

Failure to Act: Electric Infrastructure Investment Gaps in a Rapidly Changing Environment, 2020



Client

American Society of Civil Engineers

Facts

Period

2020

Project Country

United States

Over the next 20 years EBP (formerly EDR Group) finds that failure to make adequate investments in electric generation, transmission and distribution will negatively affect the US economy the American Society of Civil Engineers (ASCE), EBP developed a series of new 2020 reports assessing the economic implications of not meeting electric infrastructure investment needs in electric generation, transmission and distribution.

ASCE has long been concerned with the adequacy of US infrastructure in electricity, water and wastewater, transportation and ports. To this end, EBP is undertaking the third round of studies for ASCE, examining the economic effects in the US economy of electric generation, transmission and distribution, projecting impacts from 2020-2039.

Prior assessments performed by EDR Group (now EBP) focused on investment needs in the aging electric infrastructure. Some of those investment gaps were met in the past several years, but much new investment need is attributable to climate change - to make the system more resilient and reliable, and to decarbonize. Weather-related outage and momentary events cause direct losses to customers in damaged equipment, reduced productivity, competitiveness and profitability, conservatively estimated at \$32 billion per year in 2020, continuing without improvements.

The electric system is also on a path to decarbonize, to mitigate climate change through reductions in Greenhouse Gas emissions. New investment is needed to transition from transition from traditional largely coal-fueled central generation, to a more distributed, system powered by diverse energy resources, particularly renewable energy.

Current investment trends may not be sufficient to meet those needs, leading to severe effects on the US economy. The 2020 study found a cumulative infrastructure investment gap of \$309 billion over 2020-2039. The consequences to the US Economy of failing to act, failing to make needed investments are severe. Unless investment increases in electricity infrastructure, the following economic outcomes are expected:

- By 2039, the total cumulative output lost will be almost \$3 trillion as demand for electricity rises, but industries continue to face brownouts and irregular voltage surges.
- By 2039, the cumulative lost GDP will be more than \$1.7 trillion, reflecting lost income for workers and business owners.
- By 2029, 287,000 jobs will be lost compared to the projected baseline in that year; by 2039 the total will be 540,000.

Success in the transition requires new transmission to serve dispersed and isolated wind and solar generators, increased energy efficiency within the electric grid and in distribution and customer energy and demand. Energy storage and new control systems will accommodate multiple generation and demand needs, as well as allowing local distribution networks to buy and sell electricity.

If achieved, the needed investments will make the US electric system cleaner, more resilient and reliable as well as reducing climate changing emissions. The transition requires substantial investment across the US. EBP assessed the economic consequences of failing the make needed investments to customers and

the economy as a whole. This assessment is one in a series of four volumes concerning infrastructure
24.04.2024

investment; the others address drinking water and water treatment, transportation and port infrastructure.

On September 1st, 2020, EBP's Steven Landau spoke as part of an ASCE virtual press conference announcing the release of the report.

Contact Persons



Mike Sherman

mike.sherman@ebp-us.com