Chart of the Week #2022-23
Natural Gas and Global Food Production

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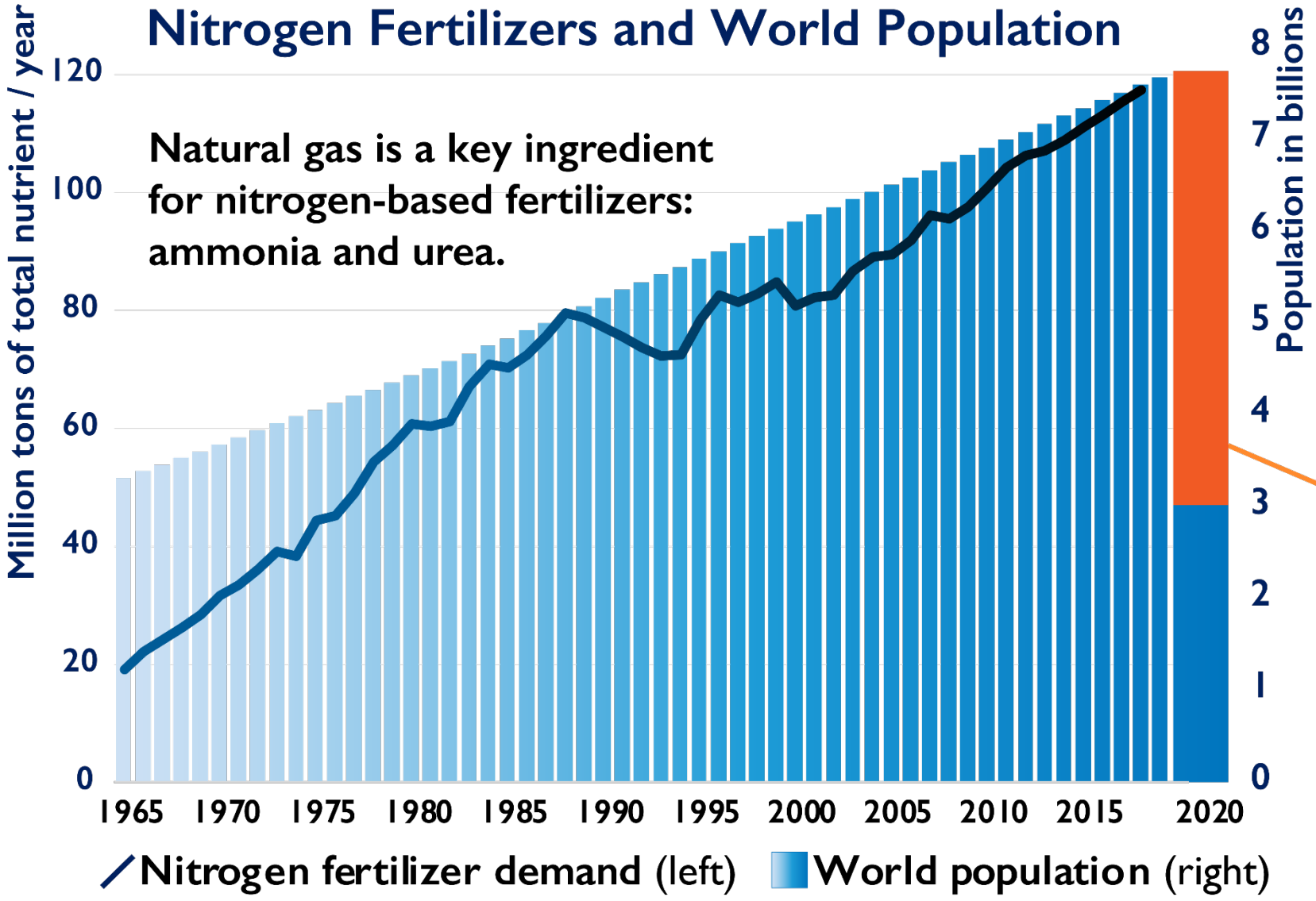
Source: AP/Houston Chronicle
Steve Campbell

Natural Gas is Critical for Global Food Production



Without fossil fuel-based fertilizers, agriculture can support, at most, 3 billion people on plant-based diets, vs. today's 8 billion on mixed diets.

Sources: Vaclav Smil, FAO, World Bank, Statista,

Natural Gas is Critical for Global Food Production

- Natural gas is the main feedstock for nitrogen-based fertilizers: ammonia and urea, the primary fertilizers used in agriculture.
- Without fossil fuel-based fertilizers, agriculture can support, at most, 3 billion people on plant-based diets vs. today's 8 billion on mixed diets.
- Mass urbanization and diet change began in the mid-nineteenth century. But it was only in the mid-twentieth century, preceded by a series of haphazard but serendipitous technological breakthroughs that, through the use of natural gas, nitrogen fertilizers were able to be produced at large scale.
- Current production of fertilizers is approximately 117 million metric tons per year. Each ton requires about 33.5 thousand cubic feet of natural gas for a total of 4 trillion cubic feet per year, or 11 billion cubic feet per day.

- This slide deck is available at EPRINC's Chart of The Week Archive.
- For more information on these charts, please contact Batt Ogderel (batto@eprinc.org) or Lucian Pugliaresi (loup@eprinc.org).