

Saudi Arabia Draws ‘The Line’: Time to Wake Up from the Absurd Dream

Saudi Arabia has a tough time supporting THE LINE's construction, including attaining feasible technology, resolving linear cities' dilemma, and financing it.

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Image: ‘[A map of Saudi Arabia’s The Line project](#)’ From [Daily Sabah](#)

On January 10, 2020, Saudi Arabia's Crown Prince Mohammed Bin Salman unveiled his plans for a futuristic city. Its arresting promotional [video](#) depicts an aerial view of a glowing linear city snaking across the country, forming a densely packed belt of future communities.

The city, aptly named “the Line,” is designed in a 170-kilometer straight line that links the Red Sea coast to the coastal desert, across mountains and upper valleys. Salman [claims](#) that this linear city, powered by renewable energy and run by artificial intelligence, has no cars, streets, or carbon emission. The Line will consist of three layers: one vehicle-free top layer for pedestrians only and two subterranean levels for infrastructure and ultra-fast transportation. All daily services can be found within a five-minute walk, and the journey between each endpoint of the city takes no more than 20 minutes by ultra-high-speed transit solution underground.

The Line is part of the \$500 billion development strategy to build “Neom”, which is a component of Saudi Arabia's Vision 2030 initiative to invest the kingdom's oil wealth in renewable energy. The Saudi government hopes that through Neom strategy, they will be able to develop biotechnology, entertainment, food, alternative energy, and manufacturing, reversing the country’s current economic dependence on oil.

Bin Salman’s vision to build a new city and cut ties from its dependence on oil sounds appealing, but is it actionable? Is the construction of this straight-line city feasible in terms of technology and finance? I would contend that the answer is NO.

A Transportation Speed that is Too Good to be True

Travelling from one end of the 170-kilometer-long city to the other end in 20 minutes would require at least 318 mph (510km/h), which is significantly faster than the current commercial transportation system's top speed. To provide some context, currently, China has the fastest conventional high-speed rail in regular operation, with the Beijing–Shanghai high-speed railway at 217 mph. The Shanghai Maglev Train is the fastest commercial passenger maglev in operation, reaching up to [268 mph](#). But those are far from 318 mph. Does the city planner can break through the current technological bottleneck and achieve their guaranteed speed?

In 2020, Virgin's Hyperloop One Company signed a deal with the Saudi Arabian government to build a test track for its futuristic transport concept, [Hyperloop](#). This entails a high-speed ground-level transportation system in which passengers could travel at speeds of up to 760 mph (1220 km/h) in a hovering pod inside a vacuum tube. However, [current tests](#) indicate that they can only reach 288 mph without passengers, not to mention the fact that hyper-loop technology is still at least a decade away from commercialization. In addition, Hyperloop transportation entails [inherent risks](#), even a minor earthquake or the slightest rupture of a vacuum tube would pose a significant danger to passengers and crew at high speeds. However, contingencies for such unforeseen circumstances are yet to be built.

As futuristic as it may sound, the idea of a 170-kilometer-long linear city without roads or cars but with an underground transportation system is unrealistic due to complex technical requirements and inherent risks. It sounds more like a pipe dream than a feasible project.

Linear City in a Dilemma

Techno-futurism has perfected the illusion of old wine in a new bottle, inflating them to an epic size, omitting all the idea's shortcomings and presenting it as the Only Way Forward in an enormous promotional film. Indeed, the concept of a linear city was not first proposed by Bin Salman. Don Arturo Soria y Mata, a Spanish engineer, first came up with the [idea of the Linear City](#) in 1882.

Arturo's initial plan was to establish the city along an optimal line and then attach the other components of the city along the length of this line. He managed to build a tramway on a piece of undeveloped land outside Madrid. Over time, it sank into historical obscurity like any other suburb. It is now just another neighbourhood in Madrid that has been fully absorbed by the city.

In addition, once an industry is established in a linear city, other connected industries will surely be established around the leading sector. Whether the linear city could retain its shape with this agglomeration remains unknown. As a result, even if the Line is created successfully, it could evolve into a leafy metropolis along the axis of this 170km-long traffic line, rather than along a single track.

The small town of Arturo serves as a cautionary tale to foreshadow the fate of the Line. It would either be buried beneath a large desert, becoming an unfunded construction boondoggle, or it would become a rail line for Neom rather than a linear city.

Funding Challenge

“The Line is Mohammed bin Salman's desperate attempt to rebrand Saudi Arabia's failed NEOM project,” [said](#) Reem Abdellatif, an Egyptian-American journalist who has covered the Middle East extensively over the past eight years. Although the crown prince stated that he intended to raise \$500 billion for the Neom, the Saudi government is incapable of raising that sum in one fell swoop; external funding from foreign investors will be required.

However, Saudi Arabia is having difficulty financing the construction of Neom, whether through foreign investment or their own funds. Due to the Saudi Arabian political environment, Saudi court cases always have a profound effect on investment. In 2018, after the Saudi crown prince became embroiled in the [scandal](#) over the killing and dismemberment of journalist Jamal Khashoggi, individuals and businesses have been [distancing themselves](#)

[from Saudi Arabia](#) to express their dissatisfaction. “Neom was announced more than three years ago. I don’t see any substantial foreign money coming in.” [said](#) Yoel Guzanksy, a Saudi expert at the Institute for National Security Studies in Tel Aviv.

Saudi Arabian’s once-thriving oil industry is not able to lend a hand to this ambitious project either. Saudi Arabian oil, the main source of Saudi Arabia's economy, has seen fluctuating price decline in the last decade. Apart from the situation that the international oil price seems will not return to its pre-2013 peak, Saudi Arabia's "oil war" in 2020 to increase production and lower the price of oil to seize the US market has also [cost Saudi Arabia significantly](#). According to the [S&P](#), the Saudi Arabian deficit reached around \$79 billion in 2020, and their debt ceiling increased from 30 to 50 percent of GDP in light of low oil prices and the pandemic.

Since the Neom project's inception in 2017, the desert in which Neom is located has remained desolate. Numerous malls and hotels that were initially promised for have not been completed, and the construction site itself does not appear to be bustling with people and noise. Due to the inefficiency of the Neom’s construction, dozens of engineers and workers [have left](#). Without additional capital injection, Neom will undoubtedly be abandoned. It is easy to see that the Line’s failure will also be an open secret.

Massive investments in infrastructure are not a panacea. Any attempt to transform a country's economic model overnight through future infrastructure projects should be scrutinized. Once his project backfires, the Saudi crown prince will surely pay a high price.

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