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### NEOM's "The Line", Eco-Friendly Haven of The Future

In an era where urbanization and environmental sustainability are at odds, Saudi Arabia's NEOM project introduces "The Line," a revolutionary concept that promises to harmonize urban living with nature. Launched in 2017 as part of Vision 2030, "The Line" is envisioned as a 170-kilometer-long, car-free smart city that operates entirely on renewable energy, preserving 95% of the surrounding land for nature (NEOMTheLine). This ambitious project aims to redefine urban development by prioritizing human health, well-being, and environmental conservation over traditional infrastructure. Despite logistical hurdles, "The Line" stands as a visionary urban experiment and an ideal place to live due to its pioneering sustainability features, innovative urban design, and focus on enhancing residents' quality of life.

One of the most compelling aspects of "The Line" is its commitment to sustainability. The city is designed to run entirely on renewable energy, eliminating carbon emissions and reducing the environmental impact of urban living (NEOMTheLine). By preserving 95% of the surrounding land for nature, "The Line" minimizes urban sprawl and protects biodiversity, setting a new standard for eco-friendly city planning. Furthermore, the compact design of the city, with a footprint of just 34 square kilometers for 9 million residents, significantly reduces the infrastructure needed, leading to greater efficiency and lower resource consumption. This aligns

with the United Nations' Sustainable Development Goal 11, which strives to make cities inclusive, safe, resilient, and sustainable (UNSDGCities).

"The Line" revolutionizes urban design by eliminating cars and roads, thereby reducing traffic congestion and pollution. Residents will have all daily essentials within a five-minute walk, promoting a healthier and more active lifestyle (NEOMTheLine). For longer distances, a high-speed rail system will provide efficient transportation, with end-to-end transit times of just 20 minutes. This design not only enhances convenience but also fosters a sense of community by encouraging pedestrian interactions. Research has shown that walkable cities promote active living, which can lead to longer and healthier lives. Regular walking reduces the risk of chronic diseases such as Type 2 diabetes and heart disease, and improves mental health by reducing stress and increasing happiness (CNUWalkable).

This project is designed to integrate nature seamlessly into urban living. Residents will have access to nature within a two-minute walk, with diverse open spaces and vertical gardens that provide equitable access to pristine views (NEOMTheLine). This close proximity to green spaces not only enhances the aesthetic appeal of the city but also contributes to the mental and physical well-being of its inhabitants. Studies have shown that access to green spaces can reduce stress, improve mood, and enhance overall well-being (PMCGreenSpaces). Additionally, the city's design includes microclimatic spaces that ensure optimal sunlight, shade, and ventilation, creating a comfortable living environment year-round.

"The Line" places a strong emphasis on the health and well-being of its residents. The city will offer world-class preventative healthcare, aiming to increase life expectancy and improve quality of life (NEOMTheLine). With zero pollution and no traffic, residents will

breathe cleaner air and avoid the stresses associated with commuting. According to the American Thoracic Society, reducing air pollution can lead to rapid health improvements, including decreased respiratory symptoms and lower rates of cardiovascular illness within weeks (ATSAirPollution). By eliminating the need for personal vehicles, residents can save on average \$12,000 per year that would otherwise be spent on car ownership costs, including purchase of the vehicle, insurance, maintenance, and fuel (MoneyGeekCar). This financial benefit can significantly enhance the quality of life for residents due to these factors.

The structure is not just a physical space but a cognitive city that leverages advanced technologies to predict and respond to the needs of its residents. This smart city approach ensures that services are efficient and tailored to individual preferences, enhancing the overall living experience (NEOMTheLine). Smart cities like "The Line" use technology to optimize services and improve the lives of residents by providing efficient transportation, energy management, and public services (PlanteMoranSmartCities). Also, the project is expected to create large-scale job opportunities, fostering economic growth and innovation. The integration of nature and technology allows for a harmonious living environment where residents can enjoy both the benefits of modern amenities and the tranquility of natural surroundings.

Advancing technology will not only improve the quality of life, but also change the way restaurants and shopping occur. In "The Line," restaurants and stores will be seamlessly integrated into the community structure, ensuring that all daily essentials are within a five-minute walk for residents. This design prioritizes walkability and community interaction, making commercial spaces easily accessible without the need for cars. The city's high-speed rail system, allowing end-to-end transit in just 20 minutes, further enhances connectivity, enabling residents and visitors to explore various commercial offerings across the 170-kilometer length of the city.

With a projected population of up to 9 million people, "The Line" will support a diverse and vibrant commercial landscape, catering to a wide range of needs and preferences.

Operations of restaurants and stores in "The Line" will be characterized by a strong emphasis on sustainability and technological innovation. As part of a zero-carbon city powered entirely by renewable energy, these businesses will need to adopt eco-friendly practices, such as using sustainable materials, minimizing waste, and possibly sourcing local or organic ingredients for restaurants. The involvement of Topian, NEOM's food company, suggests that there may be innovative food production and distribution systems in place, potentially offering unique and sustainable dining options. Additionally, the city's commitment to being a cognitive city means that commercial operations will likely leverage advanced technologies, including artificial intelligence, to optimize efficiency, personalize customer experiences, and manage resources effectively, setting a new standard for urban commerce.

In conclusion, "The Line" represents a bold and innovative approach to urban development that addresses many of the challenges modern cities face. Through its commitment to sustainability, advanced urban design, integration with nature, focus on health and wellbeing, and utilization of smart technologies, "The Line" offers a compelling vision for the future of urban living. While there are execution challenges, the potential benefits make it a worthwhile endeavor and an ideal place to live for those seeking a harmonious balance between technology and nature.

## Works Cited

- "Cities - United Nations Sustainable Development Action 2015." *United Nations*, <https://www.un.org/sustainabledevelopment/cities/>. Accessed 23 May 2025.
- "Cost of Car Ownership." *MoneyGeek*, 14 Apr. 2025, <https://www.moneygeek.com/resources/costs-of-car-ownership/>. Accessed 23 May 2025.
- Lee, A. C. K., and R. Maheswaran. "Value of urban green spaces in promoting healthy living and wellbeing: prospects for planning." *PMC*, 27 Aug. 2015, <https://pmc.ncbi.nlm.nih.gov/articles/PMC4556255/>. Accessed 23 May 2025.
- "NEOM's The Line-Vision of a Sustainable Futuristic City." *GCE Lab*, 25 Nov. 2024, <https://www.gcelab.com/blog/neom-the-line-vision-of-a-futuristic-city>. Accessed 23 May 2025.
- Schraufnagel, Dean E., et al. "Health Benefits of Air Pollution Reduction." *Annals of the American Thoracic Society*, 15 Jul. 2019, <https://www.atsjournals.org/doi/full/10.1513/AnnalsATS.201907-538CME>. Accessed 23 May 2025.
- "Ten social benefits of walkable places." *CNU*, 12 Aug. 2021, <https://www.cnu.org/publicsquare/2021/08/12/we-shape-our-cities-and-then-they-shape-us>. Accessed 23 May 2025.
- "THE LINE: a revolution in urban living." *NEOM*, <https://www.neom.com/en-us/regions/theline>. Accessed 23 May 2025.
- "Thinking about becoming a smart city? 10 benefits of smart cities." *Plante Moran*, Apr. 2018, <https://www.plantemoran.com/explore-our-thinking/insight/2018/04/thinking-about-becoming-a-smart-city-10-benefits-of-smart-cities>. Accessed 23 May 2025.
- "Will Neom's 'The Line' Be the Sustainable City of the Future?" *Green Matters*, 11 Feb. 2021, <https://www.greenmatters.com/p/neom-the-line>. Accessed 23 May 2025.