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Extending the Full Federal Solar Tax Credit by Four Years (Through 2024) for Coalfield Communities

Closure of Navajo Generating Station/Kayenta Mine Presents a Prime Example of How a Modest Policy Change Could Help Drive Local Economic Development in a Disruptive Time of Transition

Introduction

Federal tax credits for solar energy installations are on track to be phased out over the next few years in the winding-down of a program meant to help the nascent industry find its legs nationally.

The tax credit has existed in one form or another since 2005, and the thinking behind dialling it back year by year after 2019—and then eliminating it almost entirely in four years—is that by 2023 the solar industry will be strong enough to grow and flourish on its own, without tax-policy support.

The federal solar tax credit was extended in 2015 by Congress to create market certainty and to help the industry establish a strong foothold. Under the extension, the current 30% tax credit will be decreased annually going forward, to 10% by 2022.

Yet it seems far too early to curtail the program in certain parts of the country.

Indeed, **curtailment comes at the worst possible moment for vulnerable communities, particularly the Hopi and Navajo tribes,** that are facing impending closure of a power plant or a coal mine that provides revenues critical for government services. The Hopi stand to be especially hard hit, with the loss of 80% of general fund revenue due to closure this year of Navajo Generating Station (NGS).

Former power plant sites and coal mines all across the country offer ideal locations for solar development, in part because the utilities in question in most instances are willing to leave behind assets such as substations and power lines, assets that can be leveraged to help local economies recover.

Many of these power plants and mines have historically been key economic drivers for surrounding communities, so it makes sense now for Congress and the Trump administration to work together to minimize fallout from plant and

mine closures, in part by keeping the full 30% tax credit in place for these communities.

A four-year extension, through 2024, of the federal tax credit on Hopi and Navajo tribal lands—and across coalfield communities nationally, for that matter—would likely bring local and regional benefits by helping drive new utility-scale solar projects on sites like NGS and its companion Kayenta Mine, both of which are to be closed this year. Utility-scale solar can help replace lost jobs, and the tax revenues it generates can help local economies during the transition.

Utility-scale solar projects don't exist yet in most of these areas, despite the surge in such project development across the U.S. in general. **A tax-credit extension carve-out along the lines proposed here could help to bring solar industry expansion to the very communities that can benefit the most from it. An adequate carve-out would require a congressionally approved extension that would keep the full federal solar tax credit in place longer for communities that are being economically devastated by shutdowns of coal-fired plants and coal mines. Hopi and Navajo tribal lands are a showcase example of where such an extension could help sustain a struggling local economy.**

Most of these tribal lands are in northeast Arizona, but portions include substantial parts of northwest New Mexico and southeast Utah. The area has abundant sunshine and key access to transmission lines that can move electricity to market. Exactly where such a program extension could apply, geographically speaking, is open to discussion, and several possibilities exist, as shown in the next few pages.

Overview: Global (and Local) Trends

Coal-fired power generation is in decline nationally as it is replaced by cheaper natural-gas generation and renewables—mostly wind and solar—by way of a fast-moving trend that shows no sign of abating.[1] Public policy has helped drive this shift, which is accelerating as market forces gain momentum, with the price of renewables now commonly beating traditional forms of generation.

Examples of the transition from coal to renewables abound:

- Kit Carson Electric Cooperative (KCEC) in northern New Mexico has engineered an exit from coal-powered generation through a deal that will cut its power costs by half from what it had been paying its former supplier, Tri-State Generation and Transmission Association, a coal-centric entity that serves 43 member co-ops. Now, some other member co-ops are re-examining their relationship with Tri-State based on KCEC's model, which is based on a hard shift toward utility-scale solar.[2]

[1] IEEFA report: "Coal outlook 2019: Utilities transitioning away from coal toward natural gas and renewables," March 2019.
[2] IEEFA report: "Kit Carson electric co-op gains from breakup with coal-centric Tri-State group," April 2019.

- In northern Virginia, the Spotsylvania County Board of Supervisors recently approved a 500-megawatt (MW) solar farm,[3] one of the biggest in the country.

- Duke Energy, North Carolina's biggest utility and long dependent on coal generation, is moving steadily away from the fuel. Last week it chose 14 utility-scale solar projects from among 78 bidders who had sought to participate in a 602MW program most of which will come online next year and, by the company's estimates, save customers $375 million over the life of the installations.[4]

- The Southwest Power Pool (SPP), the transmission operator that delivers electricity to all or most of five states and parts of 10 others, set a record in April by generating 65.7 percent of its power from wind at one point, a result of the industry's ongoing aggressive shift to renewables. SPP has 51.75 gigawatts (GW) of wind capacity and about 24.5 GW of solar power in development.[5]

- Idaho Power expects to get all of its electricity from renewables by 2045, and the states of Washington and New Mexico have adopted similar plans.[6,7]

The uptake of renewables is not just a U.S. phenomenon. In the U.K., renewable resources accounted for 33 percent of electricity generation during the first quarter of this year.[8] European investment in wind-power generation is on track to attract more than $100 billion in fresh capital by 2021.[9] The Australian solar industry is booming,[10] Chile, India, Saudi Arabia and parts of Africa are embracing solar,[11] and China already has more solar energy capacity (in excess of 130 gigawatts) than any other country and is continuing to expand on that front.[12] Growth in solar is likely to continue—abroad and in the U.S.—buttressed significantly by the rapid adoption of fast-developing energy storage technology.[13]

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[3] Virginia Mercury, "Last pieces of mega Spotsylvania solar project approved," April 15, 2019.
[4] Duke Energy: "Competitive process yields Carolinas' biggest one-day collection of solar projects ever; significant savings for Duke Energy customers," April 17, 2019.
[5] The Oklahoman: "Wind energy sets new record on the Southwest Power Pool's grid," April 13, 2019.
[6] Lewiston Tribune: "Avista Utilities unveils goal to achieve 100 percent clean energy by 2045," April 19, 2019.
[7] NPR: "In Midst Of An Oil Boom, New Mexico Sets Bold New Climate Goals," March 13, 2019.
[8] CleanTechnica: "Renewables generate 33% of Britain's electricity in First Quarter," April 16, 2019.
[9] Bloomberg News: "European wind industry investment Could Hit $111 Billion by 2021," April 18, 2019.
[10] PV Magazine: "High energy prices set to drive 2 GW of rooftop PV in Australia this year," 15, 2019.
[11] The Motley Fool: "Solar energy is hot in 2019," April 21, 2019.
[12] BBC: "How China's giant solar farms are transforming world energy," September 4, 2018.
[13] GreenTech Media: "Global Energy Storage to Hit 158 Gigawatt-Hours by 2024, Led by US and China," April 10, 2019.

A Coalfield-Friendly Fix to a Key Policy Restraint

Yet solar is still a growing industry—utility-scale solar accounts for less than 2 percent of total electricity generation in the U.S. but is gaining market share fast.[14]

And while solar seems clearly in ascendance,[15] the industry remains vulnerable to public policy changes. When new tariffs were imposed on imported solar panels last year, for instance, broad trends toward more installation slowed.[16]

Indeed, much of the solar industry's recent growth is a direct result of the market certainty created in 2015 by the extension of the federal tax credit meant specifically to help the industry gain its footing:

> *"The legislation allows solar power companies to keep claiming federal tax credits at 30% of the price of a solar array. The credits, which apply to home solar kits as well as big commercial installations, will be good through 2019. After that the credit will begin to drop, declining to 10% in 2022 where it will remain."*[17]

The phasing-out of the tax credit stands to leave out coalfield communities like the one located around the NGS-Kayenta complex by closing the door before utility-scale solar projects can even take root in ways that fully benefit local economies.

This is not just a tribal-lands issue, however. As the maps below show, the region is home to a number of coal-fired power-generation complexes. They include NGS-Kayenta, San Juan-Four Corners, Cholla Generation Station, Springerville Generating Station, Coronado Generating Station, and Escalante Generating Station. All are essentially mine-mouth operations, that is, they tie the plant in question to a nearby coal source.

All are also vulnerable to closure trends gaining momentum across the coal-fired generation sector.[18] Coal-plant closures and associated mine closures create economic trauma but also present an opportunity.

Why not turn these sites into utility-scale solar projects? One way to help make that happen would be to extend the solar tax credit in full by four additional years—through 2024—and in a way that applies specifically to coalfield communities.

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[14] IEEFA U.S.: "The gathering U.S. solar wave," Jan. 24, 2019
[15] Wood Mac Kenzie: "U.S. Solar Market Insight," December 2019.
[16] SEIA: "Solar Tariffs Hold Back Q3 Installations, Scramble Project Timelines As Procurement Pipeline Booms," December 13, 2018.
[17] Wall Street Journal: "Wind, Solar Companies Get Boost From Tax-Credit Extension," December 15, 2016.
[18] IEEFA report: "Record drop in U.S. coal-fired capacity likely in 2018," October 2018.

The Navajo and Hopi Desire for Project Equity

Navajo and Hopi people no longer want to simply offer land for lease under arrangements that typically and historically have benefitted outside companies more than the community. Today, the local desire is to gain a larger revenue share from future projects than has been realized from past projects.

Being communal is a value instilled in tribal members at a young age and one that many adhere to passionately. The federal government as a result has allowed tribes to create communal, tribally owned corporations. Some of these enterprises are federally chartered (such as Section 17 corporations that are meant to give tribal economies a fair chance to compete and develop). Navajo and Hopi communities today have an express desire for equity in the actual ownership/operations of projects on tribal lands.

Shared ownership between partners is common across the wind industry through a "flip structure" that maximizes tax-incentive value. These deals are complicated and costly to put together, however, and tribal business holdings themselves are not eligible for the federal solar tax credit because they are usually organized as non-profits and do not pay income taxes. **So, in addition to extending the life of the tax credit for these areas, we recommend a special, simultaneous policy provision that *explicitly acknowledges the value in partnerships between tribal communities and experienced tax-credit-eligible developers,* an approach that can help monetize the value of the tax credit for both partners.**

A clear path forward along these lines would have tribal communities to co-own a large solar development—a policy that could have a quick and far-reaching positive economic transition impact.

Some Potential Tax-Credit Extension Approaches

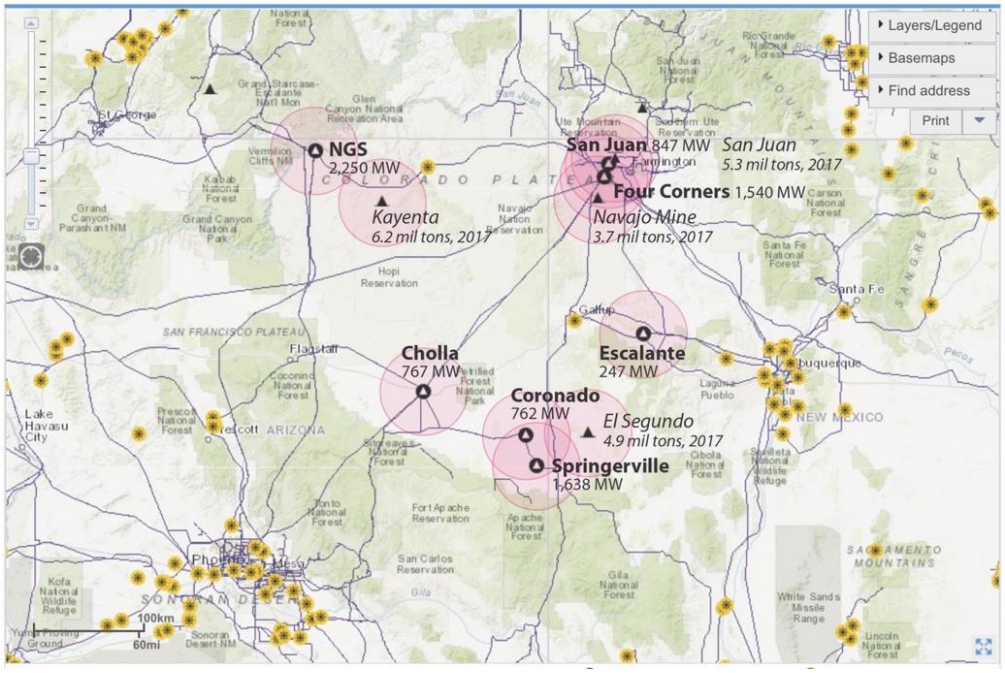
The three maps on the following pages show, in the NGS-Kayenta case, that while utility-scale solar projects (marked by the sunburst emblems on each map) have been built in significant numbers in and around small towns in the region—St. George, Utah, for example, and Durango, Colo.—and in and around larger cities like Albuquerque and Phoenix, the industry has made few inroads onto tribal lands (bounded on the maps roughly by NGS to the northwest, Flagstaff, Ariz., to the southwest, Gallup, N.M., to the southeast, and near the San Juan and Four Corners mine-mouth coal-fired power plants to the northeast).

Three geographic possibilities:

- Extending the life of the full tax credit to projects built within a 25-mile radius of sites like NGS and Kayenta, as shown in Figure 1;
- Extending the life of the full tax credit to projects built within a 40-mile radius, as shown in Figure 2;

- Extending the life of the full tax credit, as shown in the NGS-Kayenta example, to all areas within 20 miles of existing transmission lines.

Figure 1: Areas Within a 25-Mile Radius of Currently Operating Coal-Fired Power Plants/Mines



(All figures here show net summer capacity of plants and 2017 mine production.)

Figure 2: Areas Within a 40-Mile Radius of Currently Operating Coal-Fired Power Plants/Mines

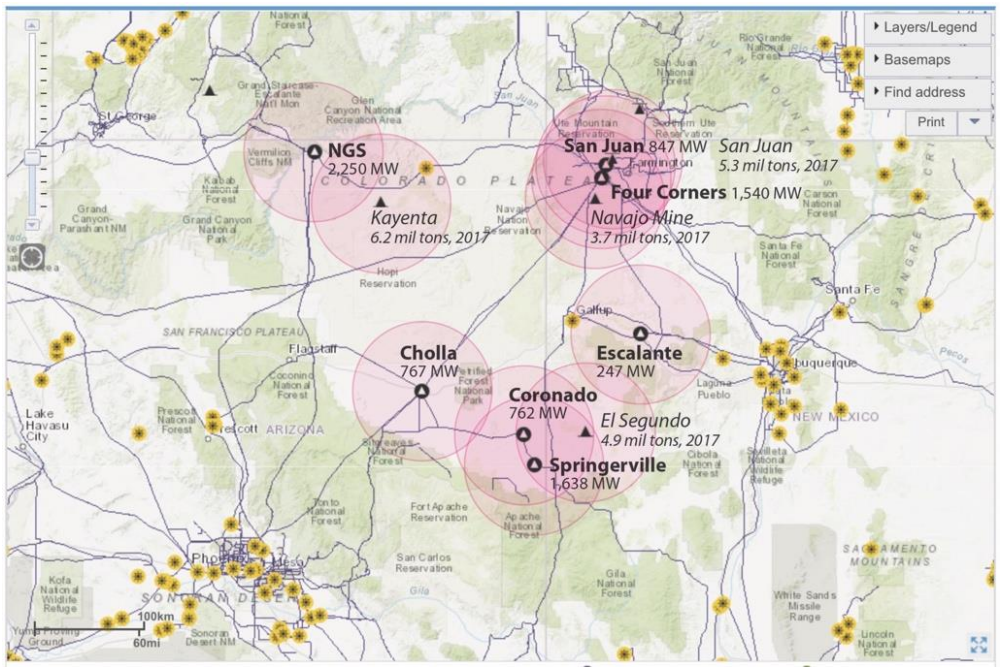
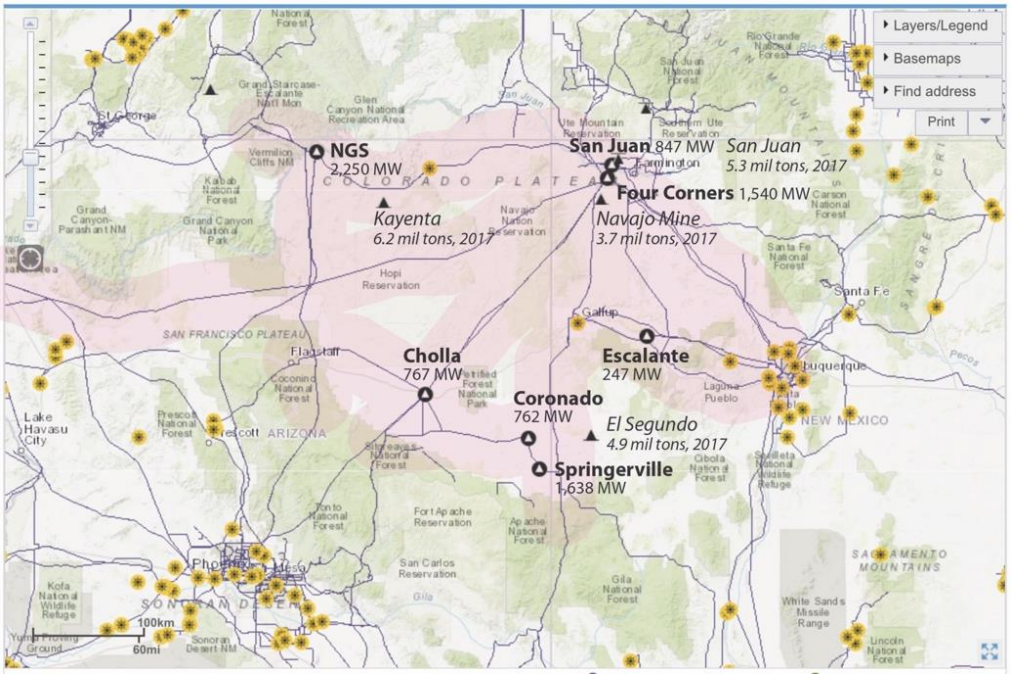


Figure 3: Areas Within 20 Miles of Existing Transmission Lines



Conclusion and Recommendations

Extension of the federal solar tax credit to coalfield communities beyond the tax credit's current phase-out dates would help the industry take hold where coal-fired plants and their companion mines are closing.

Such an extension would support economic development in these areas, and it would be especially helpful if it were to give priority to communities that don't have enough time to effectively respond to impending plant and/or mine closures.

For tribal lands, we also recommend a special federal policy provision that allows tribes to partner with experienced developers in a way that maximizes monetization of the value of the tax credit.

About IEEFA

The Institute for Energy Economics and Financial Analysis 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. www.ieefa.org

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