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Potomac Economics, Ltd.
8000 Metropolis Drive, Building E
Austin, Texas 78744

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January 10, 2023

Public Utility Commission of Texas
Chairman Peter Lake
Commissioner Will McAdams
Commissioner Lori Cobos
Commissioner Jimmy Glotfelty
Commissioner Kathleen Jackson
1701 N. Congress Ave.
Austin, Texas 78711

Re: PUC Project No. 54335, *Review of Market Reform Assessment Produced by Energy and Environmental Economics (E3)*

Estimate of 30 Highest Reliability Risk Hours from 2019-2022

Dear Chairman and Commissioners:

Potomac Economics, the Independent Market Monitor for ERCOT, submits the attached historical data for determining the highest reliability risk hours for purposes of estimating the 30 Performance Credit (PC) hours from 2019-2022, presented in various ways using different definitions for determining the highest reliability risk hours. For this purpose, we use the definition options as laid out in Staff's memo dated January 5, 2023, and then present each on both an annual and seasonal basis:

1. By Physical Responsive Capability (PRC) on an annual basis
2. By PRC on a seasonal basis
3. By ORDC reserves (RTOLCAP) on an annual basis
4. By ORDC reserves on a seasonal basis
5. By highest net load (load minus solar and wind output) on an annual basis
6. By highest net load on a seasonal basis.

Each evaluation is on a separate tab in the attached spreadsheet. We have also included illustrative graphs of the various approaches.

Please note the following data descriptions and sources for this analysis:

- We used Security Constrained Economic Dispatch (SCED) level data. Using 4 second telemetry data could yield a slightly different result but SCED level data is our preferred choice for ease of implementation and because the data is publicly available to market participants.

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- A SCED failure of 12 intervals in 2022 was excluded from these results.
- For the seasonal analysis we used 10-10-10 distribution of hours consistent with ERCOT's filing on January 5, 2023, though there are many ways to apportion those hours.
- We used 3 months for each summer and winter season and 6 months for "shoulder" (a combination of both shoulder seasons), but other options may be considered (such as including September in "summer").

Please let me know if you have any further questions. We would be happy to provide the Commission any further information it may need in connection with its evaluation of market design proposals.

Sincerely,

Carrie Bivens

Carrie Bivens
VP, ERCOT IMM Director
Potomac Economics, Ltd.
8000 Metropolis Drive, Building E
Austin, TX 78744
(512) 248-6678
cbivens@potomaceconomics.com

Attachments: Highest_Reliability_Risk_hours 2019 through 2022 (spreadsheet)
IMM_graphs_for_PC_hour_backcast Jan 2023

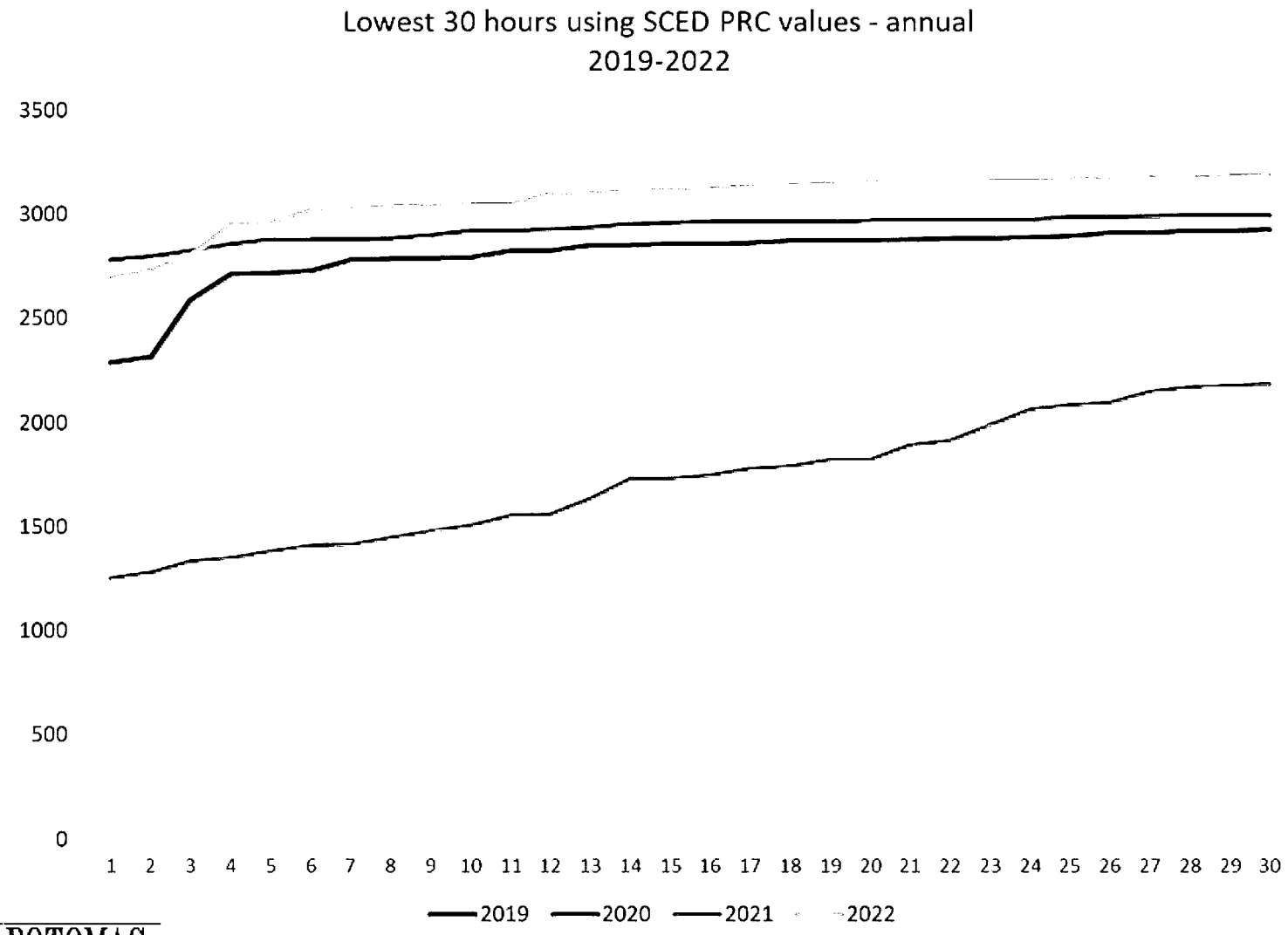
The following files are not convertible:

Highest_Reliability_Risk_hours 2019 through 2022.xlsx

Please see the ZIP file for this Filing on the PUC Interchange in order to access these files.

Contact centralrecords@puc.texas.gov if you have any questions.

PRC Evaluation



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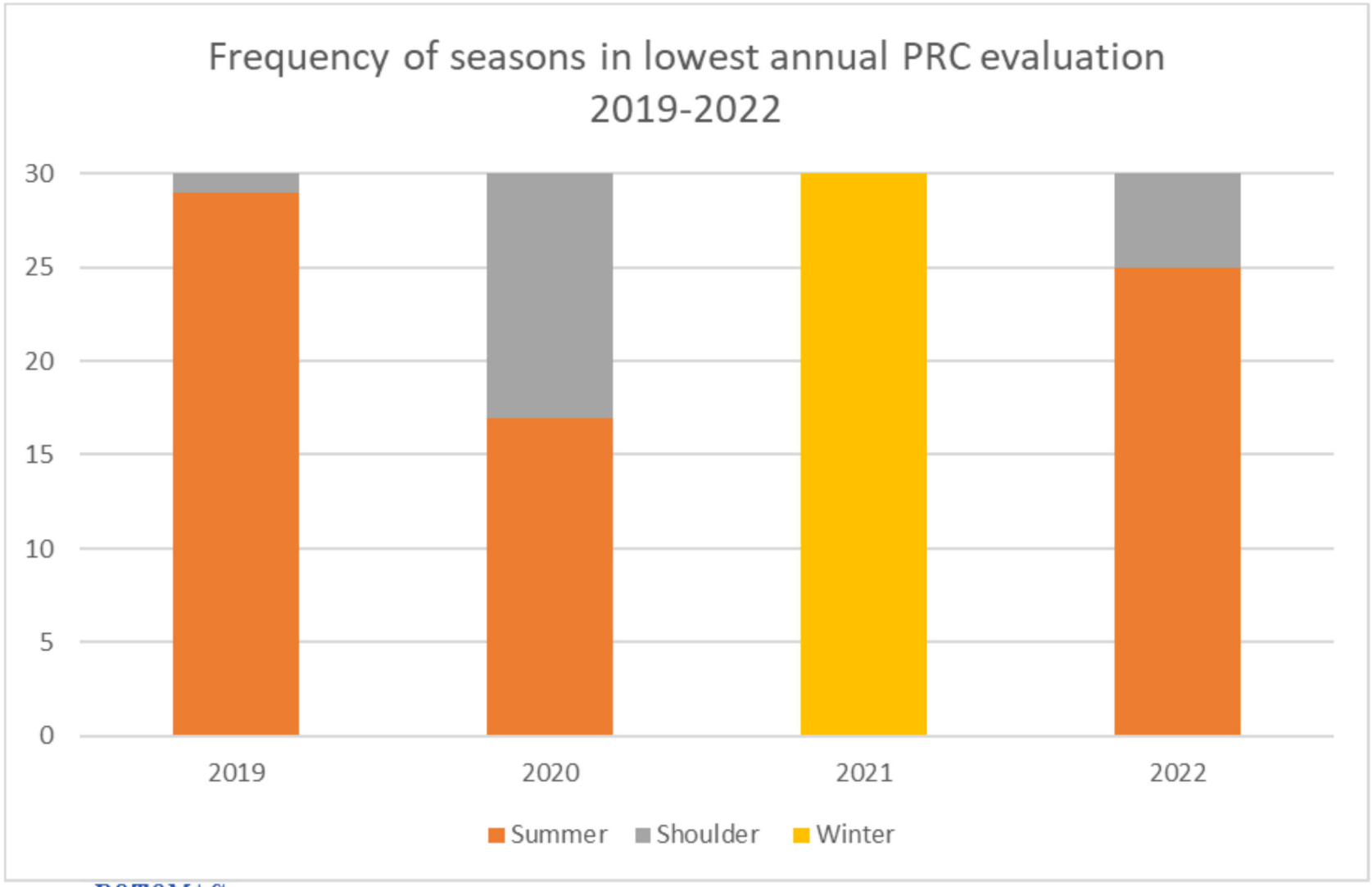
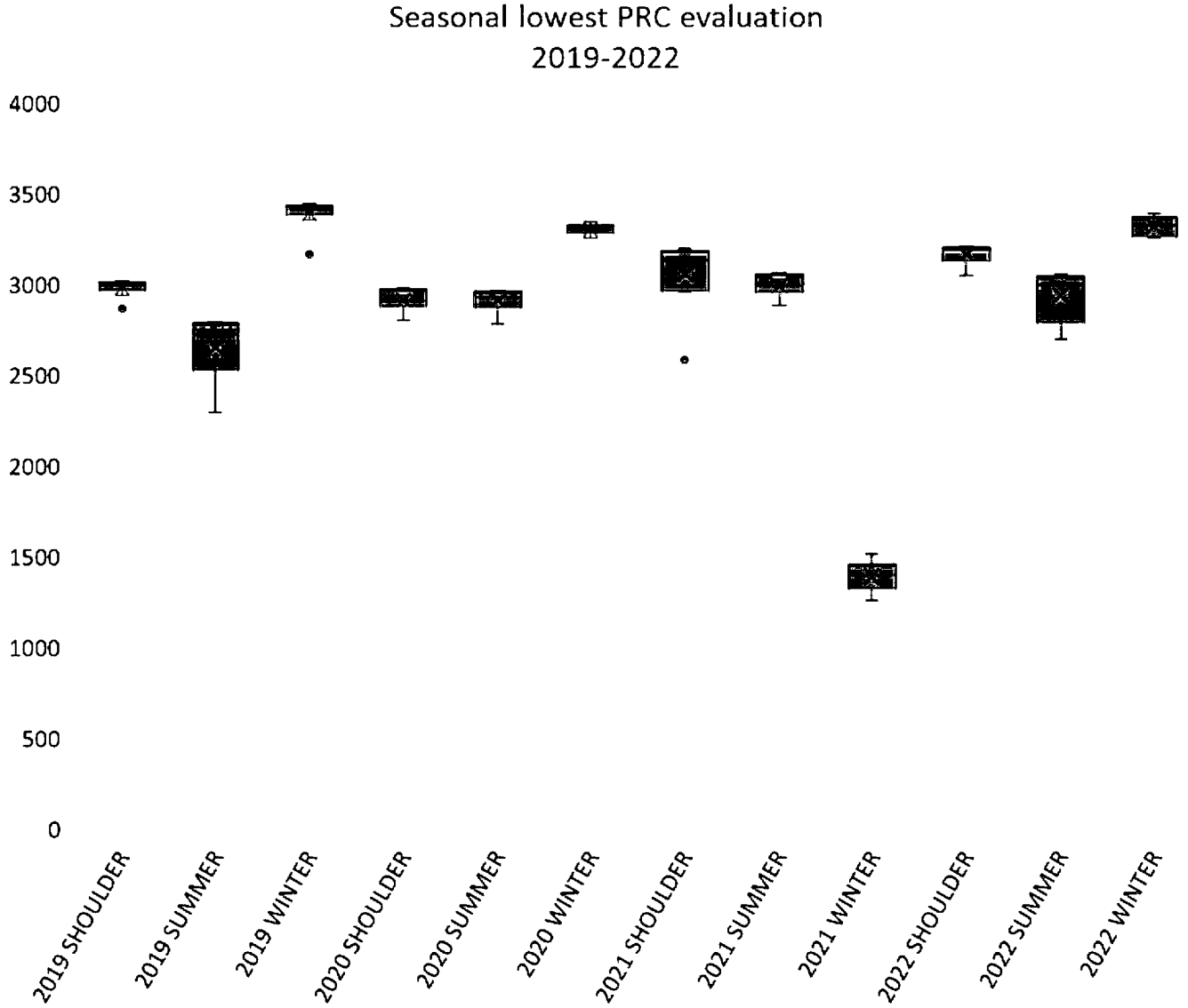
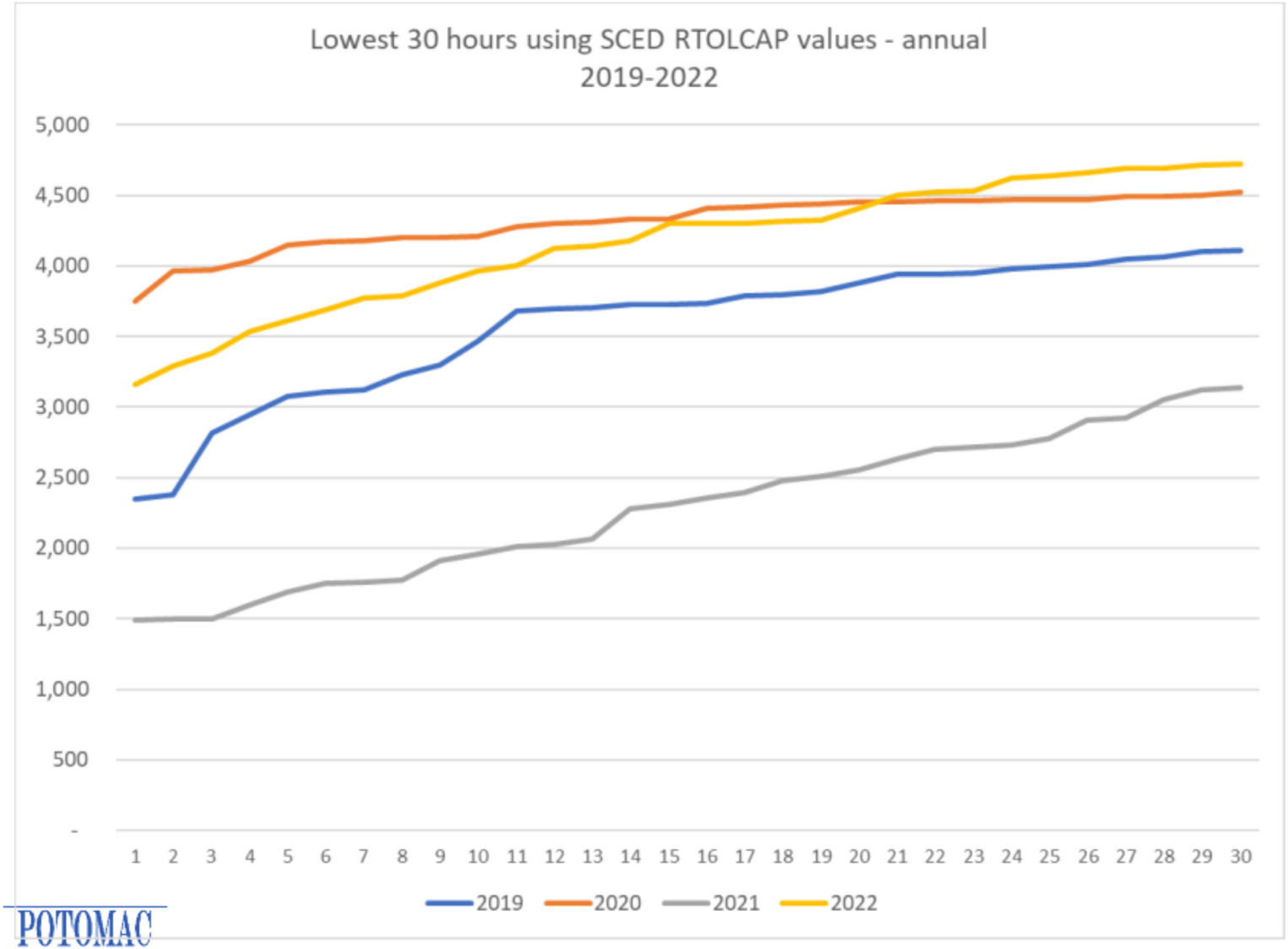
PRC Evaluation



PRC Evaluation



ORDC Reserves evaluation (RTOLCAP)



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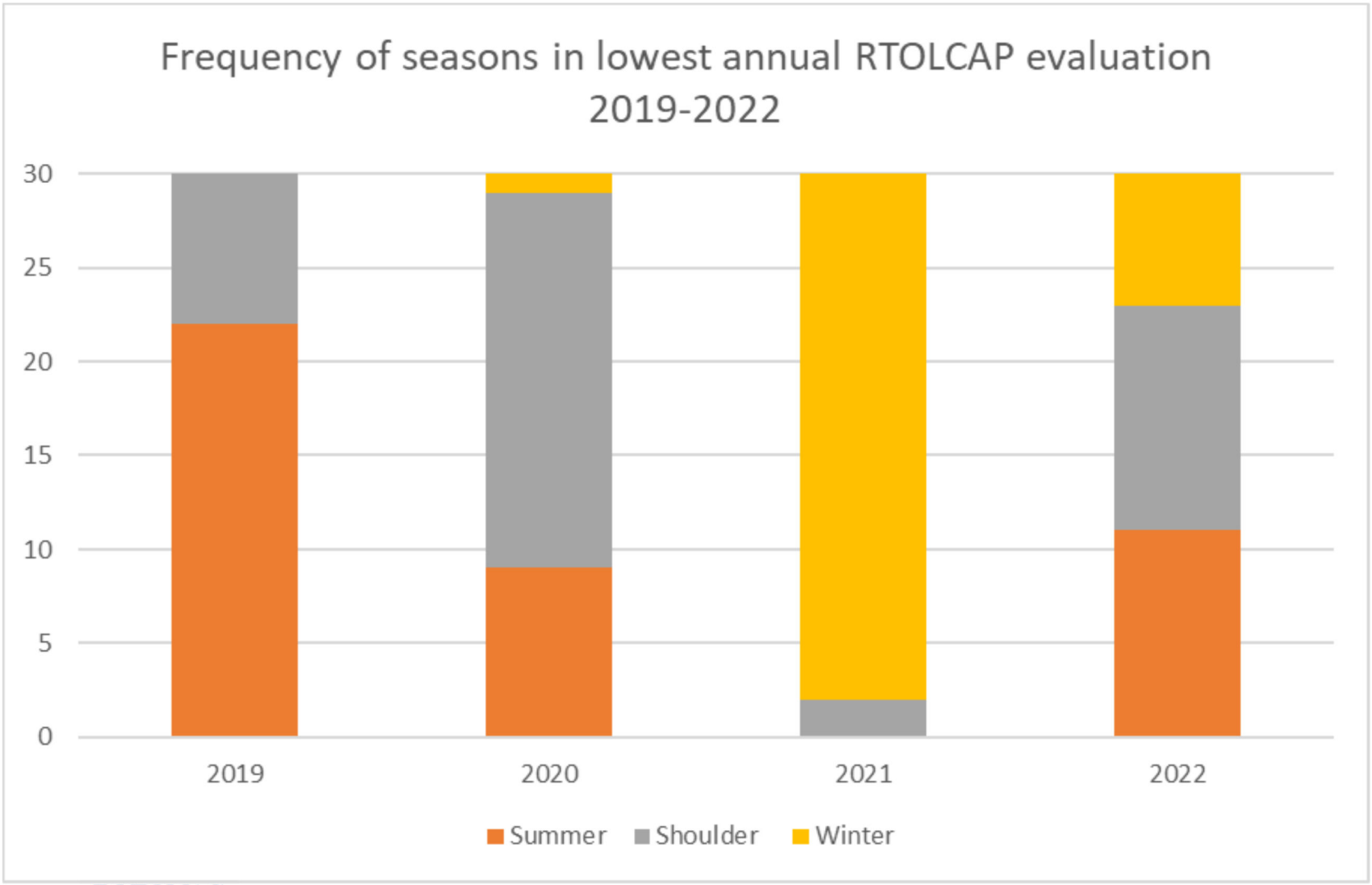

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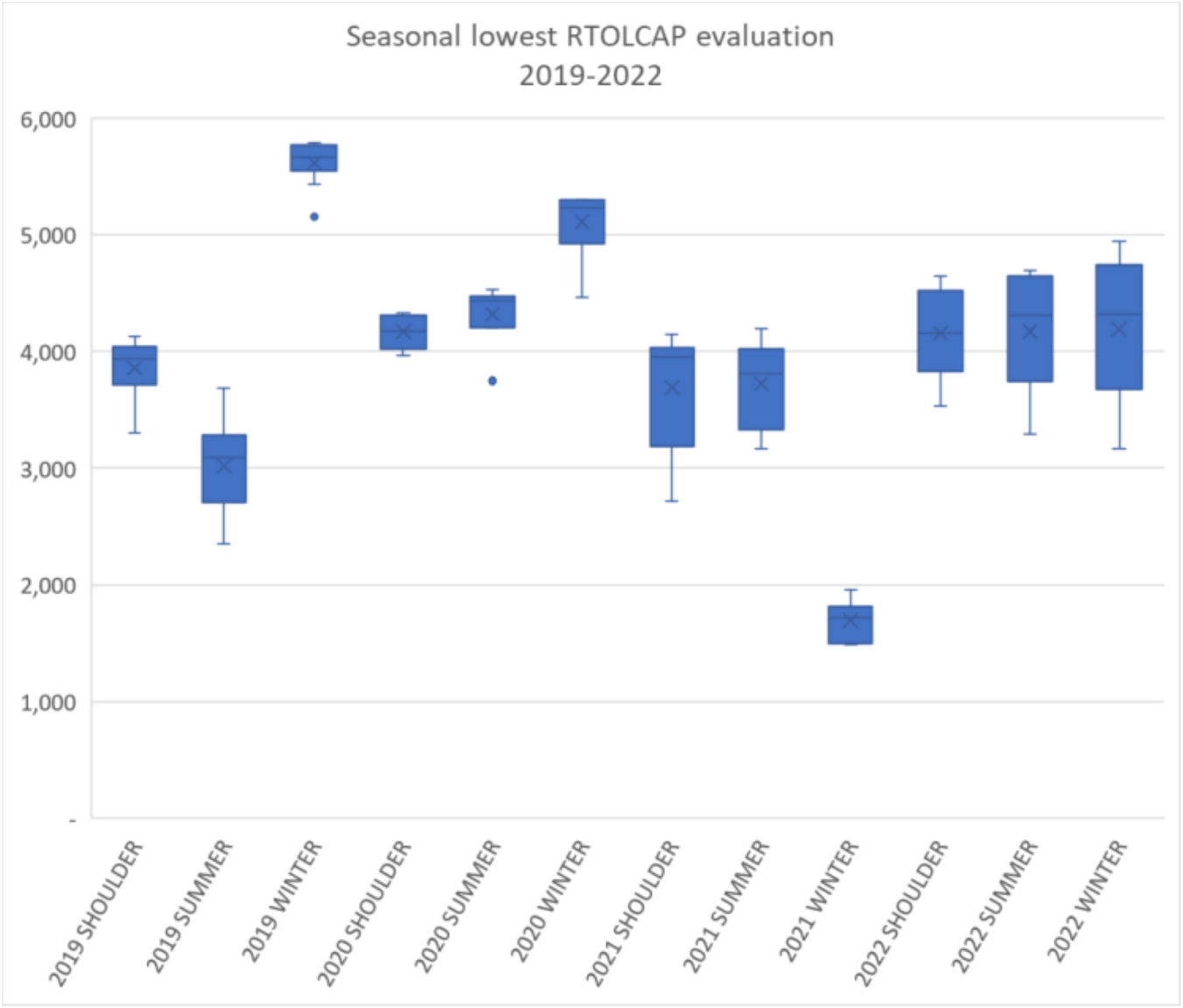

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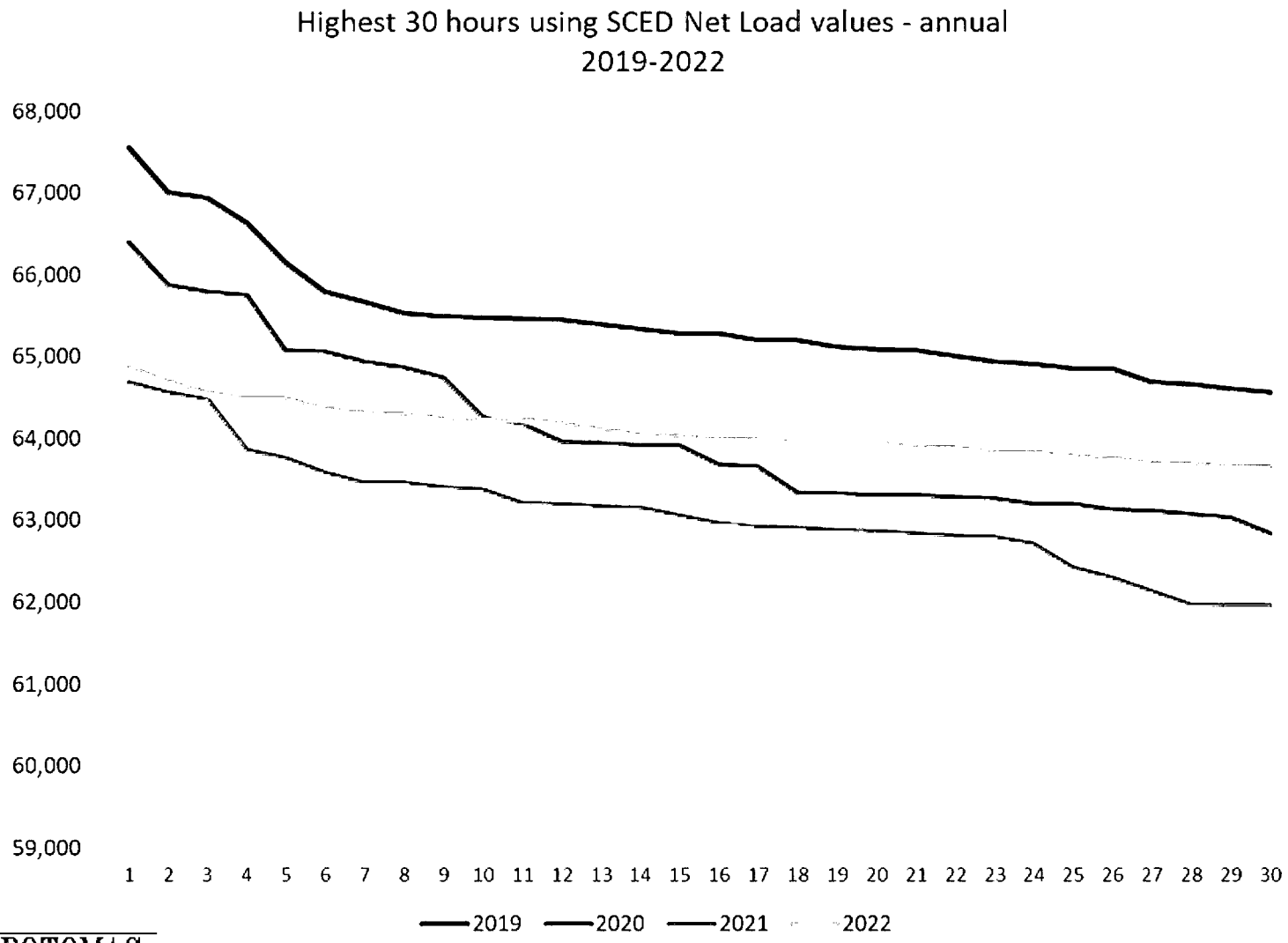
Net load evaluation



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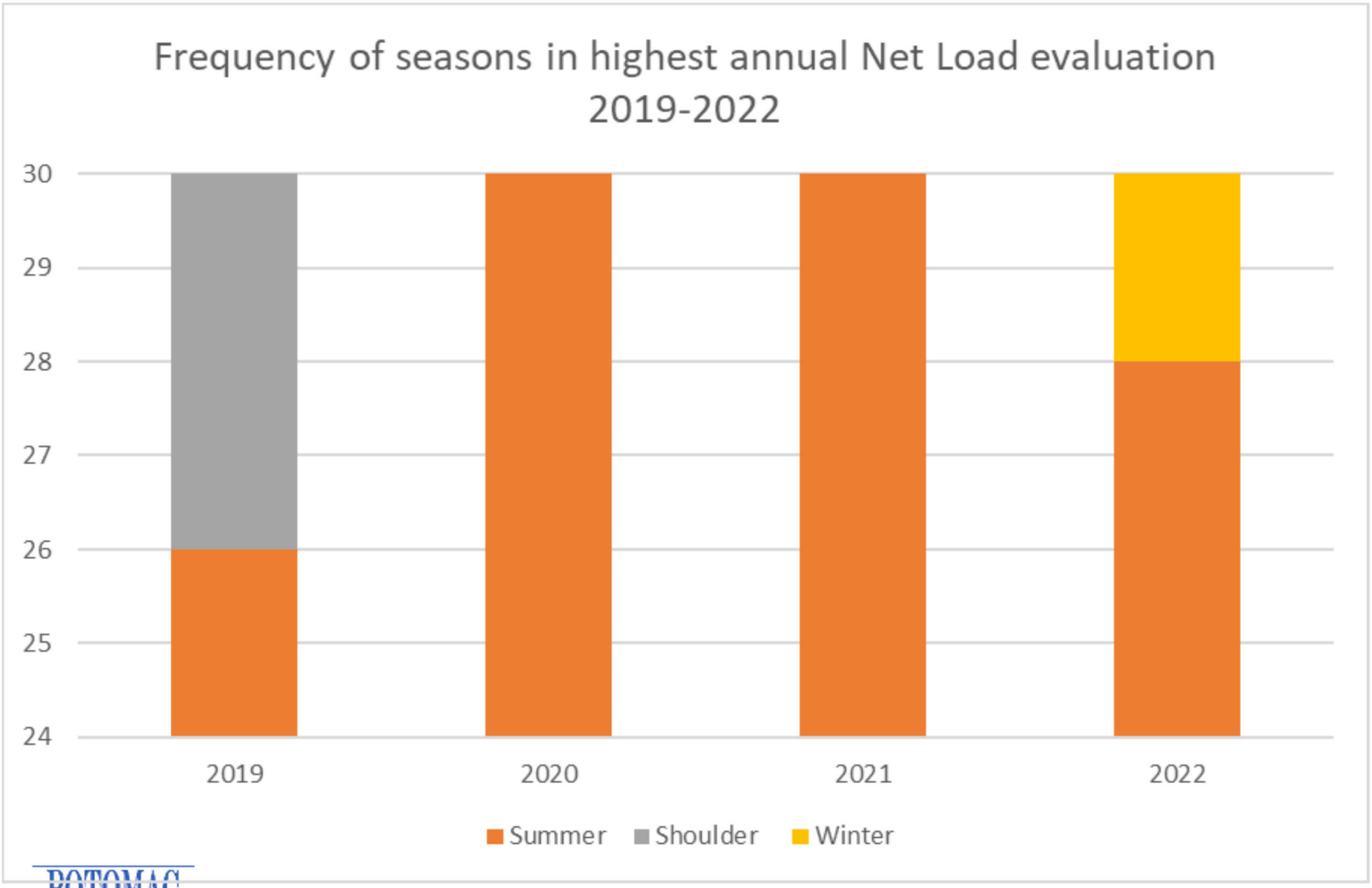

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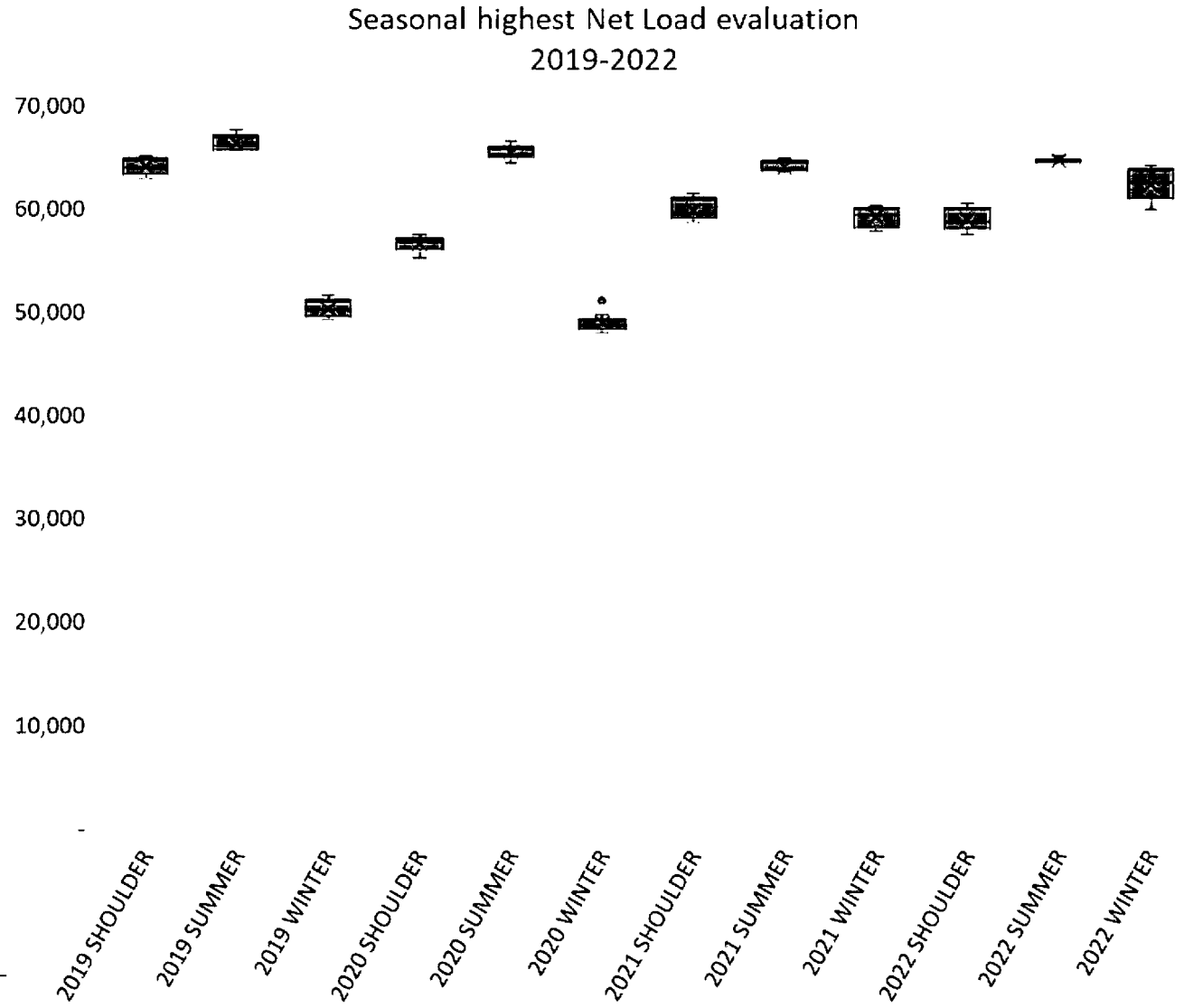

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