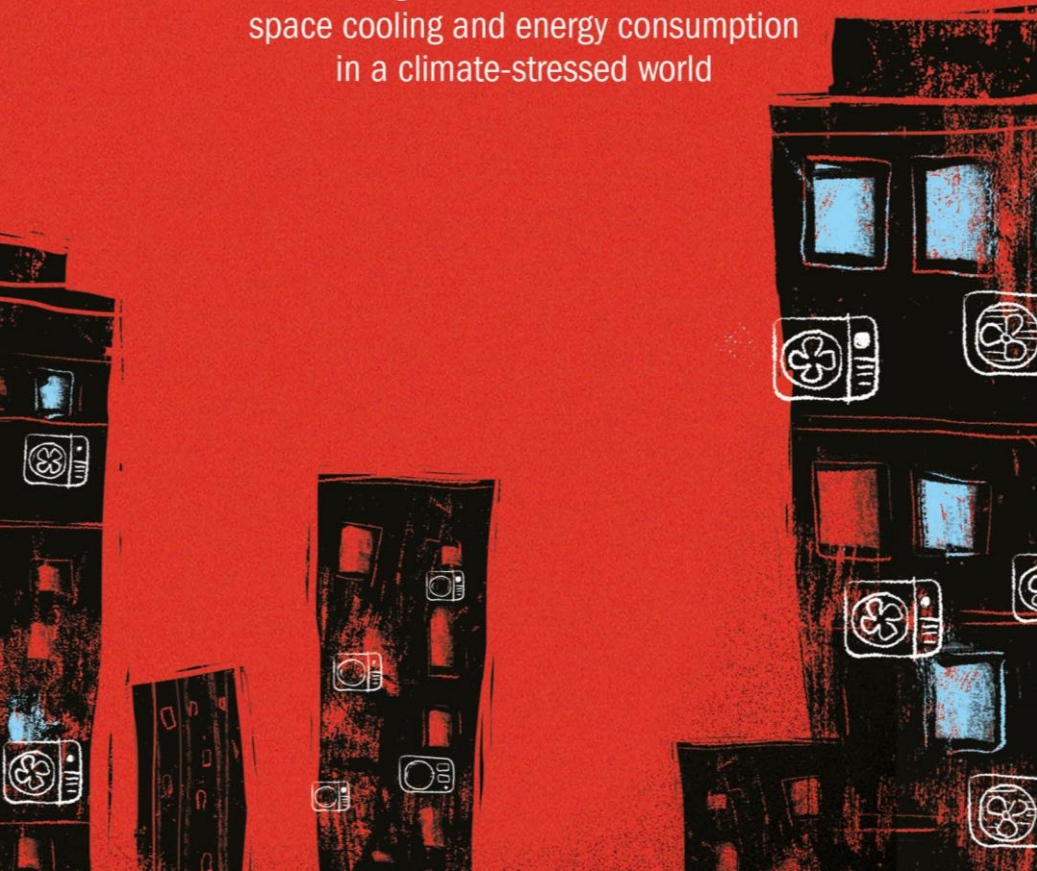




A MIDSUMMER NIGHTMARE

Decoding the link between comfort,
space cooling and energy consumption
in a climate-stressed world

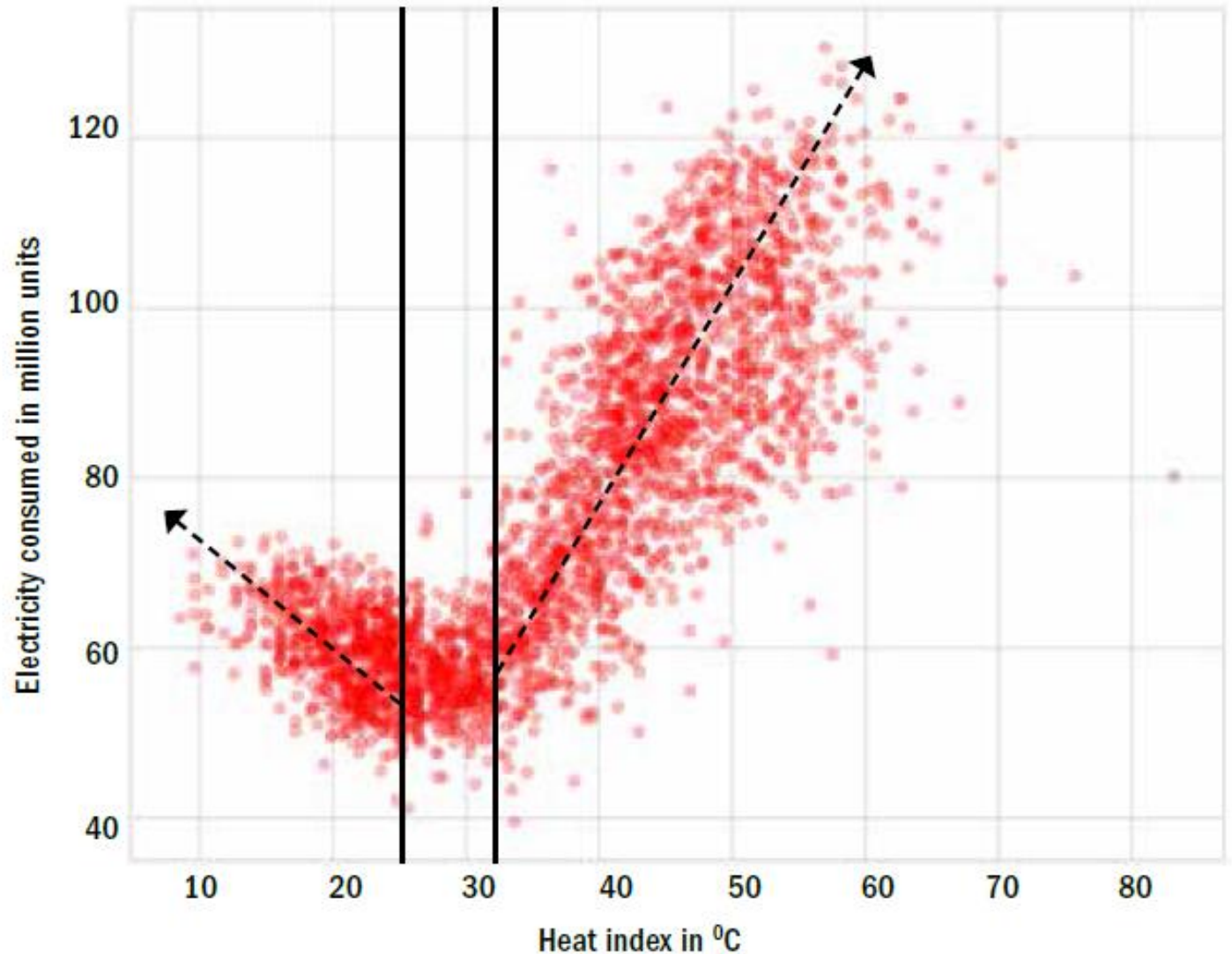


E-Release

June 20, 2019

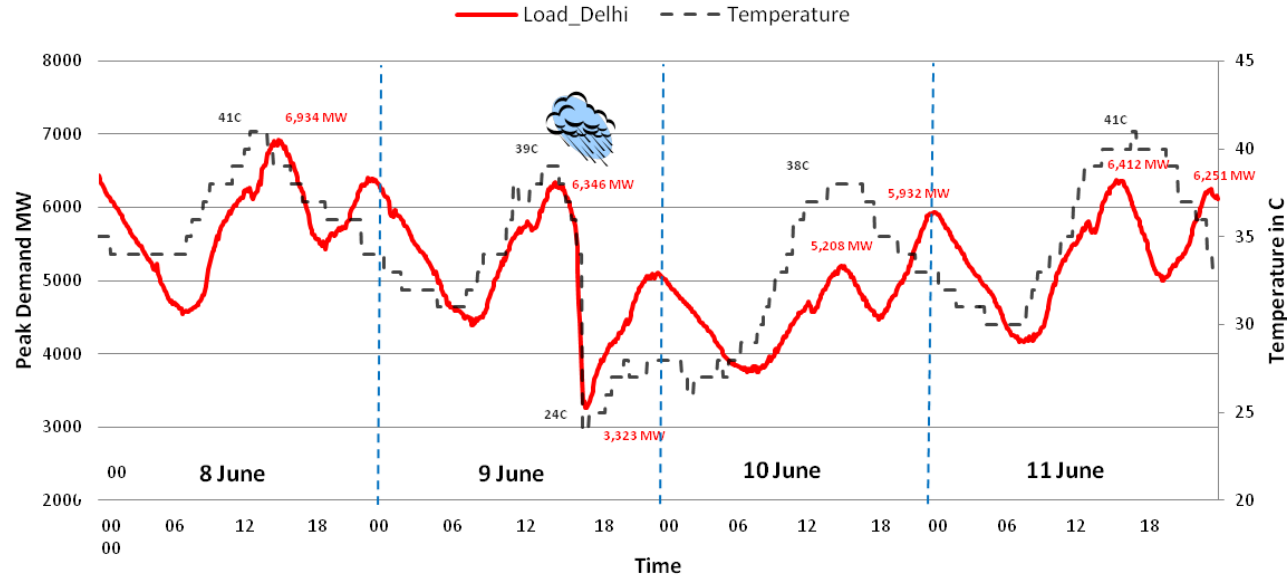
Avikal Somvanshi
Centre for Science and Environment

Delhi's electricity consumption as a proxy to its thermal discomfort

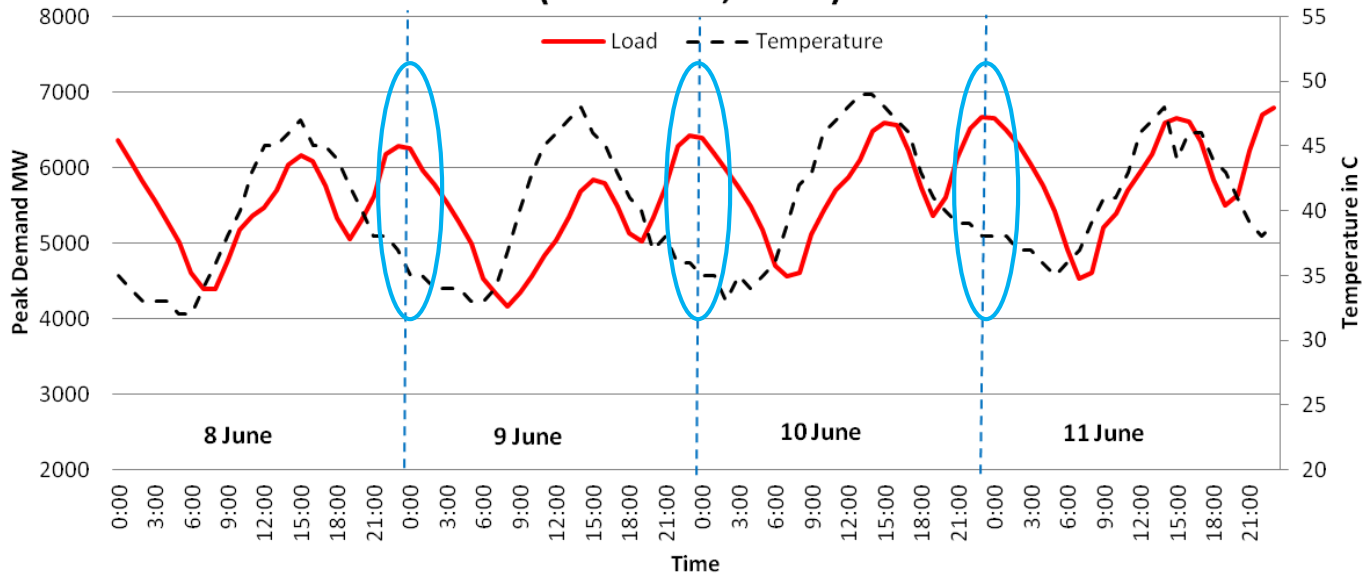


Source: CSE analysis

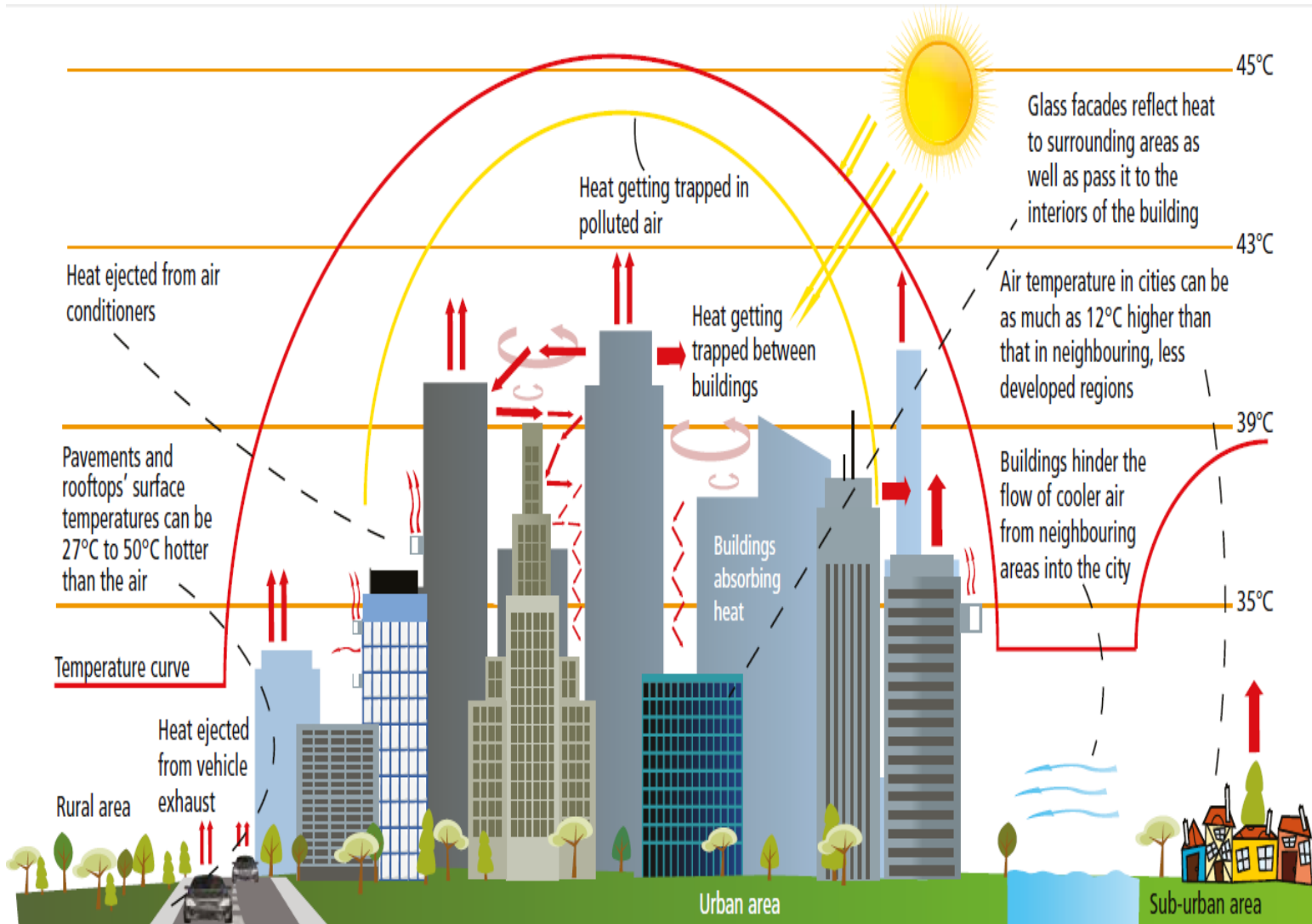
Hourly Peak Demand vs Ambient Temperature (8-11 June, 2018)



Hourly Peak Demand vs Ambient Temperature (8-11 June, 2019)



Cities are simmering in its own waste heat



CSE Recommends



- Develop urban heat action and mitigation plans to reduce urban heat island in the same spirit as clean air action plan
- As recommended by ICAP adopt Adaptive Thermal Comfort Model-based mixed-mode building design and operation, to reduce prolonged use of AC.
- Adoption of passive design and envelope improvements through shading and ventilation in all new construction to inherently reduce the need for active space cooling
- In existing buildings introduce measures to enhance thermal comfort and reduce operational need for active cooling systems. This should include addition of sunshades to any exposed glass in the facade, cool roofs and capping of thermostat of building heating, ventilation and air conditioning (HVAC).



CSE Recommends



- Improve star labelling of existing technology to better inform people of the energy costs, CSE notes that the current label is misleading and pushing the market towards 3star technologies instead of 5star ones.
- Demand-side management and demand response programmes for behavioural change like peer to peer energy performance comparison, promote the use of demand response-enabled cooling technology, real-time power consumption displays in all room air conditioners and building automation and management systems.
- Make disclosing energy and cooling demand and electricity consumption mandatory for all buildings. This information should be made publically available for all buildings with a connected load equal to or more than 100 kW.

