

Assas

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Discipline : **Anglais**
(Unité d'Enseignements Complémentaires 1)

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Document(s) autorisé(s) : Aucun document n'est autorisé

Durée de l'épreuve : 1h30.

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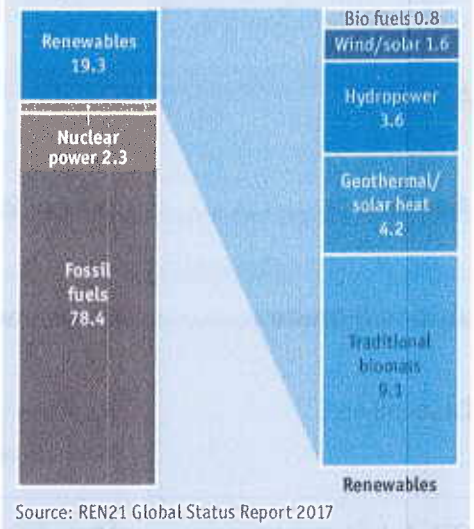
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Renewable Energy

Growing power

Global energy consumption
2015, %

Doc 1:



Doc 2: Can the world thrive on 100% renewable energy?

Despite falling costs, wind and solar still produce only 5.5% of the world's electricity. Hydropower is a much more significant source of renewable energy, but its costs are rising, and investment is falling. Looking more broadly at energy demand, including that for domestic heating, transport and industry, the share of wind and solar is minuscule. It seems impossible to eliminate fossil fuels from the energy mix in the foreseeable future.

But all energy transitions, such as that from coal to hydrocarbons in the 20th century, take many decades. It is the rate of change that guides where investments flow. That makes greens more optimistic. During the past decade, solar photovoltaics (PV) and wind energy have been on a roll as sources of electricity. For the first time the amount of renewable capacity commissioned in 2016 almost matched that for other sources of power generation, such as coal and natural gas. In some countries the two technologies—particularly solar PV in sunny places—are now cheaper than coal and gas.

Ambitions are rising. The Senate in California, a state that is close to hitting its goal of generating one-third of its power from renewables by 2020, has proposed raising the target to 60% by 2030; Germany's goal is to become 80% renewable by 2050.

Adapted from *The Economist*, Jul 13th 2017

Doc 3:

As the Trump administration yanks the U.S. out of the Paris climate change agreement, claiming it will hurt the American economy, Beijing is investing hundreds of billions of dollars and creating millions of jobs in clean power. China has built vast solar and wind farms, helping fuel the growth of major industries that sell their products around the world. More than 2.5 million people work in the solar power sector alone in China, compared with 260,000 people in the U.S..

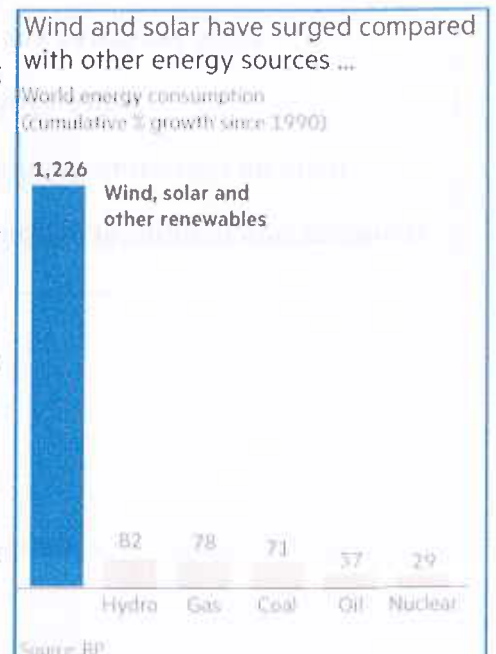
Coal still makes up the largest part of China's energy consumption, but Beijing has been shutting coal mines and set out plans last year to cut roughly 1.3 million jobs in the industry. The Chinese government has also moved to restrict the construction of new coal power plants.

For the first time ever, China's National Energy Administration in January established a mandatory target to reduce coal energy consumption. It also set a goal for clean energy to meet 20% of China's energy needs by 2030.

To help reach the 2030 goal, China is betting big on renewable energy. It pledged in January to invest 2.5 trillion yuan (\$367 billion) in renewable power generation -- solar, wind, hydro and nuclear -- by 2020.

Adapted from <http://money.cnn.com/2017/07/18>

Doc 4



Doc 5: The Big Green Bang

Wind and solar parks are being built at unprecedented rates, threatening the business models of established power companies. Electric cars that were hard to even buy eight years ago are selling at an exponential rate, in the process driving down the price of batteries that hold the key to unleashing new levels of green growth.

This clean energy disruption hit the electricity sector first, in Europe in 2013 and then the US two years later. Now it has spread to the auto sector and the oil industry is probably next. The shift has come as increased government

efforts to curb climate change and smog have driven down costs and spurred technical advances, creating a newly attractive green energy industry.

Global renewable power generation capacity rose by 9 per cent last year, — a fourfold increase from the start of this century — buoyed by the growth of newer sources such as solar power that shot up by more than 30 per cent. For the second year in a row, renewable energy accounted for more than half the new power generation capacity added worldwide. Sales of plug-in electric vehicles last year were 42 per cent higher than in 2015, growing eight times faster than the overall market. The storage capacity of big lithium ion battery systems more than doubled last year. None of this means the problem of climate change has been solved, or that fossil fuels will vanish in the near future. Coal and gas-fired power plants are still being built, especially in the developing world where 1.2bn people lack electricity. Modern renewables, in contrast, are growing from a tiny base and are often less dependable than dirtier power generators that do not rely on the weather. Electric vehicle sales last year were just 0.9 per cent of all vehicles sold.

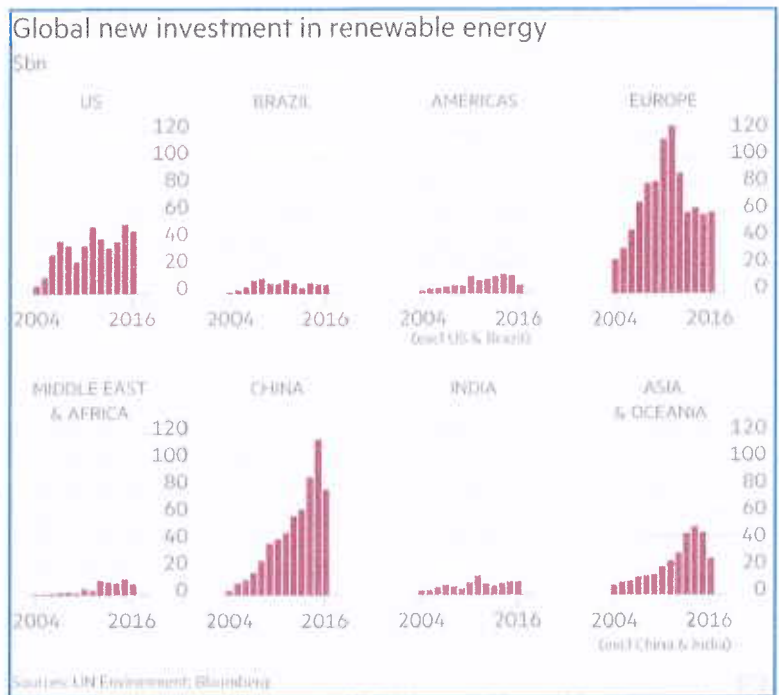
Such shifts usually take decades. But the growth of the latest one has prompted some to wonder if the age of fossil fuels might fade faster. Some mainstream thinkers are dubious.

Professor Vaclav Smil, an energy scholar says “naive” people who are “enchanted” by the idea of a rapid end to fossil fuels ignore the fact that it has typically taken 50 to 60 years for a widespread shift from one dominant fuel to another.

Still, another paper published last year suggests energy transitions in some places can be speedier. Nuclear power in France went from 4 per cent of the country’s electricity supply in 1970 to nearly 40 per cent in 1982, for instance.

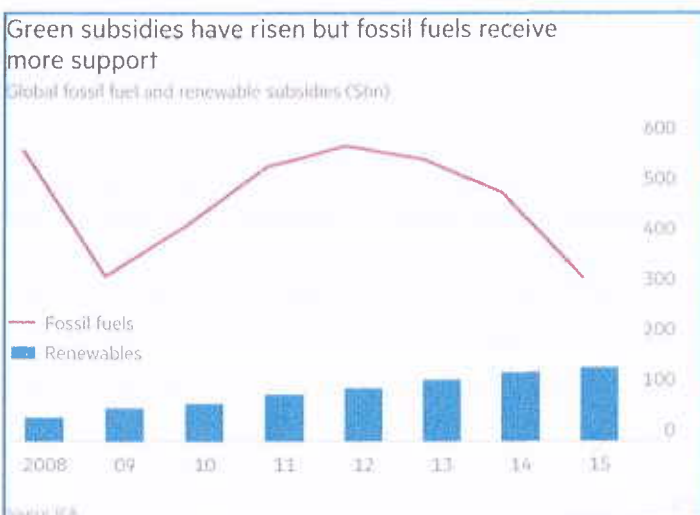
Others think the latest energy transition could be swifter because it is driven by deliberate efforts to curb climate change, rather than chance. Countries around the world have adopted more than 1,200 climate change laws, up from about 60 two decades ago. Renewables now receive direct policy support in an estimated 146 countries.

Adapted from *The Financial Times*, May 18, 2017



Doc 6:

Doc 7:



Doc 8:

