



Wind Anomalies 2014 Brazil and Uruguay

CONTEXT :

How much did your wind farm produce last year? How much can be explained by wind resource inter-annual variability? Year-to-year variability of wind resource is a main driver of uncertainty during the pre-construction stage. Once a wind farm is in operation, monitoring wind condition departures from climatology (anomalies) provides the context for wind farm performance assessments.

This report aims to provide a regional overview to 2014 annual wind speed climate variability for Brazil and Uruguay. All data employed in this analysis were derived from a cutting-edge atmospheric modeling technology based on zooming global Reanalysis up to different relevant scales for wind industry applications.

DATA:

This report shows 2014 annual wind speed anomalies for the Brazil (NorthEast, SouthEast and South regions) and Uruguay, computed with reference to the baseline 1995-2014 climatology period. Annual wind speed time series at 100 m a.g.l. were obtained by downscaling global Reanalysis data. Anomaly fields were computed as percentage of deviation from climatology.

LIMITATIONS:

The final anomalies map provides general indications about annual wind condition departures at a regional scale. No site-specific variability impact information can be extracted due to the model's resolution. Higher resolution downscaled products are required in combination with bias correction techniques, such as Vortex Remodeling, to obtain an accurate characterization of wind conditions anomaly values for wind farm project scale.

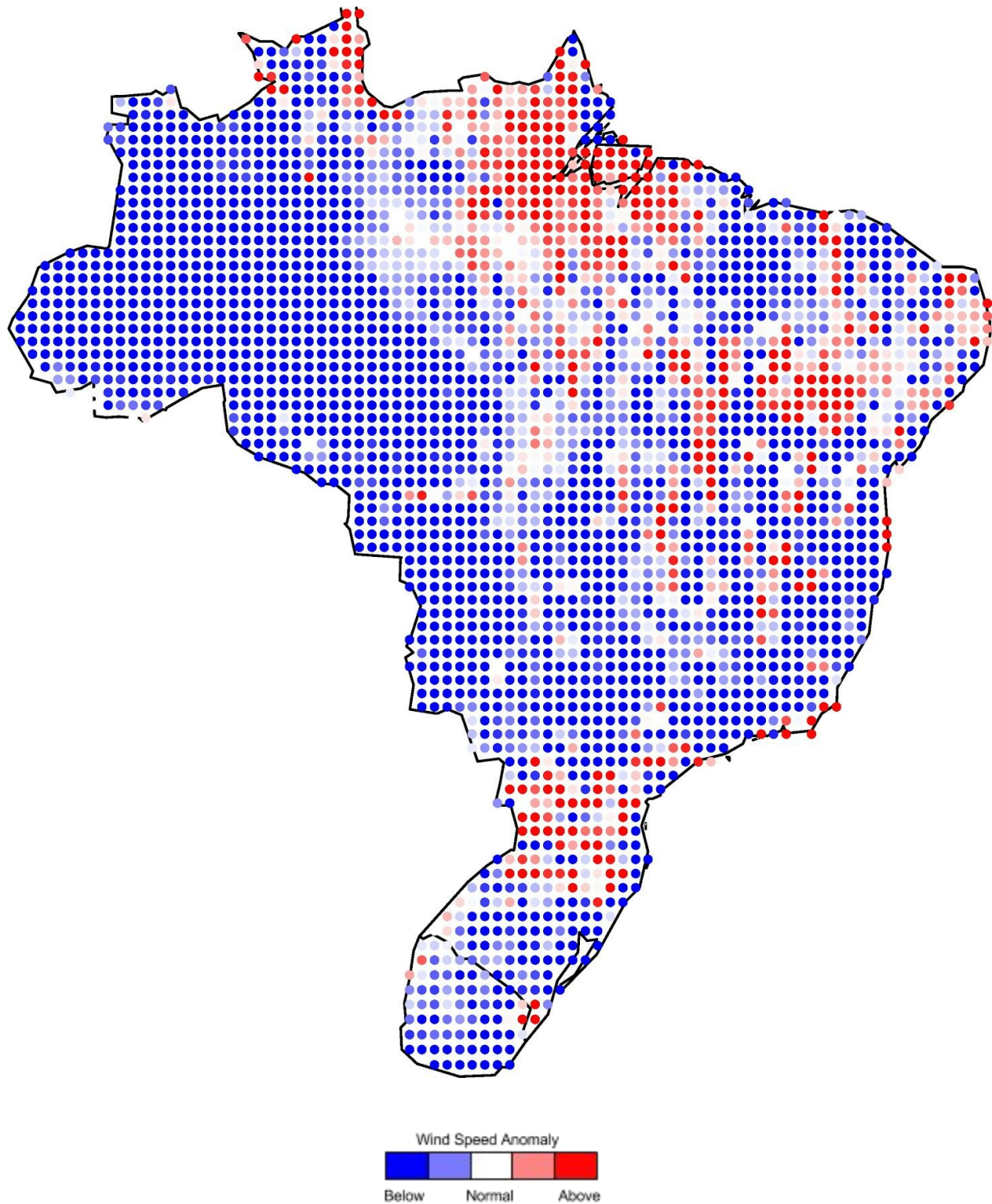


Figure 0: 2014 annual wind speed anomalies for Brazil and Uruguay based in low resolution merged Vortex data and Merra Re-analysis products. Colors indicate wind regime below (blue), above (red) the normal long-term wind conditions. Reference period 1995-2014



Brazil Northeast Region (North): Maranhao, Piaui and Ceara

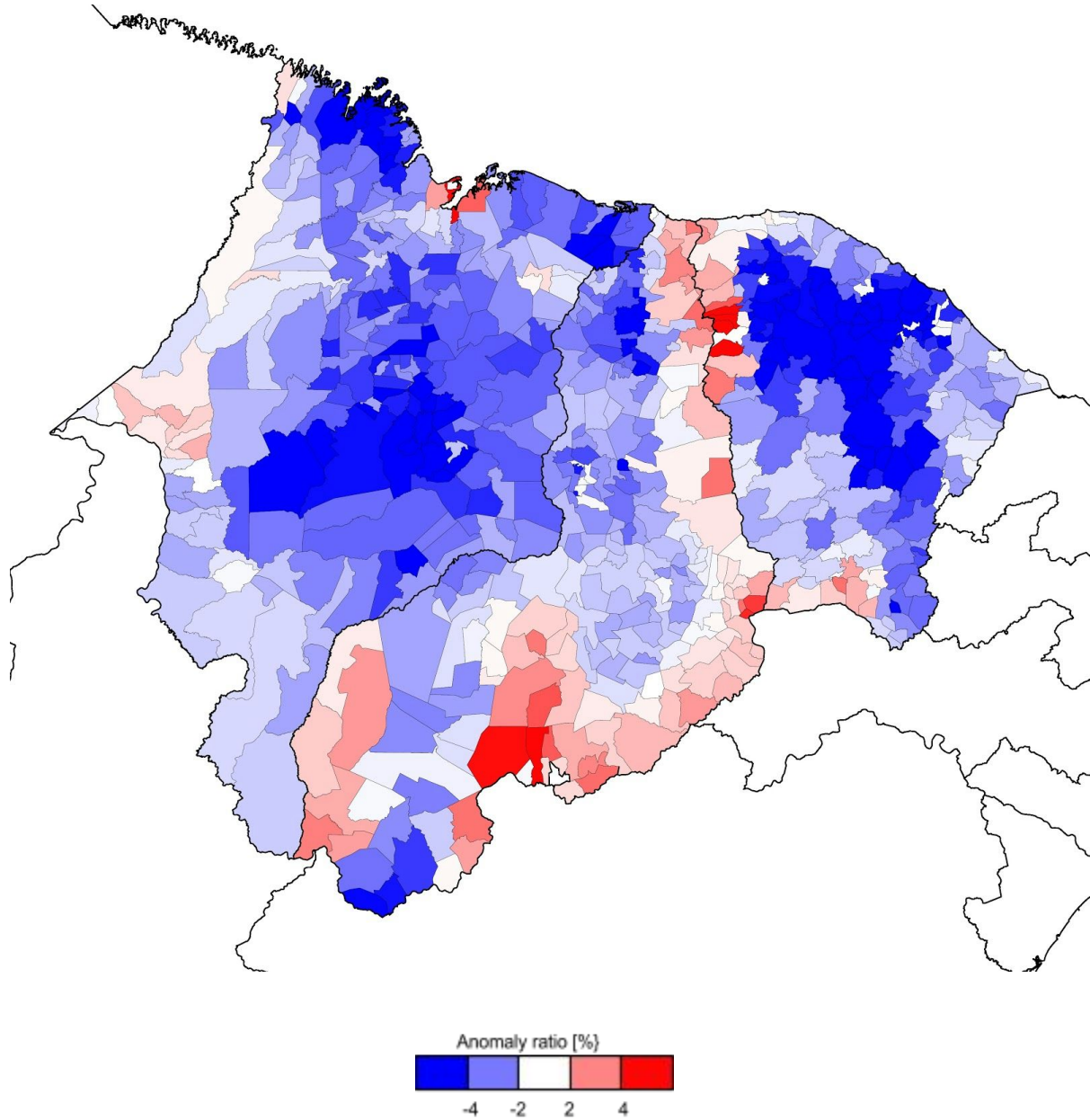


Figure 1: 2014 annual wind speed anomalies [%] for Maranhao, Piaui and Ceara States, based in Vortex data and Merra Re-analysis. Reference period 1995-2014



Brazil Northeast Region (East) Rio Grande do Norte, Paraíba, Pernambuco, Sergipe and Alagoas

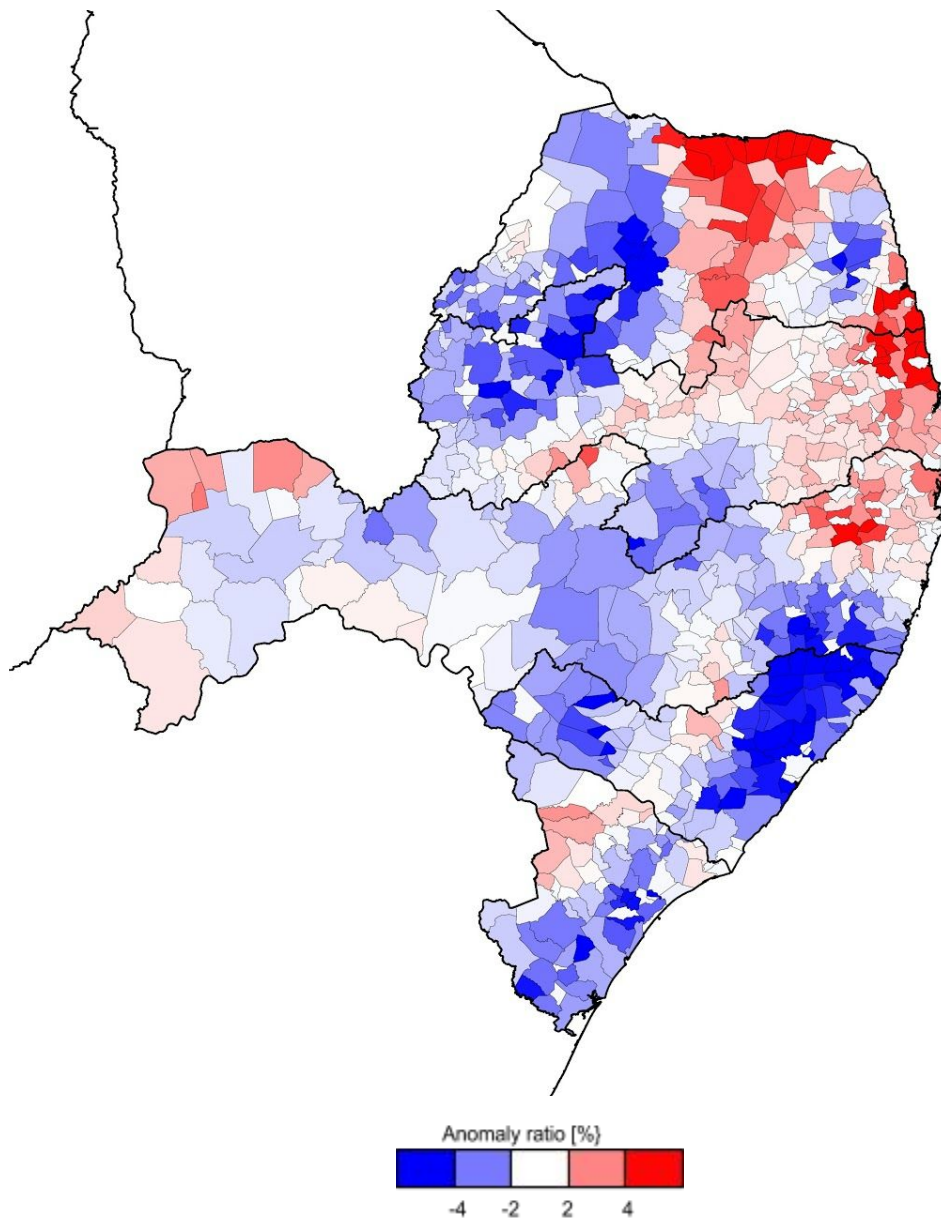


Figure 2: 2014 annual wind speed anomalies [%] for Rio Grande do Norte, Paraíba, Pernambuco, Sergipe and Alagoas States, based in Vortex data and Merra Re-analysis. Reference period 1995-2014



Brazil Northeast Region (South) Bahia

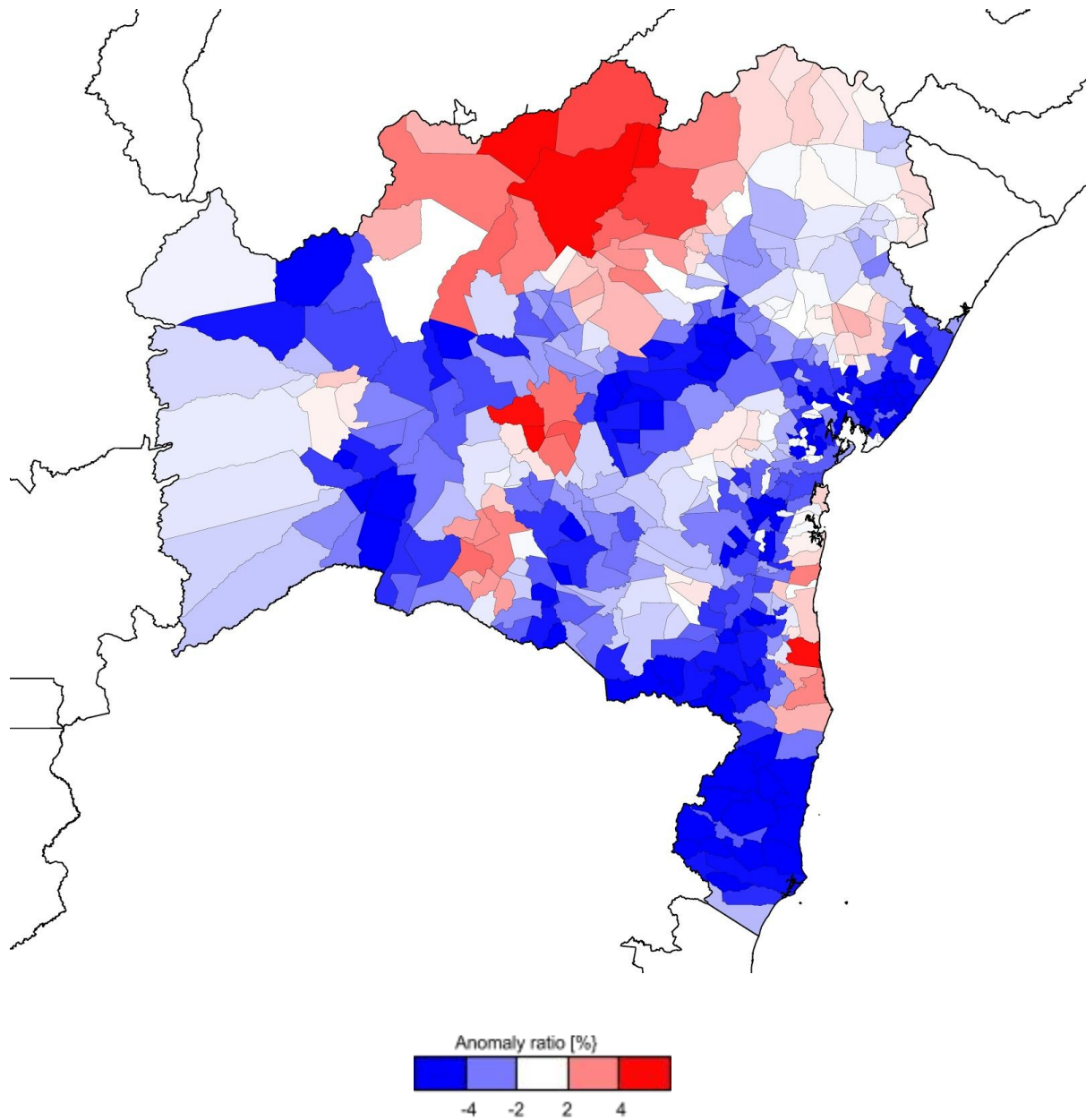


Figure 3: 2014 annual wind speed anomalies [%] for Bahia States, based in Vortex data and Merra Re-analysis. Reference period 1995-2014



Brazil South-East Region: Minas Gerais, Espirito Santo, Rio de Janeiro & Sao Paulo

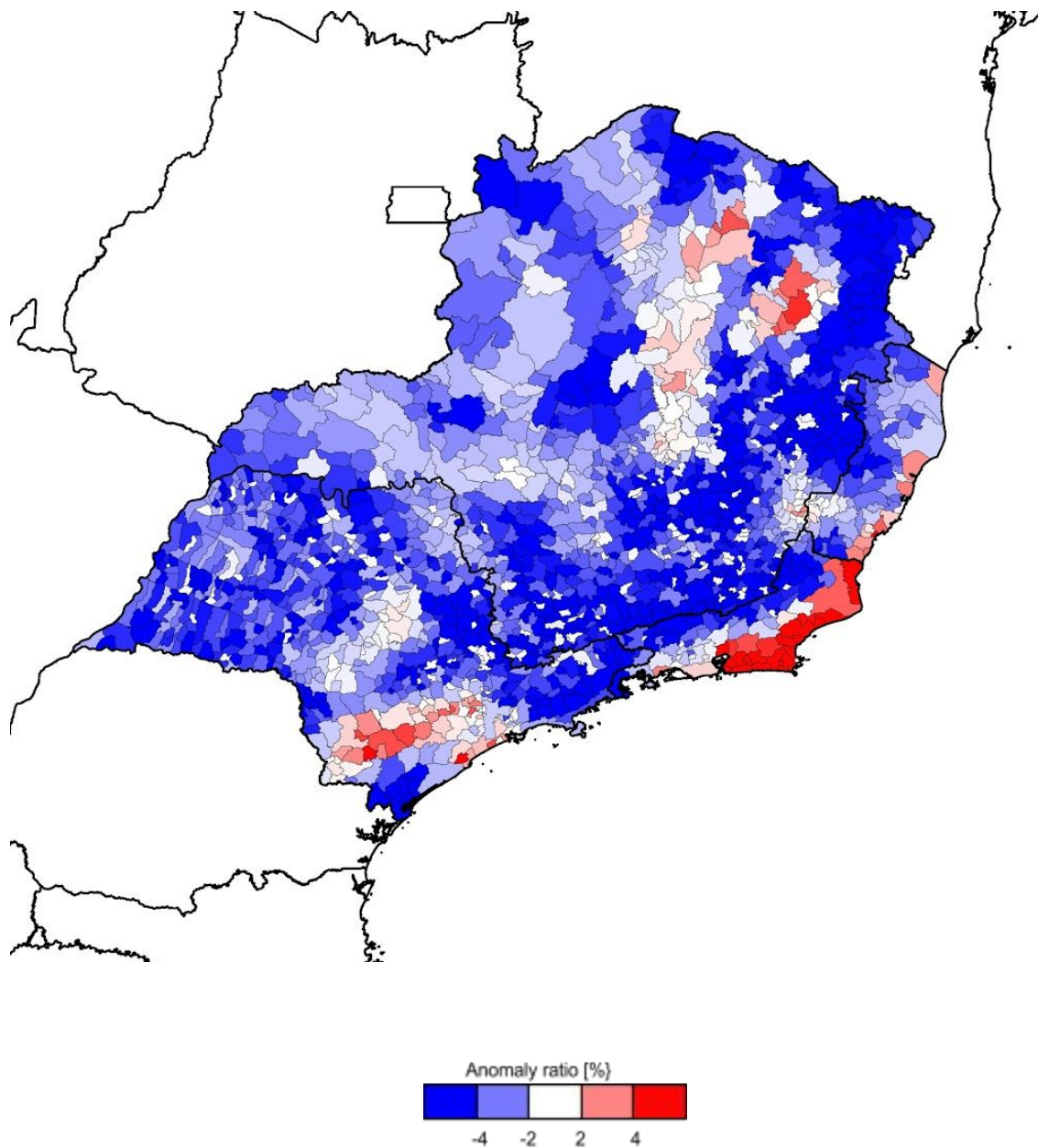


Figure 4: 2014 annual wind speed anomalies [%] for Minas Gerais, Espirito Santo, Rio de Janeiro and Sao Paulo States, based in Vortex data and Merra Re-analysis. Reference period 1995-2014



Brazil South Region: Parana, Santa Catarina & Rio Grande do Sul

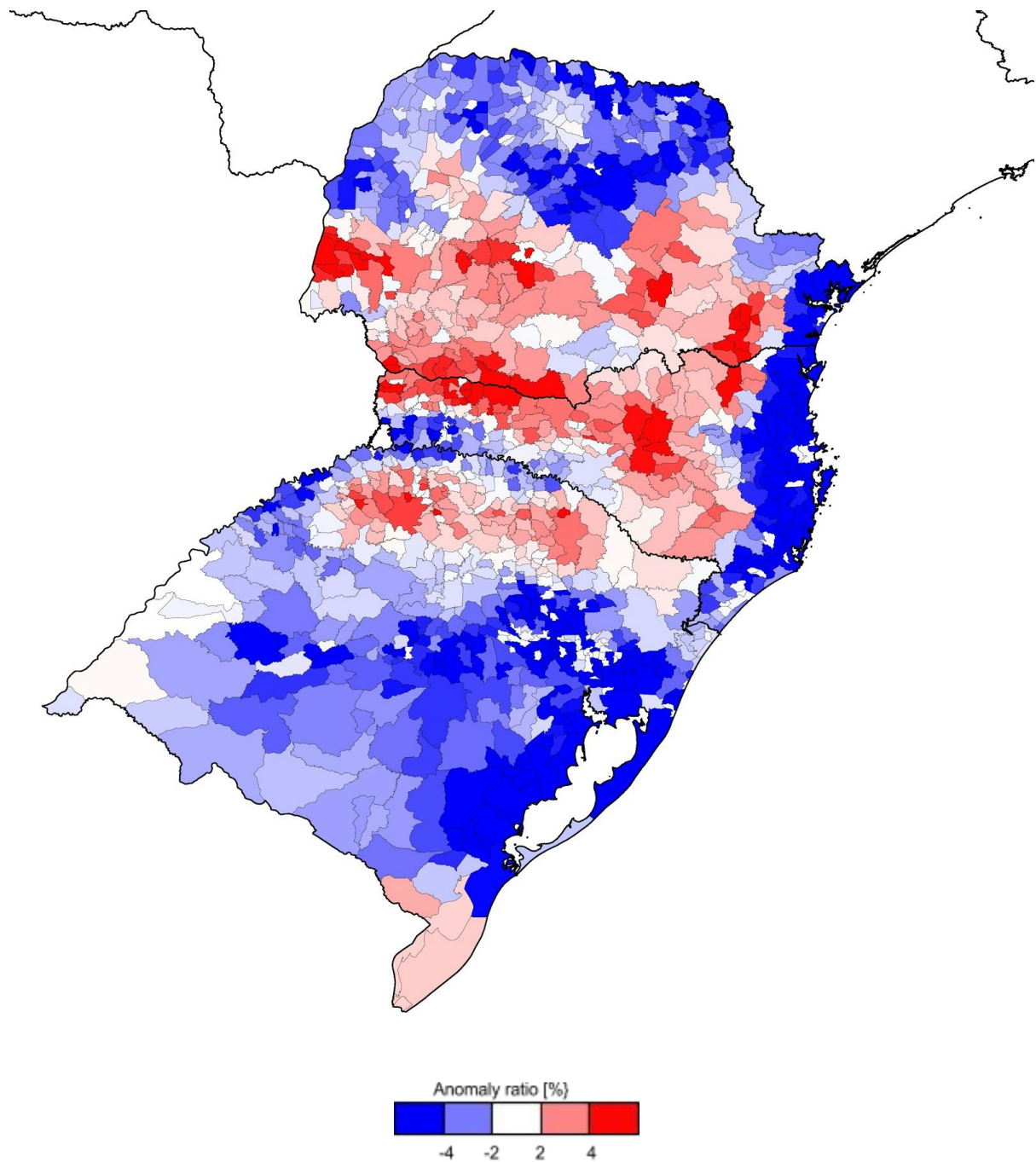


Figure 5: 2014 annual wind speed anomalies [%] for Parana, Santa Catarina and Rio Grande do Sul States, based in Vortex data and Merra Re-analysis. Reference period 1995-2014



Uruguay

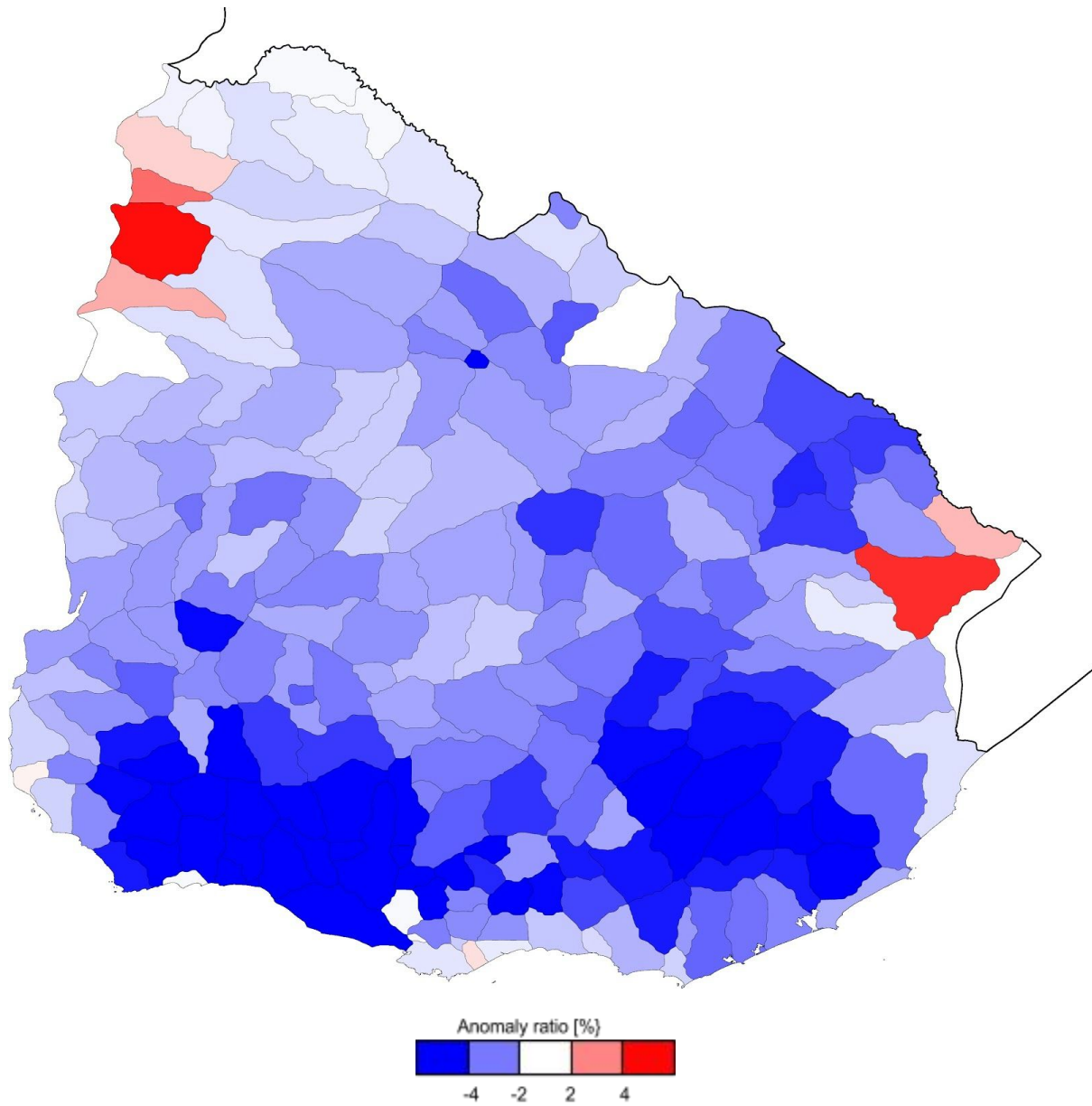


Figure 5: 2014 annual wind speed anomalies [%] for Uruguay, based in Vortex data and Merra Re-analysis. Reference period 1995-2014

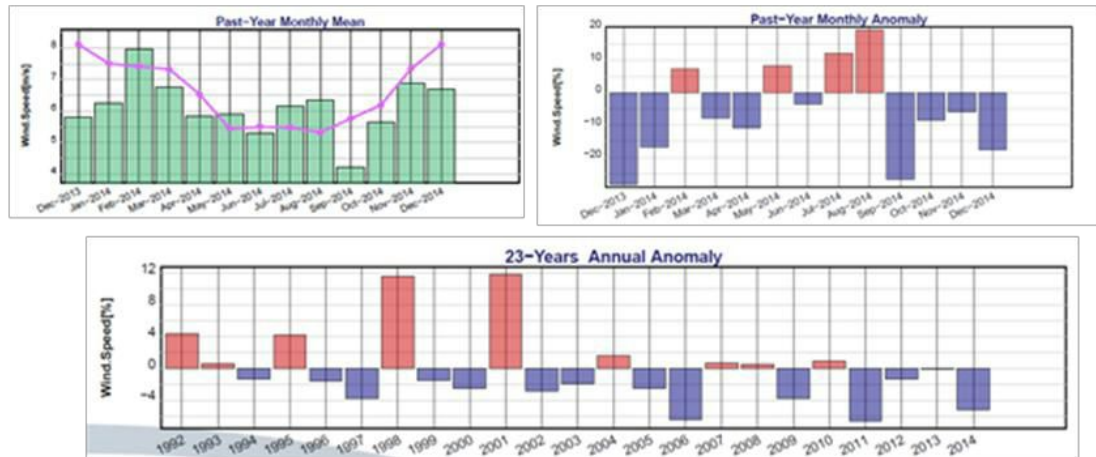


VORTEX MONTHLY INSIGHT:

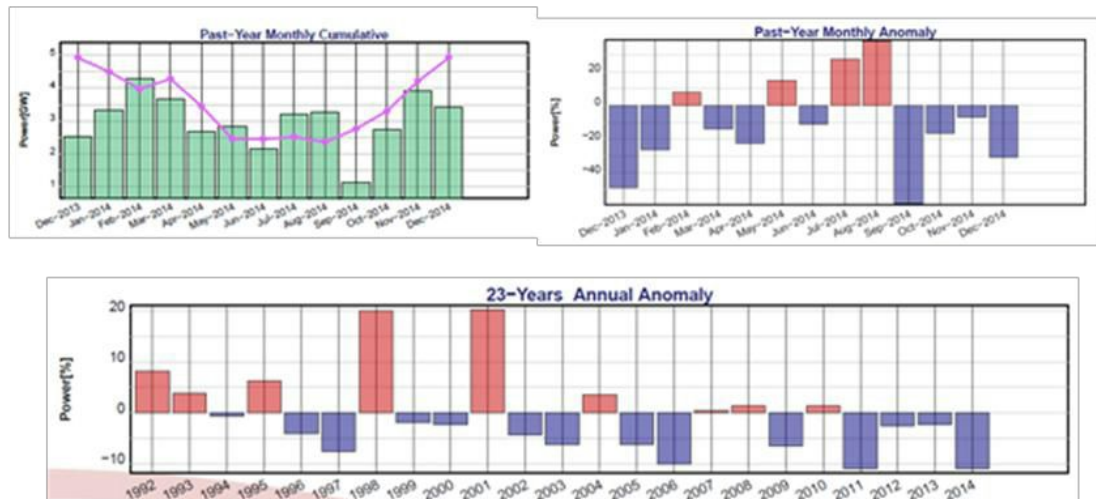
Monthly Insight is an enhanced tool for conducting site-specific anomaly impact studies for any given location, including wind and power production statistics. On-site measurements can be assimilated for effective bias correction and calibration using Vortex Remodeling technology. Some samples of the information provided by site-specific Monthly Insight reports are showed below.

Feel free to get in touch with us to obtain further information about INSIGHT features and capabilities.

WIND



POWER





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