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# PURPA: Bastion, Bridge, or Bygone? Constitutional and Consumer-Generator Considerations

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# PURPA: BASTION, BRIDGE, OR BYGONE? CONSTITUTIONAL AND CONSUMER-GENERATOR CONSIDERATIONS

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## *Introduction to PURPA and Net Metering*

This article begins with a brief overview of the Public Utility Regulatory Policies Act of 1978 ("PURPA") and its application, then proceeds to a constitutional analysis of PURPA under the Commerce Clause and the Tenth Amendment to demonstrate the limitations of the Act. The next section outlines a sampling of state implementations of PURPA. The final

section of the article explores net metering, including analysis of the current threats net metering faces, the limitations of PURPA to protect net metering, possible federal and state actions to further net metering protection, and a brief exploration of whether consumers could assert property law[1] protections to self-generated energy.

PURPA emerged in 1978 as part of the Carter Administration's response to the then-ongoing energy crisis.[2] The Act aimed to encourage development and use of alternate energy sources in the electricity sector through FERC-approved "Qualifying Facilities" ("QF").[3] QFs enjoy three categories of federally conferred benefits: (1) the right to sell energy to a utility, (2) the right to purchase certain services from utilities, and (3) relief from certain regulatory burdens.[4] The two types of QFs are small power production facilities (those with generating capacity of up to 80 megawatts[5] whose primary energy source is renewable) and cogeneration facilities (those that sequentially produces electricity and another form of useful thermal energy in a way that is more efficient than the separate production of both).[6] The small power production facilities are the primary focus of this paper and will simply be referred to as QFs. At the consumer-generator level, for example, QFs often utilize personal solar panels—photovoltaic ("PV") cells which are easily installed on rooftops.[7]

The Carter administration's intent under PURPA was to encourage energy conservation and supplementation of the energy provided from the

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1. An in-depth discussion of Takings and the Due Process Clause is largely outside the scope of this paper, but a limited overview is necessary to demonstrate the possible relevancy of these avenues for consumer-generator relief.

2. Amy Abel, "Public Utility Regulatory Policies Act of 1978: A Fact Sheet," CONGRESSIONAL RESEARCH SERVICES, THE LIBRARY OF CONGRESS, July 30, 1992

3. *See PURPA 101 Fact Sheet*, SEIA, https://www.seia.org/sites/default/files/2018-09/SEIA-PURPA-101-Factsheet-2018-Sept.pdf; *See also* FERC v. Mississippi, 456 U.S. 742, 746 (1982) ("The Titles share three goals: (1) to encourage 'conservation of energy supplied by . . . utilities'; (2) to encourage 'the optimization of the efficiency of use of facilities and resources' by utilities; and (3) to encourage 'equitable rates to . . . consumers.'") (Citation omitted).

4. *PURPA Qualifying Facilities*, FAQ (last visited February 14, 2021), https://www.ferc.gov/qf.

5. This is the limit in PURPA, but the limit varies by state. Nat'l Conf. of State Legislatures, *State Net Metering Policies* (November 20, 2017), https://www.ncsl.org/research/energy/net-metering-policy-overview-and-state-legislative-updates.aspx.

6. *PURPA Qualifying Facilities*, FAQ (last visited February 14, 2021), https://www.ferc.gov/qf.

7. Samuel Moore, *Identifying the Pillars of a Pro-Solar Energy Policy: A Multi-State Survey of Distributed Solar Energy Generation Laws*, 5 ONE J 695, 696 (2020).

grid with renewable resources.[8] But to encourage this supplemental production, the law required a carrot for the individuals who would be contributing to the energy grid because these individuals still had to bear the initial investment costs of, for example, purchasing and installing PV cells to their roofs. So the act required utilities to purchase the energy from the QF producer through the "avoided cost" method: the utilities pay the QF at a rate of what it would have cost the utility to generate that same amount of energy.[9] The regulation also forbade rate discrimination against the QF "in comparison to rates for sales to other customers served by the electric utility."[10] Compliance with the purchase requirement commonly appears today in the form of "net metering."[11]

Congress codified Net Metering in a 2005 amendment to PURPA, the Energy Policy Act.[12] This paper will use the term "net metering" as an umbrella phrase for utilities measuring and compensating consumer-generators for the energy they produce. On a technical level, however, use of a net meter is merely one option of exercising avoided cost; it refers to usage of a single meter which shows the net consumption of power.[13] The meter, thus, does not measure and separately display the amount of energy contributed to the grid and the amount consumed from the grid.[14] Instead, it shows only net usage as a single metric, meaning the meter can actually run backward to reduce previously clocked energy usage when the household produces more energy than it consumes.[15]

Another common implementation of the avoided-cost method is through use of a bi-directional meter, which can separately measure the power

8. *The Public Utility Regulatory Policies Act of 1978*, AMERICAN PUBLIC POWER ASS'N (last visited February 14, 2021), https://www.publicpower.org/policy/public-utility-regulatory-policies-act-1978.

9. 16 U.S.C. 824(a)(2) ("[W]hich rules require electric utilities to offer to . . . purchase electric energy from such facilities. Such rules shall be prescribed, after consultation with representatives of Federal and State regulatory agencies having ratemaking authority for electric utilities."). S*ee also PURPA 101 Fact Sheet*, SEIA, https://www.seia.org/sites/default/files/2018-09/SEIA-PURPA-101-Factsheet-2018-Sept.pdf.

10. In re Joint in re Westar Energy, Inc., 311 Kan. 320, 325 (2020) (quoting 18 C.F.R. § 292.305(a)(1)(ii) (2019)).

11. Various rate-making guidelines apply depending upon QF size, but such intricacies are beyond the scope of this paper. *See, e.g.,* 18 C.F.R. § 292.304(b)(5) for further details.

12. 16 U.S.C. § 2621 (including the amendments made by the act).

13. Mark Durrenberger, *Different Types of Utility Meters for Solar*, NEW ENGLAND CLEAN ENERGY: THE ENERGY MISER (February 15, 2017), https://newenglandcleanenergy.com/energymiser/2017/02/15/different-types-of-utility-meters-for-solar/.

14. *Id.*

15. *Id.*

consumed from the grid and the power produced from the house.[16] Finally, there is dual metering, which consists of two non-communicating meters—usually the original utility meter (measuring consumption) and another, new meter measuring how much energy the house sends out to the grid.[17] Thus the separate meters record separate information to provide the two distinct metrics of energy produced and energy consumed.

In practice, local utility companies typically choose which type of meter to use to accomplish this process, and most states that have net metering policies also specify how the utilities will manage the avoided cost.[18] For example, a simultaneous buy-sell agreement is a cost avoidance model that typically utilizes the two-meters method to record both energy used by the consumer from the grid and, separately, energy the consumer generated for the grid.[19] The consumer pays for the energy she consumes from the grid and the utility company reimburses her for the energy her home feeds back into the grid to be used by others.[20] The catch is the often-used "rate difference," where consumers pay retail rate but utilities only pay the avoidance rate[21]—the amount it would cost the utility company to produce that same amount of energy using its own industrial facilities to supply to the grid.[22] This system is more advantageous to the energy company than to the consumers, who may view the arrangement as unfair since the energy companies can then re-sell that excess energy to other consumers at the retail rate.

Net metering sets up an energy exchange, working off the single-meter method, which can measure in both directions.[23] Energy-producing consumers have instant access to the electricity they generate from their generation equipment while also feeding any excess into the grid; they can also draw more energy from the grid when their energy demand outstrips their own production.[24] In a manner of speaking, the energy company still

16. *Id.*

17. *Id.*

18. *State Net Metering Policies* (November 20, 2017), https://www.ncsl.org/research/energy/net-metering-policy-overview-and-state-legislative-updates.aspx

19. Wan, Yih-huei, *"Net Metering Programs"* TOPICAL ISSUES BRIEF (December 1996), https://www.nrel.gov/docs/legosti/old/21651.pdf

20. *Id.*

21. *Id.*

22. *PURPA 101 Fact Sheet*, SEIA, https://www.seia.org/sites/default/files/2018-09/SEIA-PURPA-101-Factsheet-2018-Sept.pdf

23. Samuel Moore, *Identifying the Pillars of a Pro-Solar Energy Policy: A Multi-State Survey of Distributed Solar Energy Generation Laws*, 5 ONE J 695, 696 (2020).

24. *Id.*

pays the energy-producing consumer for the power the consumer produces through a credit on the utility bill—and often at retail price rather than simple avoided cost.[25] While this seems more fair to the consumer, it is not cost-advantageous for the energy companies (even though they could still theoretically resell that energy to other consumers at the retail rate at a near zero-loss).

Now federally codified, net metering looks like the tempting carrot these potential consumer-generators need to contribute individually to renewable energy production—or so it would seem until further investigation of the law. The statute did not require actual implementation, but only that states *consider* implementing the net metering standard.[26] Is this consideration requirement reflective of the statute's lack of teeth—space yielded where the Commerce Clause permits regulation—or is it what enables the law to survive Tenth Amendment challenges?

### *PURPA Under the Commerce Clause and the Tenth Amendment*

*FERC v. Mississippi* seems to suggest the latter upon constitutional examination of a similar provision of the original law (requiring consideration of specific rate design schemes for implementing PURPA's regulations).[27] The Constitution's establishment of a system of "dual sovereignty" between the state and federal governments is more than well settled—it is fundamental to our nation.[28] The Tenth Amendment is reflective of this division of power, claiming for the states any power not granted to the federal government.[29] One such plenary power expressly granted to the federal government is the Commerce Clause[30], which

25. Wan, Yih-huei, *"Net Metering Programs"* TOPICAL ISSUES BRIEF (December 1996), https://www.nrel.gov/docs/legosti/old/21651.pdf

26. 16 U.S.C. § 2622(b)(1) ("Not later than 2 years after the enactment of this paragraph, each State regulatory authority (with respect to each electric utility for which it has ratemaking authority) and each nonregulated electric utility shall commence the consideration referred to in section 111, or set a hearing date for such consideration, with respect to each standard established by paragraphs (11) through (13) of section 111(d).").

27. 456 U.S. 742, 746-751 (1982).

28. *See, e.g.,* Gregory v. Ashcroft, 501 U.S. 452, 457 (1991) ("As every schoolchild learns, our Constitution establishes a system of dual sovereignty between the States and the federal government.").

29. U.S. Const. amend. X. *See also* United States v. Darby, 312 U.S. 100, 124 (1941) ("The amendment states but a truism that all is retained which has not been surrendered.").

30. U.S. Const. art. I, § 8, cl. 3.

Congress enjoys as a plenary power[31]. The interplay of the Tenth Amendment and the Commerce Clause creates, in some areas, tension of power between the states and the federal government. One notable area of tension—attempts by the federal government to commandeer state officials to action on behalf of federal agendas and regulatory implementation—demonstrates where the power of commerce regulation stops short.[32]

After PURPA passed, the State of Mississippi sued FERC, arguing that Titles I and III of the Act were unconstitutional because PURPA was beyond the scope of the Commerce Clause and impermissibly preempted state sovereignty guaranteed by the Tenth Amendment.[33] Titles I and III encompassed the provisions aimed at encouraging states to adopt regulatory practices.[34] These titles directed state utility regulators to consider adopting:

- certain federal standards on ratemaking (six variations on approaching rate structuring),
- a second set of standards regarding utility terms and conditions (five factors),
- some enumerated procedures to follow when considering these proposed standards, and
- reporting requirements regarding the consideration of the standards (data collection and filing procedures).[35]

Note, however, the lack of any requirement or mandate to *actually implement* any of the specific regulatory standards that the act bade them consider.[36]

The Court first addressed PURPA as an exercise of the Commerce Clause. The Court found the state's assertion of purely intrastate

31. S*ee, e.g.,* Gibbons v. Ogden, 22 U.S. 1, 197 (1894) ("[T]he sovereignty of Congress, though limited to specified objects, is plenary as to those objects.").

32. "In *New York v. United States*, 505 U.S. 144 (1992), and *Printz v. United States*, 521 U.S. 898 (1997), five Justices found that Federalism principles that prevented the federal government from requiring state and local governments to enact legislation, and also prohibited the federal government from requiring state or local executive officers to implement federal law." Ronald Rotunda, *Principles of Constitutional Law,* 123 (West Academic Publishing, 5th ed. 2016).

33. FERC v. Mississippi*,* 456 U.S. at 752.

34. *Id.* at 746.

35. *Id.* at 746–749.

36. *Id.* at 749–750.

jurisdiction over public utilities unconvincing entirely[37] because the argument "disregard[ed] entirely the specific congressional finding [in the act] that the regulated activities have an immediate effect on interstate commerce."[38] The Court moved on to its holding on the Tenth Amendment: squarely within its plenary power, Congress did not invade the state's Tenth Amendment powers, but *did* create a case of first impression—"attempt[ing] to use state regulatory machinery to advance federal goals."[39]

The Court reduced PURPA to three provisions and analyzed each provision in turn for constitutional violations; it held that the only truly troublesome provision (the provision requiring electricity utilities to purchase electricity at a rate set by the utility) merely provided for judicial dispute resolution.[40] But, this was a sort of dispute resolution state courts already engaged in regularly and, furthermore, this was a permissible enlistment of the state judiciary branch by the federal government to further its ends.[41]

The Court had no concern whatsoever with the mandatory purchase agreement because it required only *consideration* of standards.[42] Congress could, the Court said, have preempted the field of utilities entirely but instead chose to defer to state regulation so long as they at least *consider* the federal standards.[43] The Court found "nothing in PURPA 'directly compelling' the states to enact a legislative program" in an already pre-emptible area.[44] Thus, PURPA avoided Tenth Amendment infringement.[45]

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37. *Id*. at 757 ("We agree with appellants that it is difficult to conceive of a more basic element of interstate commerce than electric energy, a product used in virtually every home and every commercial or manufacturing facility. No State relies solely on its own resources in this respect.").

38. *Id.* at 753, 755.

39. *Id.* at 759.

40. *Id.* at 759–60 ("PURPA, for all its complexity, contains essentially three requirements: (1) § 210 has the States enforce standards promulgated by FERC; (2) Titles I and III direct the States to consider specified ratemaking standards; and (3) those Titles impose certain procedures on state commissions.").

41. *Id.* at 762, 768 ("To be sure, PURPA gives virtually any affected person the right to compel consideration of the statutory standards through judicial action. We fail to see, however, that this places any particularly onerous burden on the State.").

42. *Id.* at 765.

43. *Id.*

44. The Court did have sympathy for the states' choice of "either abandoning the field altogether or considering the federal standards," but ultimately noted the Tenth Amendment "has been consistently construed 'as not depriving the national government of authority to resort to all means for the exercise of a granted power which are appropriate and plainly adapted to the permitted end.'" *Id.* at 766 (quoting *Darby*, 312 U.S. at 124).

While PURPA escaped the ax, the Supreme Court previously invoked the Tenth Amendment to strike down a portion of an act requiring states to take title of nuclear waste generated within their borders because "the federal government could not compel the States to enact or administer a federal regulatory program."[46] Building on that decision a few years later, the Court examined a suit brought in opposition to the Brady Act.[47]

With the Brady Act, Congress took aim at gun control, looking to implement a national background check system on prospective gun owners.[48] Plaintiffs compelled the Court to consider whether the provisions "commanding state and local law enforcement officers to conduct" the checks and "to perform certain related tasks" violated the Constitution.[49] In other words, the provision compelled a state official to particular action on behalf of the federal regulations.[50] The Court recognized that state officials are, of course, obligated to legislate and enforce state law in a manner that does not contradict federal laws;[51] then it recalled the Framers' rejection of "a central government that would act upon and through the States."[52] Thus, while the Court focuses on the commandeering of state officials to advance federal regulatory action, the underlying current of that objection flows between the Commerce Clause and the Tenth Amendment.[53]

Yet the Court left *FERC v. Mississippi* undisturbed when it decided *Printz* nearly fifteen years later. In fact, it specifically addressed its holding in *FERC* and distinguished it from *Printz*:

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45. "[The] most that can be said is that the . . . Act establishes a program of cooperative federalism that allows the States, within limits established by federal minimum standards, to enact and administer their own regulatory programs, structured to meet their own particular needs." *Id.* at 767 (quoting *Hodel v. Virginia Surface Mining & Reclamation Ass'n, Inc.* 452 U.S. 264, 291 (1981)).

46. New York v. United States, 505 U.S. 144 ,188 (1992).

47. 18 U.S.C. § 922. Commonly known as "The Brady Act."

48. *Printz*, 521 U.S. at 902.

49. *Id.*

50. *Id.* at 904.

51. *Id.* at 913.

52. *Id.* at 919.

53. "Even where Congress has the authority under the Constitution to pass laws requiring or prohibiting certain acts, it lacks the power directly to compel the States to require or prohibit those acts. . . . The Commerce Clause, for example, authorizes Congress to regulate interstate commerce directly; it does not authorize Congress to regulate state governments' regulation of interstate commerce." *Id.* at 924 (quoting *New York*, 505 U.S. at 166).

> [S]tate courts cannot refuse to apply federal law . . . [but] that says nothing about whether state executive officers must administer federal law. As for FERC . . . "this Court never has sanctioned explicitly a federal command to the States to promulgate and enforce laws and regulations," . . . and upheld the statutory provisions at issue precisely because they did not commandeer state government, but merely imposed preconditions to continued state regulation of an otherwise pre-empted field . . . and required state administrative agencies to apply federal law while acting in a judicial capacity.[54]

Where the Court seemingly could have rendered *FERC v. Mississippi* and PURPA void, it instead continued to recognize the delineation between writing legislation commandeering state officials to actively enforce federal aims and PURPA's proffering of implementation standards for consideration.

PURPA's consideration clause, which leaves the door open for state regulators to remain in the field, also effectively helped it work around potential Tenth Amendment problems. The deliberations in *Printz* included analysis of how the commandeering of state officials to federal purposes acts on the democratic process.[55] PURPA presented the option to write federally developed approaches into local state regulatory law; the Brady Act instead drove states to act out federal legislation like marionettes.

The Brady Act would thus have pinned the burden of cost and execution on the states and still permitted Congress to take credit for the program without increasing federal taxes.[56] This shifts any potential voter dissatisfaction—and potential retribution in loss of votes—squarely onto the states' shoulders. PURPA instead leaves it to the states to determine how to best implement the valid federal purpose via state regulation,[57] leaving the burden but also the credit.

### *A Selection of State Net Metering Implementation*

As of April 2020, more than 2.3 million residential electricity customers in forty-eight states and the District of Columbia generated at least some energy through solar panels, representing ninety-six percent of net metered

54. *Id.* at 929–30 (citation omitted) (quoting *FERC v. Mississippi*, 456 U.S. at 761–62).
55. *Id.* at 930.
56. *Id.*
57. *Mississippi*, 456 U.S. at 767.

electricity generation.[58] States have broad leeway to create and implement PURPA-compliant statutes, but many of the policies address common issues, such as:

(1) How to compensate rooftop solar owners for the excess energy: at the retail rate, or at more or less than the retail rate of energy;[59] as a monthly credit; as an annual cash-out; or some other option?[60]

(2) Which type of incentive to use: net metering or some other type?[61]

(3) Should the state limit the amount of energy an individual may generate?[62]

Logically, rate of compensation is one of the principal considerations of policy for both the consumers and the utilities. The end-rate that electricity companies charge embraces a range of costs, but "broadly speaking, rates are the sum of generation costs, transmission costs, and distribution costs."[63] Generation costs can fluctuate by season along with demand fluctuations, rising with higher demand as the system works to compensate.[64] Transmission and distribution costs include the fixed costs associated with the movement of electricity on the grid and include the variable costs associated with grid maintenance and operations.[65] Utilities also frequently employ time-of-use pricing, which reflects rate changes associated with highest or peak demand periods and seasons—aimed at best aligning the price with the actual costs of the electricity.[66]

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58. U.S. Energy Info. Admin., ELECTRICITY DATA BROWSER, https://www.eia.gov/electricity/data/eia861m/xls/net_metering2020.xlsx (This also includes 90,000 commercial and industrial electricity customers. The combined amount of electricity sold back to electric companies exceeded 175,000 megawatt hours.).

59. Josh T. Smith, *Net Metering in the States: A primer on reforms to avoid regressive effects and encourage competition*, Policy Paper 2018.001 (August 2018), https://www.ourenergypolicy.org/wp-content/uploads/2018/10/net-metering.pdf.

60. *See* Database of State Incentives for Renewables & Efficiency, *Programs*, (July 2, 2020) (demonstrating the common categories addressed for every state policy), https://programs.dsireusa.org/system/program/detail/488.

61. *Id.*

62. *Id.*

63. Jackson Salovaara, *Just and Reasonable Rooftop Solar: A Proposal for Net Metering Reform*, 7 ARIZ. J. ENVTL. L. & POL'Y 57, 67 (2016).

64. *Id.*

65. *Id.*

66. *Id.* at 68.

PURPA mandates that electric utility providers will accept and pay for electricity from non-utility generators[67] but does not specify in detail the method for setting the rate. The 2005 EPA amendment simply requires electric utilities to "make available upon request net metering service . . . under which electric energy generated by that electric consumer . . . may be used to offset electric energy provided by the electric utility."[68] Utilities are likely to argue for paying consumers a true avoided cost for any excess energy generated—that is, paying only what it would cost the utility company to actually produce the energy using its established infrastructure without accounting for the added costs utilities commonly build into rates for infrastructure maintenance[69]. Consumers are more likely to argue for receiving a retail rate for the excess energy generated and fed back into the system because it results in greater savings on energy bills, more cash in consumers' pockets, or greater return toward the initial investment of the PV cells. A sampling of state net metering policies demonstrates the common considerations and how states handle them.

*Oklahoma*

Oklahoma's net metering policy was established in 1988 but was most recently modified in 2019[70] with several pro-solar development provisions. Oklahoma offers net metering to all classes of customers and, as of 2019, places no limit to the amount of energy that consumers may produce.[71] Utility companies are required to compensate net generation at the full retail energy rate up to the consumption level or energy used at that location.[72] Energy generated in excess of the energy the consumer had actually consumed—previously entirely non-compensable—is to be purchased by the utility at the avoided energy cost.[73] The excess now must either be paid or credited in the next billing period.[74]

Oklahoma also increased the maximum net metering participation level to 300 kilowatts from 100 kilowatts, but placed a 125% peak load cap on

67. 16 U.S.C. § 824a-3.

68. 16 U.S.C. § 2621(d)(11).

69. *See* 18 C.F.R. § 292.304(a)(2) (2016).

70. Database of State Incentives for Renewables & Efficiency, *Net Metering* (July 2, 2020), https://programs.dsireusa.org/system/program/detail/286

71. *Id.*

72. Oklahoma Corp. Comm'n, *Net Metering in Oklahoma: Payments or Credits for Consumer-Generated Power* (November 2, 2020), Oklahoma.gov/occ/divisions/public-utility/electric-utility/netmetering.html.

73. *Id.*

74. *Id.*

net metering production.[75] If production exceeds that cap, the customers might be subject to the different small power producer regulations under a separate subchapter.

One feature of Oklahoma's regulations is the so-called "Sun Tax," which addresses possible extra rates or surcharges for net metering customers.[76] Oklahoma utility companies may file a new tariff if the utility could show evidence of subsidization—when a customer might use (pay for) so little power so as to not pay the company enough to cover the fixed costs the customer causes on the system.[77] The theory stands on the precedent that utilities build these fixed costs into the usage portion of the energy rates rather than charging flat fees to consumers to cover the fixed costs.[78] However, as of November, 2020, no utility had yet provided sufficient evidence that subsidization occurred or to what level it occurred; thus, net metering customers still are charged only the standard rates.[79]

*California*

California is widely known for its aggressive attitude toward encouraging and developing renewable energy. California most recently updated its net metering policy in 2019 (Net Metering 2.0) to better assess and utilize the impact of energy produced by consumers while keeping solar power economically viable.[80] The adjustment also came as a response to the previous policy's implementation of a five-percent cap on total solar installations for total peak electricity demand; California's growth in solar energy production was rapidly overtaking that cap.[81] Given the high cost of energy in the state, solar generation is highly popular because California

75. *Id.*

76. *Id.*

77. *Id.*

78. *Id.* (citing Final Order No. 662059 "In the event OG&E proposes, in the future, a demand charge or any other substantive change toa tariff applicable to customers with distributed generation that OG&E deems necessary to comply with 17 O.S. Section 156, the Commission will require OG&E to include as part of its case cost effectiveness tests, such as those performed for the company's demand programs, and make available to the parties detailed cost and benefit data.")

79. *Id.*

80. EnergySage, *California net metering: everything you need to know about NEM 2.*0 (last visited February 13, 2021), News.energysage.com/net-metering-2-0-in-california-everything-you-need-to-know/. Note that California is already in the process of developing the successor to 2.0.

81. *Id.*

consumers could realize tens of thousands of dollars in electricity cost savings over the panel lifetime.[82]

The original policy was simple: for every kilowatt-hour (kWh) fed into the grid, one kWh of credit was applied to the bill at the retail rate for the utility-generated energy saved. When the panels produced excess energy, the consumer could accumulate the credit to use at a later time when the panels did not produce enough to meet monthly use.[83] The new program continues the retail rate credit and proactively prohibits utility companies from applying fixed charges ("demand charges, grid-access charges, installed capacity fees, and standby fees") aimed at energy-generating consumers.[84] However, 2.0 allowed for a one-time interconnection fee and for non-bypassable charges which were built into the per-kilowatt hour charge for energy produced by the utility to fund other programs, such as low-income customer assistance.[85]

California is already in the midst of adopting a third iteration of the net metering regulations to go into effect in 2022—some reports speculate the newest policy may cut back on the benefits to consumer-generated energy and hinder further development of sustainable energy and policy.[86]

*Kansas*

Kansas has established net metering policies for the state's two investor-owned utility companies, most recently amended in 2014.[87] Utilities must offer net metering and provide bi-directional meters at no cost to the customers "until the rated generating capacity of all net-metered systems equals 1% of the utility's peak demand during the previous year."[88] However, local cooperative and municipal electric providers are not statutorily required to offer net metering (though many have some form of it available).[89]

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82. *Id.*
83. *Id.*
84. *Id.*
85. *Id.*
86. *See, e.g.,* Adam Gerza, *The net metering successor tariff 'NEM-3' proceeding in California has officially kicked off* (September 15, 2020), pv-magazine-usa.com/2020/09/15/the-net-metering-successor-tariff-nem-3-proceeding-in-california-has-officially-kicked-off/
87. Kansas Corp. Comm'n, *Net Metering in Kansas* (last visited February 13, 2021), Kcc.ks.gov/electric/net-metering-in-kansas.
88. *Id.*
89. *Id.*

Kansas has an expansive inclusion of energy sources which qualify as renewable energy resources eligible for net metering; far from just solar, the list includes wind, crops grown for energy production, cellulosic agricultural residues, methane from landfills or wastewater treatment, wood products, hydropower, hydrogen fuel-cells (produced by aforementioned renewable sources), and a catchall provision for any energy storage connected to any renewable generation.[90] To be eligible for net metering, one must be a "customer-generator":

- using any of these renewable energy resources,
- located on a premise owned by the customer generator,
- interconnected and operated in parallel phase with an affected utility under that utility's safety standards,
- intended to primarily offset the customer-generator's own energy requirements, and
- contain a utility-approved energy output automatic shutoff function.[91]

Despite the expansive inclusion, the statute limits net metering to small generators—25 kilowatts for residential customers under a pre-2014 agreement and 15 kilowatts for residential customers under a post-2014 agreement.[92] One of the big changes in the 2014 amendment to the net metering guidelines was a shift from one-to-one credit for consumption (retail rate) to a 100% avoided cost rate credit, based on the utility's monthly system average cost of energy per kilowatt hour.[93] This change allowed pre-2014 agreement customer-generators to continue to receive retail rate reimbursement.[94] But this grandfather clause will phase out in 2030, and *all* customer-generators will receive avoided cost bill credit.[95]

Finally, Kansas's statute includes a reporting and tracking provision requiring the utilities to submit annual information on the net-metered

90. *Id.*

91. *Id.*

92. *Id. See* EnergySage, *How much does a 15000 watt (15kW) solar system cost?* (last visited February 13, 2021), https://news.energysage.com/15-kw-solar-system-cost/. ("The average 15 kilowatt solar panel system in Austin, TX, has a monthly output of 1,850 kilowatt-hours. The average household in the United States uses about 014 kilowatt-hours per month.").

93. *Id.*

94. *Id.*

95. *Id.*

facilities they service.[96] the utilities may count these facilities toward their compliance with the Kansas Renewable Energy Standard.[97]

*Other State Approaches to Net Metering Under PURPA*

While thirty-four states, including the three above, utilize net metering, the rest take a different approach. Some states are transitioning to other types of compensation. Illinois is set to move to a new process upon reaching a 5% aggregate cap and Indiana will phase out retail-rate compensation completely by 2022.[98] Michigan has phased out net metering entirely in favor of "cost of service," which allows utilities to simply choose what they want to pay for distributed energy generation.[99] While Michigan's approach is uninspiring, New York is moving to a value-based tariff which aims to accurately compensate distributed generation[100]—potentially a better avenue than either retail or avoided cost rate net metering reimbursement.

Other states have forms of mandatory compensation other than net metering. Hawaii, for example, has two tariffs: one is a credit up until the utility's capacity limit, and the second is designed for smart systems which can both generate and store solar energy.[101] Customers thus use excess generation to charge the storage batteries during the day, then consume the stored energy at night; any further excess energy exported to the grid overnight is reimbursed in a bill credit.[102] Utah, on the other hand, has capped net metering and any new customers will receive utility-determined credits.[103]

Georgia, Idaho, and Texas, meanwhile, do not have mandatory state-wide net metering, though some utilities offer compensation.[104]

96. *Id.*
97. *Id.*
98. Kelly Pickerel, *Which states offer net metering?* (March 27, 2020), www.solarpowerworldonline.com/2020/03/ which-states-offer-net-metering/
99. *Id.*
100. *Id.*
101. *Id.*
102. *Id.*
103. *Id.*
104. *Id.*

*Net Metering Under PURPA: Problems, Potential Federal and State Remedies, and Consumer-Generator Property Rights*

Some noteworthy points may be gleaned from our brief look at states' net metering implementations. First, states commonly seem to have started their net metering policies using retail rate reimbursement or credit for the consumer-generators. However, they appear to be collectively moving away from the retail rate toward avoided cost as popularity and the percentage of peak energy generated increases among utility customers. Kansas changed from retail rate to avoided cost in its 2014 adjustment and Illinois will put a new compensation system in place upon reaching a 5% aggregate cap.[105] FERC supports the move to avoided cost, because "[w]ith PURPA, . . . Congress was not asking utilities and utility ratepayers to pay more than they otherwise would have paid for power."[106] Logically, such an ask would have served to disincentivize utilities from enacting PURPA.

A second takeaway is that states could still choose simply to either do away with current net metering compensation, like Michigan, or to make it completely optional, like Georgia. Consumer-generators then must ask what sort of assurance any of them has that they will continue to benefit from this investment. Kansas policy reveals at least one way states may incentivize utilities to *want* to work with consumer generators by creating a policy that allows consumer production of energy to benefit the utilities. Such a renewably energy portfolio standard may require, for example, that utilities must produce a certain percentage of their energy from qualifying, renewable sources.[107] But it should also allow the utilities to purchase rather than produce some of that energy—such as from consumer-generators—to satisfy this minimum threshold.[108] The requirement helps shift the incentive from having as few consumer-generators as possible to increasing use of consumer-generators and net metering.[109]

*Problems*

Unfortunately, states are still free to choose not to implement net metering at all. Short of relying on state policy to cement net metering advantages, where else can individual consumers turn to enforce supposed

105. *Id.*

106. *Southern California Edison Co.*, 71 FERC ¶ 61,269, 62,079 (June 2, 1995).

107. Samuel Moore, *Identifying the Pillars of a Pro-Solar Energy Policy: A Multi-State Survey of Distributed Solar Energy Generation Laws*, 5 OIL AND GAS, NAT. RES., AND ENERGY J. 695, 698–99 (2020)

108. *Id.*

109. *Id.*

rights under PURPA? The DC Circuit summarized the limited judicial options in a 2017 case in which a small QF contested its sales to the local utility under PURPA.[110] The case noted PURPA's construction: FERC creates regulations under PURPA, but the states must actually implement the regulations and determine utilities' avoided cost rates.[111] PURPA's enforcement provisions only apply to the extent that the state has already implemented PURPA, and thus any dispute created by state-implemented PURPA rules are a matter for state courts.[112] Federal courts may only adjudicate matters which affect interstate power transmission or wholesale generation (under FERC's Federal Power Act jurisdiction) or in which FERC brings certain claims.[113] This case demonstrates that neither federal courts nor FERC has much power to adjudicate suits brought by small QF consumers against local utility companies for rights set out under PURPA. These consumers are limited to state court relief and only to the extent that the states have chosen to implement PURPA's regulations.

This narrow avenue for judicial relief recommends consideration of the limited power to combat threats to existing state PURPA implementations and why Congress is limited in its enforcement of PURPA principles.

*Threats*

This delegation to the states of net metering regulation under PURPA also delegates to the states the responsibility to deal with the legal challenges and threats to PURPA and net metering. In the states that have net metering, consumers face a rise in pushback from utilities as PV cell energy generation trends both cheaper and more popular. Consider:

- Both Utah and Vermont currently face pressure form utility providers to continue lowering solar purchase rates, past a point of financial feasibility, and Arizona's state regulators have put off a 10% annual rate drop—but only for this year.[114]

110. Portland Gen. Elec. Co. v. F.E.R.C., 854 F. 3d. 692 (D.C. Cir. 2017).

111. Jennifer L. Key, *DC Circuit Clarifies Limits of Jurisdiction in PURPA Disputes* (May 5, 2017), https://www.steptoe.com/en/news-publications/dc-circuit-clarifies-limits-of-jurisdiction-in-purpa-disputes.html#_ftn1

112. *Id.*

113. *Id.*

114. Tim Sylvia, *State solar news: Net metering attacked in Vermont and Utah, Main goes big in PC*, PV MAGAZINE (September 24, 2020), https://pv-magazine-usa.com/2020/09/24/state-solar-news-net-metering-attacked-in-vermont-and-utah-maine-goes-big-in-pv/

- Louisiana outright abandoned net-metering in 2019;[115] one Illinois utility company ended its net metering policy despite requests from the state's Commerce Commission to delay the move.[116]
- FERC even faced down—and rejected—a petition by the New England Ratepayers Association ("NERA") which aimed to scrap state net metering policies *nationwide.*[117] NERA's approach was to force FERC into declaring that net metering constituted a sale subject to exclusive federal PURPA jurisdiction, but FERC declined,[118] thus leaving net metering policymaking to the states.

Meanwhile, both the Montana and Kansas Supreme Courts in 2020 stood as bastions against the encroaching utilities, ruling in favor of consumers and rejecting rate and fee discrimination against distributed solar customers.[119] The Montana Supreme Court rejected the argument that protecting the ratepayer (utilities) was the most critical factor in calculating avoided-cost; the most critical factor was instead to "preclude discrimination in the marketplace for sources of energy that provide an alternative to fossil fuel development."[120] The utility company sought to exclude carbon costs from the avoided-rate cost for small, solar qualifying facilities, citing unpredictable federal regulatory actions and the likelihood of carbon emissions regulations.[121] The court held this justification was arbitrary: "to assign carbon pricing a value of 'zero' because of its speculative nature simply does not compensate QFs for the full avoided-cost rate.[122] Nor does conjecture about an increasingly hostile political

115. Edward Klump, *LA kills net metering. Will other states roll back solar?*, E&E NEWS (October 11, 2020), https://www.eenews.net/stories/1061246571

116. John Funk, *Amren rejects Illinois regulators' request, ends retail net metering for new residential solar customers*, UTILITYDIVE (October 6, 2020), https://www.utilitydive.com/news/ameren-rejects-illinois-plea-net-metering-for-new-residential-solar/586452/

117. The petition backers wanted to place net metering under FERC jurisdiction, claiming it would lower costs for ratepayers but potentially reducing significantly the rates payable. Arianna Skibell, *FERC kills anti-net metering plan as PURPA fight rages*, E&E NEWS (July 17, 2020), https://www.eenews.net/stories/1063576787

118. *See* Order Dismissing Pet. for Declaratory Order, 172 FERC ¶ 61,042 (July 16, 2020) (FERC Order).

119. Vote Solar v. Dep't of Pub. Serv. Regulation, 401 Mont. 85 (2020); In re Joint Application of Westar Energy, Inc., 311 Kan. 320 (2020).

120. *Vote Solar*, 401 Mont. at 95.

121. *Id.* at 111–12.

122. *Id.*

climate" justify the move.[123] This carbon cost exclusion was thus discriminatory to QFs and violated PURPA.[124]

The court also rejected the utility's implementation of reduced contracts for the solar QFs because it failed to consider the shorter contracts "in conjunction with greatly reduced standard offer . . . rates," resulting in a PURPA violation since the contracts must "be sufficiently long term to 'encourage' and 'enhance' QF development."[125] The court held against strategies which aimed to chip away at the consumer-generator side of the balance PURPA seeks to strike in incentivizing both utilities and consumers to invest in renewable energy resources. While rate-makers have great leeway, generally, the court found these particular strategies "arbitrary and unreasonable" as well as discriminatory against the QFs in question.[126]

The Kansas Supreme Court likewise dealt with discriminatory rates set by utilities targeting customers who produce at least some energy through renewable resource distributed generation.[127] The court noted a frequent theme which utilities raise: the companies traditionally use a "two-part rate," but build some of the fixed costs of delivering energy to consumers into the rate charged per kilowatt hours used during the billing period rather than including them all in the commonly denoted "flat service charge".[128] Utilities suggest this practice is used as an incentive to encourage customers to "exercise prudent energy consumption;" however, it now gives cause for the companies to complain of a "free rider" problem.[129] Distributed generation customers still pay the flat service fee but, in some scenarios, are able to generate enough energy that their usage bills amount to net-zero.[130] And, utilities argue, shifting the costs to other customers who thus subsidize the distributed generation customers.[131] In the instant case, the utility company developed a new rate structure to apply to distributed generation customers.[132] The court points out that the utilities chose all along to

123. *Id.*

124. *Id.* at 112. Note that, as seen here, courts often use phrases such as "violated PURPA" in decisions when referring to the state's implementation of PURPA regulations. The phrasing reflects the somewhat confusing nature of PURPA being a suggested "regulation" for states to implement or disregard at their choice.

125. *Id.* at 120–121.

126. *Id.* at 112, 121.

127. *In re Westar*, 311 Kan. at 321.

128. *Id.*

129. *Id.* at 321–22.

130. *Id.*

131. *Id.* at 322.

132. *Id.*

structure rates in a manner which encourages energy conservation by wrapping some fixed costs into the variable charge, suggesting the free rider problem was actually created by the utility companies themselves.[133]

The court noted the economic arguments may have some merit but said it could easily dismiss them.[134] The new proposed rate structure violated Kansas law because it was discriminatory to distributed generation customers.[135] The problem with the new proposed structure was that the utility added a fee without any added service: the flat fee had no relation to "time-of-use rate or a minimum bill," but is "simply price discrimination" based on their being distributed generation customers.[136]

These two cases highlight two common threats to consumer-advantaged net metering. First, as the Montana case suggests, utility companies may employ tactics to tip the PURPA guidelines more to their favor than to the consumer's favor. The Montana company tried to exploit technical uses of rate determination to its advantage and sought to predict the direction of the political winds, betting on future legislation that was less economically focused. The Kansas case presented discriminatory pricing that the Kansas Supreme Courts could shut down. The Kansas decision showed how courts can deal with such tactics and still support PURPA's intent of encouraging renewable resource development.

The Kansas case also demonstrated the second threat of policy argument designed to sway public opinion against net metering. The utility raised a policy and economic argument that opponents of net metering champion, while also demonstrating the obvious rebuttal. The argument is that permitting net metering (or any billing arrangement which allows distributed generation customers to offset energy costs via self-generated electricity) only serves to benefit the distributed generation customers at the expense of traditional customers, low-income customers, and the utilities.[137]

But this argument only has merit to the extent that consumer generators shift enough costs to truly negatively impact non-consumer generators. In 2019, the annual estimated amount of small-scale PV energy generation was approximately 35,000 gigawatt hours (GWh).[138] The total energy sales

133. *Id.*

134. *Id.*

135. *Id.* at 332.

136. *Id.* at 330.

137. Megan McLean, *Throwing Shade: The Case against Judicial Interference with Solar Net Metering Policies*, 46 ENVTL. L. REP. NEWS & ANALYSIS 10873, 10880 (2016).

138. Database of State Incentives for Renewables & Efficiency, *Net Metering* (July 2, 2020), https://www.eia.gov/electricity/data/browser

for 2019 amount to 3.9 million GWh.[139] Accordingly, only approximated 0.9% of the energy demand in 2019 could have been supplanted by distributed generation consumers with PV solar, and only a corresponding amount of the costs could thus have shifted to non-consumer generators. Furthermore, only some of that cost equates to the portion allocated to fixed costs which would be shifted since only part of the kilowatt per hour rate consists of fixed costs.[140] As for low-income consumers, the argument overlooks state and federal programs and subsidies which discount utility rates.[141]

On the other hand, this cost-shifting argument narrowly excludes consideration of the benefits that the consumer-generators confer on the grid and other consumers. For example, consumer-generated power reduces peak demand, emissions, and the maintenance or repair costs that accompany these reductions.[142] Some cities even pay higher-than-retail rates for this excess energy.[143] Even with this more inclusive approach, cost shifting is likely still negligible, though the potential certainly exists for the small-scale energy industry to grow to the point at which the costs become substantial. In the meantime, as the Kansas Supreme Court rightly pointed out, the utility company in the *In re Westar* case had likely just created its own problem by structuring its rates such that the fixed costs of providing electricity were not covered by the flat service fees which it permissibly charged all of its customers.[144] Rather than discriminating against distributed generation customers, the simpler solution is to better

139. *Id.*

140. *See, e.g.*, Salovarra, *supra* note 61, at 83. (estimating this portion for 2016) ("The Energy Information Administration reports that electricity prices are composed of 65% generation costs, 9% transmission costs, and 26% distribution costs. This analysis assumes that 3 5% of the electricity price-the non-generation costs-is fixed. Multiplying by 0.48%, the assumed share of net metered generation, gives 0.17% as the upper limit on the portion of the national revenue requirement which are fixed costs not borne by net metered customers. Shifting these costs to non-participating customers results in an average rate increase of 0.17%. For the average residential customer with a $111 monthly electric bill, this amount to paying an additional 190 each month.")

141. *See, e.g., infra* note 185 (referencing the LIHEAP program).

142. Salovarra, *supra* note 61 at 75.

143. *Id.* at 75–76 ("A few jurisdictions, namely Minnesota and the city of Austin, Texas, have adopted value-of-solar tariffs, which explicitly calculate these benefits in addition to avoided costs and arrive at rates for excess solar generation above retail rates.").

144. *In re Westar*, 311 Kan. at 321.

incorporate the actual costs into the flat service fee—which is what the fee is designed to cover in the first place.[145]

*PURPA Comes Up Short*

If Congress still aims to promulgate policy supporting net-metering, PURPA's first problem is it does not reach far enough. The 2005 amendment requires only that states consider implementing policies of net-metering. As of 2015, most states had implemented net metering policies, but some still had not.[146] Though only a few states hold out, the citizens of those states do not have access to benefits of net-metering.

*Printz* and *FERC* viewed together indicate the second problem with PURPA: Congress cannot compel the states to implement net metering. Comparing the cases, the consideration provision of PURPA stands out as its protection from the Court's Tenth Amendment ax. Congress may regulate the commerce of utility providing, but it cannot commandeer states directly to act for its purpose. Utilities, though truly connected to interstate commerce, still possess intimately local considerations.[147] If, however, net metering indeed is something vital to protecting or promoting the continued development of and transition to renewable resources under PURPA's framework, then the federal government has taken the current statute as far as it can go under the current Constitutional Limitations.

*Remedies: Constitutional Analysis of Potential Federal and State Avenues*

Both the federal and state governments utilize policy to encourage development and expansion of renewable energy.[148] Without directly mandating specific actions, policy is one of the sharpest tools the government possesses to promote desired behaviors from its citizens. Both levels of government employ tax credits and legislation "requiring utilities to purchase renewable energy credits . . . to create financial incentives for

145. *Id.* at 331.

*146.* Nicole Rodriguez-Fierro, *Should the Federal Energy Regulatory Commission Intervene: With Varying State Policies on Net Energy Metering, What Is the Future of Solar Distributed Generation in the United States*, 29 TUL. ENVTL. L. J. 323, 327 (2017).

147. Utilities often have state-authorized monopolies subject to close state regulation of the minutia of rate-setting to control permissible revenues and still promote policy goals. Solar Energy Indus. Ass'n, *Utility Rate Design and Complementary Policies* (last visited February 14, 2021), https://www.seia.org/initiatives/utility-rate-design-complementary-policies.

148. Robert Young, *FERC Maintains the Status Quo on Net Metering for the Time Being*, July 21, 2020, https://www.law.com/thelegalintelligencer/2020/07/21/a-declaratory-order-seeks-to-change-the-status-quo-on-net-metering/.

[renewable energy] project developers."[149] For the small scale projects which are the focus of this paper, net metering is the most common promotional policy tool.[150] Keeping in mind the limitations of *Printz* and *FERC*, as well as the division of regulatory power built in to PURPA's construction, both the federal and state levels of government still possess actionable avenues to strengthen PURPA through policy.

How, then, should net metering protection proceed under the law? One option is a federal work-around, either through rewriting PURPA, partially or completely preempting the field, or tightening the purse strings. A second option is for states to take a stronger stance to protect net metering through a property rights analysis and close monitoring of utility rates, or merely to continue implementing PURPA as written and allowing the state courts to carry the burden of remedying utility company rate discrimination.

*Federal Courses of Action*

*1. Legislate a work-around into PURPA.*

The federal government is unlikely to find a workaround path to successfully mandate adoption of net metering, per *Printz* and *FERC v. Mississippi*. But one approach it could take is a simpler exercise of its Commerce Power through actual prohibition of rate discrimination against solar power users.

If Congress has not entirely displaced state regulation over the matter in question, state law is still pre-empted to the extent it actually conflicts with federal law, that is, when it is impossible to comply with both state and federal law or where the state law stands as an obstacle to the accomplishment of the full purposes and objectives of Congress.[151]

As *FERC* recognized—and *Printz* upheld—utilities are well within Congress's exercise of the Commerce Clause because of the extensively interconnected nature of energy among the many states.[152] PURPA declined to fully preempt and toed the line of Tenth Amendment infringement when it refrained from compelling action,[153] but also declined to exercise the easily defendable power of prohibition.

This prohibition on rate discrimination would function as a partial preemption of the utility field under authority of the Supremacy Clause. A

149. *Id.*
150. *Id.*
151. Silkwood v. Kerr-Mcgee Corp., 464 U.S. 238, 248 (1984) (citation omitted).
152. *See supra* note 26.
153. *See supra* note 32–34.

constitutionally adopted federal law—such as valid exercise of the Commerce power—invalidates "any and all state or local laws" to the extent such laws conflicts with the federal law.[154] The move would constitute partial preemption because Courts do not entirely exclude state regulation alongside federal laws.[155] Such a prohibition would permissibly maneuver the states into regulating accordingly, because state officials have to enact and enforce state laws "in a fashion as not to obstruct the operation of federal law, and . . . all state actions constitution such obstruction, even legislative Acts, are ipso facto invalid."[156] *Printz* endorsed the use of "preconditions to continued state regulation of an otherwise preempted field."[157]

Including a statute prohibiting discrimination in rate-setting could function as a useful, if only partial, band-aid over the PURPA problem. The federal government could preempt utility companies from engaging in the previously discussed tactics to discourage the growing popularity of PV panels, while still leaving to the states the rest of the regulatory authority and responsibility. At least two state supreme courts have successfully upheld state PURPA measures prohibiting discriminatory charges,[158] indicating judicial viability of the intent. The antidiscrimination measure, however, still works best for consumer generators when coupled with net-metering like a one-two punch.

*2. Preempt the Field Entirely*

As a second avenue, Congress could *entirely* preempt the field of utility regulation in lieu of the partial preemption option. Congress may impliedly preempt *any* state regulation through a "scheme of federal regulation so pervasive as to make reasonable the inference that Congress left no room to supplement it."[159] Federal regulation may make federal interest in the field "so dominant that the federal system will be assumed to preclude enforcement of state laws on the same subject."[160] Full preemption renders to the federal government the obvious benefit of complete control over the

154. Rotunda, *supra* note 31, at 225.
155. *Id.* at 226.
156. *Printz*, 521 U.S. at 913.
157. *Id.* at 929.
158. *See supra* note 115.
159. Pacific Gas and Elec. Co. v. State Energy Res. Conservation & Dev. Comm'n, 461 U.S. 190, 204 (1983) (quoting Fidelity Fed. Savings & Loans Ass'n v. de la Cuesta, 102 S. Ct. 3014, 3022 (1982)).
160. *Id.*

means used to pursue the goal of PURPA (increased renewable energy production). Such total preemption would eliminate the wide variation in current state net-metering legislation and could set forth a standardized application of net metering principals nation-wide. Several FERC decisions demonstrate reluctance to expand even its limited regulatory purview, and Congress would have to consider questions of how to avoid commandeering under *Printz* if it looked to expand PURPA as a whole. For example, what the sheer logistics of full preemption would look like and whether utilities are a matter the federal government and courts are equipped to handle still remain.

Presently, FERC creates regulations under PURPA, leaving to the states the consideration and implementation (or not) of those regulations, and rejecting efforts to shift regulation to the federal level. FERC possesses specific regulatory power over wholesale sales of electricity in interstate commerce.[161] In response to the recent NERA challenge,[162] the Pennsylvania Public Utility Commission filed a protest raising the point that the Federal Power Act preserves to the states the jurisdiction to legislate the local retail sale of power—and any sale beyond wholesale interstate sales, for that matter.[163] FERC apparently agreed and declined to make any sweeping changes classifying QF power sale as wholesale—and thus subject to *federal* regulation—effectively leaving the jurisdictional disputes to the states.[164] Such a declaration would have effectively regulated at the federal level the rate utilities are required to pay to consumer generators for the excess power fed back into the energy grid by declaring it wholesale energy.

The decision here represents a continuation of FERC's stance in two earlier administrative decisions[165]: *MidAmerican Energy*[166]and *SunEdison.*[167] MidAmerican Energy objected to an Iowa Utilities Board order, directing it to interconnect with three "Alternate Energy facilities"

161. FERC, *What FERC Does*, FERC.GOV (last visited February 14, 2021), https://www.ferc.gov/about/what-ferc/what-ferc-does#:~:text=The%20Federal%20Energy%20Regulatory%20Commission,well%20as%20licensing%20hydropower%20projects.

162. *See supra* note 71.

163. Young, *supra* note 146.

164. *Id.*

165. Note these three cases come at approximately ten-year intervals, suggesting FERC's approach to PURPA implementation and the division of the federal and state regulation in these matters seems to be its long-accepted stance.

166. *MidAmerican Energy*, 94 FERC ¶ 61340 (2001)

167. *SunEdison,* 129 FERC ¶ 61146 at P 18 (2009)

and to offer them net metering pursuant to Iowa's Alternate Energy Production Statute.[168] The company argued (1) MidAmerican did not have to pay a rate in excess of its avoided cost because PURPA preempted Iowa's regulation, and (2) Iowa actually had set rates for wholesale power sales, for which the Federal Power Act ("FPA") preempted Iowa's authority because these facilities were not QFs.[169] It further argued that every "flow of power" constituted a sale subject to the pricing requirements of either PURPA or the Federal Power Act.[170] The Iowa Board argued that its orders were "permissible implementations of state energy policy," and thus not preempted by or in conflict with either PURPA or the FPA.[171]

FERC, unpersuaded by MidAmerican's arguments, declined to find all "flows of power" constituted sale; it found no sale when individual homeowners and consumers engage in net metering with utilities.[172] However, the commission noted that where a QF has a net sale to a utility—where a QF has created more power than it has used and receives compensation—net sale falls under the avoided cost requirement under PURPA.[173]

Based partially on the final holding in *MidAmerican*, SunEdison sought a declaratory ruling from FERC to ensure proper jurisdiction and rate making in the case of sales of electricity to end-use customers.[174] The particular concern involved somewhat of an electricity merry-go-round: when SunEdison generates solar power from its own QF generation subsidiaries, sells it to a customer, and pays the same customer in the event that some of that power goes unused (under a net metering agreement), does that constitute a sale for resale in interstate commerce for purposes of federal jurisdiction?[175] *MidAmerican* did not stretch so far as to rule out this scenario. FERC helpfully specified that a sale subject to its jurisdiction only occurs should the end of use customer produce and feed back into the grid more energy than it needs over an entire billing period.[176]

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168. *MidAmerican*, 94 FERC ¶ 62261.
169. *Id.*
170. *Id.* ¶ 62263
171. *Id.* ¶ 62261
172. *Id.* ¶ 62263.
173. *Id.*
174. *SunEdison*, 129 FERC ¶ 61618.
175. *Id.* ¶ 61619
176. *Id.* ¶ 61621. This specification is consistent with the *MidAmerican* holding defining a sale subject to avoided cost requirements.

SunEdison's other concern arose from concerns over rate setting: should its sale of energy to end-use customers constitute "jurisdictional rates," the "rates accepted, established, or permitted by the Commission for the transmission of electric energy in interstate commerce[] [and] the sale of electric energy at wholesale in interstate commerce?"[177] FERC returned to its conclusion that there was not a sale under its jurisdiction in such net metering scenarios to assert that jurisdictional rates do not apply.[178]

In both *MidAmerican* and *SunEdison*, FERC asserted straightforward demarcations to the specific jurisdictional questions presented. NERA sought to overcome both of these cases in its suit seeking a FERC declaration that net metering transactions amounts to sales in interstate commerce, but FERC still declined to make such a statement.[179] In its answer to the NERA challenge, however, FERC also declined to truly make a generalized, catchall statement putting to bed all jurisdictional disputes over net metering.[180]

FERC had the clear opportunity to fully preempt regulation of net metering as a sale of power subject to federal commerce control, but continued to decline to do so. This consistent resistance to asserting full jurisdiction over net metering under PURPA makes easy sense in light of the restrictions borne of the Commerce Clause and the Tenth Amendment interplay demonstrated in *Printz* and in *FERC*. If FERC claims jurisdiction over all net metering questions under the banner of wholesale energy and interstate commerce, PURPA regulations are no longer subject to governmental enforcement only as a matter of state implementation. The federal government would now own regulation and mediation of net metering disputes under federal law. Would the federal government then find itself forced to order all states to implement and enforce PURPA-compliant net metering policies? Possibly. It seems difficult to shut down some consumer suits for net metering in states which currently have no PURPA-compliant regulations while enforcing the regulation's application in suits brought in states which do. If so, the *Printz* and the Tenth Amendment tension surfaces immediately.

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177. *Id.*

178. *Id.* The Court also declined to extend a clerical waiver SunEdison requested on the basis that QF status for the facilities in question means such facilities are already exempt from the regulations implementing the Public Utility Holding Company Act of 2005. This declaration further shows FERC's strong assertions of jurisdictional divisions. *See Id.* ¶ 61618.

179. Young, *supra* note 146.

180. *Id.* (noting the Federal Power Act leaves much still to state jurisdiction).

PURPA avoids Tenth Amendment infringement because it leaves to the states the ultimate decisions on whether and how to implement net metering regulations. If the federal government merely mandates PURPA nationwide, it removes states discretion and opens itself up to the commandeering problems seen in *Printz* and invites a revisiting of *FERC v. Mississippi*. FERC cannot, of course, coerce state officials to execute a federal regulation program. Total field preemption is an option to circumvent that problem—the constitutional authority exists to fully regulate energy and utilities under the Commerce Clause[181].

Obviously, myriad federal programs exist, so transforming PURPA into a federally regulated program requires no novel mobilization of resources or logistic skill. On the one hand, FERC could have found that net metering *did* constitute a wholesale of energy in interstate commerce, thus regulated under the FPA. Rates under the FPA must be "just and reasonable," but FERC delegates much of that ratemaking authority to nonprofit organizations in various regional markets.[182] In New England, for example, the organization that oversees market auctions (auctioning demands for electricity) sets the wholesale price via the price of the last accepted bid; from there, the entities that sell and deliver the energy to the consumers derive the retail price to charge for the power.[183] Thus, even if net metering remained grouped under the wholesale part of this process, FERC still delegated regulation down to a more practical regional level and potentially would not require an extensive change in execution of PURPA.

This type of reclassification likely circumvents any commandeering or Tenth Amendment issue because FERC already regulates wholesale. Theoretically, it would simply cause utility providers to have to measure and compensate the net metered energy along the wholesale rates. Such an arrangement likely satisfies most companies with existing net metering because it is a lower rate of compensation than retail rate. In states with no current net metering, however, the utilities would have to implement a system to handle the now-wholesale nature of the net metered power.

Alternatively, FERC could find itself forced to take over utility ratemaking entirely if it laid claim to net metering with a mandate that compensation will always be at the retail rate. While the Court upheld PURPA in *FERC v. Mississippi*, it did so because it "merely imposed preconditions to continued state regulation of an otherwise pre-empted

181. *See supra* note 155.
182. PNE Energy Supply LLC v. Eversource Energy, 974 F.3d 77, 80 (1st Cir. 2020).
183. *Id.*

field."[184] A retail rate could still be a mere precondition; arguably such a command does not upset federal versus state accountability since the local utilities still determine the retail rates. Or, a retail rate could be a commandeering of state policy, overriding the state's discretion to implement PURPA as it chooses.

Of course, FERC could just take over utilities entirely via regulation that is pervasive enough under *Pacific Gas* so as to remove the state entirely,[185] and implement federal officials to take over any positions currently occupied by state officials for the purpose of executing regulatory regimes. This, however, would force any disputes over energy into federal courts for federal judges to deal with.[186]

*3. Tug on the Purse Strings*

A third avenue that remains steadfastly open, with room to enhance PURPA, is Congress's ability to strong-arm or entice states into compliance through monetary incentive via congressional spending power. "Congress may attach conditions on the receipt of federal funds."[187] But "such conditions must bear some relationship to the purpose of the federal spending,"[188] and cannot be so coercive as to leave states with no real choice other than to comply.[189] Congress could use its power of the purse to offer funds aimed at offsetting some of the cost utility companies claim in order to require states to promulgate net metering paired with the anti-discriminatory rate clause. States could be given funds earmarked specifically for renewable resource development, conditioned on the implementation of net metering policies that comply or closely comply with PURPA's guidelines.

Alternatively, Congress could condition further receipt of some amount of funds already allocated to state budgets to entice the states to act in a compliant manner or to offer increased funding to an already existing program on basis of such conditions. For example, the Low-Income Home

184. *Printz*, 521 U.S. at 929.

185. *See supra* note 89.

186. 28 U.S.C. § 1331.

187. South Dakota v. Dole, 483 U.S. 203, 206 (1987) (holding that a 5% reduction in highway funding was permissible condition in relation to electing a drinking age other than the federally suggested age).

188. *Id.* at 207–08.

189. *See* Nat'l Fed'n of Indep. Bus. V. Sebelius, 567 U.S. 519, 587 (2012) ("The Court today limits the financial pressure the Secretary may apply to induce States to accept the terms.").

Energy Assistance Program ("LIHEAP") provides funding to states to help offset high energy costs for low-income households.[190] The program assists with costs associated with heating and cooling, weatherization, bill payment assistance, and energy-related home repairs.[191]

Consider, for example, Oklahoma, which will receive $42 million in federal funding for its LIHEAP program.[192] The federal government could easily condition a small portion of that budget or offer a small increase to that budget in order to entice Oklahoma into implementing PURPA in its federally recommended form. If the Supreme Court held that a drinking age was closely related enough to highway funding to uphold *South Dakota v. Dole*,[193] then LIHEAP is certainly one (likely of several) area of funding on which the federal government could attach a string related to renewable energy. As a matter of policy and optics, offering to increase the funding certainly appears better than threatening to withhold any measure of the funds since the criticism already implies that net metering disadvantages the poor.

*State Courses of Action*

States, of course, are simply free to legislate and regulate for the general welfare of their citizens to the extent that federal regulation does not preclude state law as discussed in the above paragraphs. While states, of course, may choose to implement PURPA in its suggested form, they also may (and do) alter the guidelines to better suit their own legislative purposes.[194] While some states have taken advantage of the opportunity to reduce net metering guidelines, they could also choose to pursue more aggressive policies designed to encourage renewable energy development within the state. Some research suggests that the "retail rate" form of net metering may not actually benefit solar because it could spark a stronger pushback against residential solar.[195] The same study found that utility-scale solar actually costs less than residential-scale,[196] suggesting states

190. Alabama Low-Income Home Energy Assistance Program (last visited February 14, 2021), https://www.benefits.gov/benefit/1551.

191. *Id.*

192. US Dep't of Health and Human Services, OKLAHOMA PROFILE (last visited February 14, 2020), https://liheapch.acf.hhs.gov/profiles/OK.htm.

193. *See supra* note 183.

194. *See, e.g., infra* page 15 (discussing other state net metering policies).

195. Julia Pyper, *Ditching Net Metering Is in the "Best Interest" of Solar, Say MIT Economists*, GREENTECH MEDIA (May 5, 2015) https://www.greentechmedia.com/articles/read/MIT-Economists-Say-We-Should-Ditch-Net-Metering.

196. *Id.*

might look for ways to push legislation encouraging utility companies to aggressively pursue transitioning to renewables on a large-scale.

States could, in conjunction with such legislation, offer tax incentives to residents who already have an energy generation system to allow the utility company to focus the funding on the renewable development instead. Net metering stands as a useful interim measure, but states will need to take greater, large-scale action to make meaningful strides toward energy independence via renewable sources. Kansas, for example, increased its wind-produced energy by 270% from 2009 to 2018; by 2018, the state produced enough energy from solar, wind, and hydro electricity to power 47% of the state's electricity consumption.[197] Over some of that time period, Kansas had a Renewables Portfolio Standard setting percentage goals.[198] Georgia, contrarily, produced only about 9% of its energy from renewable sources in 2019, but nearly half of that was derived from wood and wood-derived fuels.[199] Georgia has neither a renewable energy portfolio standard, nor a voluntary renewable energy goal.[200]

*Consumer-Generator Property Rights*

If neither federal nor state regulations offer consumer-generators protection for the energy they generate, what avenue for recourse might they exploit? This final section very briefly touches on whether the Constitution provides any defenses for self-generated energy under property theory or due process requirements.

Before applying the Takings or Due Process clauses in protection of excess self-generated electricity, courts would likely need to address whether consumer-generators have the right to both self-generate power and still be connected to the commercial utility system. Common law property doctrine supports the right to use renewable resources to generate electricity through the right to use and enjoy one's property.[201] On the federal level, PURPA establishes the right to interconnect these electricity-

197. *Kansas becomes a leader in renewable energy*, KANSAS CITY BUS. J. (September 4, 2019), https://www.bizjournals.com/kansascity/news/2019/09/04/kansas-becomes-a-leader-in-renewable-energy.html.

198. *See* Database of State Incentives for Renewables & Efficiency, *Programs* (June 14, 2018), https://programs.dsireusa.org/system/program/detail/3401

199. U.S. Energy Info. Admin., *Georgia State Profile and Energy Estimates* (November 19, 2020), https://www.eia.gov/state/analysis.php?sid=GA

200. *Id.*

201. Jon Wellinghoff & Steven Weissman, *The Right to Self-Generate as a Grid-Connected Customer*, 36 ENERGY L. J. 305, 309 (2005).

generating facilities with the local utilities—implying the right to also use these generation facilities in addition to the utility provided energy.[202] However, as discussed in preceding paragraphs, PURPA is an optional regulatory scheme. Fortunately, all states have laws establishing "an electric distribution utility's obligation to reliably serve all customers," for which consumers must pay the fixed infrastructure costs and the variable rate for the consumer's energy use.[203] The implication, per these rate structures, is that consumers set the payable level of service via the extent to which they request and use the service.[204] If consumers have the right to receive power from local utilities, and to determine how *much* power they do receive, then presumably they also have the right to stay connected to these local utilities even if they begin to generate some power for themselves. In this case, solar generation to save utility costs is analogous to a consumer using a wood-burning fireplace in the wintertime to generate additional heat and save utility costs—a use of property none would question.

If consumers may generate power under use and enjoyment of property, then the Constitution may provide some protection for the property owner's interest in the generated power—particularly in the excess power which the property owner does not use. The Fifth Amendment provides two property interest protections under the Due Process Clause and the Takings Clause; each involves "subjective assessments of the nature and degree of the government action," though the differences between the two can be nuanced.[205]

Under a Takings analysis, courts look to factual analysis of the regulation's economic impact of diminution in value, character of the governmental action, and the action's impact on "reasonable investment-backed expectations."[206] The Fifth Amendment implies that the government should only execute a taking of private property for "public use," but courts defer to legislators' judgment on the matter.[207] The Supreme Court also recognizes a distinction between a "physical intrusion or appropriation of property requiring just compensation" and a regulatory taking which yet amounts to an appropriation due to the severity of constraints on use of the

202. *Id*. at 317.
203. *Id.* at 323.
204. *Id.* at 323–24.
205. William Rich, MODERN CONSTITUTIONAL LAW § 17:17 (3d ed. 2020).
206. *Id.*
207. *Id.* § 17:4.

property.[208] Property regulation is presumptively reasonable but "if regulation goes too far it will be recognized as a taking."[209]

Due process analysis focuses on legitimate government interests versus arbitrary and irrational actions.[210] Due process requires that the government pay just compensation to the owner of taken property.[211] The just compensation is "fairly determined market value"—ascertained on the date of the taking and measured by what an ordinary buyer would be willing to pay—but is also measured by the owner's loss rather than the government's gain.[212] Market value may not command the price determination when it would "result in manifest injustice to the owner or the public."[213]

Constitutional protections under the Takings or Due Process clauses may pass through the utility companies to consumer-generators because the government may regulate private conduct when it is "clothed in the public interest"—that is, when "the owner by devoting his business to the public use, in effect grants the public an interest in that use and subjects himself to public regulation."[214] Thus utilities are subject to state rate regulation, and the rates must be reasonable; courts may find unreasonable rates amount to regulatory takings and require just compensation.[215]

Suits under the Takings theory seem unlikely to garner success for consumers, but the best argument likely lies within the reliance interest on the consumer's investment in the generation equipment. "Reasonable investment backed expectations" as a standard addresses property owners' ability to use their land as expected in context of new regulation which would hinder that ability.[216] Rather than protect compensation paid for excess energy, this theory of law likely would serve to protect consumer-generators only from regulation seeking to strip property owners of the right to generate any electricity at all—and only under a reasonable expectation of use and enjoyment of one's land as a property owner. The diminution in value approach sets a high bar to qualify as a taking: to either "substantially exceed 50%," but really decreasing by "closer to 90% of the

208. *Id.* § 17:8.
209. *Id.* (quoting *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393, 415 (1922)).
210. *Id.* § 17:17.
211. *Id*. § 17:3.
212. *Id.*
213. *Id.*
214. Wellinghoff, 36 ENERGY L. J. at 314.
215. *Id.* at 315.
216. Christopher Serkin, *Existing Uses and the Limits of Land Use Regulations*, 84 N.Y.U. L. REV., 1222, 1251 (2009).

parcel as a whole before it is likely to result in a taking."[217] Unless the excess energy produced were severable from the land as a parcel of property, the value of that energy will never approach ninety or even fifty percent of the parcel value.

Though not a due process-based suit, the Missouri Supreme Court invalidated the local utility's efforts to squelch distributed generation compensation rates as arbitrary or irrational policymaking,[218] offering a more promising recourse for similar suits under Due Process theory. Due process examines whether the means justify the ends to determine whether there is sufficient purpose in government regulations.[219] The government may not "impos[e] harms that are disproportionately high compared to the benefits created," but the standard is deferential.[220] The likely path to Due Process protection lies in connecting the excess produced energy to irrational or unreasonable rates of compensation. Net metering rates still carry an end-result presumption of validity, as do all rate-making decisions.[221] Ratemaking is a highly technical, local, and self-correcting process best executed by experts in the field—courts may struggle to govern cases of rate accuracy.[222] Courts, however, are practiced in determining whether regulations violate constitutional protections and whether regulatory actions fall into a category of unreasonable or arbitrary. For that reason, courts—like the Missouri Supreme Court—will have no trouble continuing to protect consumer-generators from discriminatory, arbitrary, or unreasonable regulations, under the Due Process Clause or otherwise. However, if consumer-generators want to argue about what amount exactly qualifies as just compensation for excess generated energy, appealing to legislators through the political process will likely serve them better.

### *Conclusion*

Net metering has demonstrated its usefulness as a policy tool in encouraging private persons to self-produce some of the energy they consume using renewable resources harnessed from their own property. Currently, the costs this self-produced energy shifts to other consumers on

217. McLean, 46 ENVTL. L. REP. at 10876 (quoting Mark. W. Cordes, *Takings Jurisprudence as Three-Tiered Review*, 20 J. NAT. RESOURCES & ENVTL. L. 39 (2005).

218. *See supra* note 114.

219. Serkin, 84 N.Y.U. L. REV. at 1257.

220. *Id.*

221. McLean, 46 ENVTL. L. REP. at 10876–77.

222. *Id.*

utility grids certainly does not outweigh the policy benefits Congress sought to push when it enacted PURPA,[223] but admittedly the time may come when enough energy is produced that the cost shifting becomes substantial. A study conducted by the Massachusetts Institute of Technology supports this notion, suggesting "utility-scale solar is inherently less expensive than residential-scale" and has greater external costs than benefits.[224] But some argue this study is incomplete and "ignores commercial and industrial rooftop solar" which often is similar in cost to utility-scale solar.[225]

Unquestionably, energy sourced from renewable resources is a growing industry and policy concern. PURPA certainly has its limitations, but this paper concludes that net metering presently remains an important incentive and equity tool for the states while they develop and evolve their utilities to include renewable energy. States should seek to protect net metering and consumer generators while PURPA remains in its current form. This protection will remain important while legislatures determine what the future of utilities holds and while states work to resolve what a fully integrated renewable energy grid looks like.

223. *See supra* at 25.

224. Julia Pyper, *Ditching Net Metering is in the 'Best Interest' of Solar, Say MIT Economists*, GREENTECH MEDIA (May 5, 2015) https://www.greentechmedia.com/articles/read/MIT-Economists-Say-We-Should-Ditch-Net-Metering.

225. *Id.*