Wind Trends Bulletin India: 2012 Q3

19 December 2012

Across much of central and west-central India, wind speeds at 80 m above ground level were well above normal in the third quarter (July – September) of 2012 relative to the long-term (1997-2011) average. Below-average winds occurred across most other regions (see Figure 1). Positive wind speed anomalies were greatest in Rajasthan, Madhya Pradesh, and coastal Kerala (+15% or more); speeds were furthest below normal (-15% or less) in Karnataka, Tamil Nadu, and coastal Maharashtra.

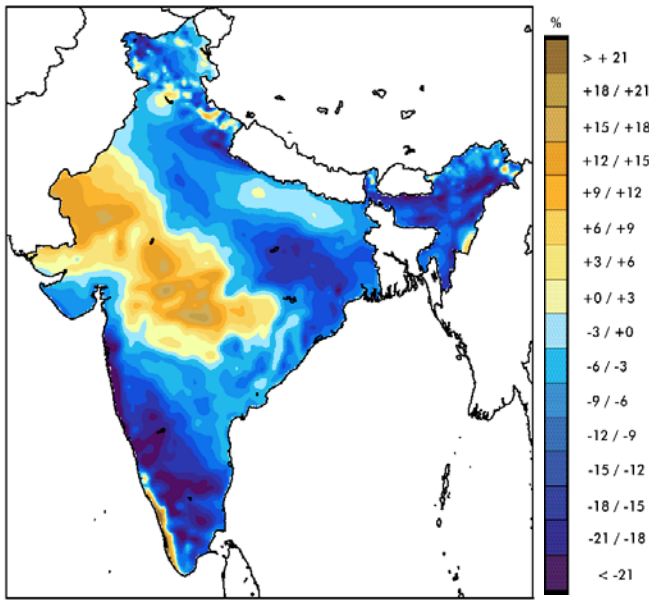

Figure 1. Wind Speed Anomaly Map: Q3 2012

The pattern of wind speed deviations is at least partially explained by the persistance of surface air pressure anomalies during the monsoon season. For most of the quarter, surface air pressure was below normal across central India and above normal in the southern peninsula and northeast. This resulting pressure gradient produced above-normal winds from the Thar Desert to southern Madhya Pradesh. In July, wind speeds in these areas were generally 5% to 15% above normal, while in August they increased to more than 15% above normal, with some parts of central Madhya Pradesh experiencing winds more than 35% above normal. In contrast, the regions of India under high pressure experienced below-normal winds. This was especially notable in the wind power producing regions of Maharashtra, Karnataka, and Tamil Nadu, which experienced winds 10% to 20% below normal in July and August. The coastline of Keral was an exception, with wind speeds more than 25% above normal. In September, the surface pressure anomalies weakened and wind speeds across the subcontient generally returned to normal.

For the 12-month period from 1 October 2011 to 30 September 2012, wind speeds were below normal in the southern peninsula and generally above average in northern and western India (see Figure 2). Wind speeds have generally increased across India over the past twelve months relative to the previous year (see Figure 3).

This analysis was conducted by AWS Truepower's meteorology team. It is based on a computer simulation of weather conditions dating back to 1997, which results in a comprehensive and detailed weather snapshot at multiple heights above ground for every hour. Project assessments, maps, data and monthly reports are available. For more information on customized analyses for your project portfolio, data or subscription options, please contact us: info@awstruepower.com.

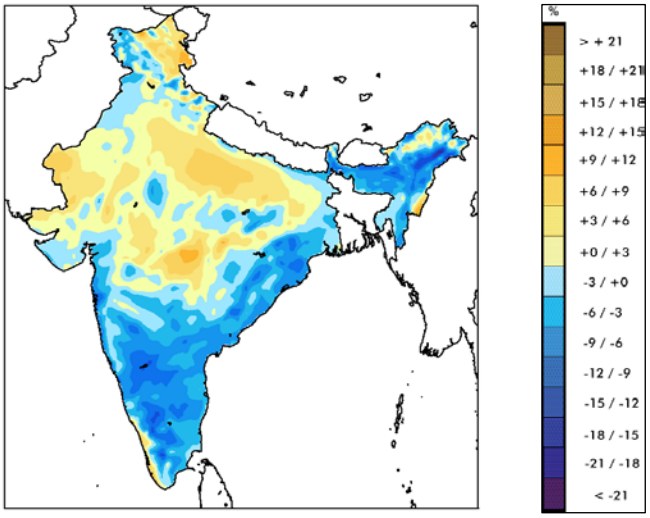

Figure 2. Wind Speed Anomaly Map: Q4 2011 – Q3 2012

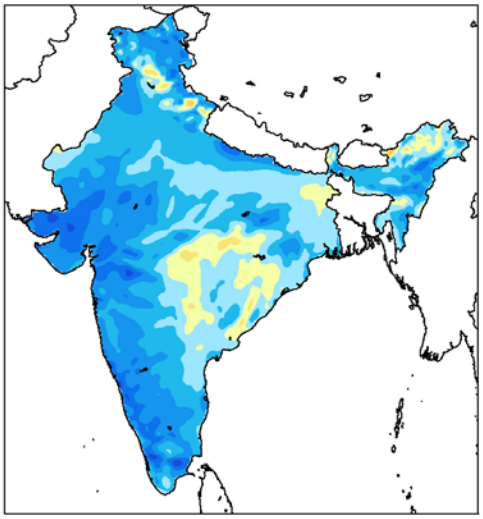

Figure 3. Wind Speed Anomaly Map: Q4 2010 – Q3 2011

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