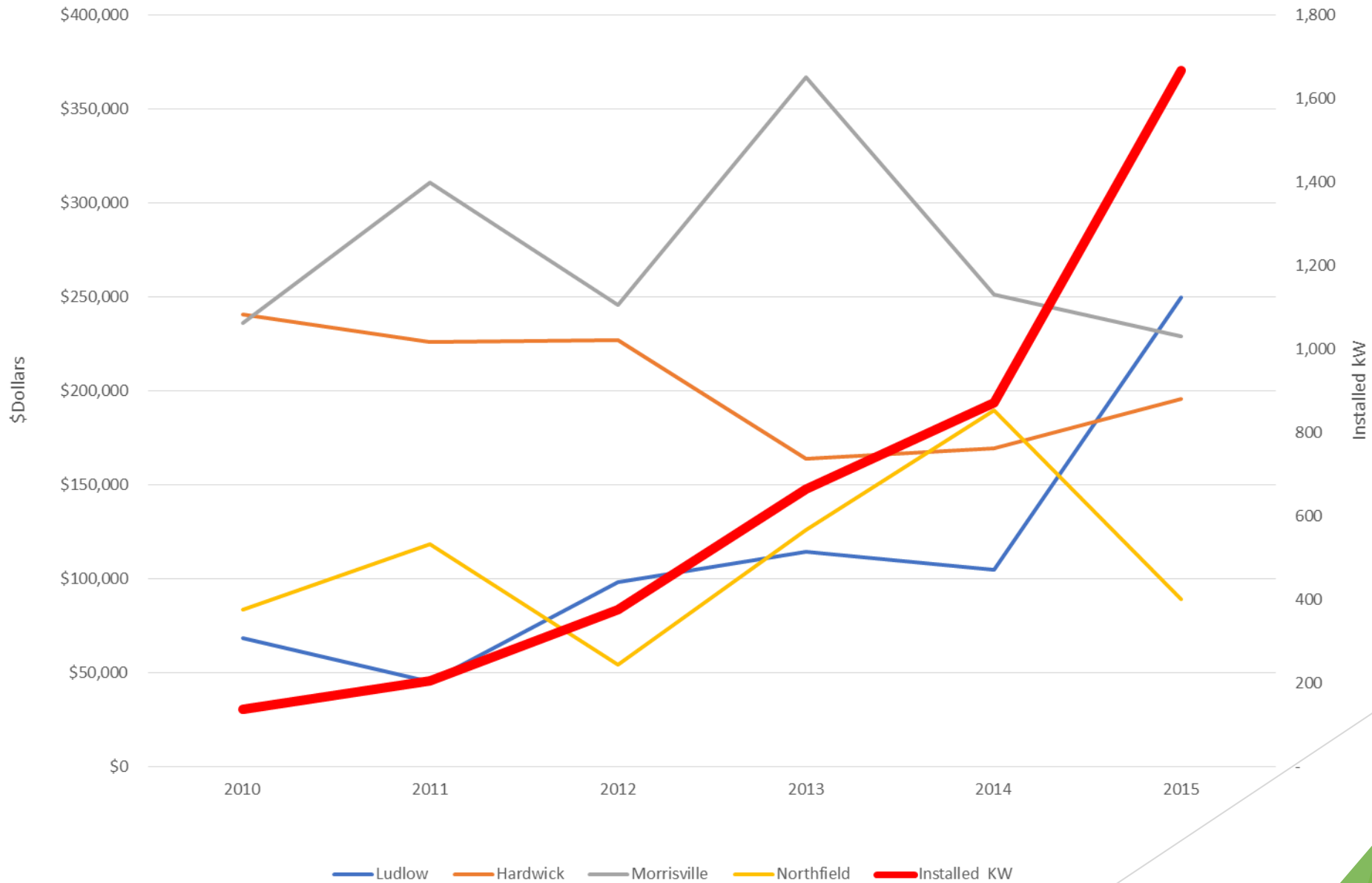
Impact of Net Metering on Distribution Infrastructure Costs

- ▶ VPPSA has seen no correlation between net metering penetration and changes in distribution costs.
- ▶ The distribution system must be built to accommodate a utility's peak load.
 - ▶ The majority of VPPSA members peak during the winter in the evening when solar generation is low.

Installed Net Metering KW



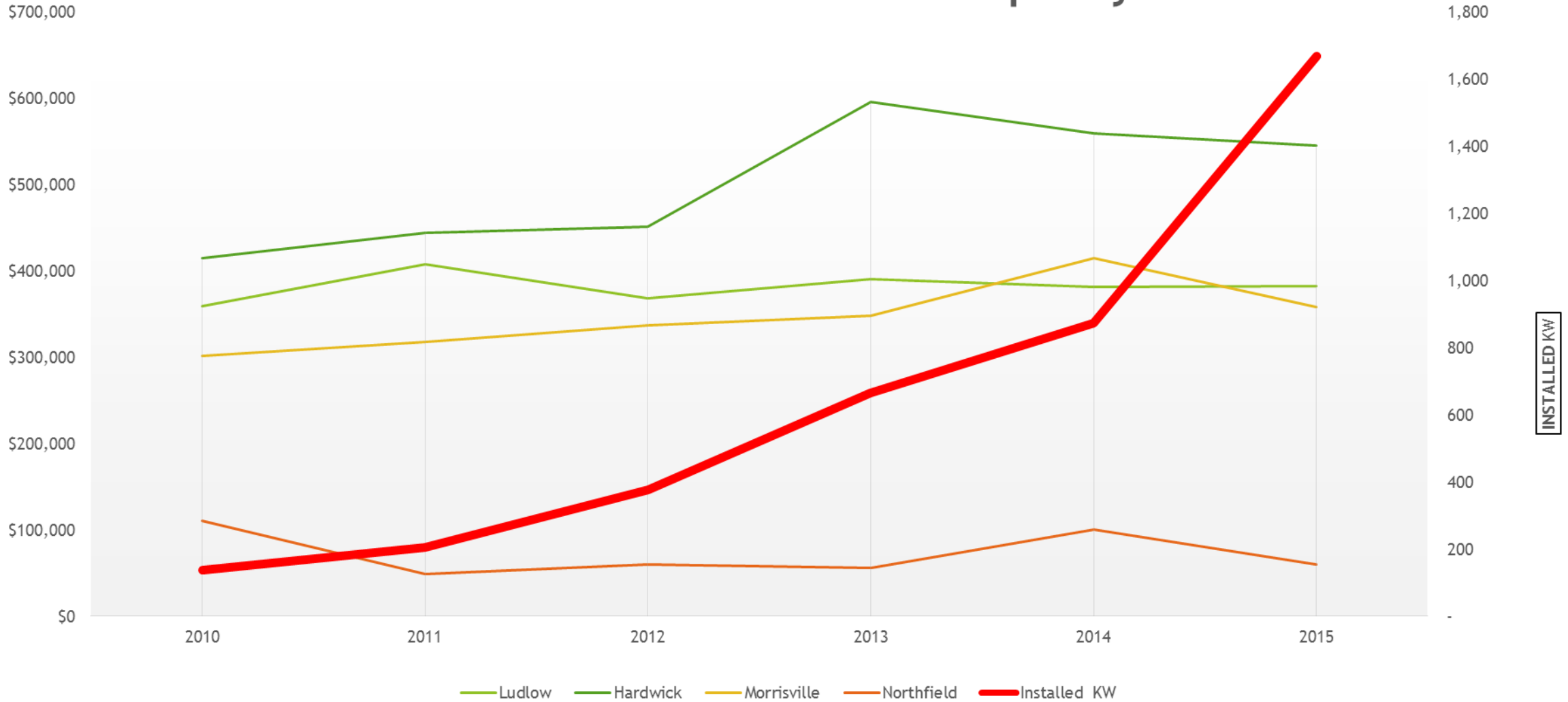
Distribution Gross Plant Additions



Impact of Net Metering on Distribution Operation and Maintenance Costs

- ▶ Net metering does not reduce costs related to operating the distribution grid.
- ▶ Because net metering customers utilize and benefit from the distribution grid, they should contribute to utilities' O&M costs.
- ▶ The retail rates of the VPPSA utilities (~\$0.015) include ~\$0.02 of distribution expense.
 - ▶ In the short run, for every kW of NM installed, that equates to \$30 that others have to pay (for distribution alone).

Distribution O&M & Installed Capacity



Impact of Net Metering on Line Losses

- ▶ Net metering generators located close to load have the potential to reduce line losses.
- ▶ Net metering generators located far from load have the potential to increase line losses.
- ▶ Net metering located close to generation, but sized out of proportion to the load may also increase losses.
- ▶ The impacts would require site-specific analysis.

Conclusion

- ▶ VPPSA supports the PSB's Proposed Rule 5.100 as reflected in the August Board Order and filed with the Secretary of State. Extensive process was followed and the Proposed Rule represents a compromise position.
- ▶ Section 5.125, which addresses pre-existing systems, is necessary to ensure that costs and benefits of net metering are distributed fairly among customers.

Questions?

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