



# ASSESSING COVID-19 IMPACTS AND THE STIMULUS NEEDS FOR INDIA'S POWER SECTOR

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# THE COAL SECTOR STILL SUPPLIES MORE THAN 50% OF INDIA'S ELECTRICITY BY 2030, BUT ITS PLF WILL REMAIN SUBDUED.

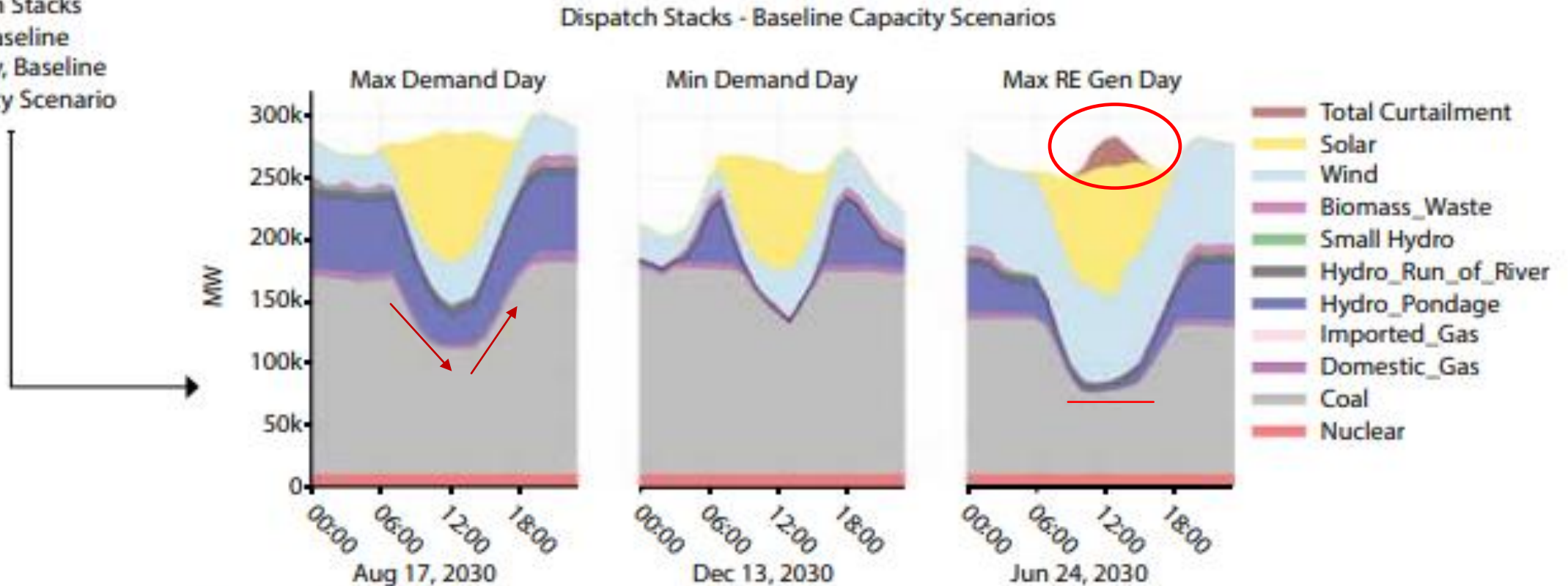
**Table 6:** Aggregate Scenario Results: Key Indicators

Scenario Name	Unserved Load	Solar Curtailment	Wind Curtailment	Gas PLF	Hydro PLF	Coal PLF
	MWh	%	%	%	%	%
BCS_Baseline_Flex	0.00	0.41%	0.27%	16.75%	36.15%	65.48%
BCS_Low_Flex	2.00	0.53%	0.34%	16.70%	36.04%	65.55%
BCS_Trans_Flex	38.74	0.34%	0.01%	16.66%	36.03%	65.55%
HRES_Baseline_Flex	39.19	2.73%	1.29%	16.47%	35.32%	58.77%
HRES_Storage_Flex	0.00	0.10%	0.08%	16.55%	36.05%	57.77%
HRES_Thermal_Flex	21.16	1.16%	0.73%	16.62%	35.68%	58.34%
HRES_Trans_Flex	214.00	3.00%	0.92%	16.41%	35.06%	58.92%

Source: authors

# THE COAL FLEET MOVES FROM BASELOAD TO LOAD FOLLOWING AS THE SHARE OF VRE INCREASES

**Figure 5:** All-India Dispatch Stacks in the Baseline Capacity, Baseline Flexibility Scenario



Source: authors

# ACHIEVEMENT OF LOW TECHNICAL MINIMUM IS THE KEY FLEXIBILITY REQUIREMENT

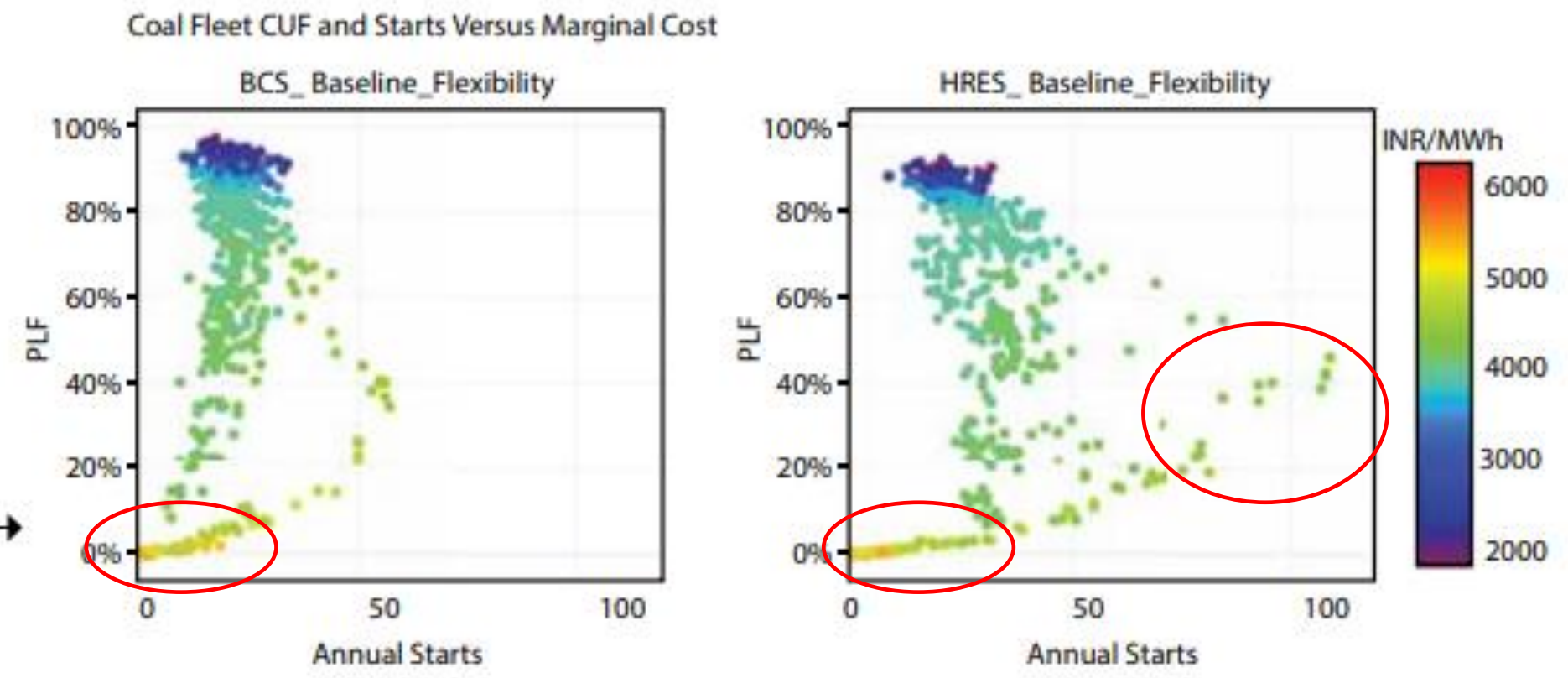
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Source: authors

THERE ARE A GROUP OF HIGH MARGINAL COST PLANTS WHICH NEVER START; AN INCREASE IN RE PENETRATION INCREASES THE NEED FOR TWO SHIFTING FROM A PORTION OF THE FLEET

**Figure 12:** Coal Unit PLF and Starts Versus Marginal Cost

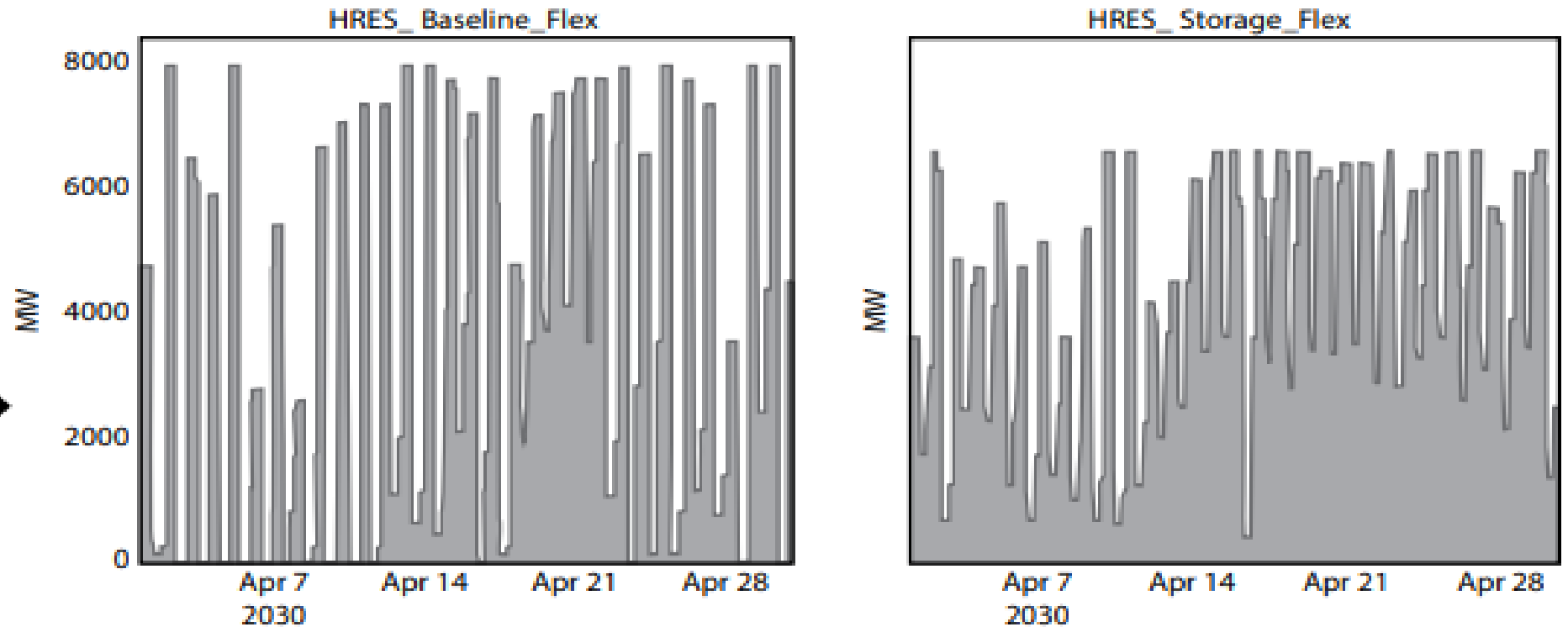


Source: authors

ADDITIONAL SOURCES OF FLEXIBILITY LIKE BATTERIES REDUCE THE CYCLING STRESS ON THE COAL FLEET, BUT ALSO PLF FOR THE HIGH MARGINAL COST PLANTS. AT THE SYSTEM LEVEL THEY SAVE COSTS

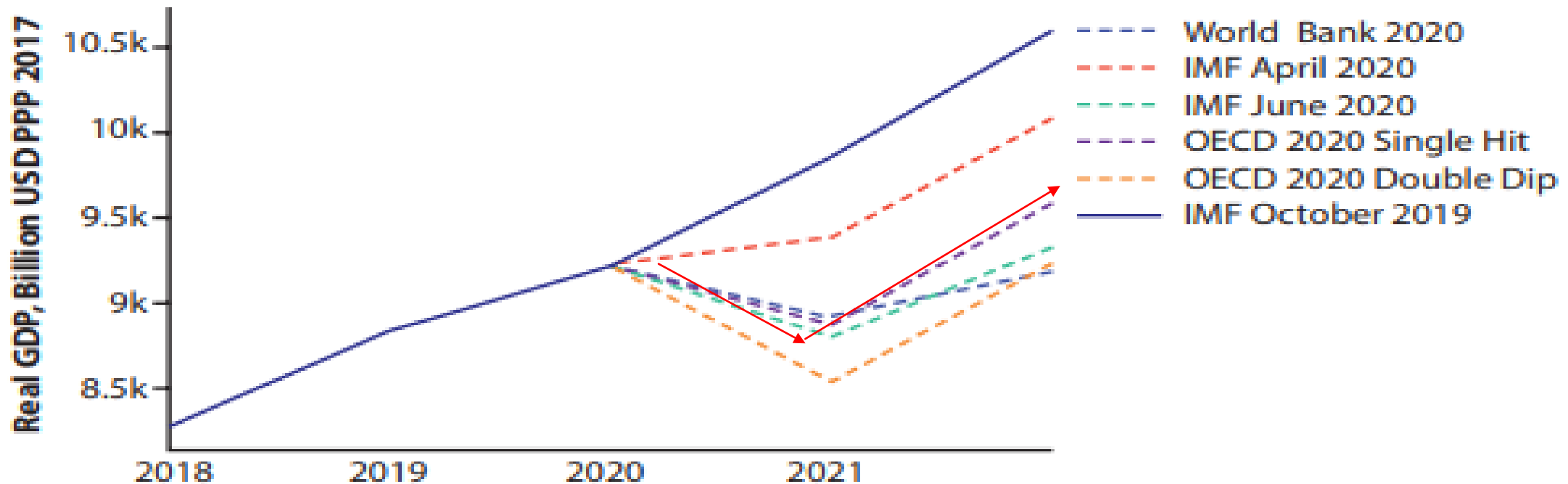
Hourly Dispatch of the 20 Most Aggressively Cycled Coal Units in the Month of April

**Figure 11:** Hourly Dispatch of the 20 Most-Aggressively-Cycled Coal Units



Source: authors

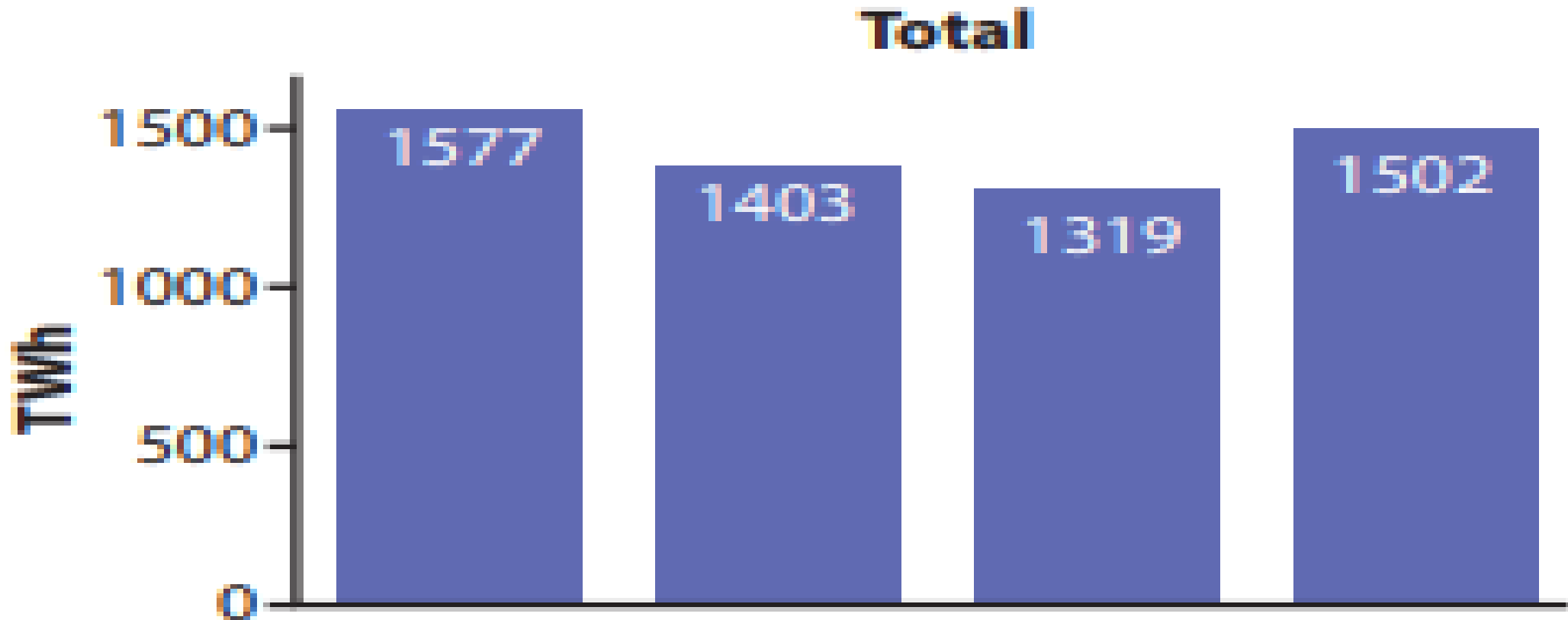
# THE COVID SHOCK MOST PROBABLY MEANS A NEW TRAJECTORY FOR THE INDIAN ECONOMY



**Figure 5:** Short-term GDP forecasts for India from various multilateral agencies.

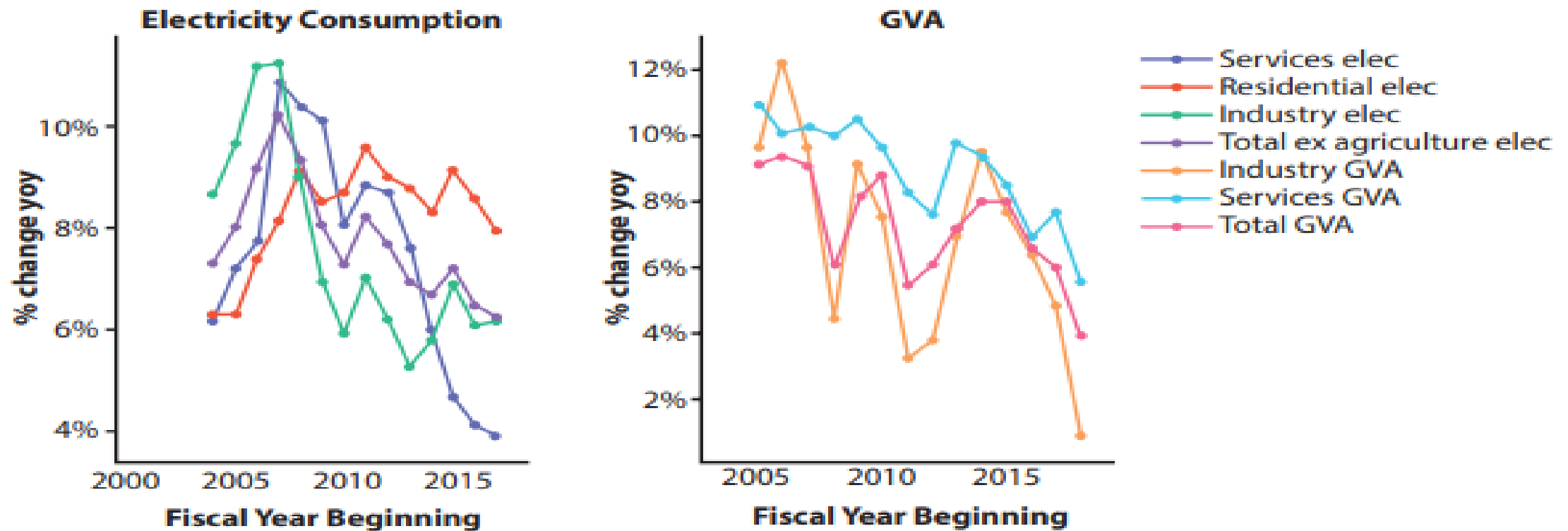
*Source:* Based on data from World Bank (2020), IMF (various years), and OECD (2020)

THE MID-TERM IMPACT OF THIS REVISED TRAJECTORY COULD BE IN THE ORDER OF 6-17% LOW DEMAND BY 2025, RELATIVE TO THE PRE-COVID TREND LEVEL FORECASTED FOR THIS YEAR





# WE HAVE BEEN HERE BEFORE



**Figure 4:** Pattern of sectoral electricity demand growth and sectoral economic activity growth

**Note:** Services electricity demand includes commercial, other, and public lighting. Industry includes high and low tension, and public utilities.

**Source:** Based on data from RBI (2019), CEA (various years).

## REPORTS, DATA AND LINKS

- Report on grid integration of wind and solar: <https://www.teriin.org/sites/default/files/2020-07/Renewable-Power-Pathways-Report.pdf>
- Link to the free results dataset: <https://teriin.org/etctool/>
- Report in the demand impact of COVID-19: [https://www.teriin.org/sites/default/files/2020-07/Bending-the-Curve\\_Report.pdf](https://www.teriin.org/sites/default/files/2020-07/Bending-the-Curve_Report.pdf)
- Link to the results data: <http://teriin.org/sites/default/files/files/eco-elec-outputs.zip>