A Transition Plan for Communities Affected by the Closings of Navajo Generating Station and Kayenta Mine

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In coordination with several principles of DinéHózhó L3C (a Navajo community-based low-profit limited liability company)

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Executive Summary and Recommendations

This proposal outlines a responsible transition initiative to create economic growth, new jobs, and new revenues for the people and communities who will be hurt by the closures of the Navajo Generating Station and its coal supplier, the Peabody Energy-owned Kayenta mine.

In February 2017, the plant's current utility-company owners (Salt River Project, Arizona Public Service, Nevada Power, and Tucson Electric Power announced plans to close the plant because it is no longer competitive. While it now appears that negotiations between the owners and the Navajo Nation will result in a decision to keep the plant open until 2019, some of the parties involved have discussed the possibility of selling the plant and mine to new owners and attempting to keep it open longer.

The Institute for Energy Economics and Financial Analysis recently analyzed the plant's poor financial performance and weak financial outlook (See "**End of an Era: Navajo Generating Station Is No Longer Economic**") and concluded that a bailout of up to $2.4 billion would be required to keep the plant open through 2030. If such a bailout were to occur, ratepayers and taxpayers would pay for the losses through higher taxes and higher electricity rates.

We see a better use for public and private money: investing in a sound economic transition plan over the next three years in advance of the plant and mine closing. Well-planned transition initiatives limit job losses, public-income losses and community disruption, and can lay the groundwork for further economic development.

IEEFA proposes addressing three critically important components now: economic growth, jobs and fiscal balance. Implementation of such a plan will require the cooperation and goodwill of businesses, tribes, labor interests, and public agencies.

This plan requires redeployment of existing private and public investment dollars. It assumes prioritizing the rebuilding of the local and regional economy according to principles of community-based, diversified development that is economically and ecologically sustainable. The plan, developed in close consultation with the on-the-ground work of DinéHózhó L3c and similar community-based initiatives, is built on the premise that every laid-off employee of the plant and the mine will receive a new job with comparable wages and benefits, and that no worker need miss a day's pay. The plan assures fiscal balance for Navajo and Hopi communities and calls for enhancing existing services and employment provided by tribal governments.

While many residents may find employment elsewhere, the aim of the initiative is to create good local work opportunities in a transition that preserves families, protects local culture and grows strong businesses.

Recommendations

The plan outlined here suggests a way to close the plant and mine while simultaneously supporting the people and communities most affected by the closings.

We propose a three-fold strategy:

- A well-resourced focus on the short-term needs of existing businesses and longer-term economic growth strategies
- Immediate new jobs and income for laid off workers
- Revenue replacement for tribal governments affected

IEEFA specifically recommends a structure and approach for economic transition planning that would provide the following:

An Economic Growth Framework That Produces Investment and Jobs

The plant and mine are economic engines that must be replaced when they close. This plan offers a structure for long-term growth based on local entrepreneurial, labor and organizational assets, and cultural vitality. The plan suggests several permanent planning and development mechanisms to ensure continued participation of the community and an ongoing dialogue on priorities and investment. These community-based development structure, provided with sufficient resources, can launch the initiatives to diversify the economy into the energy, infrastructure, agriculture and tourism sectors. This plan also addresses the immediate needs of existing businesses that will lose customers and revenue from the plant and mine, and new large-scale economic growth projects in the renewable energy and infrastructure areas and beyond.

Many aspects of this plan follow the economic transition models created by the U.S. Department of Defense. Applying this model is particularly appropriate here because of the federal government's role as a part-owner of the Navajo Generating Station and of the historical relationship between the tribe, federal government, and Peabody Energy with regard to ownership and leasing of the Kayenta mine.

New Jobs for People Affected by the Plant and Mine Closings

IEEFA estimates that at least 643 employees from the plant and mine will need new jobs along with a currently unknown number of people employed by supporting businesses that will be hurt. We estimate that the current owners of the plant and mine (four utilities, Peabody Energy, and the U.S. Bureau of Reclamation) will be able to provide a substantial core of replacement jobs that require skill sets similar to those of the existing workforce at the Navajo Generating Station and Kayenta mine.

Between them, the current owners are likely to have 2,347 job openings in the next three years.

We estimate also that large employers in the region will have 26,681 new job opportunities[1] during their normal course of business over the next three years. These will include energy-related work and will come also from other parts of the economy.

Fiscal Support for Tribal Budgets

The Hopi and Navajo tribes receive a total of $51 million per year in revenue payments from the Kayenta mine. These payments will cease when the mine closes. This transition plan provides $55 million in annual replacement revenues for the Navajo Nation and Hopi Tribes, for a minimum five-year period, from targeted federal financial assistance.

Administration of the Transition Plan

We propose that implementation of the plan be overseen by an executive board, made up of members of tribal governments, local Navajo chapters, village, business and cultural leadership; Arizona business leaders, including from coal interests; federal representatives with agency, executive and legislative leadership functions; higher-education representatives; union representation and other employee leadership.

The board will hire a staff to execute its policy directives.

Cooperative leadership, solid planning, and efficient organization and execution are the cornerstones of this plan.

The alternative to this plan is to bail out the plant and the mine, at an estimated cost of $2.4 billion through 2030. This plan can be implemented in a considerably shorter amount of time and at one sixth of the cost—roughly $128 million in the first year and a total of $380 million over five years.

Fair Payment for a Job Well Done

This plan is fair payment for a job well done. Coal miners in particular have who have made many sacrifices and contributed mightily over the past several generations to an historic expansion of the U.S. economy. Coal became an important component of national security as a critical low-cost energy source the U.S. electricity and steel-making sectors. With the support of federal and state governments and utilities, the industry has helped develop markets, created jobs for workers and business for suppliers, and supplied community revenues. The coal sector was also a modest, steady, stable contributor to returns for investors.

[1] Job opportunities include those new jobs created as a function of business and economic growth and new openings from projected job turnover. See Table I.

Time and market forces have dimmed the importance of coal in the U.S. economy, particularly over the past decade. Although the energy sector and the overall economy have grown, the coal industry has shrunk. Competition, from natural gas and renewable energy, has cut into the market share of coal-fired power plants. Investment value and jobs have vanished, tax revenues have dried up, and the industry outlook is negative. Bankruptcies and layoffs have hurt many communities and created bitterness and fear.

The pain of change is real and must be acknowledged and remedied. Resources are available now to help workers find new livelihoods, to support communities by providing fiscal relief, and to build local economies anew.

Background and Current Status of the Navajo Generating Station and Kayenta Mine

The Navajo Generating Station, a coal-fired plant supplied by the Kayenta mine, provides electricity to customers in Nevada and Arizona.[2] The plant and the mine have provided jobs and revenues for the Hopi Tribe and Navajo Nation for decades. The plant has "more than 400 employees,"[3] according to its website, and Peabody Energy, which owns the mine, reported 243 mine employees as of July 2016.[4] The mine generates $51 million per year in revenues[5] for the Navajo Nation and Hopi Tribe, contributing to the Navajo Nation's annual budget[6] of $626 million[7] and the Hopi budget of $21 million.[8]

The coal-fired plant and coal mine support a local economy and a way of life based on a partnership of 40 years between the multiple plant owners; the mine owner, Peabody Energy; and the community. Wages at the plant and the mine are substantial, and many workers live relatively close to the facilities. These factors have combined to make the plant and mine mainstays of the economy, supporting employees and their families, tribal communities, and county and state governments.[9]

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2 http://www.azcentral.com/story/money/business/energy/2017/03/01/feds-seek-ideas-keep-navajo-generating-station-arizona-open/98522800/

3 https://www.ngspower.com/about/facts.aspx

4 http://www.hopi-nsn.gov/wp-content/uploads/2016/09/Hopi-Comprehensive-Economic-Development-Strategy-Final-Draft-2016.pdf, p. 51. Some reports on employee levels are significant lower, See: http://www.azcentral.com/story/money/business/energy/2017/05/16/navajo-nation-president-russell-begaye-promises-deal-troubled-navajo-generating-station-coal-plant/320774001/

5 Precise budget and payroll information in this area are not publicly available. The transition initiative will require more precise headcounts and salary information. The public process would benefit from a certified statement from the Chief Financial Officers of both tribes regarding total annual revenues received from the mine. We have relied on NREL data to summarize the payments thorough 2010 http://www.nrel.gov/docs/fy12osti/53024.pdf. Under this financial presentation, the Navajo Nation receives $37 million per year and the Hopi Tribe receives $14 million in coal revenues from the mine. Typically, the Navajo Nation budget contains a revenue line item for Coal Revenues. This includes Kayunga and other mines. http://www.navajobusiness.com/pdf/CEDS/CED_NN_Final_09_10.pdf, see also: http://www.omb.navajo-nsn.gov/Downloads/NNFunds/FY2017%20Downloads/FY2017%20Budget%20Instructions%20Manual.pdf. A more recent presentation of the Hopi Tribe budget shows $14.7 million https://www.hopi-nsn.gov/wp-content/uploads/2016/01/Vol.24-No.2-01-19-2016.pdf. Similarly some Navajo estimates have been in the range of $28 million http://www.newschannel10.com/story/35086641/tribe-could-lose-28-million-annually-if-power-plant-closed.

6 The Navajo Annual Budget documents contain a table of revenues (Revised General Fund Revenue FY 2017 Budget) with a line item for Coal Revenues. This line item provides aggregate revenues for all of the coal proceeds received by the tribe on an annual basis. Kayenta mine is one part of this calculation and its contribution is not distinguished from other revenue producing sources. http://www.omb.navajo-nsn.gov/Downloads/NNFunds/FY2017%20Downloads/FY2017%20Budget%20Instructions%20Manual.pdf. The Budget Instructions manual also contains an "FY 2017 Chart of Accounts and Level of Detail (LOD) for Budgetary Purposes", Appendix A that shows the four other sources of revenue that are counted in the Coal Revenue line item, but not the corresponding values for each source.

7 http://www.daily-times.com/story/news/local/navajo-nation/2016/09/12/navajo-nation-council-approves-fiscal-year-budget/90265472/

8 https://www.hopi-nsn.gov/wp-content/uploads/2016/01/Vol.24-No.2-01-19-2016.pdf

9 For an in-depth discussion of the role of coal in the Hopi Community, see: http://www.hopi-nsn.gov/wp-content/uploads/2016/09/Hopi-Comprehensive-Economic-Development-Strategy-Final-Draft-2016.pdf, 9-29.

Changes in Energy Markets Have Placed the Plant at Such a Severe Competitive Disadvantage That It Is No Longer Economical to Operate

The Salt River Project (SRP), which has the biggest ownership and operational stake in the Navajo Generating Station, announced on February 13, 2017, that SRP and the three other utility owners of the plant have voted to close the plant. It appears now that these owners, who collectively own 75.7 percent of the plant (the Bureau of Land Management own the remainder), will reach an agreement with the Navajo Nation and Hopi Tribe[10] to keep the plant running for a while, but only through December 2019.[11]

The decision by the utility owners—Salt River Project (42.9%), Arizona Public Service (14 %), Nevada Power (11.3%) and Tucson Electric Power (7.5%)[12]—came about as a result of market changes by which natural gas prices have driven power prices in the region well below what it costs to run the coal-fired plant. It is a rational decision. Each of the four utility owners is responsible to its customers and investors to provide electricity at the lowest possible cost.

The plant and mine have become uneconomical to operate, and this condition is not temporary. The facilities no longer generate sufficient revenue to cover operations, capital investment and sufficient profit. Current and long-term market price forecasts for power in the region indicate that the plant and the mine are no longer economically competitive and that its owners and customers are effectively subsidizing it.

The Bureau of Reclamation (which has a 24.3% ownership stake in the plant), Peabody Energy,[13] and the Hopi and Navajo nations are reportedly engaged in a process to find financing to keep the plant open in order to maintain the jobs and revenues supported by the plant and the mine.[14] Recent reports indicate it is likely that an agreement will be reached to keep the plant and mine in operation through 2019,[15] but the fate of both are uncertain after that date. This uncertainty means that valuable time and resources may be spent looking for a new owner and/or federal subsidies to achieve this objective rather than planning for the likelihood that the plant will close.[16]

IEEFA estimates — based on data provided by SRP, the other three utility owners and the Central Arizona Project[17], the plant's largest customer, — that keeping the plant open through 2030 would require subsidies of up to $2.4 billion.[18] No specific proposals either for direct coal subsidization or for other forms of external support have been floated publicly.

[10] http://www.hopi-nsn.gov/wp-content/uploads/2017/02/Tribal-leaders-call-on-Salt-River-Project-to-keep-Navajo-Generating-Station-in-operation.pdf

[11] http://www.srpnet.com/newsroom/releases/021317.aspx

[12] The federal Bureau of Reclamation also has a 24.3% interest in the plant. The Bureau is interested in keeping the mine open to preserve the employment and revenue base it provides. It is spearheading an initiative to find an alternative financing arrangement. http://www.azcentral.com/story/money/business/energy/2017/03/01/feds-seek-ideas-keep-navajo-generating-station-arizona-open/98522800/

[13] http://www.power-eng.com/articles/2017/04/peabody-energy-seeks-new-owners-for-navajo-generating-station.html

[14] http://www.azcentral.com/story/money/business/energy/2017/03/01/feds-seek-ideas-keep-navajo-generating-station-arizona-open/98522800/

[15] https://www.usnews.com/news/best-states/arizona/articles/2017-05-02/considerable-progress-cited-in-negotiations-on-coal-plant

[16] http://www.foxnews.com/us/2017/04/03/navajo-nation-wants-trump-to-subsidize-coal-sales-to-struggling-power-plant.html

[17] http://www.azcentral.com/story/money/business/energy/2017/02/16/officials-arizona-water-users-better-off-without-navajo-generating-station-coal-plant/98005410/

[18] http://ieefa.org/wp-content/uploads/2017/05/End-of-an-Era_Navajo-Generating-Station_May-2017.pdf

Lessons Learned from Economic Transitions in Defense, Tobacco, Manufacturing and Coal Industries

Lessons for the economic transition for the communities affected by the closing of the Navajo Generating Station and Kayenta mine can be drawn from other major economic dislocations that have taken place in the U.S.

The U.S. Department of Defense's experience in closing hundreds of defense facilities offers an important model for the proper treatment of employees, communities and local economies. Other examples of transition in the tobacco, manufacturing and coal sectors contain important lessons and cautions for financing, government support and employment efforts.

The pattern goes like this: Large investments prove profitable for a period and capture the public imagination. Then, competition or other changes take place and the once stable scenario of jobs, community and growth collapses. Wealth and jobs vanish, uprooting whole communities.[19] Overall, the U.S. relies upon market innovation and new investment to begin the business cycle again with job creation, growth and recovery.

Hope can be drawn from some of these transitions, including the Department of Defense's comprehensive planning efforts and support for jobs, local tax bases and economies, as well as the innovative state policies that stemmed from the tobacco transition and the decisions by utilities to transfer workers in recognition of the importance of retaining a stable, skilled, long-term workforce. Even the weak overall public policy response on the closure of coal-fired power plants produced a state initiative to provide fiscal relief to cash-strapped communities.

However, cautionary tales are also clear. The federal response to deindustrialization has not met the needs of the public. The tobacco transition received very little federal support. The coal transition has been bitter and divisive. It has produced no plan for the survival of a healthier – though smaller – coal industry and nothing for the thousands of employees who lost jobs or for communities who are losing tax revenue and have a weak economic outlook.

[19] See for example Peter Bernstein, Wedding of the Waters: The Erie Canal and the Making of a Great Nation, W.W. Norton and Company 2006. After decades of investment and toil to build a canal to move goods and people across the United States the waterway was completed. Rail transport quickly replaced the canal system. Economic growth along the Erie Canal never achieved the grand vision that built it. The process that created these less than optimal results also launched important innovations in large-scale capital construction and created the backdrop for the development of global financial markets for a young nation. See also: http://www.infomine.com/library/links/654/united.states/ghost.towns.and.historical.mining.towns.aspx

The Department of Defense Model: Comprehensive Recovery Planning and Resources When Military Installations Close

The Department of Defense has closed hundreds of military installations in the U.S. over the years[20] in response to budget cutbacks and changes in spending priorities.

The government has developed a process for the orderly phasing out of such installations, taking into account employment, fiscal and local business impacts. The federal government has devoted considerable resources to such planning,[21] both to protect national security and to assist the communities, employees and families where the installations were located.[22]

The Department of Defense has conducted extensive analysis of the employment impacts of military-installation closings,[23] the fiscal impacts on local governments, and the effects on economic activities. The department transition programs have aimed to protect local businesses, promote plant reuse and generate new economic activity in the wake of closures.[24]

The department also conducts environmental-remediation studies and funds plans for site cleanup that facilitates reuse.[25]

And it spends considerable resources to relocate civilian and uniformed staff.

The program stresses:

- Adequate notice to employees and local businesses;
- cooperation between public agencies, companies and community leaders;
- reemployment resources to help employees assess their options;
- job placement and retraining;
- severance payments and other financial support for families in transition.[26]

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[20] http://www.brac.gov/docs/final/Chap3PrevExpwithBRAC.pdf and http://www.brac.gov/docs/final/AppendixF.pdf

[21] http://www.brac.gov/finalreport.html

[22] Defense Department policy including that related to plant openings and closures has also received ongoing attention from private organizations. See: https://www.bens.org/

[23] http://www.brac.gov/docs/final/AppendixO.pdf

[24] This 2004 report, one of several that are publicly available highlights numerous examples of economic investment in communities after the plant has closed. http://www.acq.osd.mil/brac/Downloads/March%202004%20CR%20-%202912/04_0_body032403.pdf, See Chapter Economic Considerations, p. 55.

[25] http://www.brac.gov/docs/final/AppendixP.pdf

[26] https://books.google.com/books?id=16KPruqDj6UC&pg=PA49&lpg=PA49&dq=defense+plant+closures+federal+response&source=bl&ots=DYnlRughXN&sig=BTr04iWKnw8CRyosOzamjlOaoFQ&hl=en&sa=X&ved=0ahUKEwjw65L547jTAhUDTSYKHT8NClo4ChDoAQgwMAI#v=onepage&q=defense%20plant%20closures%20federal%20response&f=false. This Office of Technology Assessment study provides numerous illustrations of the concepts used in this report. Chapter 3 on the process for finding new jobs for displaced defense and civilian workers is of special relevance.

Response to Tobacco Industry Decline Relied on State Initiatives Funded Through Litigation

The tobacco industry began to decline in the U.S. in the 1990's as result of the disclosure of health hazards caused by smoking, contentious litigation and the threat of regulation. The decision by tobacco producers to move overseas to avoid this environment had important implications for many states in the South.[27] The federal government's response to the tobacco industry's flight was far less comprehensive than its response to the closure of Defense Department facilities.

Most re-investment work occurred at the state level. State governments financed their transition activities from the proceeds of a Master Settlement Agreement[28] between state government litigants and the tobacco industry,[29] which provided $138 billion distributed to every state in the nation.[30] Tobacco-producing communities that lost jobs and revenue by tobacco's exit faced many of the same challenges as those communities now faced with the coal industry exit. Many states like Virginia,[31] North Carolina[32] and Kentucky[33] integrated the resources from tobacco settlements as part of overall economic development strategies.

Manufacturing Decline Led to Federal Advance Warning Legislation, But Weak Overall Policy Changes

The number of manufacturing jobs in the United States has been on a steady, downward trajectory since the late 1970's.[34] In the debate about what to do about restoring manufacturing jobs, liberal[35] and conservative[36] analysts have both focused on globalization as a common culprit. (Others, like the International Monetary Fund, have found in deindustrialization the strength of the global economy.)[37] An array of federal policy proposals has failed to meet the needs of communities hit with job losses, revenue declines and population loss. The "solutions" span a wide gamut from support for more free trade, to less free trade; from greater restrictions on immigration to open borders; from strong support for organized labor to the end of labor unions. The result: America has not adopted a policy for a resurgence of the manufacturing industry.

Washington has been unable to find consensus on a strategy that meets with broad public approval. The only issue addressed by Congress has been the need to provide advance

[27] The general pressure on the tobacco industry took the form of actions to increase federal health regulations, investor actions to divest or place pressure on companies with shareholder resolutions (against marketing to young people and expecting mothers) and general increases in public campaigns to decrease the demand for tobacco products. At the same time, this was occurring the tobacco industry was taking steps to stabilize its revenue losses by pursuing new markets in Asia.[27] Over several decades, the industry's reinvention strategy has been largely successful.[27]

[28] https://www.tobaccofreekids.org/research/factsheets/pdf/0365.pdf

[29] http://www.publichealthlawcenter.org/sites/default/files/resources/tclc-fs-msa-overview-2015.pdf

[30] https://www.tobaccofreekids.org/research/factsheets/pdf/0365.pdf

[31] http://www.tic.virginia.gov/

[32] http://rafiusa.org/grants/

[33] http://agpolicy.ky.gov/SiteCollectionDocuments/kadf-study_2007-2014_executive-summary.pdf

[34] https://www.creditwritedowns.com/2012/05/chart-of-the-day-us-manufacturing-unemployment-1960-2012.html

[35] http://www.d.umn.edu/~epeters5/Cst1201/Articles/Deindustrialization%20of%20America.pdf

[36] http://buchanan.org/blog/manufacturings-dismal-decade-4612

[37] https://www.imf.org/EXTERNAL/PUBS/FT/ISSUES10/INDEX.HTM

warning of plant closings, as implemented with the passage of the Worker Adjustment and Retraining Notification Act (WARN)[38] in 1988.

In the absence of federal policy, it has been incumbent upon state governments to develop policies to attract new manufacturing businesses.[39] The result is that individual states compete with each other to entice companies to move to their states, often by seeing which state can offer the most substantial subsidies. The overall lack of policies that allow for national growth has become a highly divisive issue in Washington.[40]

Federal Response to the Downturn of the Coal Sector Has Been Limited and Contentious; New York State Has Developed A Plan to Protect Local Tax Bases When Coal Plants Close

IEEFA believes that the collapse and long-term structural decline of the coal industry requires concerted attention and resources from the U.S. government. The contribution of the industry to the economy of the United States has been significant, and the federal government has played a heavy role in developing and promoting the industry over time, particularly as owner of 40 percent of the coal reserves in the country.

Coal stock prices have declined precipitously since 2014, following a series of industry setbacks. These included the failure of a plan to build 150 new coal plants in the mid-2000s; the collapse of natural gas prices in 2008, which drove down the price of electricity and placed competitive pressure on the coal industry; and the declining prices of wind and solar energy, which are now taking market share in some parts of the country. Since 2010, utilities in the U.S. have retired or announced definite retirement dates for over 250 coal-fired power plants.

As financial conditions deteriorated, most distressed coal companies and utilities sold discounted assets, took value impairments and/or declared bankruptcy. In total, sixty U.S. coal companies, including 3 of the 4 largest in the country (Peabody Energy, Alpha Natural Resources, and Arch Coal), filed for bankruptcy from 2014 through 2016. Layoffs and reductions in local tax payments became common.

As early as 2012, some national leaders, like West Virginia Senator Jay Rockefeller, were urging coal industry executives to "face reality" and chart a course to pave the way for a better, if less grand, future for coal.[41] The industry did not respond to these pleas for a new public-private partnership. Even as additional political leaders proffered legislative and other programs to help communities hit by closing mines and plants,[42] the coal industry was not interested.

Even now, Industry leaders, while acknowledging that the future will include less coal sales and fewer profitable coal companies, have remained largely opposed to supporting coal

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[38] http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1326&context=key_workplace
[39] https://www.minneapolisfed.org/research/economic-policy-papers/competition-and-the-decline-of-the-rust-belt
[40] http://www.npr.org/2016/08/18/490192497/bringing-back-manufacturing-jobs-would-be-harder-than-it-sounds
[41] Senator Rockefeller: Some U.S. coal operators cannot face reality, SNL, June 20, 2012.
[42] Christopher Coats, *Obama sets aside $14.5 million for battered coal communities*, industry conflicted, SNL, October 15, 2015.

miners and coal communities in an economic transition.[43] Many utilities that remain committed to coal are simply looking to state public service commissions for bailouts in the form of higher electricity prices for uneconomic plants.[44] Some utilities[45] have chosen to manage layoffs caused by the closure of coal-fired power plants by transferring employees to jobs within their own companies, though little overall data is available.

In the meantime, the State of New York has come up with an interesting policy response to coal plant closures. The legislature created an Electric Generation Facility Cessation Mitigation Fund in 2016 to help communities protect their tax bases when power plants close. The legislature expanded the fund 2017 to $42 million, up from the original amount of $30 million. [46]

Community organizers in Tonawanda,[47] where the closure of the NRG Huntley coal-fired power plant was the latest effect of the forces of deindustrialization, were the catalyst for this legislation. Environmental and community organizations, labor unions, and local officials worked together to urge state legislators to provide fiscal relief to cash strapped towns and school districts to maintain services and education.[48] The remainder of the transition initiative in Tonawanda is a work in progress, but the bonds formed thus far place the community in a better position to meet the ongoing challenges.

A Transition Plan to Support Growth, Provide Jobs, and Replace Revenues Lost by the Closing of the Navajo Generating Station and Kayenta Mine

The intent of the plan outlined here is to support economic development, secure new jobs for individuals who will be laid off, and replace the public revenues that will be lost to the Navajo and Hopi tribal governments and communities due to the closure of the Navajo Generating Station and Kayenta mine.

This paper is meant to begin a foundational approach to transition planning driven by local decision-making and implementation.

An effective plan of action will focus on three elements:

- New economic growth strategies and protection of existing businesses

[43] http://www.kentucky.com/news/state/article147838864.html
[44] http://ieefa.org/firstenergy-hatches-new-bailout-strategy-ohio/
[45] http://www.powermag.com/supporting-coal-power-plant-workers-plant-closures/?pagenum=2
[46]https://www.wnypapers.com/news/article/current/2017/04/05/128059/schimminger-jacobs-announce-boost-to-huntley-mitigation-aid
[47] http://ieefa.org/category/subject/huntley-generating-station/
[48] http://buffalonews.com/2017/04/06/state-budget-includes-additional-funds-communities-hit-hard-huntley-closure/

- New job opportunities
- New revenues for tribal budgets to replace those lost from the mine and plant

Additional crucial elements will include buy-in, commitment, and patience from tribal and village leadership; representatives of community cultural and educational organizations; labor unions and locally based technical assistance providers; companies that include Peabody Energy, owner of the mine; the current owners of the plant, including Salt River Project, Arizona Public Service, Nevada Power, and Tucson Electric Power; tribal businesses; public agencies (federal, tribal, state, county, and education). All of these players can work together to build a stable and efficient team that can generate the resources needed to meet the challenge.

Economic Growth Opportunities Can Be Rooted in Local Initiatives, Business Planning, and Development of Solar Energy and Infrastructure Planning

Coal extraction and burning have been major drivers of the local and regional economy for decades. Coal-based activity has paid wages, bought goods and services in to the region, and contributed to the tax base. These activities also came with environmental and public health costs. A sensible transition plan will be informed by all of the above.

Residents want to be deeply engaged in the economic transition.

A handwritten placard outlining priorities posted outside a recent Interior Department "listening session" in Window Rock states some core principles in the transition at hand.

- Save a path to clean energy
- Take care of families and workers
- Clean up pollution
- Protect sacred water
- Secure transmission line rights
- Health compensation
- We want involvement

The transition plan outlined in this paper, informed by ongoing dialogue, can help assure progress toward these objectives.

Over the years, both the Hopi and Navajo[49] tribes have been engaged in assessing longer-term economic growth priorities through public discussions and formal planning. These processes have produced studies that identify social and economic needs, assess the

[49] http://www.navajobusiness.com/pdf/CEDS/CED_NN_Final_09_10.pdf

business and economic climate, analyze public and private investment commitments, and suggest short- and long-term strategies that support tribal priorities.

All of these studies assumed, however, that current economic structures would remain largely in place over time, that is, that the Navajo Generating Station and the Kayenta mine would continue to operate. The closing of the plant and mine changes the picture now, and this change creates the need for a new direction in economic growth strategy—one tailored to greater diversification of businesses (small and large), new, permanent structures of community involvement and local control over economic growth initiatives, and development of local assets (labor and culture).

Community-Based Development Strategies Are Essential

The loss of the plant and mine have become a rallying point for a new kind of economic growth, and a range of community planning and economic growth concepts are emerging. These initiatives can guide investment activity, and the creation and maintenance of community planning initiatives are critical to new business activity.

The broad economic development priorities are energy, water, infrastructure, tourism and agriculture. Substantial opportunities exist in all of these areas, which collectively work as a foundation on which transition can occur.

People in the region benefit already from numerous community-based planning initiatives.[50] These programs support aspirations around environmental and economic sustainability.[51] The planning processes associated with these programs enable communities to make economic assessments of local businesses and establish priorities. The menu of priorities then becomes the basis for the creation of investable business plans and ongoing community-controlled sustainable economic development.

A network of community-based planning mechanisms serves also to ensure that the benefits of economic activity—jobs, business development and public revenue— remain substantially in the community.

More support for these initiatives is needed, however, local organizations would benefit especially from small grants to encourage the planning and creation of specific business platforms.[52]

Small Business Start-ups Are Essential

Small business start-ups are a way to harness existing talent in the local economy. Transition can be especially effective if it is driven by family and community-based enterprises with sound business-strategy plans.

[50] See for example: DineHozho, *The Cameron Economic Strategic Implementation Process,* March 6, 2017.
[51] http://www.dinehozhol3c.com/
[52] The budget includes $10 million for these planning grants. The distribution of the funds, like all other decision-making assumed in this report, are to be carried out with maximum community involvement transparency.

A small group of staff working within a local economic-transition organization can support the growth of entrepreneurs who produce and market locally based goods and services. Micro-lending is the financing tool that is most useful for such businesses.

This small business development resource is particularly useful for those people who live on the reservations and aspire to the protection of the Hopi and Navajo tribal traditions. Locally owned and operated businesses produce wealth and jobs that support community development through entrepreneurial initiatives.

This work will focus on business development strategies, financing options and network building. This aspect of the initiative will create a mechanism to make micro-loans to eligible, project-ready businesses.

Support From 'Impact Investors' Is Essential

The plant and the mine dominate the local economy today, and their loss will create the need for a broader, more diversified economy. Small-scale, diversified, ecologically sustainable investments under the control of local communities will create the best results.

Community economic planning initiatives have already identified the need for new businesses and initiatives in tourism, retail, meat processing,[53] infrastructure and public safety.

Each of these areas are strong candidates for "impact investors"[54] who bring not only financial resources but also the kind of technical expertise necessary to design and structure profitable business ventures that are consistent with community standards.

Recovery of Local Businesses Currently Supported by Plant and Mine Spending Is Essential

The most effective transition strategy will address the impact on small- and medium-size businesses that currently provide goods and services to the mine, the plant, and their employees. The question is how these businesses find new customers.

A government cash infusion for these businesses can be a bridge to the future. The transition initiative can address both short- and long-term needs of existing businesses.

Because the local economy is coal-dependent and isolated, it faces special diversification challenges. But diversification is possible. An effective transition plan will include outreach to businesses that currently work with the plant and the mine, with the purpose of assessing the revenue loss to the businesses in the short term and devising a five-year plan to ameliorate the losses in the longer term. A cash-infusion initiative will allow for businesses to survive until a full transition is in progress.

This type of one-to-one business planning is consistent with programs widely used by the U.S. Small Business Administration. Among the many business environments the SBA works in are

[53] http://www.dinehozhol3c.com/2016/09/30/tolani-lake-enterprises-awarded-a-usda-rural-business-development-grant-to-conduct-feasibility-study-of-hozho-meats-harvest-facility-in-the-eastern-portion-of-coconino-county/

[54] Impact investors provide capital to business ventures that earn a rate of return and support social and environmental objectives. They offer a mix of market and below market capital. As of 2017 some 208 funds with over $100 billion in assets are active in this market. https://thegiin.org/impact-investing/

ones where military installations have closed[55] and where the main challenge is to find the right combination of replacement-cash resources and new business ideas for every business affected.

This approach, combined with traditional economic development resources, can open new pathways to business after the closure of the plant and mine.

Many economic development programs also traditionally use tax credits and land-acquisition incentives to expand or create business. Such mechanisms will be essential in the economic transition in communities affected by the closures of the Navajo Generating Station and the Kayenta mine.

These tools take time to work, however. They succeed as the local economy adjusts and absorbs change.

Longer-Term Economic Growth Strategies Around Solar Energy and Infrastructure Development Are Essential

Solar power generation can replace some of the lost generation capacity, jobs and revenue caused by the closure of the Navajo Generating Station.[56]

Navajo Country is an ideal location for new solar capacity. Land with ideal topography and access to transmission lines is available.[57] The Navajo Nation has more developable solar energy than any tribe and estimates for wind capacity are substantial.[58] The State of Arizona Corporation Commission encourages new renewable energy projects under its renewable standards regulations.

The price for new-build solar construction is declining and expected to remain cheaper than coal-fired generation.[59] Solar energy can provide a competitively priced source of electricity that does not require costly annual subsidies from ratepayers and taxpayers.[60]

Nationwide, the number of jobs in the solar sector has been increasing at a faster rate than jobs in the fossil-fuel component of the energy sector.[61] A recent study shows that the solar industry has created 28,000 jobs in Texas alone.[62]

A coordinated initiative to expand solar development on tribal lands simultaneously with the phase-out of the Navajo Generating Station plant and the Kayenta mine would create employment in both construction and ongoing electricity-generation operations.

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55 https://www.sba.gov/sites/default/files/files/FINAL%20PA_2013%20OGC_cleared%20.pdf

56 https://renewablesnow.com/news/tribal-utility-to-break-ground-on-27-5-mw-solar-project-in-arizona-in-apr-518776/

57 Initiatives are being made to combine coal mine phase-outs and solar energy development, see: Joshua Learn, *Coal company, renewables firm partner to install solar panels at reclaimed mine*, SNL, April 18, 2017

58 Martin J. Pasqualetti, Thomas E. Jones, Len Necefer, Christopher A. Scott & Benedict J. Colombi., “A Paradox of Plenty: Renewable Energy on Navajo Nation Lands”, Society and Natural Resources: An International Journal, Volume 29, 2016 – Issue 8.

59 http://newscenter.lbl.gov/2016/08/24/median-installed-price-solar-united-states-fell-5-12-2015/

60 http://ieefa.org/ieefa-update-tax-credits-without-prices-u-s-wind-solar-downward-slope/

61 http://fortune.com/2017/02/07/us-solar-jobs-2016/

62 http://gov.texas.gov/files/ecodev/Renewable_Energy.pdf

Solar energy development, whether at micro-grid scale or utility scale, provides long-term benefits for local economies.

Local planning and joint-venture capacity building for solar can offer a way for community residents to participate now in the new global energy economy—and to create income and wealth from it. Local planning initiatives combined with state energy-planning apparatus can hasten the development of this potential. Such initiatives can support business ventures that bring in outside investment while allowing for maximum benefits in jobs and revenues to accrue to local people.

Federal Spending on Infrastructure Improvements Can Create Jobs, Generate Revenues, and Support Long-Term Economic Stability for the Hopi and Navajo Nations

Current economic development plans of the Hopi and Navajo nations emphasize infrastructure investment.

Investment is badly needed in water supply and treatment, road construction and maintenance, energy development, solid waste treatment, telecommunications and broadband infrastructure. According to statistics published by the Navajo Nation,[63] 32 percent of homes on the reservation lack electricity, 38 percent lack water services, 31 percent lack plumbing, 86 percent lack natural gas, and 60 percent lack telephone services.

In Western Navajo, water infrastructure is paramount due to depletion of water resources due to 40 years of pumping of water from the Navajo aquifer to slurry coal to the Mohave Generating Station in Laughlin Nevada. This plant closed in 2006 but left an impacted aquifer whose recharge is challenged by 1) increased temperatures and decreased rainfall now prevalent in the region; and 2) growing Navajo and Hopi communities working to diversity their economies.

The Trump administration has pledged to spend at least $1 trillion on infrastructure support projects over 10 years.[64] Few details of the plan are known, and funding sources, the scope of projects and allocations have not been determined. Support for traditional rail, water and highway projects is under discussion, as well as for more innovative projects like broadband access and new energy alternatives.

Arizona constitutes 2.1% of the U.S. population. Federal infrastructure investment allocations based on population size would have Arizona receive $21.4 billion over 10 years. IEEFA recommends that at least $200 million to $300 million of that allocation be committed annually to counties most affected by the closing of Navajo Generating Station and Kayenta mine.

Table I: Economic Growth Initiatives Funding

Use of Funds	First Year	Total (billions)	Payment Duration	Source
Economic Growth Fund	$200-$300	$1.0 - $1.5	5 Annual Allocations	Federal Infrastructure Fund

63 http://navajobusiness.com/fastFacts/demographics.htm
64 http://www.reuters.com/article/us-usa-trump-infrastructure-idUSKBN17035D

New infrastructure investment is a long-term way to support economic growth. Success relies on serving local interests and attracting outside investment. Local and regional planning groups can influence how federal infrastructure investments are managed. For example, the existing rail system between the Kayenta mine and the Navajo Generating Station offers various infrastructure opportunities for conversion to new uses.[65]

Transition Plan Must Include Adequate Resources for Environmental Cleanup and Restoration

The transition effort must also include a comprehensive, inclusive environmental cleanup from damage to water, land and habitat caused by mining and coal plant activities over many years.

The cleanup process, like the rest of the transition effort, will be successful if it includes community leaders and residents who have lived with the environmental consequences of the plant and mine. Such a process should include resources for community planning councils to hire their own independent experts to document the environmental damages and to participate fully in the creation and selection of cleanup options. This approach has been used successfully many times in the U.S. to ensure that cleanups meet the community's needs and to meet the highest environmental standards for cleanup and restoration of the land and water.

The actual cleanup would be spearheaded by the Environmental Protection Agency (EPA) and Department of Interior (DOI) in consultation with State, tribal and community leaders. The polluters should be held strictly liable for the damages and should not have the right to contest the amount of the claims. The lead federal agencies should be charged with the responsibility to design, implement and finance the cleanup, and should be empowered to pursue legal and financial claims against polluters.

New Jobs Can Be Secured for People Currently Employed at the Plant and Mine

A major challenge, of course, is how to secure replacement jobs. This challenge is compounded by the fact that the jobs at the mine and plant pay well.

However, plant and mine workers comprise a skilled workforce.

Another objective of the job placement initiative relates to the location of new employment. To the maximum degree possible, the transition initiative should avail itself of local employment opportunities. This minimizes costs and disruption and helps protect the cultural integrity of the reservations.

The larger dynamic for families and the community relates to the loss of a talented group of workers and community participants. The aim is say to the people who possess the talent to

[65] The reuse of existing assets that were part of the old economy is one of the most profitable aspects of transition investment. The new use of an old facility also provides a significant boost to local community and business interests as symbolic evidence of new economic growth. http://www.gao.gov/assets/600/592076.pdf, See Enclosure I, p. 19.

leave and compete elsewhere that the Navajo community remains a place where they can secure good jobs, raise families, protect tradition and build community.

IEEFA estimates that 400 people work at the Navajo Generating Station and that 243 people work at the Kayenta mine.[66] Well over 600 people, then, will require new jobs.

An IEEFA survey of the current owners of the plant (Salt River Project, Arizona Public, Nevada Power, Tucson Electric Power, Bureau of Reclamation), Peabody Energy, large local employers and large statewide employers suggests that new jobs can be found.

Our analysis where possible estimates potential job growth and job turnover at the companies and government agencies in question. We paid particular attention to companies that currently employ people with skill sets similar to those of the current workforce at the plant and mine. We also recognize that many opportunities exist for people to start out in new careers in the county and state, and that Arizona's economic trajectories strongly suggest that jobs outside of the coal and energy sectors are growing.

Table 2: Estimated Cumulative Job Opportunities from Selected Arizona Employers 2017-2019[67]

Sector	Job Opportunities
Current Owners of NGS	2,139
Peabody Energy	208
Employers in the county	3,281
Employers in the state	23,400
Total	29,028

[66] The Navajo Generating Station website and the aforementioned economic development study for the Hopi Tribe are the source for these estimates. Both of these figures require a more formal update using actual payroll records from the facilities that disclose job titles and salaries and benefits. Other job estimates have been higher on the mine. One mine estimate based on Peabody reports places the roster at the mine at 384 employees for 2016, down from 403 in 2015. SNL Database/Peabody Energy/Kayenta Mine/Mine Profile/Average Number of Employees. The most recent Hopi economic development report reflects a July 2016 interview with Peabody Energy at the mine and identifies recent layoffs. The Transition team will establish employee eligibility guidelines for service.

[67] IEEFA recognizes that there may be some overlap in various job estimates for the sectors identified. We note that the lists of state and county employers contain no overlap; the Peabody estimates exclude the Kayenta mine. We do not believe the level of overlap significant alters the fundamental point that there is a relatively robust labor market in both the energy sector and broader Arizona economy.

Current Plant Owner Employment Baseline, Growth and Turnover[68]

In 2016, the four utility owners of the plant had 14,382 employees. The U.S. Bureau of Reclamation, which owns roughly a quarter-share of the plan, had 5,344 employees in the western U.S. alone.

Employment trends at the four utilities (See Table II) suggest that over the next three years these utilities generate 1,706 new jobs (325 jobs from growth and 1,381 from normal attrition and turnover). The Bureau of Reclamation's likely new job openings bring the total to 2,139.

All five owners own substantial transmission capacity, and collectively own 37,558 MW of power generation.[69]

The Bureau of Reclamation is an economic force unto itself in the western U.S. It employs 5,344 people and operates 53 hydropower plants that provide 40 billion kwh of electricity generation. The bureau has an annual budget of $1 billion, and its overall economic contribution to the region amounts to $45.53 billion in activity that supports 344,000 domestic jobs.[70]

The four utilities and the Bureau of Reclamation can collectively absorb a significant percentage of laid-off workers seeking new employment. A survey of the websites of the four utilities during the week of April 29, 2017, found 82 job-recruitment notices.

Table 3: Estimated Job Opportunities at the Five Current Owners of the Navajo Generating Station

Company	2012	2016	Annual Growth	2017-19 New Jobs	2017-19 Turnover	Total Jobs
Salt River Project	4,390	5,230	168	504	502	1,006
Arizona Public Service	6,534	6,244	-58	-174	599	425
Nevada Power	1,524	1,400	-24.8	-74	134	60
Tucson Power	1,392	1,508	23.2	70	145	214
Total Utility	13,840	14,382	108.4	325	1381	1,706
Bureau of Reclamation	NA	5,344		0	433	433
Total All Jobs		19,726		325	1814	2,139

[68] For turnover figures we have relied upon the Bureau of Labor Statistics monthly job openings, hires, separations layoffs https://www.bls.gov/news.release/pdf/jolts.pdf. For the Western part of the country, the number of new job openings as a percent of total employment was 3.6%. Federal government employment turnover is In the Transport and Utilities sector the number was 3.2%. Federal government turnover is 2.7%. Some private services estimate the turnover rate in Arizona at 19.6%, ranking 11th in the nation. https://cdn2.hubspot.net/hubfs/690463/Compdata-Surveys-Consulting-2016-Turnover-by-State-Report-BenchmarkPro.pdf?utm_campaign=Sales%20Support%20-%20Ongoing&utm_source=hs_automation&utm_medium=email&utm_content=33382165&_hsenc=p2ANqtz--sIZIBwO99LJUKEaqc1AZjZmZwcDUCbIGGOoymBkTCV6OzI-O_762gBn8hSd-Idu19flMqp84z4o1s344HgE5ENMifCA&_hsmi=33382165. As with the headcount information provided thus are public only the individual companies can verify

[69] Appendix I: Summary of Power Generation Assets of Five Owners of Navajo Generating Plant

[70] https://www.usbr.gov/main/about/fact.html. See also: https://www.doi.gov/sites/doi.gov/files/uploads/fy2015_doi_econ_report_2016-06-20.pdf , P. 23. The DOI study relies upon the widely used IMPLAN model to derive its indirect job and economic impact analysis.

Peabody Energy Can Offer Replacement Employment

Peabody Energy can play a unique and constructive role as a resource for Kayenta mine employees. Peabody Energy has recently emerged from Chapter 11 bankruptcy and is anticipating an improved cash position as the cornerstone of its financial reorganization.

Peabody Energy CEO Glenn Kellow said in April 2017 that the company is "recruiting" across its entire U.S. coal-mining operations,[71] but did not disclose the number of likely new hires. IEEFA estimates (see Table III) that the company employs approximately 4,000 workers at 17 mines in the U.S. Fully half of the jobs (excluding Kayenta) are at the company's operations in Colorado, New Mexico and Wyoming.

The most recent federal Bureau of Labor Statistics estimates have job turnover in the mining and logging industries at 2.6%.[72] Over a three-year period that level of turnover would create approximately 208 job opportunities at Peabody facilities.

Peabody, in other words, is in a position to rehire laid-off Kayenta mine workers.

Table 4: Employment at Peabody Energy Mines[73]

Mine	Region	2016 Employee
Bear Run	ILB	559
Caballo*	PRB	156
Cardinal Mine	ILB	7
El Segundo*	West NM	248
Foidel Creek*	Uinta	339
Francisco Underground	ILB	295
Gateway Mine	ILB	4
Gateway Mine North	ILB	150
Kayenta Mine	West AZ	384
North Antelope*	PRB	1,186
Rawhide*	PRB	93
Somerville	ILB	4
Somerville Central Mine	ILB	184
West 61	ILB	15
Wildcat Cottage Grove	ILB	35
Wildcat Hills Mine	ILB	220
Wild Boar	ILB	160
Total		4,039
***PRB/West (excluding Kayenta)**		2,022

71 https://www.bloomberg.com/news/articles/2017-04-05/even-under-trump-a-u-s-coal-giant-plots-cautious-comeback-plan, at 1:02 min./sec. of interview.
72 https://www.bls.gov/news.release/pdf/jolts.pdf
73 SNL Proprietary Data Base/Peabody Energy/Mines/Operating Profile

With an employment base nationwide of 70,000 and a turnover rate of 2.6%, the coal industry as a whole has the annual potential for about 1,820 new job opportunities. Arch Coal recently announced that it was having difficulty finding qualified workers.[74] Several coal producers -- including Ramaco Resources, Southern Coal Corporation, Arch Coal and Alliance Resources -- have announced that they are now hiring new workers.[75] New Powder River Basin mine jobs have increased slightly since late 2016.

That said, the number of coal jobs nationally has been declining for decades, and a major resurgence in employment is unlikely even as the industry mounts a comeback. Some coal producers are announcing layoffs.[76]

Peabody Energy could make a major contribution to the economic transition of the region affected by the closing of the Navajo Generating Station by assisting with the placement of its Kayenta workers at other Peabody mines and in the coal industry generally. Further, reclamation activities at the mine can be done by current Kayenta employees.[77]

Local and Regional Employment Opportunities

Arizona's economy has been expanding for the past five years at roughly the same rate or slightly faster than the overall U.S. economy.[78] The State of Arizona's economic forecast for the next five years projects continued growth in population, employment and income.[79] Overall U.S. economic growth projections are similar. Uncertainties at the federal level regarding immigration policy, trade, and currency regulation temper this outlook, however.[80]

A list of major employers published by the State of Arizona (Table V) shows these employers currently employing 196,000 people. These employers have reported moderate growth in employment over the past 10 years. IEEFA assumes conservatively that these employers' collective job production will be approximately the same over the next three years as it has been over the past five years, consistent with the state's overall economic outlook. IEEFA sees 23,400 job opportunities opening up statewide at these employers over the next three years.

Many of these employers are not involved in the energy industry. Where opportunities may exist at these employers, resources for retraining individuals currently working at the Navajo Generating Station and the Kayenta mine will be required.

[74] Taylor Kuykendall, *Coal jobs in demand as optimism spreads, but Trump impact unclear*, SNL April 3, 2017

[75] Taylor Kuykendall, *Coal jobs in demand as optimism spreads, but Trump impact unclear*, SNL April 3, 2017

[76] Jeffry McDonald, *Murray subsidiary to lay off 255 employees at New Future coal mine in Illinois,* Platts Coal Trader, April 28, 2017.

[77] Reclamation initiatives routinely employ mineworkers. http://powersource.post-gazette.com/powersource/policy-powersource/2016/08/05/Reclamation-projects-could-provide-jobs-for-former-coal-miners/stories/201608050129. As a policy matter: mine reclamation activity is "New economic development that would include things such as new jobs at businesses that support reclamation to workforce that provide project materials and assorted income and taxes." https://teeic.indianaffairs.gov/er/coal/impact/decom/index.htm. For a brief background of how mine reclamation activities functions, see: https://teeic.indianaffairs.gov/er/coal/impact/decom/index.htm https://www.wyomingmining.org/minerals/coal/coal-safety-reclamation/

[78] https://ebr.eller.arizona.edu/news-article/arizonas-economy-catches-winter-chill

[79] https://www.azeconomy.org/data/forecast-data/; see also: http://www.azcentral.com/story/money/business/economy/2016/12/05/economists-2017-outlook-good-arizona-and-us/95017788/

[80] https://ebr.eller.arizona.edu/economic-forecasts/forecast-data

Table 5: Large AZ Employers[81]

Company/Organization	2005	2014	Annual Loss/Gain	3 Year Job Gain/Loss	3 Year Turnover	Total
State of Arizona	49,958	48,910	-104.8	-314	4,069	3,755
Walmart Stores Inc.	28,246	32,438	419.2	1258	3,215	4,473
Banner Health	19,250	30,266	1,101.60	3305	2,999	6,304
City of Phoenix	13,844	14,875	103.1	309	1,238	1,547
Wells Fargo	11,533	14,126	259.3	778	1,400	2,178
Maricopa County	13,002	13,341	33.9	102	1,110	1,212
Intel Corp.	-	11,700	-	-	1,160	1,160
Scottsdale Lincoln Health Network	-	10,500	-	-	1,041	1,041
Honeywell	10,700	10,000	-70	-210	991	781
JP Morgan Chase and Company	-	9,600	-	-	951	951
U.S. Postal Service	11,000	-	-	-	-	
Raytheon	10,300	-	-	-	-	
Total	167,833	195,756	1,742.30	5227	18,174	23,401

Official unemployment rates for Navajo and Apache counties,[82] at 7.4% and 10.7%[83] in March 2017 respectively, are higher than Arizona and the U.S. (at 5.0% and 4.5% respectively). Alternative unemployment analyses[84] offered by the United States Bureau of Indian Affairs placed unemployment in 2010 in these counties at twice the official levels.[85] When population, employment and income grow in the state overall, Navajo County typically grows too, but at a lower rate. The average salary in the state in the fourth quarter of 2015 (the last data available) was $51,615,[86] as compared to $40,400[87] in Navajo County.

A report published by Navajo County lists 28 major employers [88] that contribute to the county's employment base of 41,000 jobs. (See Table VI).

[81] https://gao.az.gov/sites/default/files/FY%202015%20CAFR%20FINAL%20NO%20AG%20SIG%206-9-16.pdf, p. 275.
[82] The unemployment rate among Navajo and Hopis is significantly higher than the general population represented in these statistics. See discussion on unemployment rate: http://www.navajobusiness.com/pdf/CEDS/CED_NN_Final_09_10.pdf, p. 22.
[83] https://data.bls.gov/map/MapToolServlet, March 2017
[84] https://www.bia.gov/cs/groups/public/documents/text/idc1-024782.pdf
[85] https://fred.stlouisfed.org/series/AZNAVA5URN . The Official data offered by the St, Louis Federal Reserve board pegged the average monthly unemployment rate at 14.5% during 2010. The Bureau of Indian Affairs, using an alternative measure exceeded 30% (see Table 7: https://www.bia.gov/cs/groups/public/documents/text/idc1-024782.pdf)
[86] https://ebr.eller.arizona.edu/current-indicators/arizona-us
[87] https://ebr.eller.arizona.edu/current-indicators/arizona-counties/navajo-county
[88] https://www.azauditor.gov/sites/default/files/NavajoCountyJune30,2015ComprehensiveAnnualFinancialReport.pdf

Table 6: Major Employers in Navajo County

Navajo County - Major Employees	Employer Type
APS Joseph City	Electric Services
Arizona Department of Corrections	Prison
Algae Bioscience	Pharmaceuticals
Burlington Northern Santa Fe	Line-Haul
Cellular One	Communications
Hatch Auto Centers	Auto Dealer
Hondah Resort and Casino	Hospitality
Holiday Inn, Kayenta	Hotels and Motels
Home Depot	Retail
Kayenta Boarding B.I.A. School	Education
Kearns Canyon Indian Hospital	Medical
K-Mart	Retail
Little Colorado Medical Center	Medical
Navajo Government Executive Branch	Government
Navajo County School District	Education
Navajo Tribal Utility Authority, Kearns Can.	Utilities
Navopache Electric Cooperative	Utility
Northland Pioneer College, Holbrook	Colleges
NovoPower	Energy
Overseas Aircraft Support	Aircraft
Peabody Coal co. - Kayenta	Coal and Mining
PFFJ, Inc., Snowflake	Pork Production
Pinon Unified School District #4	Education
Safeway, Pinetop-Lakeside	Retail
Summit Healthcare, Show Low	Hospital
Tate's Auto Center, Holbrook	Auto Dealer
Wal-Mart SuperCenter, Show Low	Retail
Western Moulding Co. Inc. - Snowflake	Millwork
White Mountain Apache Tribe	Government

Revenues to Tribal Governments Can Be Replaced

IEEFA estimates that Hopi and Navajo tribal governments will require $55 million per year to replace lost coal revenues.[89] Coal revenues provide an estimated 80% of the Hopi tribe's budget and approximately 25% of funding for the Navajo Nation general fund (and approximately 9% of total budget), and have been declining over the past decade. From

[89] this figure could be adjusted once a more thorough analysis is conducted of tribal revenues and budgets, which are not currently publicly available

2006 to 2008, coal revenues accounted for upward of 33%[90] of total Navajo general fund resources.

The loss of coal revenues will cause employment losses for the tribal governments as well as a loss of services to tribe members. The Hopi tribal government employs an estimated 400 workers.[91]

The Department of the Interior, the lead federal agency on issues surrounding the closures of the plant and mine, holds outsize influence over how the closings will be managed.

Arizona Corporation Commissioner Andy Tobin wrote to the Secretary of the Interior in April [92] recommending that the owners of the plant and the federal government share the costs associated with keeping the plant open through 2022. He proposed that the federal government pay a 50 percent share[93] of these costs (it appears that the other 50 percent will be borne by ratepayers).

IEEFA sees the Department of the Interior as being fully capable of bearing the 50 percent share of a subsidy needed to keep the plant open until 2022, a share that would amount to $500 million from 2017.[94] We recommend using these resources instead to provide replacement revenue to tribal governments. Over a five-year period, at $55 million per year, this replacement revenue would total $275 million. It is possible that the final required total would be less than $275 million, since both tribes have ways to offset some of the lost revenue internally and both have the capacity to reduce their expenses.

IEEFA's proposals use the figure of $55 million per year for five years, however, in the interest of erring on the side of likely need.

Organizing and Funding of a Transition Initiative

The transition initiative would require organizational oversight to ensure that:[95]

- Economic growth initiatives thrive

[90] http://www.navajobusiness.com/pdf/CEDS/CED_NN_Final_09_10.pdf (See: Table 11: Navajo Nation Source of General Fund Revenues)
[91] https://www.hopi-nsn.gov/wp-content/uploads/2017/02/02-07-2017-Vol25-No3.pdf
[92] http://docket.images.azcc.gov/0000179331.pdf
[93] Item 3, page 4: http://docket.images.azcc.gov/0000179331.pdf
[94] David Schlissel, Director of Resource Planning Analysis, Navajo Generating Station is No Longer Economic, IEEFA, May 2017. http://ieefa.org/ieefa-report-end-era-navajo-generating-station-vast-subsidies-required-keep-aging-plant-online-retirement-seen-viable-option/
[95] The formulation for this transition initiative has benefited significantly from the initiatives by the Defense Department to close defense plants. For the purposes of understanding the workings of the transition committee see: https://books.google.com/books?id=16KPruqDj6UC&pg=PA49&lpg=PA49&dq=defense+plant+closures+federal+response&source=bl&ots=DYnlRughXN&sig=BTr04iWKnw8CRyosOzamjlOaoFQ&hl=en&sa=X&ved=0ahUKEwjw65L547jTAhUDTSYKHT8NClo4ChDoAQgwMAI#v=onepage&q=defense%20plant%20closures%20federal%20response&f=false, specifically Chapters 2 and 3 on the placement of displaced defense and civilian employees.

- All plant and mine employees find stable, long-term replacement jobs with wages and benefits that meet their needs
- The fiscal solvency of tribal governments is maintained

Organizational Structure

To oversee the transition, IEEFA recommends creation of an organization made up of an executive board and staff. The board would be action-oriented and would take the lead in mobilizing the necessary resources.

The board would be comprised of members of tribal governments and tribal communities; Arizona business leaders, including from coal interests; federal representatives with agency, executive and legislative leadership functions; higher-education representatives; union representation and other employee leadership.

The board would hire staff to execute its policy directives.

The board would oversee the administrative functions of the transition imitative, ensuring accountability especially as it relates to the quality of services provided to displaced employees.

Board members, in addition to their leadership roles on the board itself, would act as catalysts within their professions to mobilize opportunities for employment. For example, business-leader board members would mobilize the support of a wide network of other businesses (see "Local and Regional Employment Opportunities" above) able to offer jobs and retraining to displaced employees from the Navajo Generation Station and Kayenta mine.

The board would also be an instrument for public policy advocacy, articulating need for public investment in employees, communities and the overall economic transition. It would be the main tool for advocating for resources from the members' own organizations and professions, as well, and in concert with other board members.

The executive director would assist the board and lead staff members in setting up and maintaining the following operational units to create an efficient, functional organization:

Economic Support and Growth Initiatives – Staff involved in this area should be capable of working with businesses and community leaders to create new business plans. They would help formulate priorities for economic growth, create a menu of options and projects to pursue, and devise action plans to secure resources for turning development ideas into successful new businesses.

Support to Individual Employees — Staff here should be capable of providing one-on-one support for job placement, job training and financial security. The mandate would be clear: No displaced employee goes without a day's pay.

Fiscal Solvency Support for Communities Affected – Staff here should be able to provide informed analysis of all initiatives including but not limited to: securing maximum replacement resources for the tribal governments affected; ensuring that the fiscal aspects of the program, particularly those related to services for displaced employees, are well-funded and carried out in full compliance with mandates; assisting the board and the executive director with the formulation of fiscal strategies and negotiations.

Funding and Organizational Budget for Transition

Funding

The federal government can fund most of the transition initiative.

The proposal outlined here contains no additional costs to either Navajo Generating Station or Peabody Energy. It requires a maximum of $128 million in first-year funding and a declining annual commitment thereafter. The total cost of the transition is about $380 million.[96]

The goal is new employment for every employee, fiscal balance for the tribal governments and a strong foundation for new economic growth initiatives.

Table 7: Sources and Uses of Transition Resources ($ in millions)

Use of Funds	First Year	Total	Payment Duration	Sources
Support for Business Transition	$ 35	$35	3 years	Federal Agencies – DOI Lead
Payments to Tribal Budgets	$55	$275	5 years	Federal Agencies - DOI Lead
Severance Payments to Employees	$30	$50	3 Years[97]	Federal Agencies - DOI Lead
Transition Income for Employees	$3	$5	3 Years[98]	Federal Agencies - DOI Lead
Transition Organization	$5	$15	3 Years[99]	Partnership Sources
Total	**$128**	**$380**		

Support for Business Transition

The transition budget includes $35 million for business transition support. This is to cover cash infusions for eligible business, planning grants to local planning chapters and, if necessary additional micro-lending or other forms of business venture investments.

Line Items for Severance Payments and Transition Income

A new job is critical to the economic security of each employee. The payrolls for the new employment will come largely from the private and public sector organizations described in the prior section. The plan assumes that no employee will require long-term financial assistance. Those leaving the workforce due to age should have retirement options.

[96] See Appendix I*: Comparison of Navajo Transition Plan costs to other Transition projects funded with federal participation.*
[97] We assume $30 million in the first year and a declining amount thereafter.
[98] We assume $3 million in the first year and a declining amount thereafter.
[99] We assume three equal payments of $5 million per year.

Severance Payments

Transition initiatives frequently provide severance payments to displaced workers. These payments often have rationales connected to the voluntary or involuntary nature of employment termination, retraining and other separation events. In practice, these payments serve multiple concurrent functions.[100] The transition initiative in this case may want to support severance payments for generic overall employee resettlement needs connected to the involuntary nature of the termination, employment terms of new jobs and the potential for retraining or other family costs of the new job.

Depending upon the rationale and resource availability such an approach could require a one-time outlay of between $30 and $50 million if all employees are covered.

Transition Income

The transition initiative must include assistance for some employees for an extended period of time. We estimate that 30 employees may require such assistance at a cost of up to $5 million. The board and staff should develop criteria for these payments related to individual need, retraining periods and other extraordinary circumstances. These payments should be in addition to any employment based accrued salary or other termination payments. Transition payments should not be counted as income in qualifying for other income-based public-assistance programs.

Budget for Transition Organization

The proposed budget for the transition staffing is $5 million per year. Assistance to employees who lose their jobs receives the biggest allotment in this proposed budget. The guiding principle, again, is that no employee will lose even one day of pay. Sufficient resources must be made available if this promise is to turn into a reality.

The Fiscal Analysis and Economic Growth functions are integral to the success of the initiative. Accurate, ongoing fiscal analysis ensures that the tribal governments achieve their fiscal goals. The transition initiative will also require close attention to a variety of financial governmental and non-governmental resources that become available. Fiscal staff will also be integral to the Board's initiatives to act as an advocate for additional transition resources.

The Economic Support and Growth function will assist individual businesses and community planning programs and help with the general prioritization of economic development. It will complement existing tribal and county and state government economic development planning and project resources by focus the creation of new jobs and new businesses in communities most affected by the mine and plant closure.

[100] http://ftp.iza.org/dp5731.pdf

Table 8. Proposed Budget and Staffing Plan for Transition Initiative

Staffing	Number	Salary/Fringe*
Executive		
-Executive Director	1	$120,000
- Assistant Director	1	$90,000
- Lead Administrator	1	$75,000
- Administrative Asst.	1	$60,000
Subtotal		$345,000
Employment/Training		
- Managers	5	$450,000
- Human Resource Specialists	20	$1,500,000
- Administrative	3	$180,000
Subtotal		$2,130,000
Fiscal Analysis		
Analyst	3	$315,000
Finance Administration	1	$90,000
Administrative	1	$60,000
Subtotal		$465,000
Economic Development		
Economic and Business Developers	8	$690,000
Administrative	1	$60,000
Subtotal		$750,000
Personnel Total		**$3,690,000**
Other		$1,310,000
Total		**$5,000,000**

The "Other" line item assumes an operational plan that guides the use of consultants, that includes advertising expenses, board expenses, and administrative needs (if required). The overall budget and specifically the "Other" line item can be reduced if government agencies and companies help defray transition costs from their existing administrative outlays and underutilized assets.

Appendix: Comparison of Navajo Transition Plan Costs to Other Transition Projects Funded With Federal Participation

Size of Federal Budget and Navajo Request

ACC Commissioner Tobin recently suggested a 50/50 cost-sharing split to pay for keeping the plant open for an indeterminate period. IEEFA estimates the cost of keeping the plant open is $2.4 billion. This would set the federal government share of subsidies at $1.2 billion over an approximately 10-year period, or $240 million annually. IEEFA has reviewed such a funding obligation on the federal budget and in relation to past transition initiatives that benefited from federal participation. The proposed amount in this study for the Navajo transition plan is $380 million over a five year period $76 million on an annualized basis. This estimate seems reasonable as it relates to the annual federal budget as well as in line with prior transition project costs.

The Federal Budget

The federal budget in 2017 is $4.1 trillion. This request represents three thousandths of one percent of the federal budget in the first year 0.00003%. The Department of Defense usually coordinates DOD expenditures with Department of Treasury, Department of Energy, Department of Labor and others.[101]

Federal Budget	Amount	Percentage
1 Yr. Federal Budget	$4,100,000,000,000.00	
2 Yr. Federal Budget	$4,715,000,000,000.00	
3 Yr. Federal Budget	$5,422,250,000,000.00	
4 Year Federal Budget	$6,235,587,500,000.00	
5 Year Federal Budget	$7,170,925,625,000.00	
Cumulative Federal Budget	$27,643,763,125,000.00	
First Year Allocation Navajo	$113,000,000.00	0.003%
Five Years	$375,000,000.00	0.001%

[101] https://www.archives.gov/federal-register/codification/executive-order/12049.html

1. The scope of potentially eligible activities for financing under this type of plan is extensive. The Department of Defense Manual on Base Closings provides a good list (but even this extensive listing is not complete).[102]
2. From 2006 through 2011 the Defense Department spent $35 billion ($43 billion in today's dollars) on base closing related costs. An audit of these expenditures shows they are largely construction and relocation related costs. This means the list of costs included in the audit are significantly understated. This amounts to about $7 billion per year. The first year of the Navajo transition request would be $113 million, or just under 2% of the historic annual expenditures. [103]
3. Audits of DOD spending show that on construction costs ALONE the Defense Department spent more than the total five-year allocation asked for in the transition plan on 21 individual construction projects.[104] If we adjusted these numbers in current dollars to these charts the number would be close to 40 individual projects.

The request of $345 to $375 million for five years for the Navajo Transition project should prove to be no burden on the Federal Budget nor is it inconsistent with typical spending patterns of the Department of Defense transition spending which is considerably higher.

[102] http://www.dtic.mil/whs/directives/corres/pdf/416566m.pdf
[103] http://www.gao.gov/products/GAO-12-709R
[104] http://www.gao.gov/assets/600/592076.pdf, See Enclosure I, p. 19.

Institute for Energy Economics and Financial Analysis

The Institute for Energy Economics and Financial Analysis (IEEFA) conducts research and analyses on financial and economic issues related to energy and the environment. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy and to reduce dependence on coal and other non-renewable energy resources. More can be found at www.ieefa.org

About the Authors

Tom Sanzillo, director of finance for IEEFA, is the author of several studies on coal plants, rate impacts, credit analyses, and public and private financial structures for the coal industry. He has testified as an expert witness, taught energy-industry finance training sessions, and is quoted frequently by the media. Sanzillo has 17 years of experience with the City and the State of New York in various senior financial and policy management positions. He is a former first deputy comptroller for the State of New York, where he oversaw the finances of 1,300 units of local government, the annual management of 44,000 government contracts, and where he had oversight of over $200 billion in state and local municipal bond programs and a $156 billion pension fund.

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DinéHózhó

Diné Innovative Networks of Economies in Hózhó, L3C (DinéHózhó) is the first Low-Profit Limited Liability Company (L3C) incorporated within the Navajo Nation with a mission to integrate Diné culture, sustainability, conservation, and local knowledge to a locally developed economy. As a social enterprise developed by five Western Navajo communities, we strive to cultivate seeds of capacity building, regional empowerment, and economic livelihood that transition toward sustainable communities that improve the Diné quality of life. More information can be found at DineHozhol3c.com.

Tony Skrelunas was brought up in Diné Traditions by his great grandparents. He has B.A and M.B.A. Business Degrees from Northern Arizona University. Tony serves as vice-president of DinéHozhó L3c.com, a the newly formed Social Entrepreneurship Venture; board chair of

Black Mesa Water Coalition (BMWC), a grass roots conservation organization; and just recently joined the board of Native Americans in Philanthropy. Mr. Skrelunas serves as Director of Native America Programs at Grand Canyon Trust where he leads innovative sustainable economic work with Hopi and Navajo communities and he also manages the Colorado Plateau Inter Tribal Gatherings to ensure tribes maintain resiliency in their water, farming, ecological knowledge systems. He is the Navajo Nation's former Executive Director overseeing Commerce and Government Development. He was the lead in creating major changes to the Navajo Nation including the Local Governance Act of 1998, Securing Congressional Delegation of Business Site Leasing in 2000, creation of a 3% Sales Tax that goes to local Chapters, securing the first major grants for Land Use Planning, and creation of culturally relevant and meaningful Alternatives forms of Local Governance such as the Council of Nat'aa. His recent success includes the organizing of Colorado Plateau Inter Tribal Gatherings using ancient honored gathering processes, creation of "green" ventures with majority community ownership, and building capacity of the Navajo Nation to effectively develop large scale Renewable Energy Projects such as the Aubrey Cliffs Wind Project.

Edward Dee (Diné) is a Ph.D. candidate in the School of Sustainability at Arizona State University. His current research includes Sustainable Governance and Policy, Traditional Ecological Knowledge, Social-Ecological Services, Energy Systems, Innovative Community and Social Entrepreneurship, and Human-Environment interaction in Sustainable Tourism, with an all-encompassing proposed dissertation topic of "Mother Earth Father Sky: a theoretical framework and meanings of nature, land, and sustainability in using Diné Lifeway concept." Edward also concurrently completed a Graduate Certificate program in the Administration and Management of American Indian Natural Resources at the University of Arizona. Edward holds Masters in Public Administration (MPA) and Masters in Business Administration (MBA) degrees from Northern Arizona University. Edward is a current board member on the Arizona American Indian Tourism Association (AAITA) and the co-founder of DinéHozhó, L3C based in Cameron, AZ. Edward's previous work experience includes Arizona State University Teaching Assistant, Monument Valley Navajo Tribal Park Manager, Little Colorado River Tribal Park Supervisor, Navajo Local Governance Support Center Planner, Legislative Assistant to the Speaker of the Navajo Nation Council, and Director of Navajo Special Education and Rehabilitation Services. Edward is a University of Arizona Udall Scholar class of 2002. An Honorable Discharged Veteran with 8 years military service.