The AI revolution is here to slash carbon emissions now in commercial real estate - by Sam Ramadori

May 04, 2021 - Front Section

Time is a luxury we no longer have. Our climate crisis has reached a critical turning point, requiring urgent action. Since the start of the industrial revolution in the 18th century, the planet's average surface temperate has risen by over 2 degrees Fahrenheit – a very worrisome jump. Despite the goals that many nations committed to under the Paris Agreement, it is clear that we are behind the curve and need to implement solutions that deliver step change reductions in greenhouse gas (GHG) emissions in a short timeframe.

The fact that over 20% of U.S. emissions originate from buildings means the real estate sector must come to the table with concrete ways to reduce emissions quickly. Recent technological advances in the areas of IoT, artificial intelligence (AI), and cloud computing are now delivering solutions capable of driving meaningful energy efficiency gains in buildings at scale. Given their low upfront cost, it is clear that the implementation of AI-driven technologies will become a key part of a building owner's sustainability/ESG strategy going forward.

In 2019, New York City lawmakers understood the impact of buildings on climate change when they passed Local Law 97. In seeking to reduce emissions by 40% from existing buildings by 2030, this piece of legislation is one of the most ambitious environmental initiatives ever undertaken by a local government. The law levies fines on non-compliant buildings and mandates that building owners establish both short and longer-term emission reduction goals.

Over 70% of total emissions in the five boroughs comes from buildings. While new construction is being modernized via Passive House Standards, older buildings typically have less efficient HVAC systems, requiring a different approach. To ensure compliance and achieve significant energy efficiency gains, key energy reduction strategies for these buildings focus heavily on deep retrofit projects. However, the combination of high capital costs, complex implementations, and a lack of qualified labor means that it will take a few decades before a significant portion of the existing building stock is retrofitted. In addition, New York City Council estimates that retrofitting the city's inefficient buildings will cost upwards of $20 billion.

Though the benefits of deep retrofits are undeniable, relying solely on this long-term approach is not enough to deliver the rapid reduction in carbon emissions that is needed in our fight against climate change. What is required is a strategy where both short and long-term efficiency gains are possible.

And this is where technologically advanced solutions come into play.

In a number of industries, AI is emerging as one of the primary tools in the campaign against climate change. A study by Capgemini Research published in late 2020 projects that organizations implementing AI-based projects can reduce carbon emissions by as much as 16% in the next three to five years.

The application of AI in the commercial real estate sector will allow building owners to reduce energy consumption, energy spend, and carbon emissions in a meaningful way. So, while stringent new regulations are forcing them to face very challenging energy efficiency targets, AI is evolving rapidly and delivering solutions that are capital efficient, scalable, and quick to deploy.

While it might be pioneering, Local Law 97 is just the beginning. It serves as an example of what legislation for regulating building operations and fighting climate change will look like in the future. Preparing for that future now by using AI as a complementary approach to deep retrofits for achieving rapid and cost-effective energy efficiency in buildings will help us get back ahead of the curve.

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