

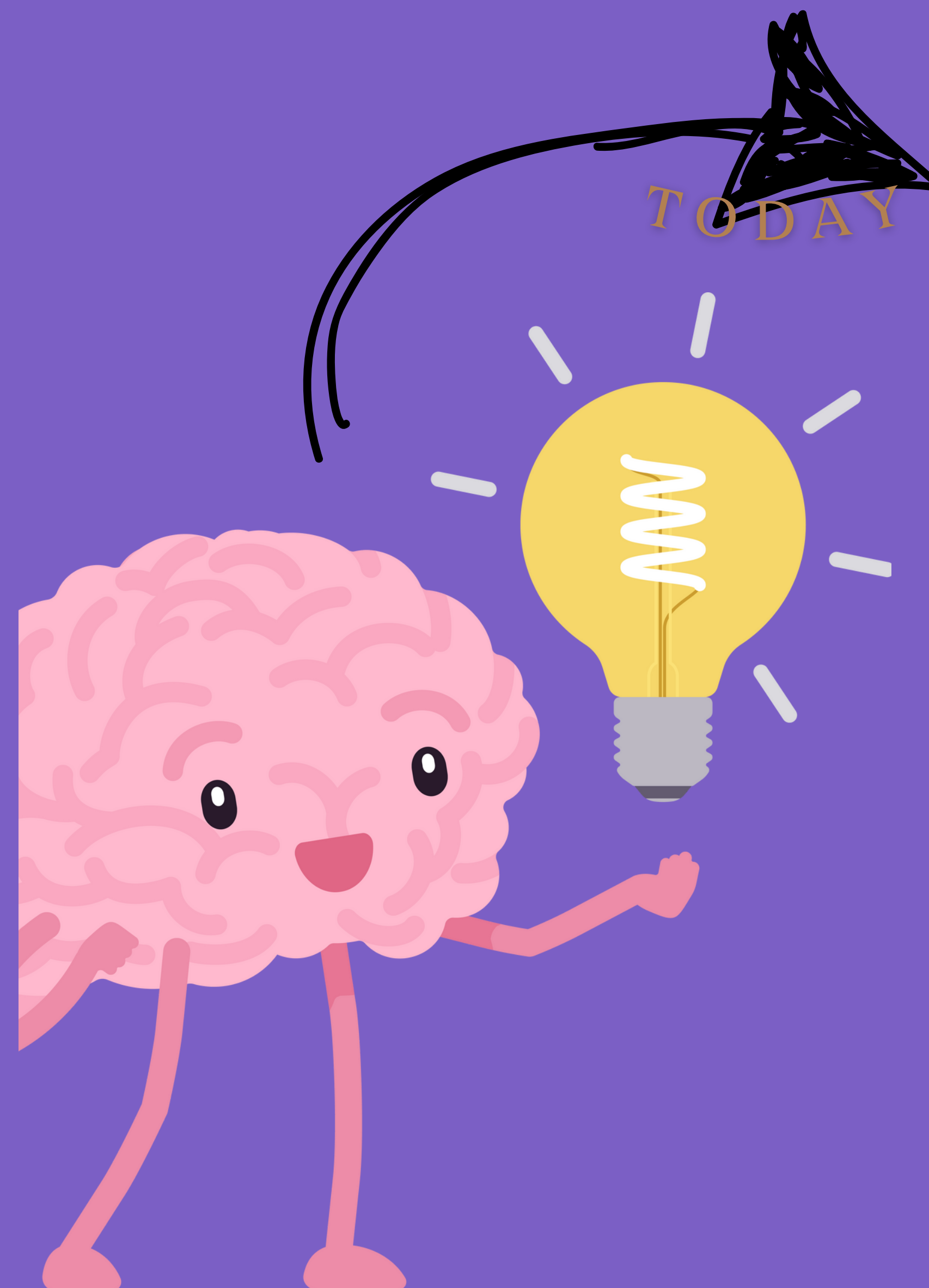
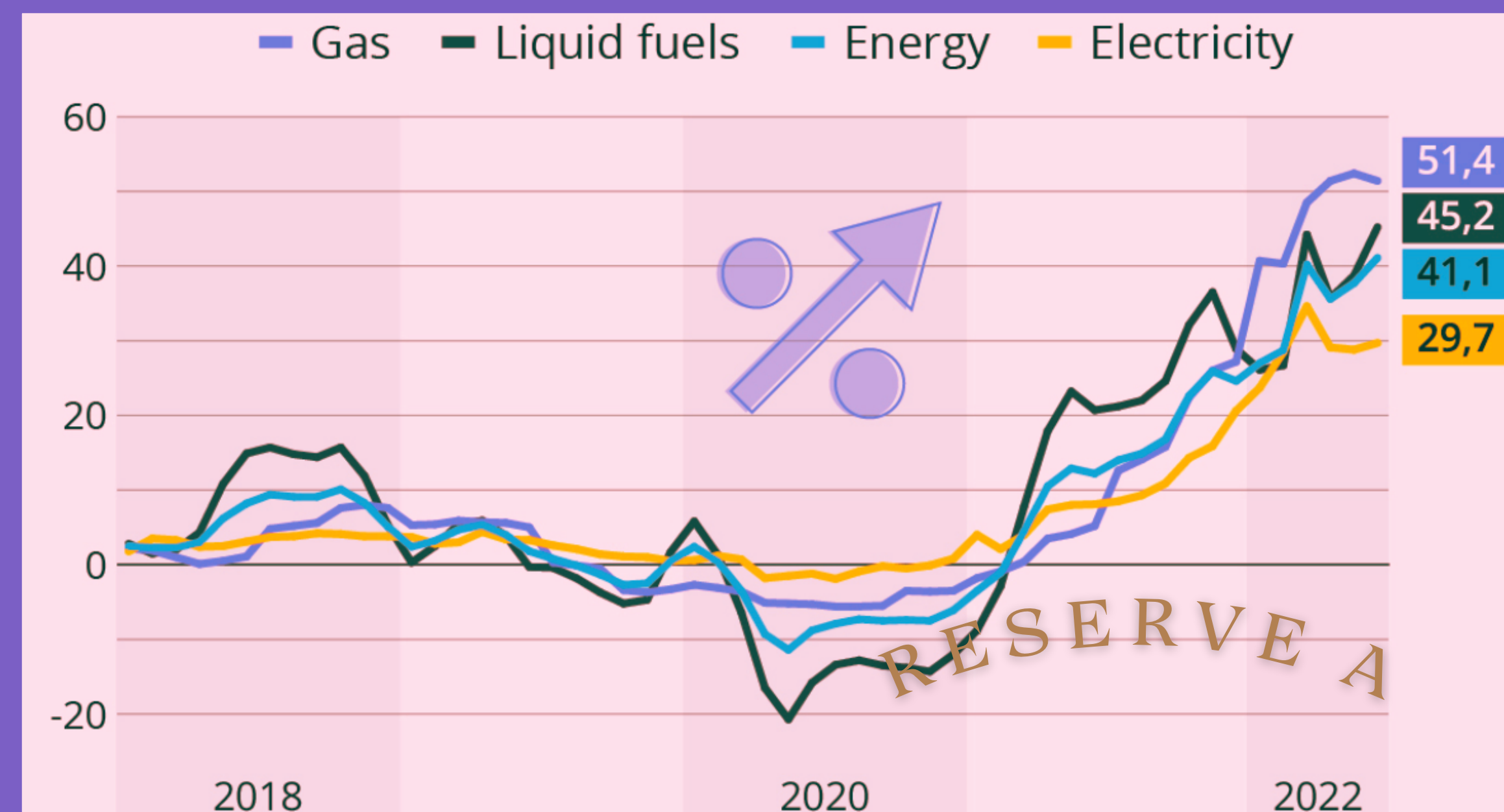
# AN APPLICATION OF DE BONO'S SIX THINKING HATS TO ENERGY CRISIS

## SITUATION

- The world's demand for energy is on the rise. Meanwhile, dependence on fossil fuels is leading to environmental and political difficulties.
- Governing bodies and global organizations are advocating for a transition to renewable energy as a measure against climate change.
- Investment is on the upswing in technologies for clean energy, including solar power, wind energy, and electric transportation systems.
- The objective is twofold: to cut down on greenhouse gas emissions and to progress toward an energy future that is both sustainable and secure.

## COMPLICATION

- Renewable energy faces challenges like tech limits, high costs, and fitting into old systems.
- Market ups and downs make long-term energy investments risky.
- Energy project development can be affected by international policies and laws.
- Switching to renewables impacts economies and societies used to traditional energy.
- Exclusive deals and patents may slow down innovation and use of new energy tech.



### WHITE HAT

- Global energy demand is projected to grow by 3.4% annually through 2026 [1]
- Fossil fuels still dominate the energy mix, with coal, oil, and natural gas accounting for over 80% of global energy consumption in 2022 [2]
- Currently renewables' share of the global electricity mix is only around 30% today and needs to reach nearly 50% by 2030 to meet climate goals [3]

### BLACK HAT

- High Upfront Costs: Renewable energy infrastructure like solar panels and wind turbines require significant initial investment compared to traditional power plants. [6]
- Grid Integration Challenges: The current electricity grid may need upgrades to efficiently handle the variable nature of some renewables like solar and wind. Storage solutions are also needed to ensure consistent power delivery. [7]

### YELLOW HAT

- Job Creation: The International Renewable Energy Agency (IRENA) estimates the renewable energy sector employed 12.7 million people globally in 2023 [4]
- Reduced Pollution: Studies by the World Health Organization (WHO) show air pollution contributes to millions of deaths annually. [5] Transitioning to clean energy can save lives
- Long-Term Energy Security: Renewables offer a reliable, domestic source of energy, reducing dependence on geopolitics and price shocks.

### RED HAT

- High energy prices have affected people's daily lives.
- Energy must come from ethical and sustainable sources.
- Recent geopolitical issues highlight the importance of energy security.
- The pace of transition to clean energy is concerning.

### GREEN HAT

- Advances in energy storage technologies, such as solid-state batteries and hydrogen storage, could enable cleaner and more sustainable mobility solutions, such as electric vehicles and potentially even electric aircraft.
- Small modular reactors which offer enhanced safety features, lower upfront costs, and increased deployment flexibility compared to conventional nuclear reactors, could be used to complement renewable energy sources. [8]

### BLUE HAT

- Develop a framework for collaboration on clean energy technologies.
- Public-private partnerships could be fostered to encourage investment in clean energy infrastructure and research and development.
- Regularly assess progress towards energy transition goals, making adjustments as needed based on technological and economic developments.

## REFERENCES

- [1] <https://www.iea.org/reports/electricity-2024/executive-summary#:~:text=Emissions%20from%20electricity%20generation%20are,declines%20in%202025%20and%202026.>
- [2] <https://ourworldindata.org/energy-production-consumption>
- [3] <https://www.iea.org/news/the-energy-world-is-set-to-change-significantly-by-2030-based-on-today-s-policy-settings-alone#>
- [4] <https://www.irena.org/Publications/2023/Sep/Renewable-energy-and-jobs-Annual-review-2023>
- [5] [https://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health)
- [6] <https://www.iea.org/reports/world-energy-outlook-2023>
- [7] <https://www.nrel.gov/docs/fy20osti/72143.pdf>
- [8] <https://www.iaea.org/topics/small-modular-reactors>

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