## INDUSTRY REPORT

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# Which industries are vulnerable in terms of fuel cost

**Dipanwita Mazumdar**
dipwanwita.mazumdar@bankofbaroda.com

**RBI in a recent report has highlighted three industries-electricity, chemicals and automobiles, as being the most vulnerable sectors in terms of fossil fuel intensity. As a corollary banks need to keep this in mind when lending. This study looks at the energy intensity of various industries and also juxtaposes the same with the banking system's exposure to them.**

**Global backdrop:** In Glasgow COP26 (2021), India has pledged to reduce its net emission to 0 by 2070 (3rd largest emitter) and increase its share of renewables in the energy mix to 50% by 2030. As we move towards the attainment of this goal, companies will face challenges in terms of compliance and banks will have to keep this in mind when lending as financial performance can be impacted.

RBI's recent research report flagged three industries *-electricity, chemical and chemical products and automobiles* - as having high fossil fuel intensity. Their data has been taken from the Annual Survey of Industries, 2016-17.

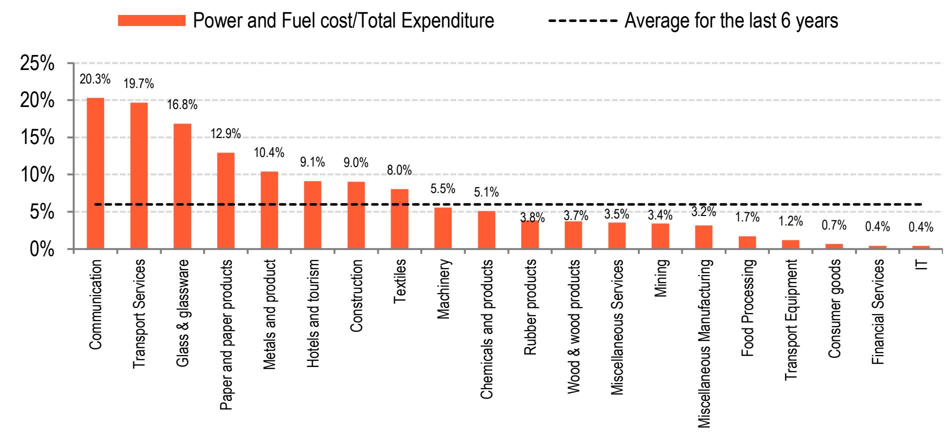
Our study looks at the share of power and fuel to total expenditure to analyse energy intensity of industries. Admittedly the energy component includes all sources and not just fossil fuels. *We have taken an aggregate of 2648 companies and evaluated their Power and fuel cost as share of total expenditure*.

**What our study says:** Our study shows that the energy intensity for the aggregate sample has remained by and large stable in the range of 9.4% to 10.2% in the last 6 years ending 2020-21. There has been a marginal decline in 2020-21 which can be attributed more to the decline in overall production. The leading sectors in terms of energy intensity are communications, glass and glassware, paper and paper products, metals and products and transport besides electricity which inherently is fuel intensive. If we exclude electricity (as it is an outlier), the average of the past 6 years (since Mar-16) stands at 6%.

**Limitation of our study:** We have taken the power and fuel cost in the Income Expenditure Statement, so it incorporates both renewable and non-renewables. The share of non-conventional energy is limited (as 80% of India's energy needs are met by coal, oil and solid biomass-IEA report on India Energy Outlook, 2021).

## Observations:

**Fig 1 – Industry wise energy intensity for 2020-21**




Source: Ace Equity, Bank of Baroda Research, Note: Total of 2648 companies have been analysed and the data pertains to Mar'21, Average is excluding electricity

Figure 1 above gives the energy intensity of various broad industries for 2020-21. The dotted line is the average energy intensity of the sample companies for the last six years after excluding the power sector. Seven industries have a ratio of above 6% with the highest being communications followed by transport services (airways and ports), glass and glassware, construction, paper and paper products, metals, hotels and tourism and textiles. These industries will have to work harder to attain the environment standards and will have to switch over to more friendly fuels. With the construction including housing sector is expected to drive capital formation in the coming years, it would face the biggest challenge as related industries like glass, metals are energy intensive. Textiles is another industry which will have to reconsider options as the energy intensity is high.

**Table 1** below gives the movement in the energy intensity ratio for various industries in the last 6 years. Some interesting trends emerge.

- Communications has witnessed an increase from 12.8% to 20.3% during this period. Such a continuous increase has been witnessed also for glass and glassware.
- While the ratio is low for machinery, there has been an increase from 2.5% to 5.5% in these past 6-years.
- The ratio for textiles also has tended to increase though there is no clear pattern.
- In case of airlines, there was an increase in energy intensity which can be aptly attributed to the rising cost of fuel which is benchmarked to global price of crude.
- The intensity ratio for fertilisers remained largely unchanged (though above the industry level average). The same can be said for metals and products.
- Hotels have witnessed a decline in energy intensity which can be attributed partly to the efforts made by companies to lower energy costs through energy saving measures.

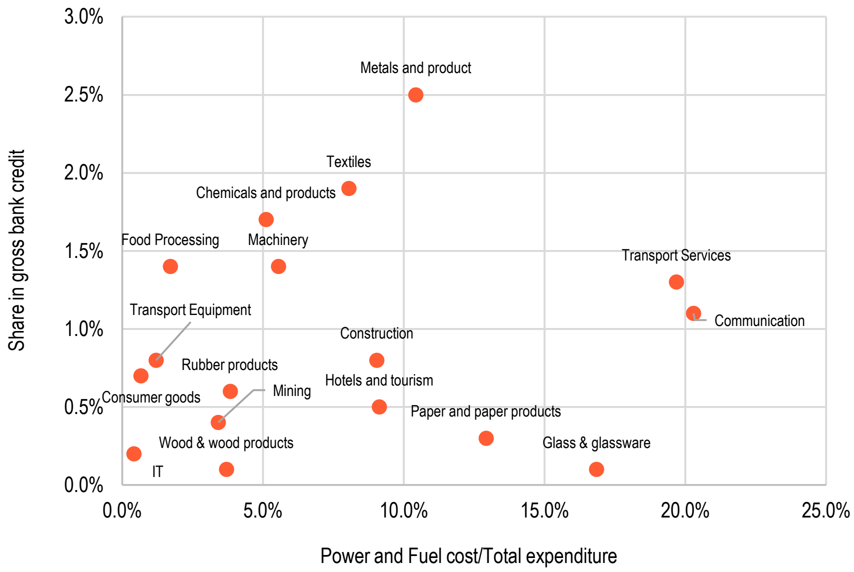
**Table 1. Trend in industry wise energy intensity ratio**

| Sl No: | Power cost ratio of total expenditure | Number of industries | Mar-16 | Mar-17 | Mar-18 | Mar-19 | Mar-20 | Mar-21 |
|---|---|---|---|---|---|---|---|---|
| **A** | **Communication** | **16** | **12.8%** | **11.4%** | **11.9%** | **14.4%** | **16.0%** | **20.3%** |
| **B** | **Construction** | **149** | **10.4%** | **10.0%** | **8.9%** | **9.8%** | **9.0%** | **9.0%** |
| **C** | **Electricity** | **43** | **86.0%** | **86.1%** | **78.3%** | **86.0%** | **82.0%** | **80.6%** |
| **D** | **Mining** | **29** | **4.1%** | **3.8%** | **4.9%** | **4.1%** | **3.2%** | **3.4%** |
| **E** | **Manufacturing** | **1605** | **5.1%** | **4.9%** | **5.1%** | **5.1%** | **5.1%** | **4.9%** |
| **E.1** | **Chemicals and products** | **425** | **5.4%** | **5.1%** | **5.5%** | **5.0%** | **4.8%** | **5.1%** |
| E.1.1 | Drugs & Pharma | 140 | 3.6% | 3.4% | 3.6% | 3.5% | 3.9% | 3.6% |
| E.1.2 | Fertilizer | 20 | 11.7% | 11.1% | 11.4% | 11.4% | 11.1% | 9.9% |
| E.1.3 | Others | 265 | 5.3% | 5.0% | 5.4% | 4.8% | 4.6% | 5.1% |
| **E.2** | **Consumer goods** | **70** | **0.7%** | **0.7%** | **0.7%** | **0.7%** | **0.7%** | **0.7%** |
| E.2.1 | Footwear, Leather & related | 11 | 2.7% | 2.6% | 2.5% | 2.7% | 2.9% | 3.1% |
| E.2.2 | Gems & jewelry | 18 | 0.4% | 0.4% | 0.3% | 0.3% | 0.3% | 0.2% |
| E.2.3 | Others | 41 | 0.8% | 0.8% | 0.9% | 0.9% | 0.9% | 0.8% |
| **E.3** | **Food Processing** | **170** | **2.3%** | **2.2%** | **2.3%** | **2.4%** | **2.1%** | **1.7%** |
| E.3.1 | Edible oils & vanaspati | 21 | 1.4% | 1.2% | 1.2% | 1.2% | 1.2% | 1.1% |
| E.3.2 | Sugar | 41 | 1.7% | 1.5% | 1.4% | 1.6% | 1.1% | 0.9% |
| E.3.3 | Tea | 9 | 8.4% | 7.4% | 7.8% | 7.1% | 6.5% | 5.4% |
| E.3.4 | Others | 99 | 2.7% | 2.8% | 3.0% | 3.1% | 2.7% | 2.2% |
| **E.4** | **Glass & glassware** | **7** | **15.6%** | **15.4%** | **17.0%** | **19.8%** | **18.5%** | **16.8%** |
| **E.5** | **Machinery** | **178** | **2.5%** | **2.9%** | **3.8%** | **4.2%** | **4.7%** | **5.5%** |
| **E.6** | **Metals and product** | **228** | **11.2%** | **11.1%** | **10.7%** | **10.9%** | **11.8%** | **10.4%** |
| E.6.1 | Aluminum and products | 7 | 4.5% | 4.5% | 4.3% | 4.6% | 4.9% | 4.5% |
| E.6.2 | Iron and Steel | 53 | 10.6% | 10.7% | 10.8% | 9.2% | 11.0% | 11.0% |
| E.6.3 | Others | 168 | 11.4% | 11.2% | 10.7% | 11.2% | 12.0% | 10.3% |
| **E.7** | **Paper and paper products** | **43** | **14.5%** | **13.6%** | **13.2%** | **14.8%** | **13.7%** | **12.9%** |
| **E.8** | **Rubber products** | **20** | **3.8%** | **3.7%** | **3.6%** | **3.7%** | **3.6%** | **3.8%** |
| **E.9** | **Textiles** | **306** | **7.2%** | **7.3%** | **7.0%** | **7.9%** | **8.0%** | **8.0%** |
| **E.10** | **Transport Equipment** | **137** | **1.5%** | **1.4%** | **1.3%** | **1.3%** | **1.3%** | **1.2%** |
| E.10.1 | Auto ancillaries | 108 | 3.3% | 3.2% | 3.2% | 3.3% | 3.1% | 3.0% |
| E.10.2 | Commercial vehicles | 3 | 1.0% | 1.1% | 1.0% | 0.9% | 1.0% | 0.9% |
| E.10.3 | Passenger vehicles | 8 | 1.1% | 0.8% | 0.8% | 0.8% | 0.8% | 0.7% |
| E.10.4 | Others | 18 | 1.0% | 0.9% | 0.9% | 0.8% | 0.9% | 0.8% |
| **E.11** | **Wood & wood products** | **6** | **3.7%** | **3.8%** | **3.0%** | **3.7%** | **3.8%** | **3.7%** |
| **E.12** | **Miscellaneous Manufacturing** | **15** | **2.9%** | **3.1%** | **2.9%** | **2.8%** | **2.8%** | **3.2%** |
| **F** | **Services incl. financial** | **806** | **6.3%** | **5.8%** | **6.2%** | **7.9%** | **7.8%** | **3.6%** |
| **F.1** | **Financial Services** | **341** | **1.5%** | **1.1%** | **1.2%** | **2.5%** | **0.7%** | **0.4%** |
| **F.2** | **Hotels and tourism** | **66** | **10.0%** | **9.4%** | **9.5%** | **9.1%** | **9.1%** | **9.1%** |
| **F.3** | **IT** | **168** | **0.9%** | **0.9%** | **0.8%** | **0.7%** | **0.7%** | **0.4%** |
| **F.4** | **Transport Services** | **47** | **27.1%** | **27.1%** | **28.5%** | **31.7%** | **32.2%** | **19.7%** |
| F.4.1 | Air | 15 | 32.1% | 31.0% | 32.4% | 35.7% | 36.0% | 24.4% |
| F.4.2 | Road | 8 | 0.7% | 1.0% | 1.1% | 1.2% | 0.7% | 1.2% |
| F.4.3 | Shipping | 8 | 9.0% | 10.5% | 15.5% | 14.7% | 14.9% | 12.1% |
| F.4.4 | Others | 15 | 1.3% | 1.4% | 1.6% | 1.8% | 1.8% | 1.8% |
| **F.5** | **Miscellaneous Services** | **184** | **4.7%** | **3.6%** | **3.7%** | **3.5%** | **3.7%** | **3.5%** |
| F.5.1 | Household and personal products | 4 | 2.4% | 1.1% | 0.5% | 0.7% | 0.7% | 0.7% |
| F.5.2 | Real Estate | 8 | 1.0% | 2.7% | 2.9% | 1.3% | 0.7% | 0.2% |
| F.5.3 | Trading, logistics, healthcare etc | 41 | 32.4% | 26.8% | 29.1% | 32.3% | 39.4% | 37.9% |
| F.5.4 | Others | 131 | 1.1% | 1.0% | 1.2% | 1.1% | 1.0% | 0.8% |
| | **Total** | **2648** | **10.2%** | **9.7%** | **9.4%** | **10.3%** | **10.2%** | **9.4%** |

Source: Ace Equity, Bank of Baroda Research Note: Red-higher than national average and shaded area show increase compared to last year

Fig 2. displays a scatter plot of credit share of various sectors and ratio of power cost to total expenditure. Interestingly, credit share of most of these sectors where power intensity is high is around 16% of overall gross bank credit. Individually the share of the sectors with high energy intensity ratios is less than 2% of gross bank credit for most of them with metals being the exception.

**Fig 2 – Scatter plot showing industries such as metals, textiles and chemicals need to be watched**




Source: Ace Equity, Bank of Baroda Research, Note: Total of 2648 companies have been analysed and the data pertains to Mar'21

**Concluding remarks:**

Going ahead companies will have to be more cognizant of the environment and take steps to move away from fossil fuels. Effort has to be put in to not just lower the use of fossil fuels but also reduce the energy intensity ratio through deployment of appropriate technology.

For the banks attention has to be paid to those sectors like communications, airlines, paper, glass, metals as these industries could face headwinds as they work through these new norms. The study done here raises the red flag for energy intensive sectors but does not cover the issue of fossil fuels directly due to data availability. But nonetheless the potential industries that require special monitoring can be separated.

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For further details about this publication, please contact:

**Economics Research Department**
Bank of Baroda
+91 22 6698 5218
chief.economist@bankofbaroda.com