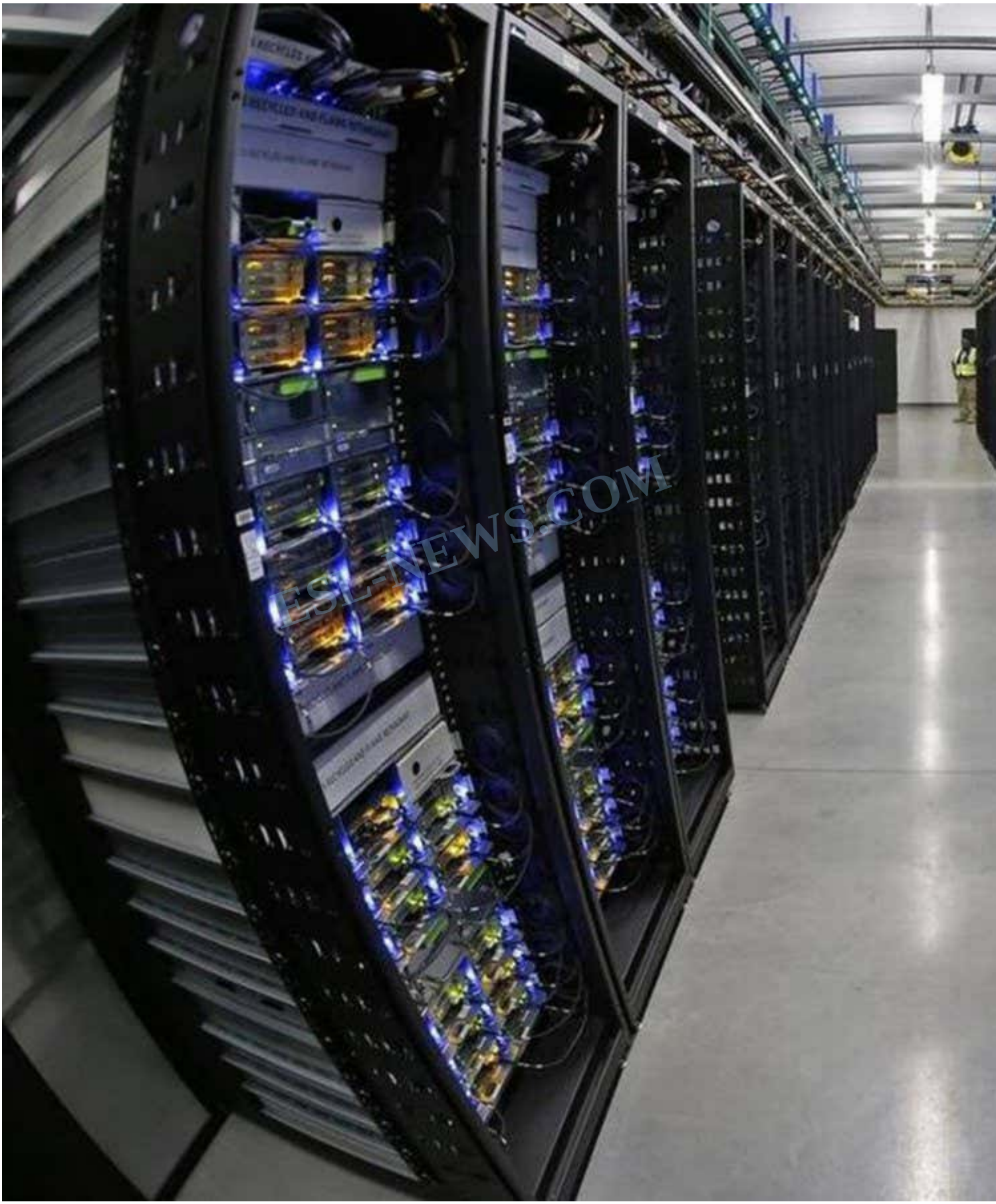
AI’s Energy Consumption Endangers Health, Escalating Fast

Description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Data centres are necessary for the operation of artificial intelligence but are also significant energy consumers. This increased energy usage leads to the release of air pollutants, which can impact public health. By 2030, it is estimated that data centres could contribute to 600,000 asthma cases and 1300 premature deaths annually in the US. These health impacts are not confined to the local areas where data centres are located, as pollutants can travel long distances.

Researchers at the University of California, Riverside, predict these health effects based on the rising electricity demand from data centres, which often rely on fossil fuels. The emissions produced from powering large AI models can be equivalent to driving a car from Los Angeles to New York City thousands of times. The overall public health cost of data centres in the US could exceed $20 billion by 2030, reflecting the potential health impact.

Efforts are being made by tech companies to support cleaner energy sources for data centres. However, the current reliance on fossil fuels, particularly natural gas, raises concerns about the future environmental and health implications of data centre operations.

Vocabulary List:

1. **centres** /ˈsɛn.tərz/ (noun): Facilities that house computer systems and associated components such as telecommunications and storage systems.
2. **pollutants** /pəˈluː.tənts/ (noun): Substances that contaminate the air water or soil and can cause harm to health or the environment.
3. **predicted** /prɪˈdɪktɪd/ (verb): Declared or indicated in advance that something will happen based on present signs or previous experience.
4. **emissions** /ɪˈmɪʃənz/ (noun): Releases of gases or particles into the atmosphere especially those that contribute to pollution.
5. **equivalent** /ɪˈkwɪv.ə.lənt/ (adjective): Equal in value amount function meaning etc.
6. **fossil fuels** /ˈfɒs.əl fjuːlz/ (noun): Natural fuels formed from the remains of ancient plants and animals used as a source of energy.

Comprehension Questions

Multiple Choice

1. What is one major function of data centres mentioned in the text?

   Option: Supporting weather prediction systems

Option: Operating artificial intelligence
Option: Providing entertainment services
Option: Running transportation networks

2. What is one consequence of increased energy usage by data centres according to the text?

Option: Decreased air pollution
Option: Improved public health
Option: Release of air pollutants affecting health
Option: Reduced energy costs

3. By 2030, data centres are estimated to contribute to how many asthma cases annually in the US?

Option: 500,000
Option: 600,000
Option: 700,000
Option: 800,000

4. What is a concern related to the environmental impact of data centre operations?

Option: Reduced energy consumption
Option: Support of cleaner energy sources
Option: Reliance on fossil fuels
Option: Minimal health implications

5. What is one potential consequence of the emissions produced from powering large AI models?

Option: Reduced energy costs for consumers
Option: Decreased traffic congestion
Option: Improved air quality
Option: Equivalent to driving a car from Los Angeles to New York City thousands of times

6. What is being done by tech companies to address concerns about data centre operations?

Option: Increase reliance on fossil fuels
Option: Support cleaner energy sources
Option: Ignore environmental implications
Option: Decrease energy efficiency

True-False

7. Data centres have no impact on public health according to the text.

8. Pollutants released from data centres can only affect local areas.

9. Tech companies are not making any efforts towards cleaner energy sources for data centres.

10. By 2030, the public health cost of data centres in the US is estimated to be less than $20 billion.

11. The emissions produced from powering large AI models do not have any real-world equivalent.

12. Natural gas is the primary cleaner energy source being supported for data centres.

Gap-Fill

13. By 2030, data centres are estimated to contribute to _____ asthma cases annually in the US.

14. The public health cost of data centres in the US could exceed $_____ billion by 2030.

15. Researchers predict the health effects based on the rising _____ demand from data centres.

16. Efforts are being made to support _____ energy sources for data centres.

17. The emissions from powering large AI models are equivalent to driving a car from Los Angeles to New York City _____ times.

18. The current reliance on fossil fuels, particularly natural gas, raises concerns about future _____ implications of data centres operations.

Answer

Multiple Choice: 1. Operating artificial intelligence 2. Release of air pollutants affecting health 3. 600,000 4. Reliance on fossil fuels 5. Equivalent to driving a car from Los Angeles to New York City thousands of times 6. Support cleaner energy sources
True-False: 7. False 8. False 9. False 10. False 11. False 12. True
Gap-Fill: 13. 600,000 14. 20 15. electricity 16. cleaner 17. thousands of 18. environmental

Answer

CATEGORY

1. Sci/Tech - LEVEL3

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Author
aimeeyoung99