



# High winter natural gas prices and ratepayer impacts.

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**Take-aways**

Natural gas markets are seeing **renewed pricing strength** not seen since prior to the last recession (2008-2009).

**Current market tightness** is function of a variety of factors that includes: (a) COVID recovery; (b) negative investor sentiment; (c) environmental, social, and governance (“ES&G”) pressure; (d) federal administrative agency policies/actions that are strongly anti-fossil fuel; and (e) geopolitical tensions (competing gas demand).

**Winter will be important transition period** – storage numbers are dramatically improving but weather could upset these trends easily.

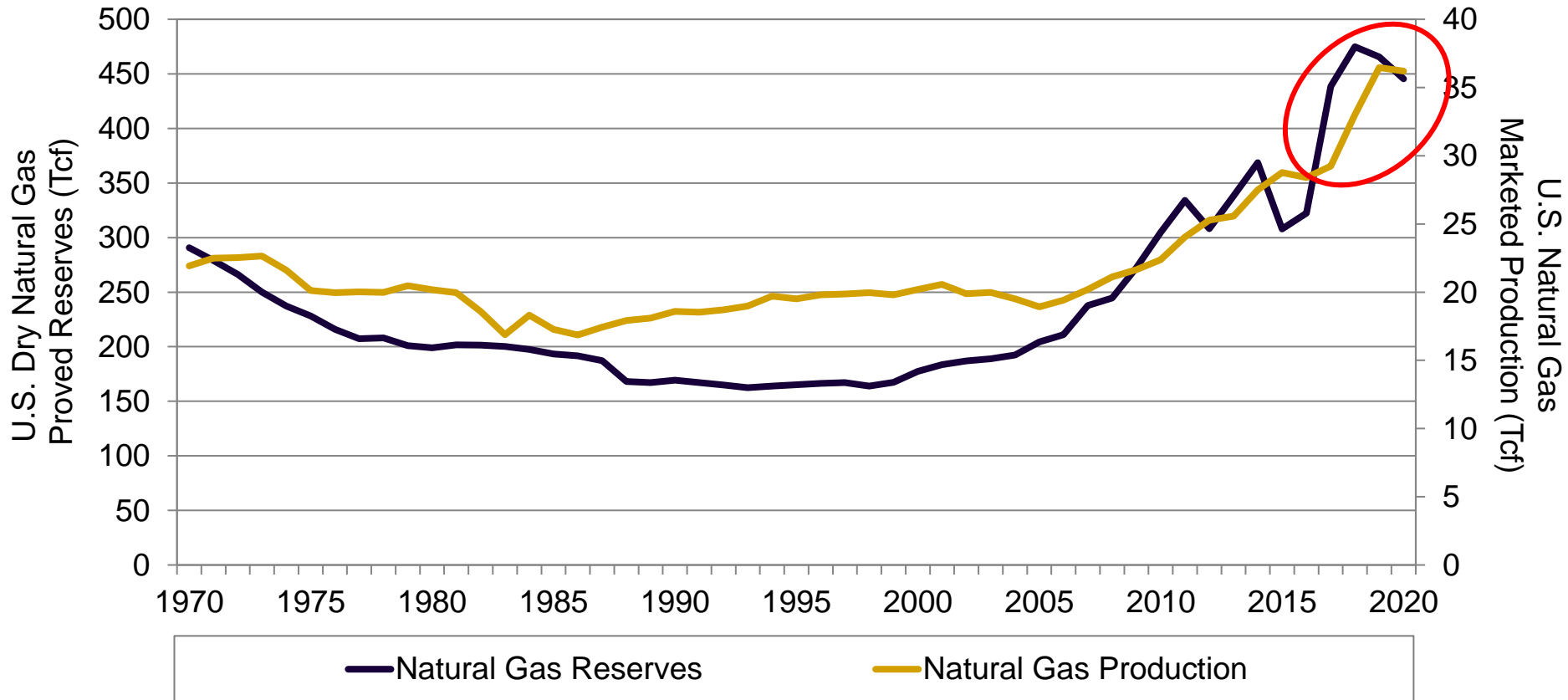
Important implications for utility ratepayers – in the past, **very large base rate increases have been offset with PGA decreases** – is that cushion gone (?)

**Raises considerable short run and longer run questions about the continued role of natural gas and the energy transition.**

## Natural gas supply trends

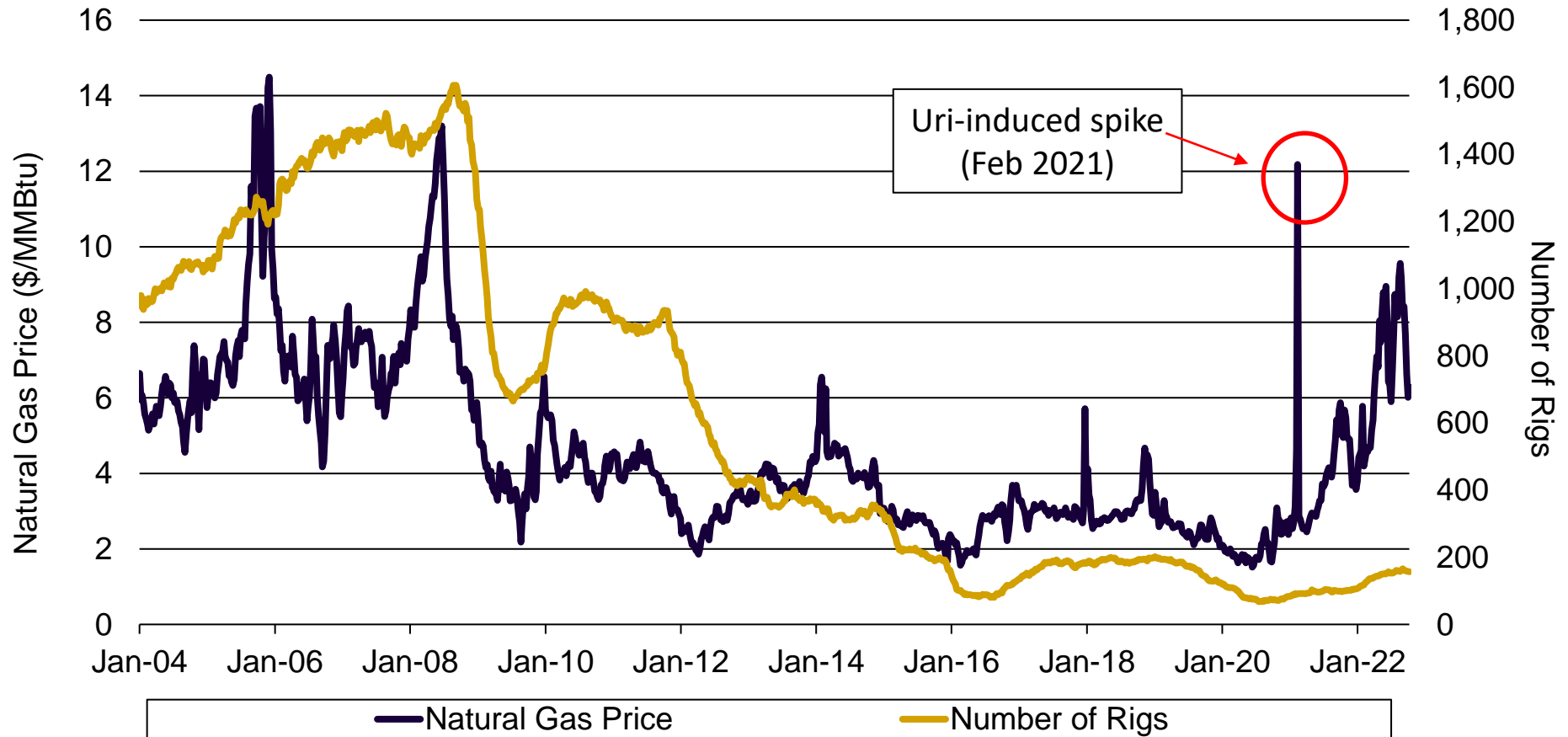
**Changes in reserves and production**

**Natural gas production and reserves are at levels not seen since the 1970s and both U.S. natural gas production and reserves are now at an all-time recorded peak.**



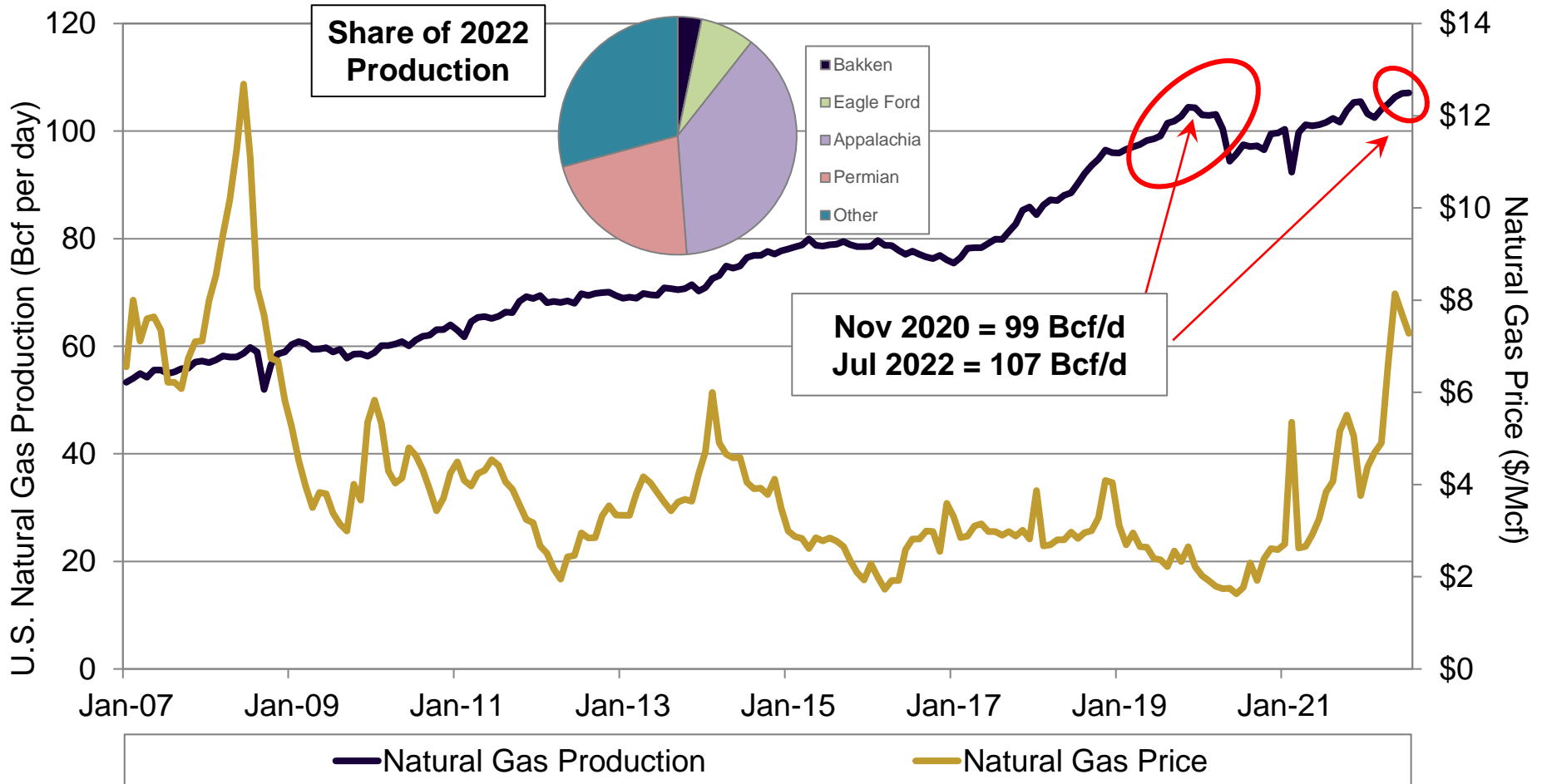
**Natural gas drilling activity**

Natural gas rigs closely follow the natural gas spot price. Price decrease that started in 2008 has **reduced natural gas drilling attractiveness.**



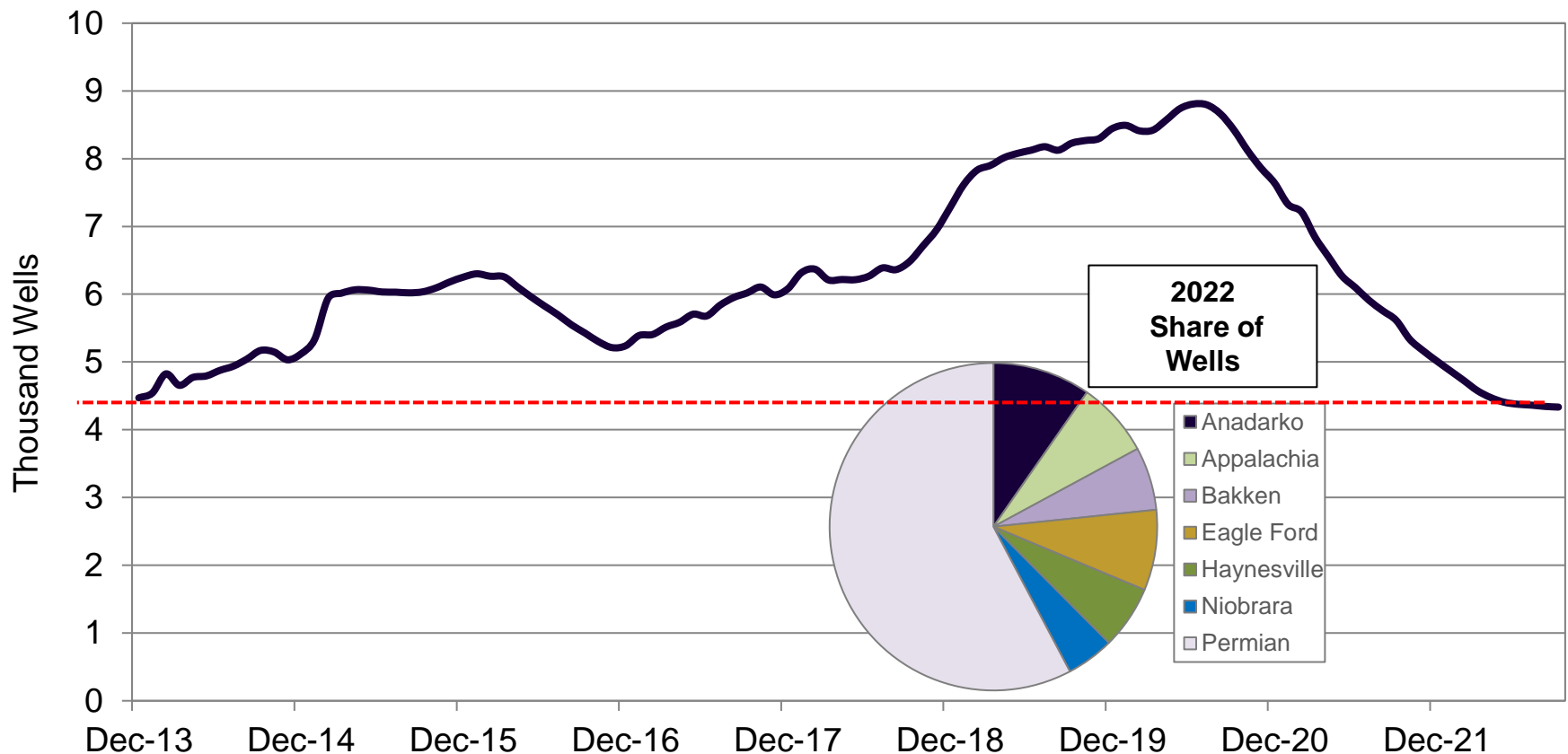
Monthly U.S. natural gas production

U.S. natural gas production now above 2019 prior-peak levels.



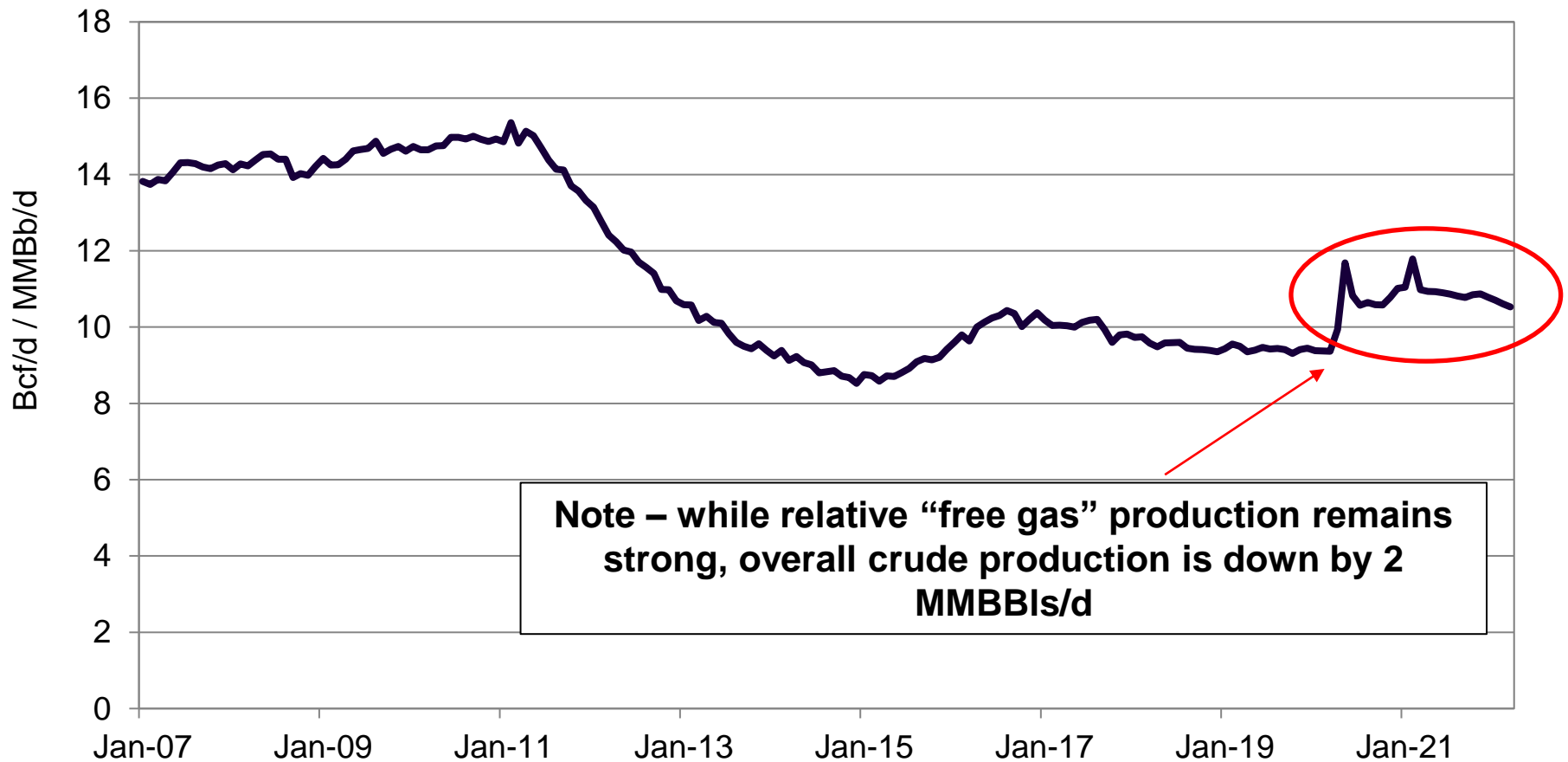
**Monthly drilled but uncompleted wells**

Drilled but uncompleted (DUCs) are well below historic levels – clearly indicates draw down on potential “just in time inventories.”



**Relationship of shale oil and gas production**

**Growth in “free gas” has hit a steady state level – pandemic does not appear to have significantly altered this free gas production rate.**

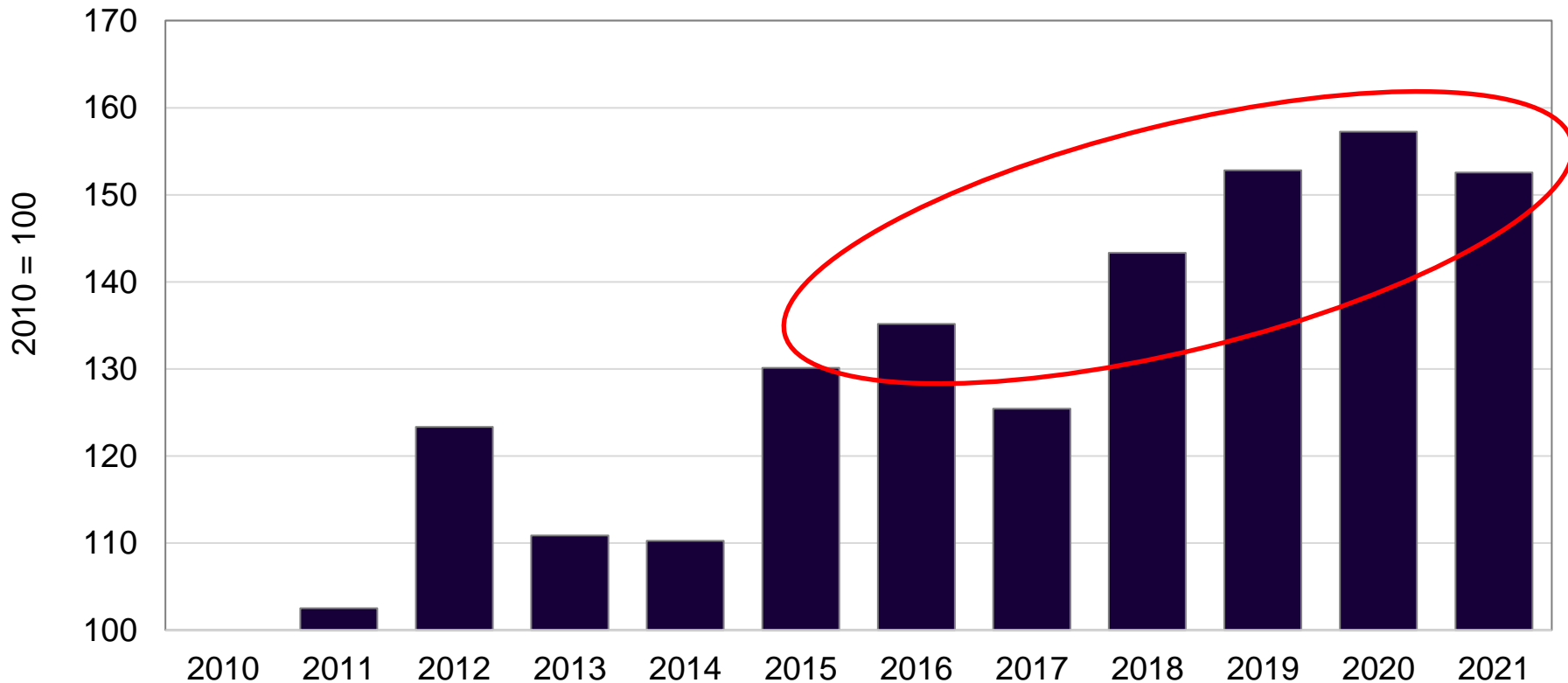




## Natural gas demand trends

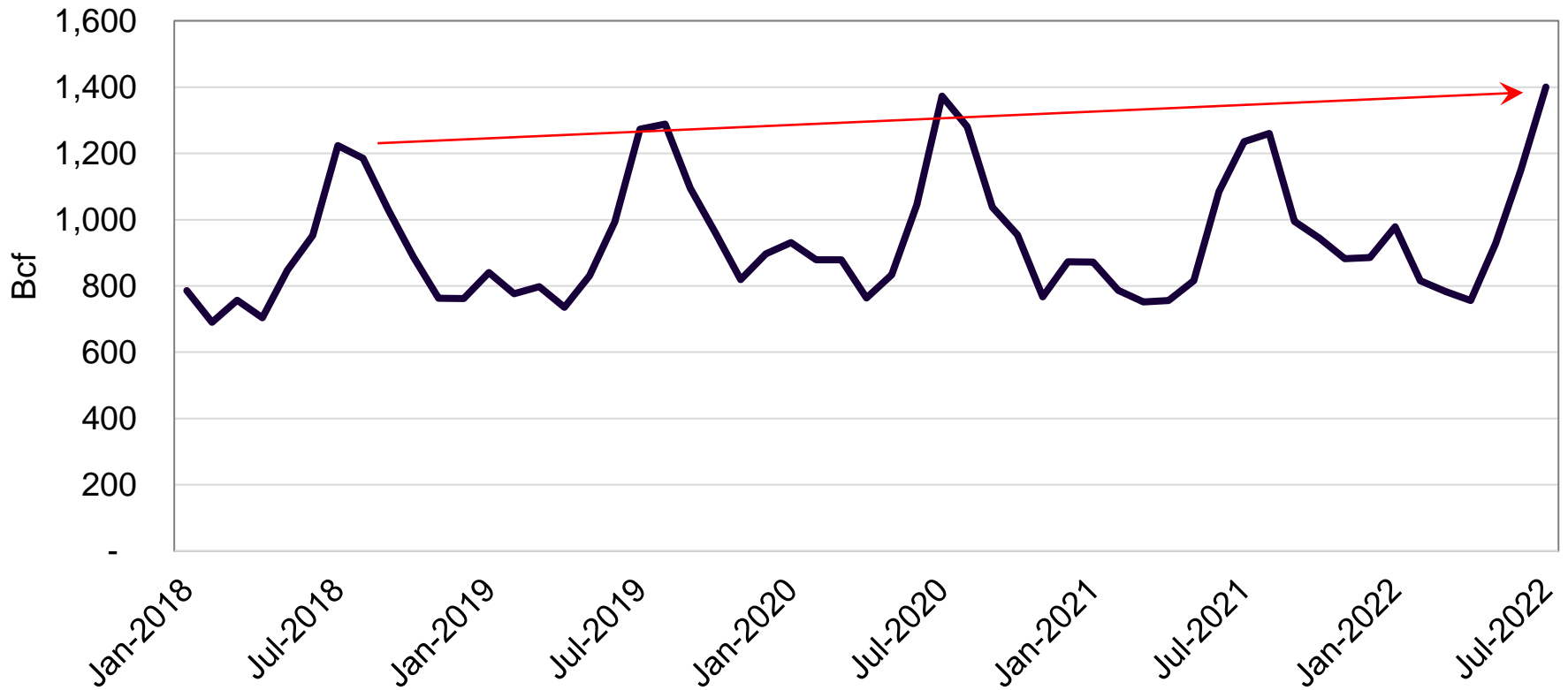
**Year-over-year growth trend in power generation natural gas demand**

Natural gas demand from the **electric power industry** has increased over **50 percent** in the last 10 years.



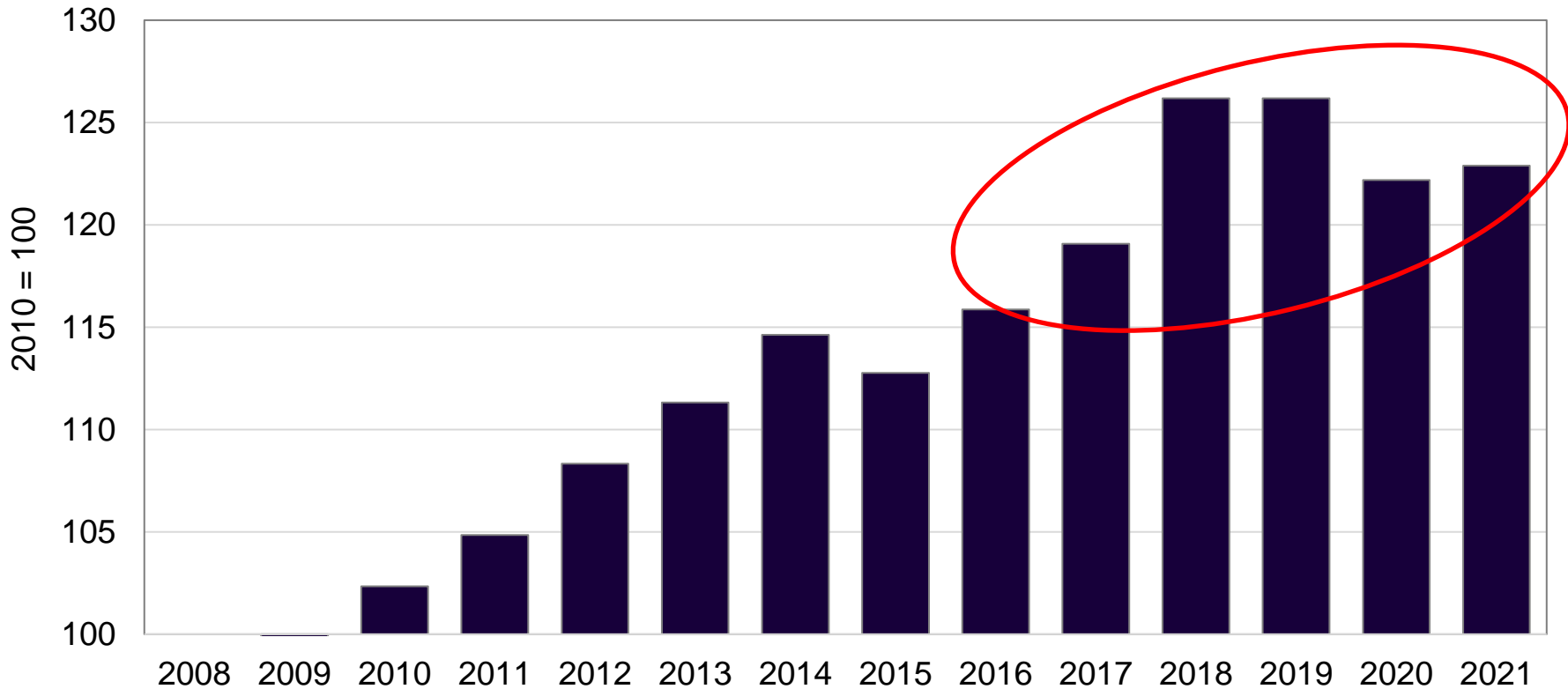
**Electric power generation natural gas demand (monthly)**

Natural gas demand from the **electric power industry** has continued to rise in the last two years.



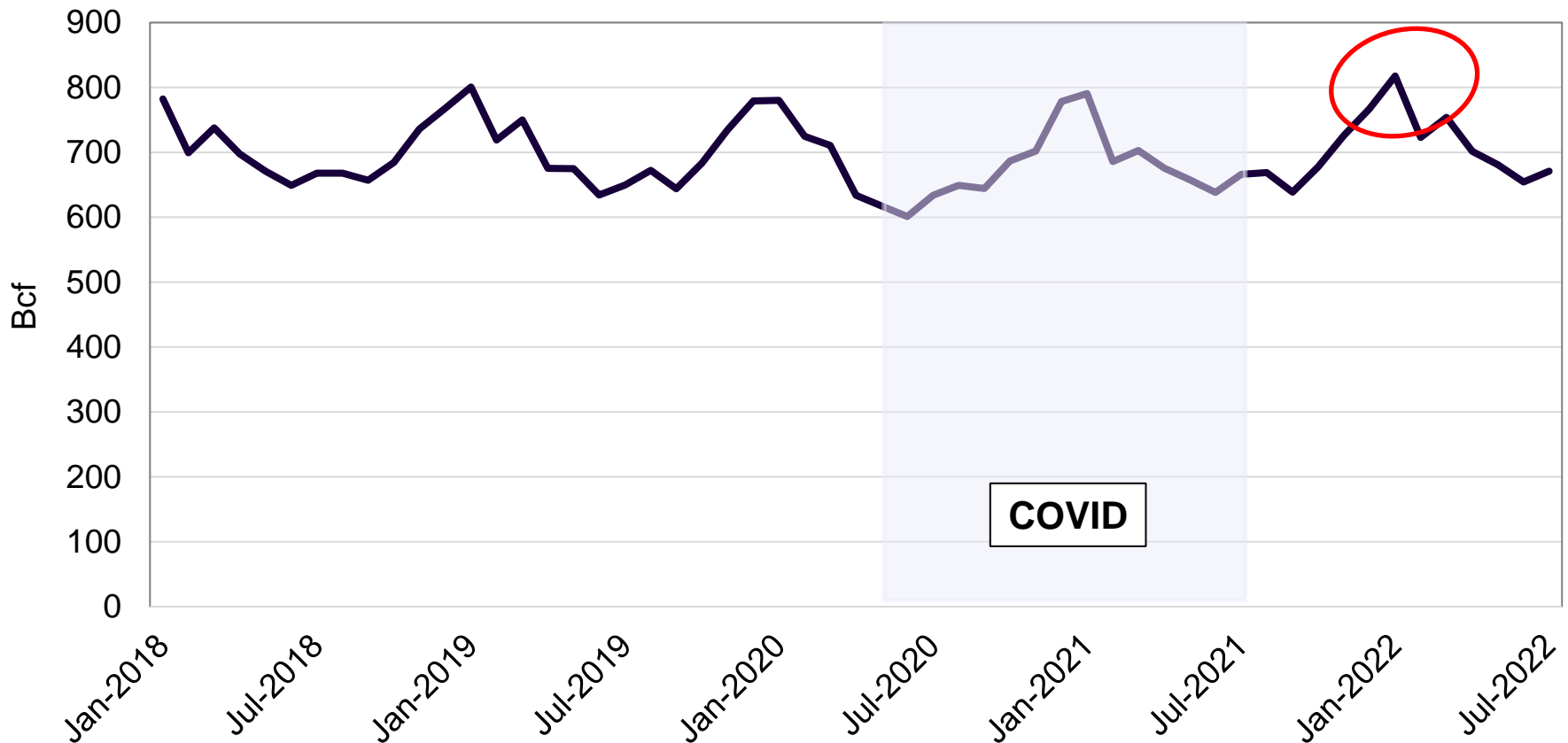
**Year-over-year growth trend in industrial natural gas demand**

Natural gas demand from the **industrial sector increased 23 percent** in the last 10 years but **decreased in 2020 and 2021** due to COVID.



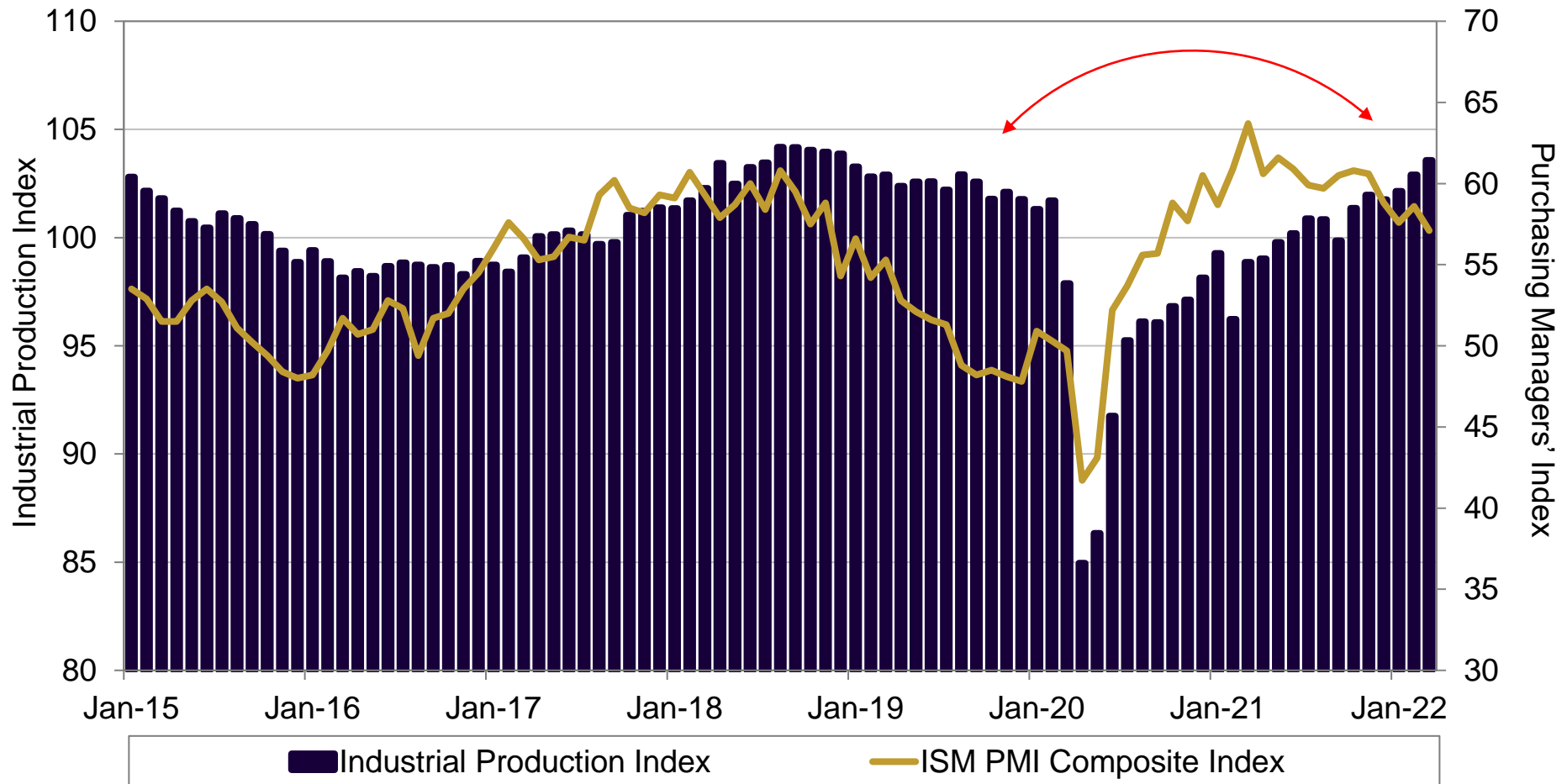
**Industrial natural gas demand (monthly)**

Natural gas demand from the **industrial users** fell in 2019 and part of 2020. It has recovered, but feeling some **pain from inflation, exchange rates, and global tensions.**



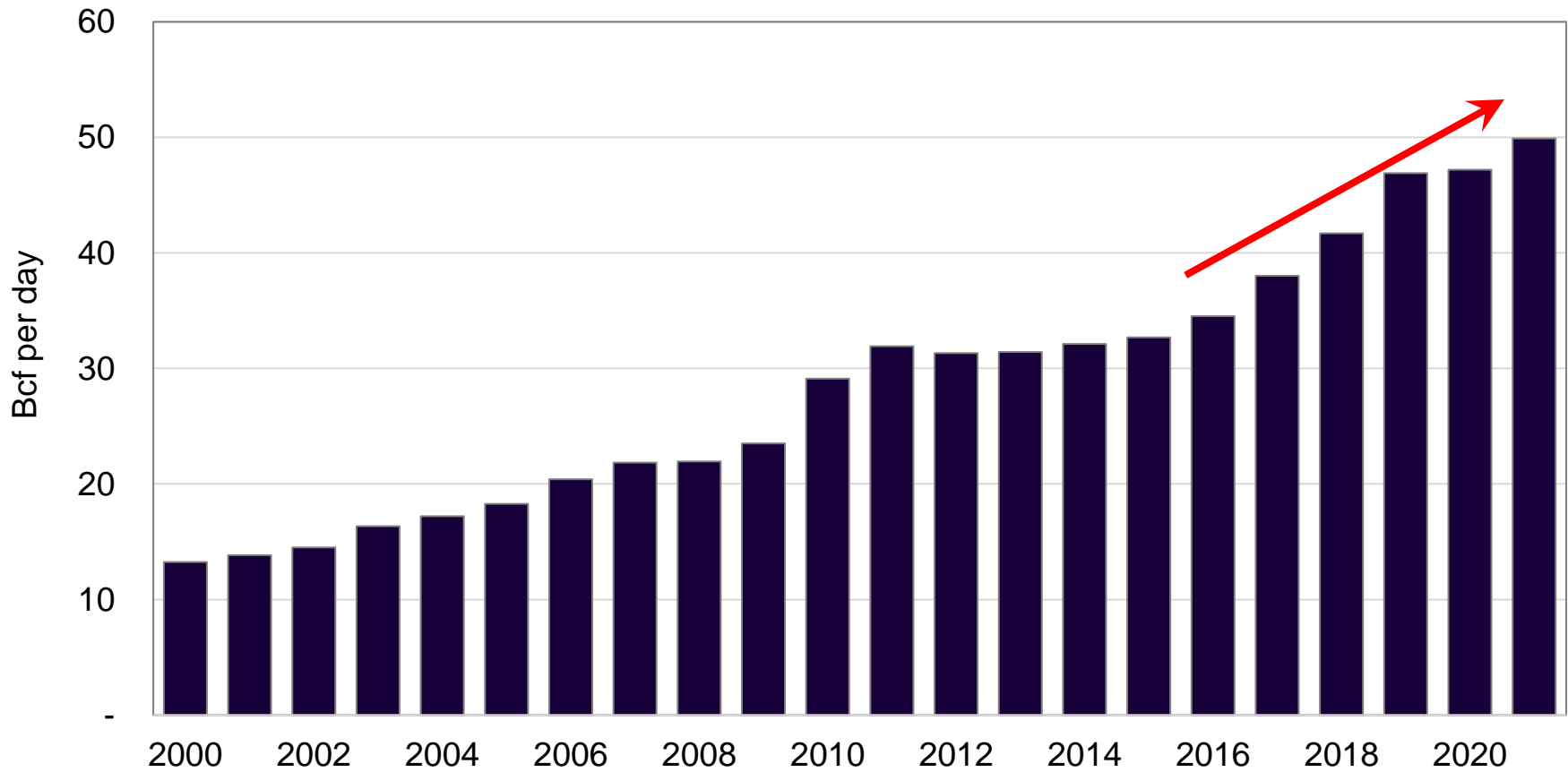
**U.S. industrial production index.**

**Industrial production and purchasing indices have been consistently increasing since the lows of April 2020.**



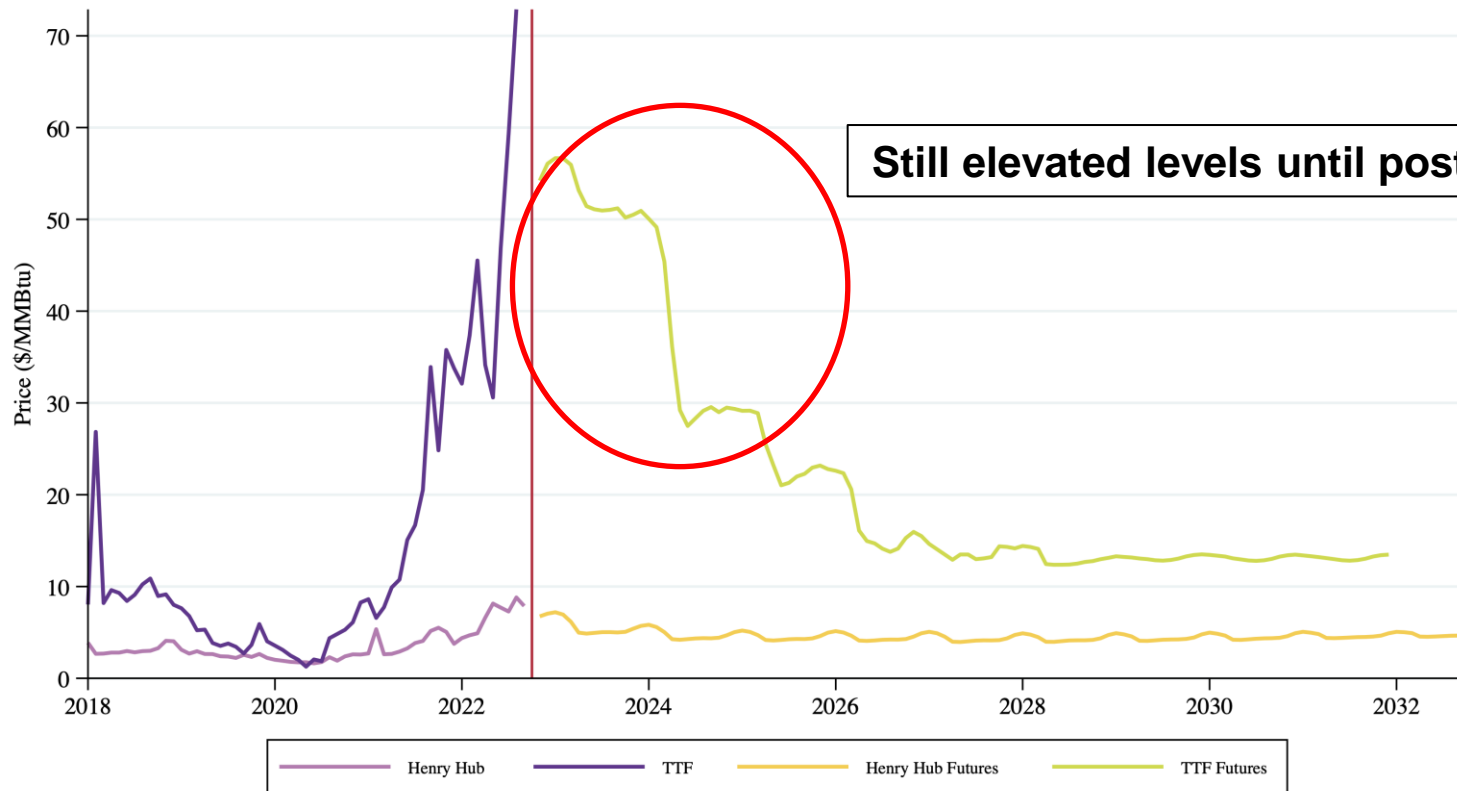
**World LNG trade volumes**

World trade in **LNG** as grown considerably over the past decade. Lastly three years has been considerable (over 24 percent).



**European spot natural gas prices**

**European natural gas prices are astronomical but expected to return to more normal levels over longer run (?).**



**Still elevated levels until post-2026.**

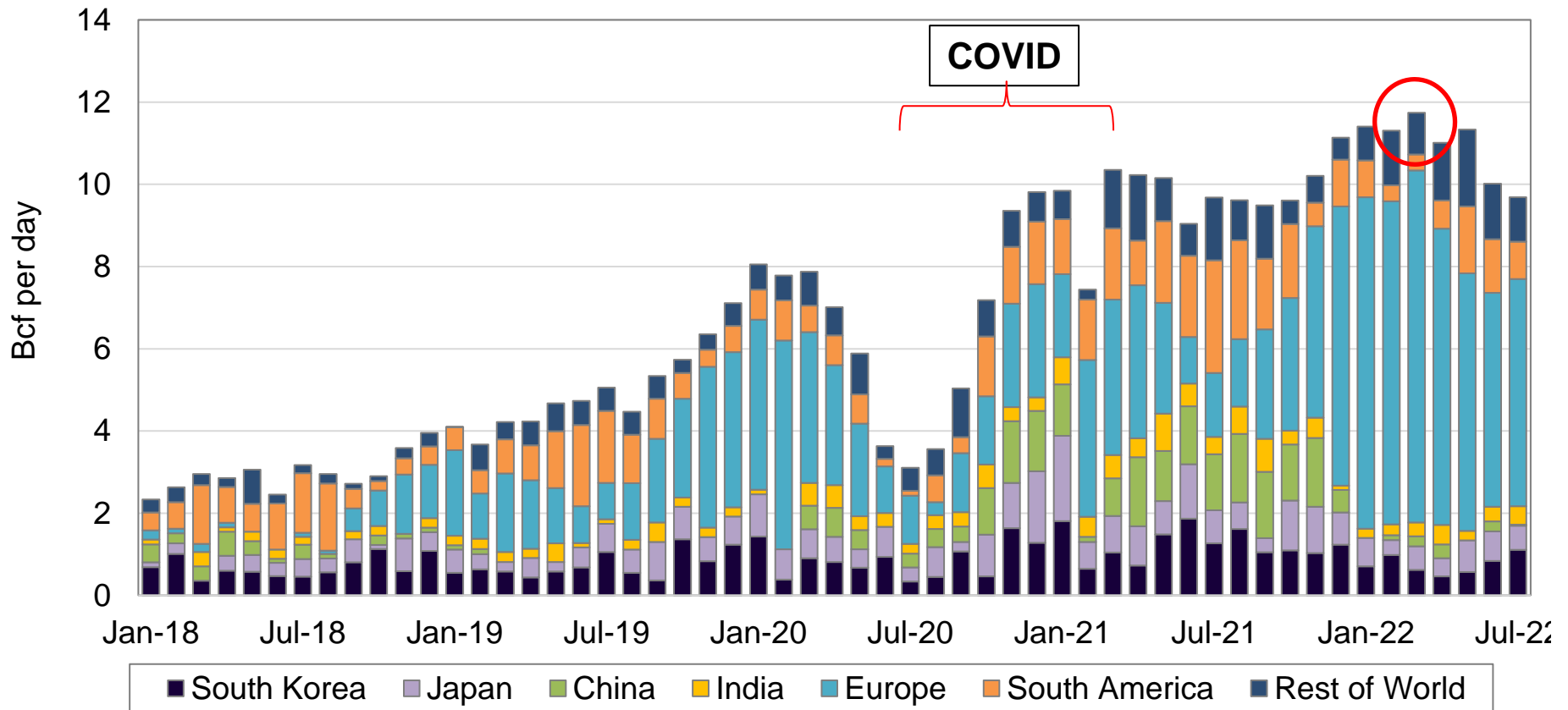
Note: "Spot-LNG" refers to LNG that are traded on a cargo to cargo basis and does not mean term contracts of LNG (so-called long, medium, short-term contracts). In addition, for spot-LNG, the price of which is linked to a particular price index (for example the Henry Hub link, and the JKM link) is excluded from these statistics. Objects of these statistics are spot-LNGs the prices of which are determined at the time of contract (so-called "fixed price").

Source: Bloomberg.



### U.S. LNG exports by destination

U.S. LNG exports rebounded quickly and strongly post COVID, reached a high of 8 Bcf per day in the beginning of 2020. (recent decreases due to **Freeport outage**)

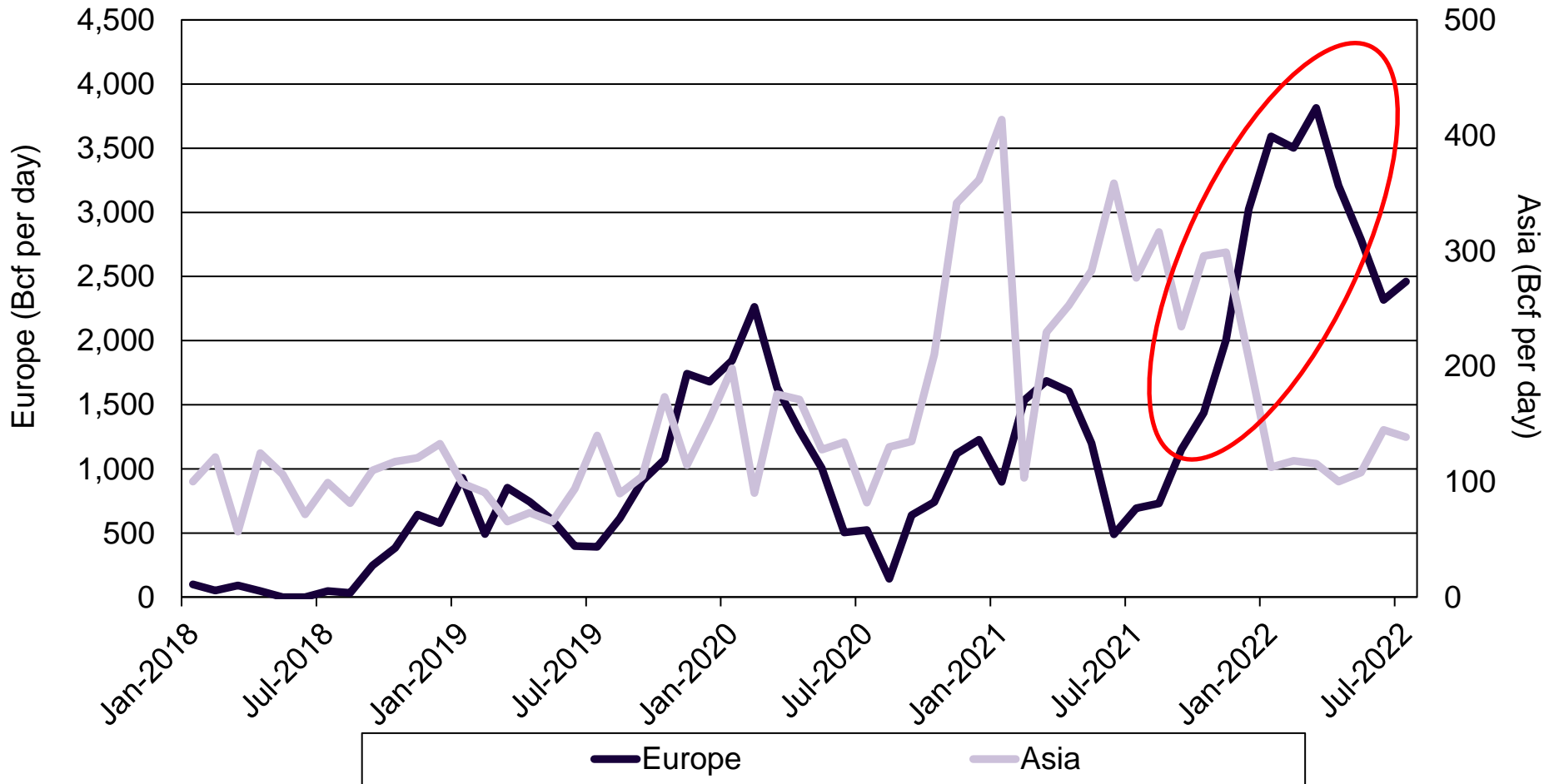


Note: Europe includes Belgium, France, Greece, Italy, Netherlands, Poland, Portugal, Spain, Turkey, and the U.K.; South America includes Argentina, Brazil, Chile, Columbia, and Mexico.

Source: U.S. Energy Information Administration.

**Asian v. European Exports from U.S.**

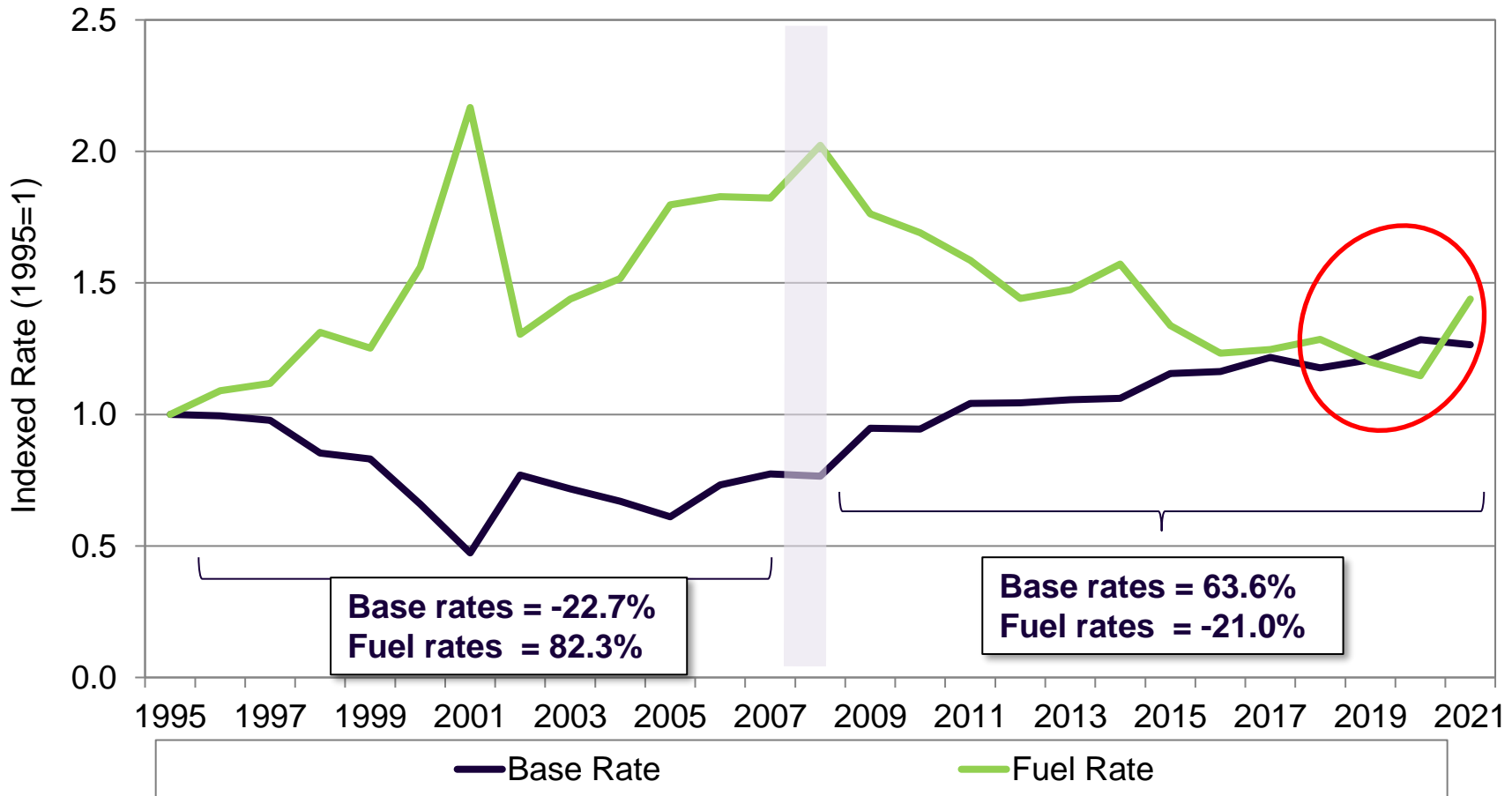
**Large recent surge in European exports.**



## Ratepayer impacts

**Annual change in estimated base rate versus fuel rate – electric.**

**Base rates (electric) have increased almost 63.6 percent since 2007, compared to fuel rates that have decreased 21 percent.**

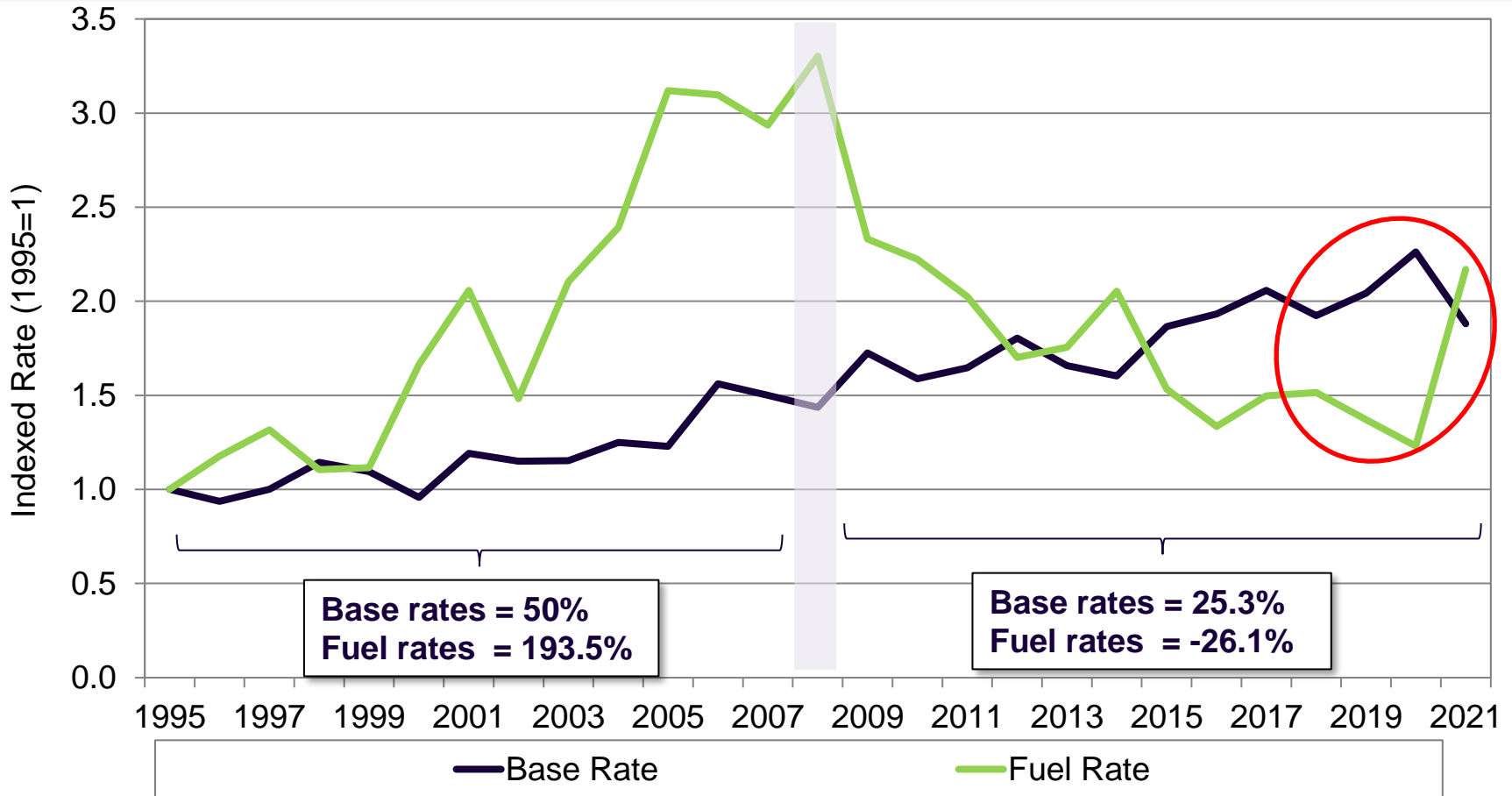


Source: U.S. Energy Information Administration and Federal Energy Regulatory Commission, S&P Global

Note: EIA data used from 1995 to 2017, S&P data used to estimate 2018-2021 for electricity

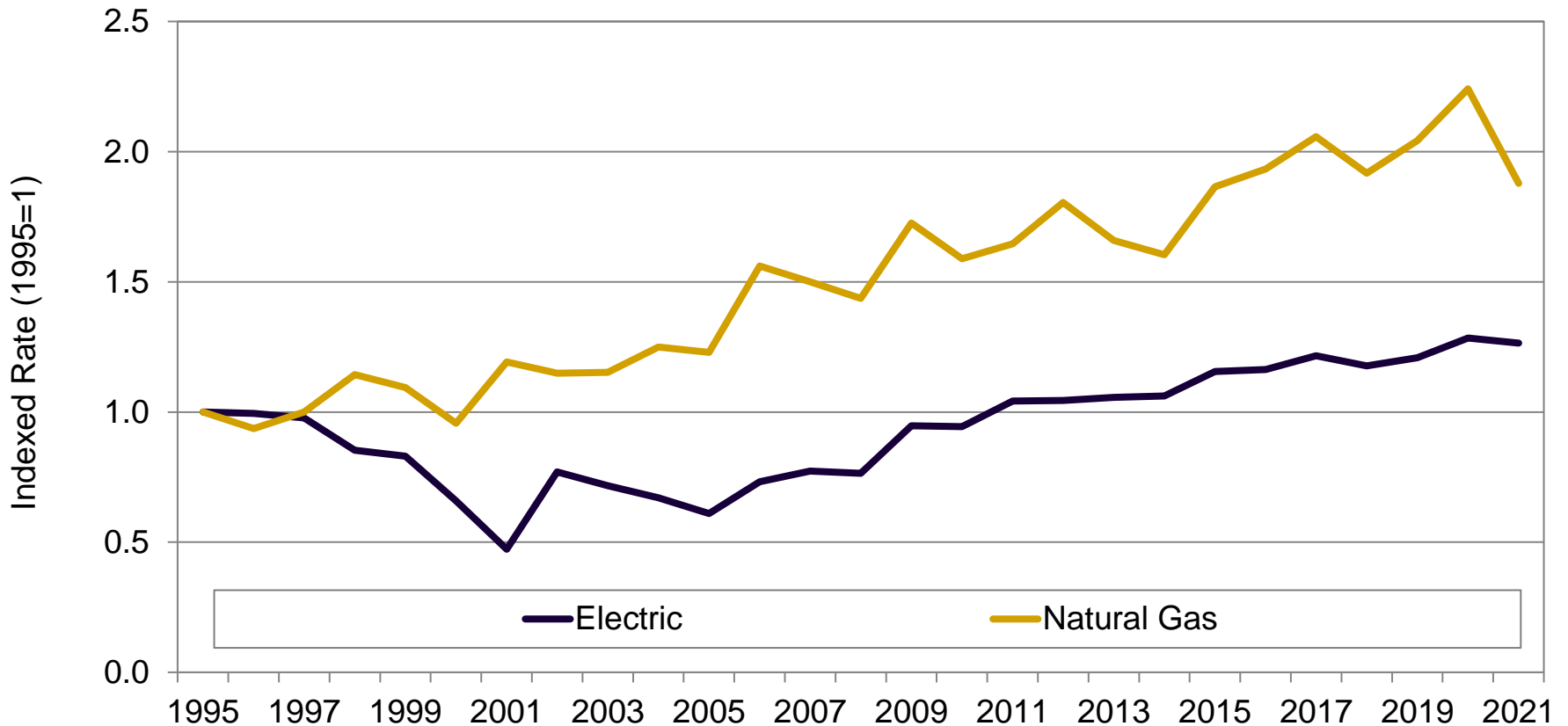
**Annual change in estimated base rate versus fuel rate – natural gas.**

**Base rates (natural gas) have increased 25 percent since 2007, compared to fuel rates that have decreased by 26 percent.**



**Annual change in estimated base rates – electric and natural gas.**

**Base rates for electric and natural gas have followed similar trends since 2005.**

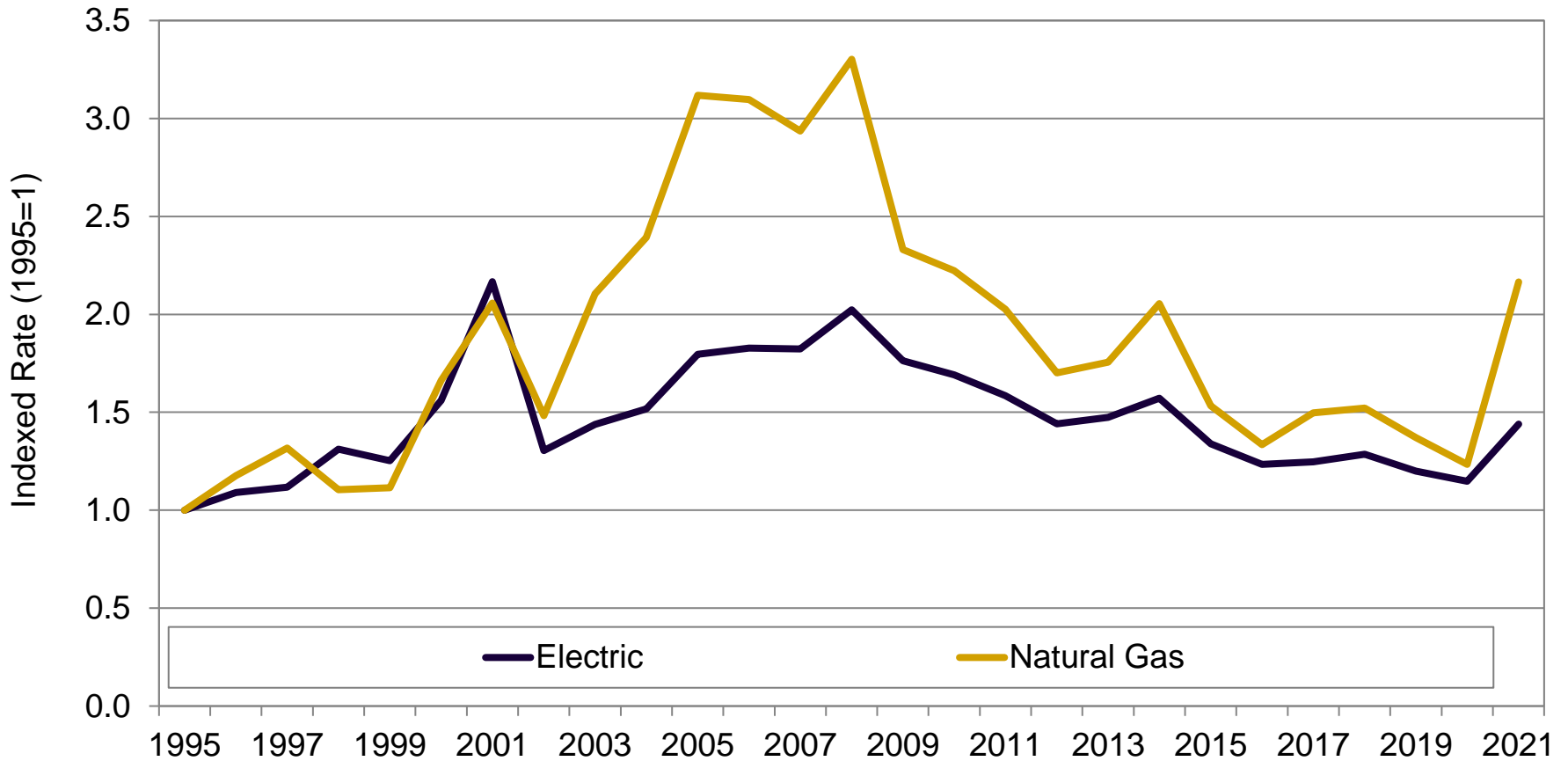


Source: U.S. Energy Information Administration, S&P Global

Note: EIA data used from 1995 to 2017, S&P data used to estimate 2018-2021 for electricity

**Annual change in estimated fuel rates – electric and natural gas.**

**Fuel rates for electric and natural gas have followed similar trends since 2005, with a recent spike for fuel rates in both electric and natural gas.**



Source: U.S. Energy Information Administration, S&P Global

Note: EIA data used from 1995 to 2017, S&P data used to estimate 2018-2021 for electricity

## Conclusions



## Conclusions – market outlook

- **High natural gas prices are already being felt in utility rates:** both electric and natural gas. This, coupled with current energy capital investments will place considerable continued pressure on total rates.
- **These trends are not likely to dampen for some time –** continued infrastructure proposals with even moderate commodity prices will **put continued pressure on rates.**
- This will be **harmful for lower-to-moderate income ratepayers** since bills are increasing and **real income is falling.**
- **Prices are likely going to follow weather (here and in Europe).**
- **Raises considerable short run and longer run questions about the continued role of natural gas and the energy transition.**

Questions, comments and discussion.



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