

**Economics
Seminar
Series
2018**



**SOUTH ASIAN UNIVERSITY
FACULTY OF ECONOMICS**

Seminar

***Impact of Weather Shocks on Residential Electricity
Demand: Evidence from Delhi***

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at the
University of Chicago (EPIC-India)**

Date: August 24, 2018
(Friday)

Time: 2:30 p.m.

Venue: FSI Hall, Akbar Bhawan,
Satya Marg, Chanakyapuri, New Delhi

All are Welcome

ABSTRACT

Electricity for space heating and cooling is an important mode of adapting to extreme weather conditions, and to climate change. This study measures the change in electricity demand in response to weather shocks at the household level in Delhi, and at various aggregate levels in India. We use a semiparametric model to capture the nonlinearity of short-run temperature response. On average, aggregate electricity demand in India increases by 11% or more at temperatures above 30 degree Celsius, relative to a reference range of 21-24 degree Celsius, with substantial heterogeneity across the country. Aggregate demand in Delhi increases by 30% or more at temperatures above 30 degree Celsius. Using rich micro-data on electricity demand in Delhi, we do a first-of-its-kind estimation of household-level temperature response. We find evidence that the smallest domestic consumers, especially those living in slums, show limited incremental response to high temperatures, likely due to limited cooling options available to them. These findings underscore the need to improve our understanding of the constraints posed by poverty on climate change adaptation, and for interventions to mitigate risks of heat stress among the poor.