



Nucor, Emissionality, and the Pursuit of Green Steel

e-mis-sion-al-ity (*noun*) the practice of comparing and acting on the avoided emissions of different renewable energy projects.
from English 'emission' + 'additionality'

It's All About Timing

It can be tempting to treat all renewable energy projects as equal, since none of them produce emissions to generate electricity. However, the **real climate benefit of renewable electrons comes not in the type of new energy generation added to the grid, but what it replaces**. By this measure, all renewable energy projects are not equal.

Turning On Renewables

Recent years have seen record-setting levels of voluntary corporate renewable energy procurement. The types of companies pursuing such power purchase agreements (PPAs) have rapidly diversified, including in heavy industry. Nucor—the largest steel producer in the United States—has taken steps in this direction, too.

Nucor Is Leading the Way in the Steel Industry

On November 13, 2020, Nucor announced a contract to buy solar power via a virtual PPA. **The Nucor project is the largest PPA yet signed worldwide for off-site renewable energy projects in the steel industry**. But it's how Nucor evaluated renewable energy projects and chose its investment that is arguably the most noteworthy.

Clear Eyes and Motivation

Recognizing the environmental importance of this project, Nucor engaged WattTime to conduct an avoided emissions analysis of proposed solar and wind projects to help the company better understand and evaluate the avoided greenhouse gas (GHG) emissions, reduced pollution, and improved health outcomes associated with various projects. This analysis enabled Nucor to co-optimize its investment decision alongside traditional metrics such as financial and risk-related considerations. WattTime calls this concept of including the avoided emissions of projects in the decision-making process *emissionality*.

“Nucor is setting itself apart as a leader by incorporating emissionality into its renewable energy PPA selection process.

— Henry Richardson, Senior Analyst, WattTime



Enabling the Greatest Impact

Nucor approached this new renewable energy procurement with clear motivations and evaluation criteria for choosing a project to have the greatest impact:

- **Environment:** Nucor's actions support *additionality*—new renewable energy capacity gets built and added to the power grid as the result of a corporate PPA—with a focus on projects that would yield strong emissions reductions.
- **Risk Management:** Nucor signing a competitively-priced, fixed-rate, long-term virtual PPA helps insulate the company from rising energy prices. A PPA can also buffer against higher costs from a potential carbon tax.
- **Load Matching:** Nucor focused on renewable energy projects that are proximate to the company's facilities. Load matching was also an important consideration, as Nucor facilities draw power with a 24-hour demand profile.
- **Product Marketing:** The market appeal and competitive advantage of 'green steel' (by reducing carbon emissions via using renewable energy) improves Nucor's position and influence, especially with growing supply chain sustainability expectations.
- **Community Impact:** Nucor views the development of new renewable energy resources as an opportunity to bring jobs and economic benefit to the communities and regions of the country where it operates.

As the world's leading Electric Arc Furnace (EAF) steelmaker, Nucor also leads the industry by evaluating and selecting renewable energy projects that best fill these selection criteria. Combining emissionality (the avoided emissions of the project), favorable risk and financial considerations, as well as positive community benefits makes Nucor steel an even deeper shade of green.

About Nucor

Nucor and its affiliates are manufacturers of steel and steel products including carbon and alloy steels—in bars, beams, sheet and plate; hollow structural tubing; electrical conduit; steel piling; steel joists and joist girders; steel deck; fabricated concrete reinforcing steel; cold finished steel; precision castings; steel fasteners; metal building systems; steel grating; and wire and wire mesh. As North America's largest recycler, Nucor leads the industry in sustainable, "green steel." For more information, please visit www.nucor.com

About WattTime

WattTime is a nonprofit with a software tech startup DNA, dedicated to giving everyone, everywhere the power to choose clean energy. Our Automated Emissions Reduction (AER) technology can shift the timing of flexible electricity use to sync with times of cleaner energy and avoid times of dirtier energy. We help make it easy for anyone to achieve emissions reductions without compromising cost and user experience. WattTime is a subsidiary of Rocky Mountain Institute. For more information, please visit www.WattTime.org

