Uranium: Powering the Clean Energy

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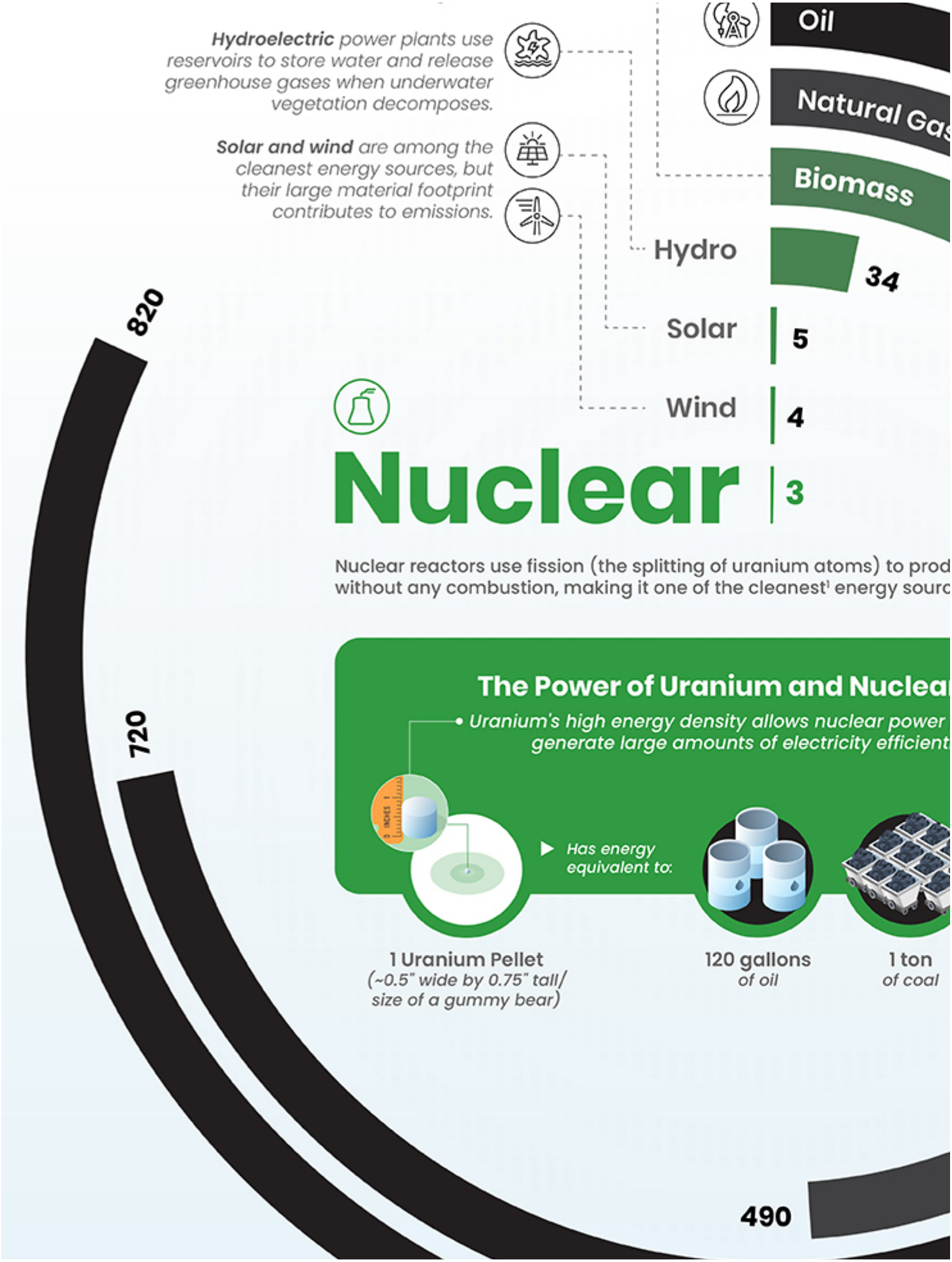
CO_2-Equivalent Emissions Per Gigawatt-H
Over the Lifetime of a Power Plan


Oil
Natural Gas
Biomass
Hydroelectric power plants use reservoirs to store water and release greenhouse gases when underwater vegetation decomposes.
Solar and wind are among the cleanest energy sources, but their large material footprint contributes to emissions.
Hydro
34
Solar
5
Wind
4
Nuclear
3
820
720
490
Nuclear reactors use fission (the splitting of uranium atoms) to prod
without any combustion, making it one of the cleanest[1] energy sourc
The Power of Uranium and Nuclea
Uranium's high energy density allows nuclear power
generate large amounts of electricity efficient
Has energy equivalent to:
1 Uranium Pellet
(~0.5" wide by 0.75" tall/ size of a gummy bear)
120 gallons
of oil
1 ton
of coal

Uranium: Powering the Cleanest Source of Energy

The world's energy needs are growing with its population. However, achieving a net-zer economy while meeting our growing energy needs requires a larger role for clean, susta and reliable sources. Nuclear is one such energy source.

The above graphic from the Sprott Physical Uranium Trust highlights how uranium is po one of the cleanest and most reliable sources of energy in nuclear power.

The Cleanest Energy Sources

Although all energy sources have tradeoffs, some are better for the environment than ot

To find the cleanest sources of energy, Our World in Data calculated CO_2-equivalent emis gigawatt-hour (GWh) of electricity generated over the lifecycle of power plants for differ energy sources. This includes the footprint of raw materials, transport, and construction plants.

Energy Source	CO_2-equivalent Emissions Per GWh (tonnes)	Type
Coal	820	Fossil fuel
Oil	720	Fossil fuel
Natural Gas	490	Fossil fuel
Biomass	78-230*	Non-renev
Hydro	34	Renewabl
Solar	5	Renewabl
Wind	4	Renewabl
Nuclear	3	Non-renev

**Emissions from biomass vary depending on the type of fuel combusted.*

It's not surprising that coal, oil, and natural gas plants emit much more greenhouse gases their renewable and non-renewable counterparts. In fact, emissions per GWh from coal plants are roughly **273 times** higher than nuclear power plants.

Hydropower offers a cleaner and renewable alternative to fossil fuels, however, the conc materials used in dam construction contribute to emissions. Furthermore, the decompos underwater vegetation in reservoirs also releases methane and carbon dioxide into the environment. Still, emissions per GWh from hydropower are around **24 times** lower tha

Solar and wind are often the most mentioned energy sources when it comes to the clean transition. However, their energy densities are lower than fossil fuels and as a result, the require more units to generate the same amount of power. For example, generating one

electricity can take more than **three million** photovoltaic panels, or **412** utility-scale win turbines. Constructing these massive solar and wind farms adds up to a relatively large r footprint and consequently, GHG emissions.

This is where nuclear power comes in.

Why is Nuclear the Cleanest Source of Energy?

Nuclear power plants use fission to generate electricity without any combustion, avoidin emissions from the process of electricity generation. What's more, on average, it only tak typical nuclear reactor to generate one GWh of electricity. The power generation capacit nuclear reactors is largely due to the high energy density of uranium and nuclear fuel.

According to the U.S. Department of Energy, a single, eraser-sized uranium pellet contain same amount of energy as **120 gallons** of oil or **17,000 cubic feet** of natural gas. This allo nuclear power plants to generate large amounts of electricity efficiently, making them or cleanest energy sources per GWh of electricity produced.

Nuclear's Role in the Clean Energy Transition

Nuclear power offers several advantages in the transition to clean energy.

Besides being carbon-free and sustainable, nuclear power is also one of the most reliable safest sources of energy. In fact, nuclear plants in the United States have a capacity factor **92.5%**, which means that they run at maximum capacity for almost 93% of the time duri

As one of the cleanest, most powerful, and reliable sources of energy, nuclear power cou key role in helping countries achieve decarbonization goals in the fight against climate c

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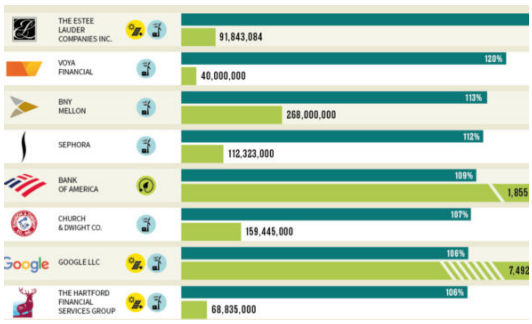

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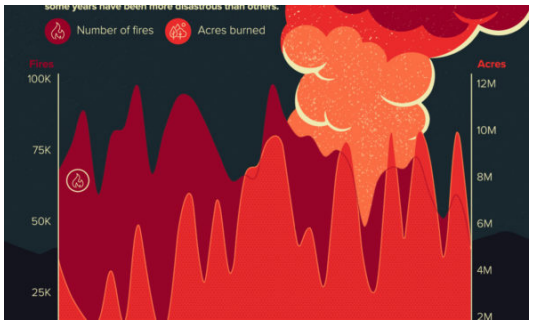

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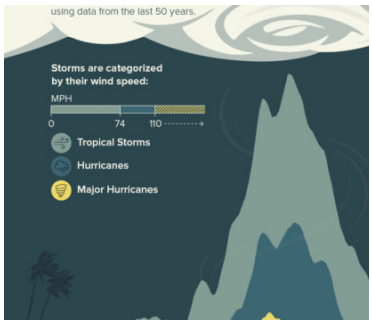

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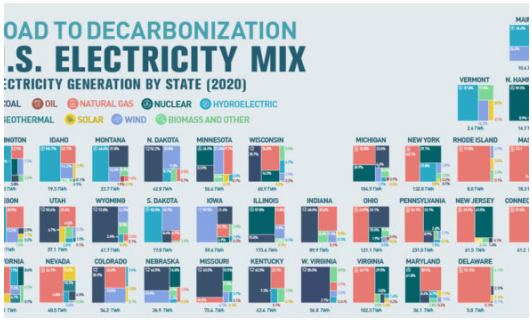

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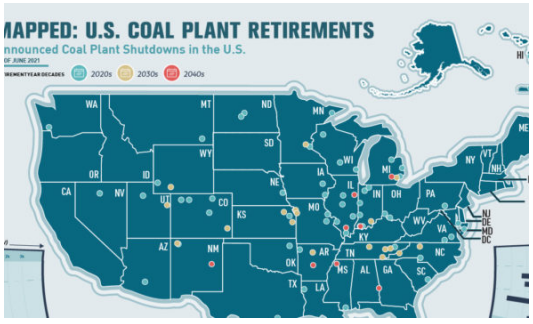

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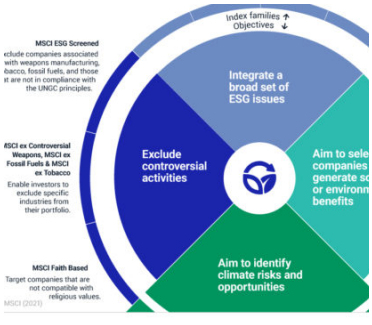

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Visualizing Global Demand for Lithium

Lithium is one of the most in-demand commodities in the world today.

With the ongoing shift to electric vehicles (EVs) and clean energy technologies, governments and EV manufacturers are rushing to secure their supply chains as demand for lithium soars.

But while China has a strong foothold in the lithium race, the U.S. is lagging behind. infographic from our sponsor Scotch Creek Ventures highlights the rising demand fo lithium and the need for a domestic supply chain in the United States.

What's Driving the Demand for Lithium?

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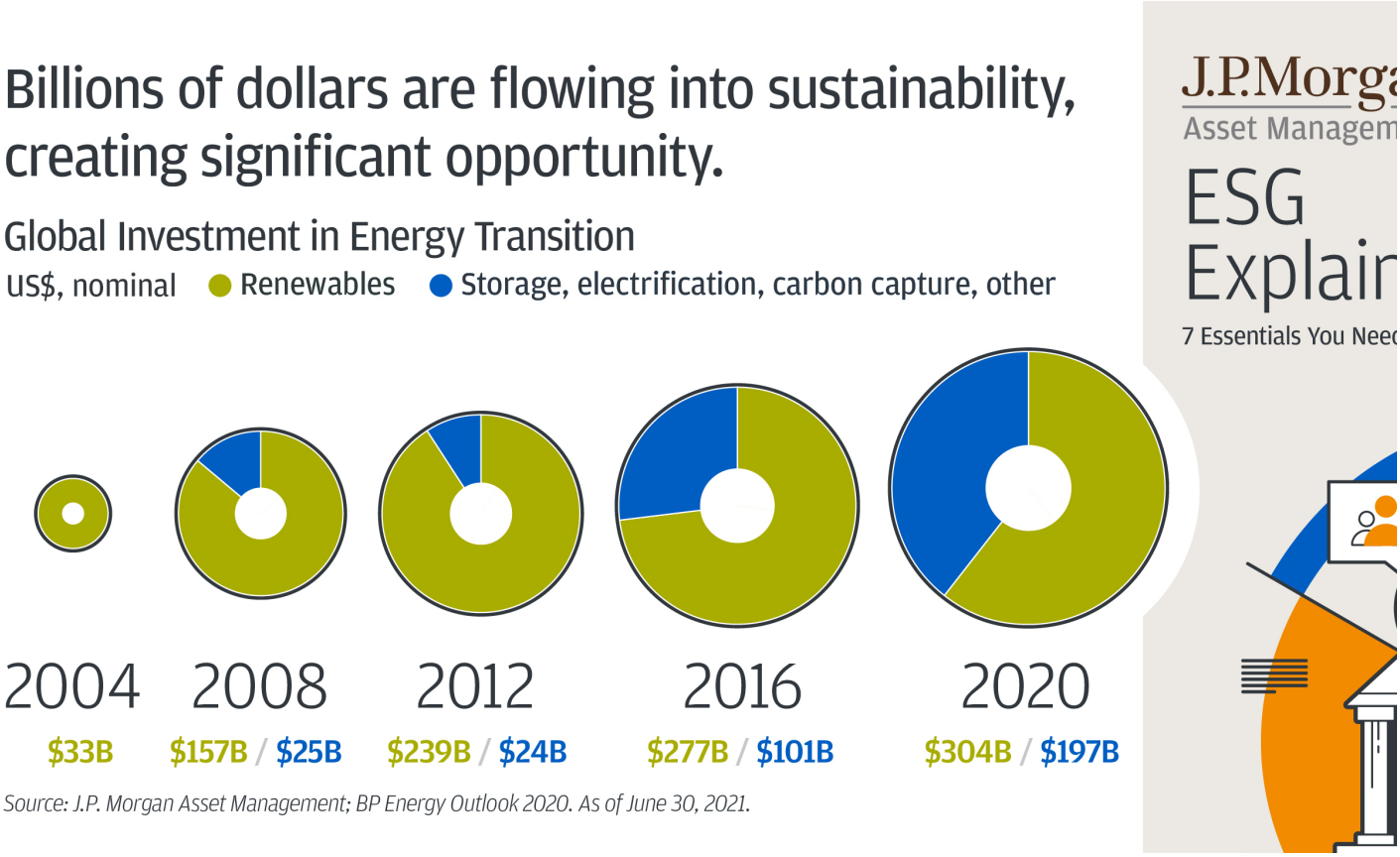

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From consumers to policy makers, many economic actors are backing sustainability and creating a powerful portfolio opportunity for investors.

The use of environmental, social, and governance factors (altogether known as ESG) increasingly informing investment decisions. But although ESG investing has grown prominence in a few short years, there's a disconnect:

- 69% of retail investors are interested in ESG, yet...
- Only 10% actually invest in products that incorporate ESG factors

To properly capitalize on this trend, it's important to first fully understand it.

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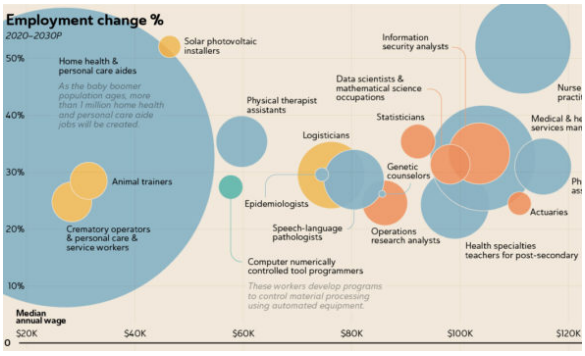

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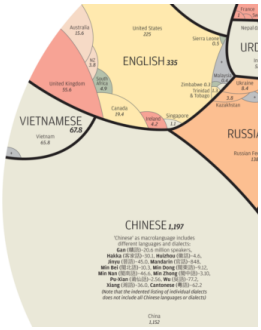

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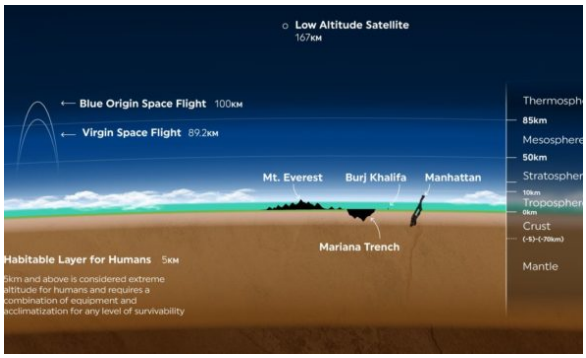

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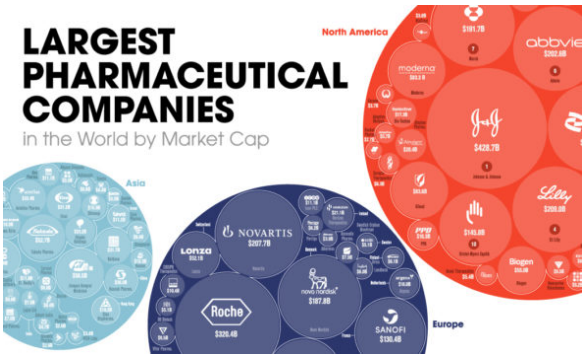

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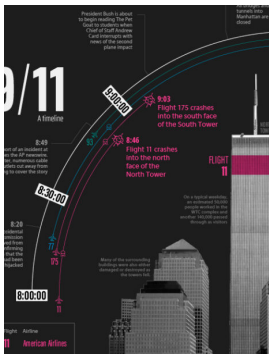

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