# Alcoa in Tennessee

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**Introduction**

In Pittsburgh, Pennsylvania on June 12th 1985, Charles W. Parry, president of the Aluminum Company of America, gave a speech to the Newcomen Society. In his speech he compared the company to an organism, saying that "like all successful living organisms, Alcoa has adapted in order to survive and flourish."[1] Large corporations have been compared to biological organisms before, like Standard Oil's malicious octopus[2], but the primary intention of Parry's biological analogy is to naturalize ALCOA, to give it agency beyond its human leadership.[3] Though the intention of this metaphor is propagandistic, it is also analytically useful.

ALCOA, like any organism, needs a constant supply of energy to survive and thrive. Through the history of ALCOA's network of dams in the Little Tennessee River's watershed, built to power its smelting operation in the town of Alcoa, Tennessee, this paper will explore the way ALCOA manipulated environmental and social systems to obtain the energy it demanded. To avoid confusion, the company will be referred to as ALCOA whereas the town will be written as Alcoa unless quoted differently.

**The Aluminum Company Before Tennessee**

Almost a century earlier in the same city where Charles Parry addressed the Newcomen Society, Charles Martin Hall shocked ALCOA to life in a Frankenstein-like moment by running an electrical current through a vat of dissolved alumina and cryolite to precipitate pure

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[1] Parry, Charles W. "Alcoa: A Retrospection." *The Newcomen Society of the United States*. Speech presented at the 1985 Pennsylvania Meeting, June 12, 1985. 22.
[2] Keppler, Udo J. "Next!" Cartoon. *Puck* 56. New York, NY: J, Ottmann Lith. Co., 1904.
[3] An agency affirmed by the U.S. Supreme Court in 2010: Citizens United v. Federal Election Commission, Oyez (United States Supreme Court 2010)

aluminum.[4] Aluminum manufacturing had previously been prohibitively expensive so the invention of the Hall-Héroult process represented a major industrial breakthrough.[5] In order to capitalize on this newly patented process, Charles Martin Hall and, as Charles Parry puts it, "six young and ambitious industrialists" founded the Pittsburgh Reduction Company, which would later be known as ALCOA.[6]

Hall and his young ambitious colleagues soon learned the energetic requirements of the aluminum smelting process. The reduction pots where smelting took place needed to be tended to at all times. If the electric current were to cease, the molten alumina would freeze in the pots and would have to be broken out before restarting. The alumina needed to be constantly replenished to keep the cryolite from breaking down, and the baked carbon anodes used to precipitate aluminum needed to be regularly replaced. Additionally, the heat and fumes from the steam engine used to generate electricity, combined with the gas flames heating the reduction pots, and the $CO_2$ generated in the process made the factory a difficult place to work. Hall referred to it as "Satan's Church."[7]

Luckily for Satan's worshippers, the invention of the Hall-Héroult smelting process converged with the invention of another groundbreaking technology, the hydroelectric dam. The first hydroelectric dam was built in Appleton, Wisconsin in 1882 and not long after in 1895, the Pittsburgh Reduction company would be the first customer of the Niagara Falls Hydraulic Power and Manufacturing Company.[8] Hydroelectric power and aluminum manufacturing are both

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[4] Smith, George David. *From Monopoly to Competition: the Transformation of Alcoa, 1888-1986*. Cambridge: Cambridge University Press, 1988. 14.
[5] Ibid, 16.
[6] Parry, 11.
[7] Smith, 26.
[8] Gitlitz, Jennifer S. Working paper. *The Relationship Between Primary Aluminum Production and the Damming of World Rivers*. Berkeley, California: International Rivers Network,

technologies of the Second Industrial Revolution, making them capitally-intensive and technology-dependent. In this way, the Pittsburgh Reduction Company and Niagara Falls had a mutualistic relationship: the dam had a customer willing to purchase large amounts of electricity generated by the falls, helping to make up for its investment in infrastructure, and ALCOA gained a reliable and heavily discounted source of electricity that wouldn't require refueling like a steam engine would.

The Niagara contract was also strategic on ALCOA's part. The young company was vulnerable to resource competition and though it held the U.S. patent for aluminum manufacturing, there was nothing stopping a Canadian manufacturer or someone with a different process for setting up shop at Niagara. In one of the "adaptations" Parry may be referring to in his biological analogy, the Pittsburgh Reduction Company added a restrictive clause to its contract with Niagara Power, preventing it from manufacturing aluminum itself or from selling power to other aluminum manufactures.[9] The company made similar moves to protect its resource and market share when it signed contracts with the St. Lawrence River Power Company and the Water and Power Company of Shawinigan Falls.[10]

**Tennessee Before ALCOA**

Meanwhile, in East Tennessee on the ancestral lands of the Yuchi and Cherokee nations, the Second Industrial Revolution was also beginning to take hold.[11] Maryville Electric Light and

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1993. 4.; Muller, Charlotte. "Aluminum and Power Control." *The Journal of Land & Public Utility Economics* 21, no. 2 (1945): 109.

[9] Ibid.

[10] Ibid, 110.

[11] "□□□□□□ Tsalaguwetiyi (Cherokee, East)." Native Land. Native Land Digital, June 5, 2018.; "S'atsoyaha (Yuchi)." Native Land. Native Land Digital, June 5, 2018.

Power was incorporated in the early 1890s in the college town of Maryville, located between the Tennessee River, the Little River, and the Little Tennessee River.[12] Maryville's electricity was presumably coming from a coal burning plant, but nearby Knoxville was looking to venture into hydroelectricity. The Knoxville Power Company was denied permission to construct a hydroelectric dam on the Tennessee River, but was permitted to dam the Little Tennessee River in 1901 and began securing riparian rights in the watershed. Col. John Bogart, an engineer who had supervised plant construction at Niagara Falls came to consult on a proposed dam site and soon after Knoxville Power notified ALCOA of the potential hydroelectric project.[13]

Hydroelectric developments and the industrial investment they could bring meant modernization and promise to towns in the New South. Newspaper stories of hydroelectric development along the Little Tennessee and Ocoee rivers are framed by jubilant phrases like "Knoxville Jobber Says This Town Will Soon Be Biggest Thing Growing" and "many wise men from the east… declare that [Polk county] is soon to become the source of all power."[14] Correspondingly, towns like Maryville were in desperate need of investment. A right of way was granted to build a town waterworks in 1895 but almost twenty years later in 1914 Mayor Sam M. Everett lamented that "we have the most difficult town to get water supply for that [engineers] have ever seen."[15] It is understandable then that ALCOA's decision to buy the Knoxville Power Company in 1910 sparked great interest in the area.

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[12] "County Court." *The Maryville Times,* April 11, 1895.

[13] "Water Power for Knoxville." *The Bolivar Bulletin*, June 28, 1901.; "Tennessee State News." *The Bolivar Bulletin*, March 22, 1913.; Muller, 111. Parker, Russell D. "Alcoa, Tennessee: the Early Years, 1919-1939." *The East Tennessee Historical Society's Publications* 48 (1976): 86.

[14] "FUTURE OF MARYVILLE." *The Maryville Times*, April 13, 1916. "Speaking of the Ocoee Dam..." *Polk County News-Gazette*, July 14, 1910.

[15] Everett, Sam M. "WATERWORKS." *The Maryville Times*, November 20, 1914.; "County Court."

The Knoxville Power Company was not ALCOA's first purchase or its first foray into constructing hydroelectric facilities. The company had purchased the St. Lawrence River Power Co. in 1906 and built its own power plant at Niagara Falls in the same year. It was the United States and Canadian governments ruling against ALCOA's attempt to build its own dam along the St. Lawrence River that set the company looking for developments elsewhere.[16] Along with the subsidies, tax breaks, and lax labor regulations of the New South, Knoxville Power's pre-purchased riparian rights and permission to dam the Little Tennessee River would have made for a tempting offer.

The Pittsburg Reduction Company had changed its name to the Aluminum Company of America in 1907, reflecting its national growth. But 1910 was when it first adopted the diminutive form ALCOA to refer to its basecamp along the Little Tennessee River.[17] This name change corresponded with a change in ALOCA's hydroelectric operations. Previously, ALCOA's hydroelectric developments were sited on wide northern rivers where they did not greatly impede the river's navigability. The Niagara development did not involve damming the river at all, but used the existing drop in the river to generate kinetic energy.[18] Running through the steep narrow valleys of the Great Smoky Mountains, the Little Tennessee River would require a different kind of intervention. Generating hydroelectric power from the Little Tennessee would involve sealing off an entire valley to raise the water level and create an artificial drop. Luckily, their acquisition Knoxville Power had plans already. Captain William C. Crozer, previously Knoxville's city engineer, was brought onto ALCOA's staff and is credited

[16] Smith, 96.
[17] Parker, Russell D. "Alcoa, Tennessee..." 85.
[18] Smith, 81.

with developing the company's plan to create several dams on the Little Tennessee, capturing the river's energy multiple times and equalizing its seasonal flow.[19]

But before ALCOA could begin building dams in earnest, it would have to find a place for all that energy to go. Sam Everett, mayor of Maryville, who was described as a man "that wears his boots all the year round" was determined to have ALCOA's smelting plant in Maryville. When land was secured for the plant, Everett even took his boots to Indiana to track down the owner of the last parcel of land to be purchased.[20] Despite what the Maryville Times describes as "GREAT BIG SCARRY head lines by the Knoxville papers" claiming that ALCOA had settled in Knoxville, the Aluminum Company of America began construction of their smelting plant in North Maryville in summer of 1913.[21] The Maryville Times, under the headline "Maryville Rejoicing!" declared "Other industries are only waiting developments to rush to our city. We will soon have a Water Works and Sewerage Plant. Never has our prospects been brighter."[22]

**Alcoa, Tennessee**

ALOCA had found a new home in Maryville, but had yet to develop a new source of energetic nourishment. Previously Alcoa's operations had been next to the rivers from which they drew power, but the mountainous terrain of Appalachia meant a new system of energy corridors would have to be created to connect ALOCA with its energy sources. While its projects

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[19] "Obituary of Capt. William C. Crozer." *The Chattanooga News*, September 21, 1920.
[20] Williams, R. P. "VISIT TO THE ALUMINUM PLANT." *The Maryville Times*, August 1, 1913.
[21] "ALUMINUM CO. TO STAY." *The Maryville Times*, June 25, 1913.; "Maryville Rejoicing!" *The Maryville Times*, June 27, 1913.
[22] Ibid.

on the Little Tennessee River were being completed, the company purchased power from the Tennessee Power Company, which had just completed the first of three dams on the Ocoee river, 95 miles southwest of Maryville.[23] The Tennessee Power Company, incorporated the same year ALCOA purchased Knoxville Power, had planned a system of three hydroelectric dams along the Ocoee river, similar to the idea William Crozer had for ALCOA.[24] Lines had already connected the Ocoee dam to Knoxville in early 1913, and lines were extended to ALCOA's Maryville plant when it became operational in 1914.[25] The 25,000 horsepower ALCOA was using from the Ocoee dam would not satiate the company for long, especially with WWI brewing in Europe. In 1916, the company stepped up the pace of dam construction on the Little Tennessee and the plant built an auxiliary steam plant to increase its capacity in the same year.[26]

When construction of the Cheoah Dam was concluded in 1919, the Carroll County Democrat led the news with the headline, "GIANT DAM RIVALS NIAGARA." The dam was estimated to generate 80,000 horsepower, more power than Knoxville, Memphis, Chattanooga, and Nashville were consuming at the time.[27] The transmission lines from Cheoah to the aluminum plant had been the longest in the world, snaking 28 miles over the mountains. The lines themselves were made out of aluminum, whose lightweight structure came at the enormous energetic cost of the metal's manufacture.[28] With this new source of power and the beginnings of a transmission network funneling the river's kinetic energy to the plant, the community that had

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[23] "FUTURE OF MARYVILLE."
[24] "CHARTER FILED FOR POWER CO." *The Columbia Herald*, April 26, 1912.; "LAST TOWER PUT IN PLACE." *Sequachee Valley News*, April 10, 1913.
[25] "Aluminum Plant In Operation." *The Maryville Times*, March 13, 1914.
[26] "ALUMINUM COMPANY TO RUSH RAILROAD WORK." *The Maryville Times*, February 17, 1916.; "FUTURE OF MARYVILLE."
[27] "GIANT DAM RIVALS NIAGARA." *The Carrol County Democrat*, February 7, 1919.
[28] *Alcoa's Hydroelectric Developments in the Great Smoky Mountains*. Pittsburgh, PA: Aluminum Company of America, 1958.

been growing around ALCOA's plant in Maryville formally incorporated in 1919 as the town of Alcoa, Tennessee.[29]

The complex of transmission wires that connected a growing network of hydroelectric developments with the newly formed town of Alcoa exemplifies Christopher Jones's "landscape of intensification." The aluminum transmission wires required to get energy to the smelting plant required enormous energy themselves in their manufacture, creating what Jones refers to as a "synergistic feedback loop" of ever increasing energy demand and provision.[30] This is especially true of aluminum manufacturing whose high electricity requirements have led aluminum to be dubbed "packaged electricity." Mimi Sheller points out that aluminum's increasing technological incorporation into modern society, picking up around the period of Aloca's incorporation with the development of flight and wartime technologies, has created a "culture of speed and lightness" made possible by aluminum's enormous embodied energy.[31] Taken together, we can see the hydro-aluminum network centered in Alcoa, Tennessee as the center of a landscape and culture of intensification.

This energetic landscape was not without physical limits. When the Cheoah dam was being built, the Maryville Times discussed three dams to be built along a stretch of the Little Tennessee River, the other two being today's Calderwood and Chilhowee dams. Presumably this was the plan William Crozer initially developed for ALCOA, which reflects the similar three

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[29] Parker, Russell D. "Alcoa, Tennessee…" 87.

[30] Jones, Christopher F. *Routes of Power: Energy and Modern America*. Cambridge, MA: Harvard Univ Press, 2016.

[31] Sheller, Mimi. "Global Energy Cultures of Speed and Lightness: Materials, Mobilities and Transnational Power." *Theory, Culture & Society* 31, no. 5 (2014): 129.; Ibid, 127.

dam complex being built on the Ocoee river during the same period, but the Calderwood and Chilhowee dams were not the next to be competed.[32]

When the Cheoah dam was first built, the power it generated varied with the seasonal flow of the river and it became important for ALCOA to further amend the Little Tennessee's watershed to equalize the river's flow. To do so they conceptualized the Santeetlah hydroelectric development, named after the Little Tennessee tributary it disrupts. The Santeetlah river normally met the Little Tennessee just below the Cheoah dam, but in order to regulate the upstream flow the Cheoah dam used to generate power, engineers decided to redirect the flow of the Santeetlah to join the Little Tennessee River above Cheoah. This was accomplished by damming the Santeetlah to create a reservoir and directing water into a four mile long conduit (Fig. 1) that would tunnel through mountains and bridge over roads to deposit the river's flow into the Little Tennessee between the Cheoah dam and where the Fontana dam stands today.[33] A generating station was located where the Santeetlah conduit met the Little Tennessee river so the water would generate electricity as it dropped through penstocks into the Little Tennessee.

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[32] "FUTURE OF MARYVILLE."; *Alcoa's Hydroelectric Developments…,* 6.; Obituary of Capt. William C. Crozer."

[33] *Alcoa's Hydroelectric Developments…*, 7.


Figure 1: The Santeetlah Conduit as it passes over a road. Image courtesy of the Roger H. Howell Photograph Collection, McClung Historical Collection[34]

The Santeetlah complex was completed in 1928 and the Calderwood dam was completed below the Cheoah just two years later in 1930, but it was the Santeetlah conduit that made the Little Tennessee hydroelectric development unique.[35] The idea of using a system of dams to manage an entire watershed instead of a single river had not been attempted before and would come to play a large role in regional and global hydroelectric developments.[36] Altogether, ALCOA would come to operate fifteen dams across the Little Tennessee River watershed, the Chilhowee dam, finished in 1957, was the last to be completed despite being one of the first

[34] Howell, Roger. *Santeetlah*. Photograph. Knoxville, May 24, 1936. Knox County Public Library.
[35] *Alcoa's Hydroelectric Developments…*, 7. Ibid, 5.
[36] *Aluminum by Aloca*. Pittsburgh, Pennsylvania: Aluminum Company of America, 1969. 18.

planned.[37] The Nantahala dam complex, completed in 1942, would eventually exceed the length of the Santeetlah conduit with a length of 5.2 miles.[38]

But back in 1919, the town of Alcoa was just taking shape. Labor was needed for the smelting plant and for a fabrication plant that was completed in 1920.[39] The smelting process had been much improved since Charles Martin Hall's time in Pittsburgh, but the nickname of "Satan's Church" still applied.[40] Work in the potrooms, and the plant where carbon anodes were baked would be hot and difficult. ALCOA staffed the plant by recruiting unskilled Black laborers from Alabama, Georgia, and Mississippi while white workers were employed at the fabricating plant.[41]

The life of Black workers in Alcoa was one of compromise and incremental improvement. Their train tickets to Tennessee were paid by the company but later deducted from their pay. They had jobs, but were placed strategically in the most taxing positions because it would be more difficult for Black workers to unionize. They were initially housed in tarpaper shacks, but once homes were built they had water, electricity, and an indoor toilet. Black workers were even offered to buy their home at cost, but deeds to the nicer homes provided for white folks were restricted from sale to non-white people. The access to jobs, housing, and education afforded to the Black community of Alcoa was better than many other places, but the work and the opportunities it afforded were by no means equal to that of the white community and meant being under ALCOA's thumb at all times. [42]

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[37] *Alcoa's Hydroelectric Developments…*, 9.
[38] Ibid, 19.
[39] Parker, Russell D. "The Black Community in a Company Town: Alcoa, Tennessee 1919-1939." *Tennessee Historical Quarterly* 37, no. 2 (1978): 205.
[40] Smith, 26.
[41] Parker, Russell D. "The Black Community…." 205.
[42] Ibid, 205-207.

Dominic Boyer's entanglement of energopower "the harnessing of electricity and fuel" and Foucault's biopower "the management of life and population" is helpful in understanding Alcoa's dynamics.[43] Just as ALCOA sought to regulate and maximize the electricity that could be generated by the Little Tennessee River and its tributaries, it strove to regulate and maximize the productivity of the people of Aloca, Tennessee. Black workers were initially sought out as a strategy to quell labor organizing and keep the company's expenses down. ALCOA vice president Edwin Stanton Fickes sought to "keep the colored population content" so their next generation could provide the increased labor that the ever expanding electrical capacity of the Little Tennessee River would allow.[44] In this way, Alcoa's Black community would be at odds with ALCOA anytime they strove for anything that couldn't be recaptured in the company's balance sheet, whether that was improved education or work in other parts of the plant.[45]

ALCOA was determined to run its town as efficiently as possible. Victor J. Hulquist served both as Alcoa's city manager, which superseded the Mayor, and ALCOA's construction superintendent. His responsibilities included everything from rent collection, education, and operation of the light and water department, to supervising housing construction and ALCOA's farm and dairy.[46] Arthur B. Smith, another company employee who served as the city's "recorder-treasurer-judge," referred to Aloca's government as "a practical piece of machinery."[47] The stringent management of both the Little Tennessee River and the population of Aloca to

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[43] Boyer, Dominic. "Energopower: An Introduction." *Anthropological Quarterly* 87, no. 2 (2014): 309.
[44] Parker, Russell D. "The Black Community..." 205.; Ibid, 214.
[45] Ibid, 215-216.
[46] Parker, Russell D. "Alcoa, Tennessee..." 92.
[47] Ibid, 90.

maximize efficiency demonstrates the entanglement of energo and biopolitics the town embodied.

The establishment of Alcoa also forged new connections between the town and the river. Maryville is located about 22 miles from the Little Tennessee River, so early mentions of the river in newspapers mostly refer to it as a place for vacation and relaxation.[48] Hydroelectric developments forged new physical and energetic links between the river and the town. The ever growing network of transmission wires physically connected the aluminum plant and electrified dwellings in Alcoa with various points along the river, and the kinetic energy fed the town, both through jobs at the ALCOA plant and through the provision of electric light, heat, and running water.

The dam's material infrastructure also created new ways of interacting with the river, from infrastructural tourism to tailwater fishing, the practice fishing below a dam to catch the migratory fish trapped by it (Fig. 2).[49] In addition to migratory fish, the population of the snail darter, a small fish endemic to the Little Tennessee River, would also have been influenced by the creation of these dams. The darter was declared an endangered species under the Endangered Species Act which halted construction of the TVA (Tennessee Valley Authority)'s Tellico dam on the Little Tennessee for two years in 1979.[50] The fish's population certainly would have been previously affected by ALCOA's nearby hydroelectric projects, though the ESA didn't yet exist to protect them.

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[48] "Miss Phi Smythe." *The Maryville Times,* December 3, 1898.

[49] Hutt, Clifford P., and Phillip W. Bettoli. "Preferences, Specialization, and Management Attitudes of Trout Anglers Fishing in Tennessee Tailwaters." *North American Journal of Fisheries Management* 27 (2007): 1257.

[50] Doyle, Martin. *The Source: How Rivers Made America and America Remade Its Rivers*. New York, NY: W.W. Norton & Company, 2019. 248.

Figure 2: A 22 pound muskellunge caught tailwater fishing below Calderwood Dam. Courtesy of the Tennessee State Library and Archives.[51]

**Embodied Energy**

In July of 1937, the energetic connections between human labor, river energy, and the manufacture of aluminum came to a head. Workers went on strike on May 18th and the plant remained shut down for 7 weeks.[52] On the night of July 6th, strikers dynamited an electrical tower between Alcoa and the Calderwood dam, causing an interruption to the plant's electricity. The next day, after striker Kenson Click was killed by Alcoa police during a riot, the union

[51] *Joe F. Manley with 22-Lb. Muskellunge Caught in Little Tennessee River, below Calderwood Dam*. Photograph. Nashville, n.d. Tennessee State Library and Archives.
[52] "$15,000,000 EXPANSION PROGRAM..." *The Times-News*. July 7, 1937.

planned a strike in the company's powerhouse.[53] This focus of labor organizers on disrupting electricity shows the energopolitical underpinnings of ALCOA's operations. Withholding of labor hadn't forced the company's hand over seven weeks, but workers understood that if the electrical current to the factory were interrupted, reduction pots would freeze up and halt the entire plant's operation. Though the dams themselves couldn't be switched off, the routes of power connecting the plant to the river could be easily severed and do just as much immediate damage. Ultimately, it was the interruption of both electricity and labor that finally forced ALCOA to recognize the workers' union and establish collective bargaining.[54]

Just four years later, the incorporation of ALOCA's hydroelectric infrastructure into the TVA demonstrated the importance of aluminum's "culture of speed and lightness" to the culture and geopolitical dominance of the United States. In 1941, ALCOA applied to build its largest dam yet, the Fontana dam. When notified by the Federal Power Commission that it would need an interstate commerce license for the project, ALCOA attempted to withdraw its permit. The FPC denied the withdrawal request and chastised the company, saying "not even the urgent demands of national defense can alter its apparent determination never willingly to submit any of its hydroelectric projects to the duly enacted requirements of Federal law." This rebuke demonstrates how essential ALCOA's aluminum production was to the United States government, that the FPC would force the company to permit a 37 million dollar power station, citing reasons of "national defense." [55]

Ultimately, the Fontana project would not be constructed by ALCOA but by the TVA, whose mission of managing the Tennessee River watershed for electricity, flood control, and

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[53] "One Dead and 20 Wounded in Strike Riot." *The Daily Independent*. July 8, 1937.
[54] Parker, Russell D. "The Black Community..." 218.
[55] "FPC DENIES APPEAL ON ALCOA LICENSE." *The New York Times*, March 9, 1941.

conservation was antedated by ALCOA's development of the Little Tennessee.[56] The TVA, which had already begun selling power to ALCOA in 1937, would lease the company's then five dams and pay for the Fontana dam.[57] This connection between the energy of the Little Tennessee River, ALCOA's aluminum manufacturing, and U.S. geopolitical power was further affirmed during WWII when Nazi saboteurs landed in the United States with the mission of destroying ALCOA's operations in Tennessee, New York, and Illinois.[58] Aluminum as packaged electricity had come to mean speed, lightness, and military might.

**Conclusion**

Today, everywhere is Alcoa, Tennessee. The company's model of hydroelectric watershed management was duplicated by the TVA which has in turn served as a model for hydroelectric development across the globe.[59] Dams are still seen as the gateway to industry and economic modernization as they were in towns like Maryville despite their tendencies overrun construction costs by up to 400%.[60] And the aluminum industry, still dominated by ALCOA, continues to take advantage of the generous electric rates and subsidies it gains from nations and communities desperate for the specious economic development of hydroelectric aluminum.[61]

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[56] McCully, Patrick. *Silenced Rivers: the Ecology and Politics of Large Dams*. London: Zed, 2001.
[57] Parker, Russell D. "Alcoa, Tennessee..." 94.; "ALCOA PROPERTY ACQUIRED BY TVA." *Wilmington Morning Star*, August 15, 1941.; "$15,000,000 EXPANSION PROGRAM..."
[58] Sheller, Mimi. *Aluminum Dreams: the Making of Light Modernity*. Cambridge, MA: The MIT Press, 2014.
[59] McCully, 245.
[60] Ibid., 238.; Gitlitz, 12.
[61] McCully, 254.

Alcoa is also everywhere because aluminum is everywhere. Just like the pathways and practices surrounding coal, oil, and electricity developed specific energy cultures, aluminum's lightness, speed, and embodied energy have developed and reinforced a faster and more energy intensive culture.[62] Though the modernization aluminum embodies has many benefits, it has not come without environmental and social costs.[63] If ALCOA is an organism as Charles W. Parry claims, it is a kind of ecosystem engineer, one that shapes both landscapes and cultures to increase its energetic nourishment. As a creature of human design, it comes as no surprise that it behaves much like we do.

[62] Jones, 2.; Sheller, Mimi. "Global Energy Cultures…" 133.
[63] Gitlitz, 8.

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