Transition Plan of Tó Nizhóni Áni regarding Navajo Generating Station

Testimony of Nicole Horseherder before the House Subcommittee on Energy and Mineral Resources

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For over 50 years, the Navajo Nation has been dangerously and overly dependent on a coal-based industrial economy. While revenues from development of coal resources account for a substantial portion of tribal budgets, coal development has had a significant, and some would say irreparable, impact on tribal health, culture, land, air and water. Further, the impacts are not limited to tribal lands, as the effects of hazardous air and greenhouse gas emissions, toxic water-borne pollution, massive depredation of aquifers used for drinking water, and contamination of soil, air and water from toxic coal combustion waste (CCW) disposal has dispersed into adjacent communities.

Now, after five decades of sacrificing our resources and way of life, we have been presented with an opportunity to forge a better future for generations of Navajo to come. The closure of Navajo Generating Station in less than two years is a once-in-a-lifetime opportunity to lay strong economic foundations that will sustain Diné communities far beyond NGS and coal. This economic future must include significant development of renewable energy resources to fill the void left by the plant's closure.

Any discussions that hint at a future for NGS beyond 2019 are not based in any credible economic reality. They are an incredibly wasteful distraction to helping the Navajo build a better future. Energy markets are speaking loudly and clearly. They are telling utilities throughout the West that coal is now a relic of the past. Burning coal is uneconomic and can no longer compete against cleaner, cheaper and far more culturally appropriate sources of power, such as the solar and wind resources that are plentiful on the Navajo Nation. The current owners, who have decades of experience running power plants, know this and have decided that losing hundreds of millions of dollars a year continuing to operate the plant is simply not sound business. Graciously, they have provided a two-year off-ramp for the Navajo Nation to lay plans for the transition to what comes next. And it does no good to derail those plans with discussions about how to keep a failing power plant open. The biggest insult in doing so is to the workers at NGS and Kayenta Coal Mine, who are being led down a dead-end path with false hope that coal is the future.

The Diné (Navajo) homelands are situated in the Four Corners region of New Mexico and Arizona. Over the past 50 years, outside interests have usurped Navajo heritage to force the development of a sprawling coal-industrial complex that at one time stretched across three states. The Navajo Mine operated by North American Coal Co. serves the 1,540-megawatt Four Corners Power Plant in northwestern New Mexico. Until its closure in 2005, the Black Mesa Mine on the Navajo Nation provided coal through a 275-mile slurry pipeline that consumed vast amounts of Navajo water to feed the Mohave Generating Station in Nevada. Black Mesa was operated by Peabody Energy, which continues to run the Kayenta Coal mine that provides fuel to NGS near Page, Arizona, the largest – and one of the most polluting – coal-burning power plants in the West.

Energy from all these facilities has helped fuel western prosperity, providing power to Southern California, Texas, New Mexico, Arizona and Nevada. Arizona in particular has been one of the biggest beneficiaries of Navajo resources, receiving both power and water deliveries through NGS.

Those days are now over. Through market forces, the energy landscape has evolved, swiftly making the continued operation of NGS – as well as the Four Corners plant – unprofitable. Keeping them open through corporate welfare and artificial bailouts will not sustain the Diné in anything but the short-term. It's sadly ironic how quickly the tide has changed. Just over a year ago, lawyers representing Salt River Project, which operates the plant on behalf of the other four owners, were in federal court fighting against having to install controls to cut down the pollution coming out of the plant's smokestacks. They said the cost of those pollution controls would be too great and could jeopardize the continued operation of the plant, which they planned to run into the 2040s. Less than two months later, they made their announcement that the economic plight of the plant was forcing them to retire the plant anyway.

There is nothing that will halt the decline in coal in the face of today's market pressures and the competitiveness of energy sources such as wind and solar. It's critically important for the Diné to accept this reality so that they can leverage our vast clean energy resources to level the playing field and get out from under the exploitative control of outside corporations, whose questionable history with tribes leaves little doubt that their true allegiance is to shareholders and not the wellbeing of Navajo communities. Unless we fully seize the opportunity before us, without getting distracted by fairy tales of a long life for NGS, we well be left inadequate plans – or even worse, no plans – for transitioning to a sustainable tribal economy. Allowing ourselves to chase empty promises of a long life for NGS leaves the Navajo Nation at the mercy of the utilities and corporations who will continue to dictate our future.

After decades of exploitation by mining and energy companies, a combination of factors make now the ideal time for the Navajo Nation to transition to a more sustainable clean-energy economy. The economics of clean energy are now more favorable than any other energy source, with or without subsidies. The replacement lease that the owners signed with the Navajo Nation last year provides a solid footing for a transition away from coal, giving the tribe access to 500 megawatts of transmission capacity, more than $150 million in direct payments, infrastructure such as a rail line and pumping stations, and support in the future for helping secure rights to Upper Colorado River Basin water. SRP is taking the right steps towards assisting its employees with career transition. If a new owner is lured into buying the plant with promises of handouts, all this will be lost.

Equally important to a prompt transition from coal to clean energy is the cumulative health impacts of polluted air, land and water that continue to be heaped on Navajo communities. According to the EPA, asthma disproportionately affects children, families with lower incomes, and minorities. While asthma was a rare diagnosis in many Indian Health Service areas before 1975 – the three units at NGS came online in 1974, 1975 and 1976 – asthma prevalence and hospitalizations increased dramatically among Native American populations during the 1980s. (IHS 2006). Between 1972-74 and 1996-98,

Navajo Area age-adjusted death rates for cancer increased from 43.7 deaths per 100,000 to 87.5 population (IHS 2006).

Health data on the Navajo Nation are severely lacking, so Tó Nizhóni Ání engaged community members across the northwest and central region of the Navajo Nation in a survey to assess the need for a more comprehensive health study focused on respiratory and heart disease, as well as cancer. In total, 141 surveys were returned by adults from 13 communities in the area of NGS (Kaibeto, Chilchinbito, Pinon, Navajo Mt. Coppermine, Lechee, Dennehotso, Kitsillie/Black Mesa, Tonalea, Tuba City, Bittersprings, CedarRidge, and Shonto). The survey was conducted from March to May, 2011 and included questions to assess the number of family members with asthma and respiratory problems, further broken down by age over 25 years and under 25 years. It also gathered information on distance to nearest hospital facilities and what treatments other than modern medicine have been used to address health problems.

Survey Results:

Community	13 communities in Northwest and Central Navajo Reservation:
Number of family members with respiratory problems	60% yes, at least one 38% none 42% with more than one family member
Under 25 years of age	50% under age of 25 years
Over 25 years of age	42% over age of 25 years
Diagnosed in last 10 years	26% of those with respiratory problems diagnosed in last 10 years
Over 50 years of age	26% of those with respiratory problems are over 50 years of age

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The retirement of NGS will help solve one of the most vexing and far-reaching problems related to the exploitation of Navajo coal: the impact on our vital water supplies. The Navajo Aquifer (or N-Aquifer) is the primary source of water for municipal users and tribal members within the 5,400-square-mile Black Mesa area. All of the Hopi and many of the Navajo who live in the region get their water, which they use for drinking, subsistence farming and for religious purposes, from the same source. The N-Aquifer is also the source of water for Peabody's industrial mining operations, which include the Kayenta Mine, which covers nearly 44,000 acres and has produced approximately 8.5 million tons of coal per year since it began operation in 1973. Kayenta uses up about 1,600 acre-feet of water annually, but at its most intense, Peabody was depleting the N-Aquifer by up to 6,000 acre-feet per year through one of the most nonsensical, wasteful ideas ever concocted for using water in an arid region like northern Arizona, which receives on average less than 10 inches of rain annually. Between 1969 and 2005, Peabody mixed coal mined from its Black Mesa Mine with water and pumped the slurry

to the Mohave coal-fired power plant, miles away in Nevada. This coal-transport process – not used at any other power plant in the United States – consumed up to 3 million gallons of water a day from the N-Aquifer – more than 1.3 billion gallons of potable water annually.

Since Peabody began using N-Aquifer water for its mining and coal slurry operations, Black Mesa water levels have decreased by more than 100 feet in some wells and discharge has fallen by more than 50 percent in a majority of monitored springs. There are reports that washes along the mesa's southern cliffs are losing outflow. There are also signs that the aquifer is being contaminated in places by low-quality water from overlying basins, which leaks down in response to the stress caused by pumping. This exploitative and ongoing groundwater pumping, which is not covered by a reclamation bond, undercuts the sustainability of one of North America's oldest cultures, and continues to have a significant impact on tribal communities throughout the region.

In 2010, a scientist at the University of Arizona completed a study investigating both Peabody's mine and the tribal communities' impact on the N-Aquifer. The study, which refutes conclusions of federal regulators, confirmed the following:

1. In 1989, the federal Office of Surface Mining (OSM) set a damage-threshold for spring discharge at a 10 percent reduction to discharge caused by the mine. As of 2009, Moenkopi Spring (60 miles southwest of the mine) had declined by more than 26 percent. OSM maintains, however, that the decline is caused by tribal pumping or recent drought conditions. The University of Arizona study, however, demonstrated that the *declining* rate of discharge from Moenkopi Spring is strongly correlated and has a statistically significant relationship with the rate of Peabody's *increasing* withdrawals. The spring has no statistically significant relationship with either local municipal withdrawals or local rates of precipitation. In 2008, OSM concluded that "there have been and will be no impacts to these springs attributable to mining" (OSM-CHIA 2008: 86). Subsequently, OSM removed the oversight of Moenkopi Spring from its regulatory list of springs monitored.
2. In 1989, OSM determined that water level decline at the community of Kayenta (20 miles north of the mine) would be caused almost entirely by Kayenta's groundwater pumping. As of 2009, the water level at Kayenta had dropped more than 106 feet; the aquifer's structural stability is currently at risk of compaction at Kayenta. The University of Arizona study demonstrated a statistically significant relationship between Kayenta's declining water level and Peabody's increasing withdrawals. Further, the research determined that there is no statistically significant relationship between this decline and Kayenta's withdrawals. In fact, the rate of Kayenta's withdrawals expresses a slightly decreasing trend since 1984 although the water level has continued to fall.
3. In 2008, OSM concluded that the mine had not adversely affected the N-Aquifer and completely removed *structural stability* from its regulatory purview. The same year, OSM implemented Peabody's $3 million groundwater model for regulatory purposes. According to the University of Arizona model report, however, "a regional scale model cannot currently be developed for the basin that will accurately predict the impacts of pumping on individual springs" (HSIGeoTrans & WEHE 1999: 5-23). Similarly, the model cannot accurately simulate groundwater

discharge to streams. Nonetheless, in 2008, OSM determined that, rather than using actual groundwater monitoring data, it will use the simulation results from Peabody's groundwater model for its annual evaluation of the mine's impact on springs and streams.

Water is scarce in the desert Southwest, and large volumes of water depleted from local watersheds serve the needs of the mines and cool the coal plants, drawing down aquifers, degrading river water quality and depleting one of the region's most valuable and scarce resources. Fallout from smokestack pollution and the vast quantities of CCW that have been dumped into mines over the past 45-50 years have degraded the quality of the remaining water supplies. Health advisories have been issued for most streams, rivers and lakes in the Four Corners region, warning the public against neurological and cardiovascular damage from consuming local fish due to mercury contamination (in part due to mercury emissions from NGS and Four Corners). The true costs associated with these environmental and public health impacts have never been internalized by the operators of the coal complex.

More insultingly, as the water is consumed in vast quantities by Peabody, subsistence use of water by Navajo communities is outrageously expensive. The following table illustrates only one example of the gap in water prices among Diné living on the Navajo Reservation and those living off the reservation. Residents of in Piñon, Arizona (central Navajo Reservation) pay at least 20 times more per gallon than do residents in Glendale (Phoenix area) or Peabody. Residents on Black Mesa pay four times more per gallon than Peabody (whose operation is located on Black Mesa) pays for the same water.

Arizona Regional Water Prices:

Location	Price	Unit	Conversion
Glendale, Az	$2.00	1000 gal.	$.002/ 1gal
Pinon, Az	$.01	1 gal.	$.01/ 1gal
Kaibeto	$.04	1 gal.	$.04/ 1gal
Tonalea	$2.00	55gal	$.01 /1gal
Peabody	$.01	4 gal.	$.0025/1gal
Flagstaff	$2.82	1000gal	$.0028/1gal

Beyond water depletions and cost, there also is very real problem of tens of millions of tons of coal combustion waste (CCW), the toxic by-product of burning at NGS, that have been disposed of in insufficiently regulated landfills and dumped back into the mines or on-site on the Navajo Nation. This CCW contains toxic pollutants such as mercury, cadmium, barium and arsenic, which cause cancer and various other serious health effects. These contaminants can leach into groundwater from the landfills and mines where they are dumped, and can migrate to drinking water sources, posing significant public health concerns.

The Navajo Nation is the size of Scotland. It is blessed with an abundance of resources that could provide the necessary foundation for a transition to renewable energy development. The Navajo Nation encompasses regions with ample wind, solar and geothermal resources, along with vast expanses of land, including large reclaimed coal-mining tracts that are ideal for locating renewable energy facilities. The region's solar potential is some of the best in the world and certain portions of reservation land have wind resource ratings capable of supporting utility-scale projects. Additionally, as a result of all the extensive interconnections between NGS and the electric grid, there is a

network of power lines whose capacity would be freed up for an expansion of renewable energy by phasing out the three coal-burning units at NGS.

Utility-scale development of either wind or solar energy resources alone has potential to offset job and revenue losses from the phase-out of the existing coal plants. An analysis by the U..S Department of Energy (DOE), for example, determined that constructing a wind energy project in Navajo County could generate up to 140 construction and operations jobs and more than $14 million in economic activity.

If the Diné are to transition into a sustainable future, they must develop clean energy economies instead continuing to advance a steadily declining coal-based economy. And that has to happen NOW. It cannot be delayed any longer. Distractions like talk of keeping the plant operating past 2019 are dishonest and unfair to both the workers who will be directly impacted by plant and mine closures and the Navajo Nation more generally. We need responsible leadership to recognize the economic realities of today's energy market – both the futility of keeping coal alive and the promise of clean energy.

Beyond the tangible economic benefits, a transition away from the unfulfilling history of coal and toward clean energy aligns more deeply with Diné fundamental laws and values. Building a new clean energy economy, one in which the viability of the Navajo Nation is core feature, not just an empty promise from afar, must be based on the following:

- Acknowledging the real value associated with land, water, air and other natural resources on Diné lands.
- Acknowledging the significant adverse environmental and health impacts of a coal-based economy and the reliance on the FCPP and NGS and related mine operations.
- Acknowledging that benefits from the sale of Diné raw resources is disproportionate to the profits from the sale of electricity.
- Creating legislation that would provide the Navajo Nation the financial, political and regulatory means to pursue real solutions in transitioning from fossil fuel electricity to clean energy.
- Developing privately-owned and tribal-owned clean energy generation resources on Diné lands, such as wind and solar.
- And subsidizing clean energy facilities rather than fossil fuel facilities;

The biggest question facing the Diné – along with the rest of the world is – what happens after all the fossil fuel is gone. We have no choice but to embrace the renewable technology available and move forward with it. The Navajo Nation must work toward a plan to transition retired coal plants and brownfields into solar and wind generation facilities. The goals of this plan are to: 1) ensure continued revenues and jobs for the Navajo Nation; 2) eliminate health impacts to the people; 3) minimize the use of Navajo water for industrial purposes; 4) ensure appropriate management and use of Navajo resources; and 5) ownership opportunities and increased returns on investments.

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