



## ***'CO<sub>2</sub> Emissions from Pakistan's Energy sector'***

### **SUMMARY OF RESEARCH STUDY**

Research study by Centre for Research on Energy and Clean Air (CREA) on 'CO<sub>2</sub> Emissions from Pakistan's Energy sector' provides a sector-wise breakdown of fossil fuel consumption patterns across the power, industrial, residential, agricultural and transportation sectors of the country and builds carbon dioxide emission profiles for the same.

The analysis carried out in the study is based on primary data compiled by National Electric Power Regulatory Authority, Finance Division, Government of Pakistan and Intergovernmental Panel on Climate Change. The research study highlights the followings points:

1. Coal and natural gas contributed more than 90% of the power sector CO<sub>2</sub> emissions in 2019-20, with coal contributing the highest share, followed by gas and oil.
2. Earlier, natural gas and oil were the dominant contributors to CO<sub>2</sub> emission from the power sector in Pakistan, but this changed with the addition of coal capacity for power generation over the past year.
3. CO<sub>2</sub> emissions from consumption of fossil fuels, i.e., oil, gas and coal in Pakistan have more than doubled over the past two decades.
4. Natural gas contributes highest to the CO<sub>2</sub> emission from fossil fuel consumption in Pakistan with a share of more than 40% in 2018-19. Power, household and industrial sectors are the biggest contributors to the CO<sub>2</sub> emissions from gas consumption followed by the fertilizer sector.
5. Coal, which contributed less than 10% share in overall fossil based energy for the country till 2013-14, was responsible for 19% of the emissions in 2018-19.
6. Emissions from coal saw the highest growth rate, increasing more than five-fold over the past two decades, followed by gas which has shown a more than two-fold increase and oil with approximately 50% increase in CO<sub>2</sub> emissions compared to two decades ago.
7. Cement sector is the biggest contributor of coal-related carbon emissions in Pakistan and is bound to increase coal consumption according to proposed plans.
8. Transportation sector is the single largest sector responsible for oil-related CO<sub>2</sub> emissions, which indicates the need for change in transportation and mobility



infrastructure and need for plans away from a highly fossil intensive transport sector to more sustainable modes for mobility. Similar changes are also needed to shift from polluting oil to electrification and bring effective standard improvements in freight transport (railway and cargo), which will cumulatively lead to reduction in the CO<sub>2</sub> footprint of the sector.

9. The sharp rise in coal's contribution to CO<sub>2</sub> emissions from 2018 onward will likely increase by orders of magnitude if the present trajectory on capacity addition plan is not drastically altered in favor of a renewables based mix.

### Related Links

- [Detailed underlying data for CO<sub>2</sub> Emissions from Pakistan's Energy sector](#)
- [Interactive graphs](#)
- [Published article](#)

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Founded in December 2019 in Helsinki, Centre for Research on Energy and Clean Air (CREA) is an independent research organization focused on revealing the trends, causes and health impacts, as well as the solutions to air pollution. CREA uses scientific data, research and evidence to support the efforts of governments, companies and campaigning organizations worldwide in their efforts to move towards clean energy and clean air. CREA believes that effective research and communication are the key to successful policies, investment decisions and advocacy efforts.

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