

RECONCILING GERMAN-STYLE FEED-IN TARIFFS WITH PURPA

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Countries throughout the world are utilizing feed-in tariffs to provide their citizens an incentive to invest in small-scale renewable energy projects. In order for individual states within the United States to provide a similar incentive, the Public Utility Regulatory Policies Act of 1978 (PURPA) must be changed to allow for technology-based purchase rates that are greater than a utility's avoided costs, or the states must find an alternative that achieves a similar goal.

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INTRODUCTION

Climate change has become a world wide concern, prompting governments to mitigate environmental harm by utilizing more renewable, sustainable resources to provide a portion of their country's energy.¹ One example of such governmental action was the national feed-in tariff Germany enacted in 1990.² Feed-in tariffs are legislatively mandated, technology-based wholesale rates that electric utilities pay to small-scale producers of renewable electricity.³ Feed-in tariffs promote renewable energy by generally providing for the cost of production and a small profit.⁴ Feed-in tariffs have now become law in approximately three dozen countries.⁵ The effectiveness of these laws has prompted Vermont to become the first state in the United States to pass feed-in tariff legislation, and has caused several other states to consider feed-in tariff legislation.⁶ Congress created the Public Utility Regulatory Policies Act of 1978 (PURPA) to provide an incentive for small-scale renewable energy producers by requiring that utilities buy the producers' electricity.⁷ However, PURPA sets the maximum rate that a utility must pay a small renewable energy producer at the utility's avoided cost.⁸ The avoided cost is "the cost to the electric utility of the electric energy which, but for the purchase from such cogenerator or small power producer, such utility would generate or purchase from another source."⁹ A conflict ensues because most state feed-in tariffs guarantee small renewable producers a favorable rate of return, while PURPA requires

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¹ ROGER PETERS & TIM WEIS, FEEDING THE GRID RENEWABLY: USING FEED-IN TARIFFS TO CAPITALIZE ON RENEWABLE ENERGY iii (2008), available at http://pubs.pembina.org/reports/FITariffs_Primer.pdf.

² Volkmar Lauber & Lutz Mez, *Three Decades of Renewable Electric Policies in Germany*, 15 ENERGY & ENV'T 599, 601 (2004), available at <http://www.wind-works.org/FeedLaws/Germany/GermanyList.html>.

³ Bruce Stokes, *What, Exactly, Is a Feed-In Tariff?*, THE NAT'L J., April 25, 2009, at 36, 36.

⁴ *Id.*

⁵ *Id.*

⁶ Dan Martin, *Feed-in Tariffs Have Earned a Role in US Energy Policy*, RENEWABLEENERGYWORLD.COM (Aug. 31, 2009), <http://www.renewableenergyworld.com/rea/news/print/article/2009/08/feed-in-tariffs-have-earned-a-role-in-us-energy-policy>.

⁷ Stokes, *supra* note 3, at 36.

⁸ See Federal Power Act, 16 U.S.C. § 824a-3(a) and (b) (2006); Conservation of Power and Water Resources, 18 C.F.R. § 292.304(b)(2)-(4) (2010).

⁹ 16 U.S.C. § 824a-3(d).

the utility only to pay its avoided cost.¹⁰ PURPA preempts these state laws, therefore barring mandatory state feed-in tariffs.

Feed-in tariffs in Germany and other foreign countries have provided their citizens an incentive to invest in small renewable energy projects.¹¹ In order for individual states within the United States to provide a similar incentive, PURPA must be changed to allow for technology-based purchase rates that are greater than a utility's avoided costs, or the states must find an alternative that achieves a similar goal.

In Part I, this comment explores the background to the feed-in tariff–PURPA problem. Germany's feed-in tariff law shows how a successful feed-in tariff program should be structured. Many other countries around the world are following in Germany's footsteps. In the United States, PURPA governs how states regulate utilities in the context of small renewable energy generation. Despite PURPA, a small number of states recently took substantial steps towards enacting German-style feed-in tariffs.

Part II of this comment argues that although PURPA bars state mandated feed-in tariffs that guarantee a small profit to the renewable generator, states have viable options for realizing benefits similar to those resulting from Germany's feed-in tariffs. States may work either within or outside the scope of PURPA in order to create incentives for small renewable energy generation. Within the confines of PURPA, states can rationalize a legal maximum avoided cost that corresponds to the feed-in tariff rate they want to mandate. Outside PURPA, states can institute voluntary feed-in tariffs that provide a substantial incentive for utilities to participate. In order to avoid PURPA, states may elect to shift the burden of the feed-in tariff from ratepayers to taxpayers. In the end, it is likely that states will have to persuade the U.S. Congress to change PURPA if they would like to utilize mandatory feed-in tariffs.

I. BACKGROUND AND HISTORY OF THE FEED-IN TARIFF– PURPA PROBLEM

Feed-in tariffs and PURPA are two different mechanisms created to achieve the same goal: to encourage the production of small-scale renewable energy.¹² Feed-in tariffs were developed in the early 1990s in Germany and have become one of the prevailing international renewable

¹⁰ *PSCW Open Meeting: Thursday, Aug. 27, 2009 at 10:30 a.m.*, WIS. UTIL. REG. REP., Aug. 28, 2009, at 8.

¹¹ Martin, *supra* note 6.

¹² See Lauber & Mez, *supra* note 2, at at 601–02; 16 U.S.C. § 824a-3(a).

energy policies, having been implemented in over three dozen countries stretching from South Korea to Greece to Brazil.¹³ In general, feed-in tariffs guarantee renewable energy producers the cost of production and a small profit.¹⁴ Enacted in 1978, PURPA requires public utilities to purchase power from small-scale renewable energy producers at a rate that is “just and reasonable” to the utility’s consumers, is “in the public interest,” does not discriminate against qualified facilities, and does not “exceed[] the incremental cost to the electric utility of alternative electric energy.”¹⁵ A collision between feed-in tariffs and PURPA occurs when a U.S. state tries to emulate the success of Germany and other foreign countries and passes feed-in tariff legislation that requires a utility to pay a producer a rate greater than the utility’s avoided cost.

A. THE BASICS OF FEED-IN TARIFFS

Feed-in tariffs exist in different forms throughout the world. To better understand why states have become interested in German-style feed-in tariffs, a brief examination of feed-in tariffs and their advantages is necessary.

1. FEED-IN TARIFFS DEFINED

Feed-in tariffs, also known as advanced renewable tariffs, are legislatively mandated rates that an electric utility must pay renewable energy producers over a guaranteed period of time to cover the cost of energy production and provide a reasonable profit.¹⁶ A political entity that desires to implement a feed-in tariff program must have “political will coupled with public demand for renewable energy,” a “willingness to pay a premium for renewable energy,” and a “stable public policy.”¹⁷ A feed-in law consists of six essential parts: (1) anyone who wants to produce renewable energy can connect to the electrical grid, (2) producers receive a guaranteed modest profit, (3) rates are technology- and location-dependent, (4) special projects are promoted with premium rates, (5) contract provisions are typically long-term in order to increase the confidence of generators and lenders, and (6) periodic review of rates ensure they are fair to both the renewable energy producers and the

¹³ See Lauber & Mez, *supra* note 2, at 601; Stokes, *supra* note 3, at 36; Martin, *supra* note 6.

¹⁴ See Stokes, *supra* note 3, at 36.

¹⁵ 16 U.S.C. § 824a-3(a) and (b).

¹⁶ See Stokes, *supra* note 3 at 36; PETERS & WEIS, *supra* note 1, at 1.

¹⁷ PETERS & WEIS, *supra* note 1, at 6.

electricity ratepayers.¹⁸ Beyond the essential parts of a feed-in tariff, a good system will “[d]ifferentiate by application, size, location, and by resource”; “[p]rovide bonus payments for priority situations”; “[p]rovide protection from inflation”; and “[d]ecrease prices over time to reflect cost reductions.”¹⁹

2. THE PROS AND CONS OF FEED-IN TARIFFS

Feed-in tariffs have become an important policy for encouraging renewable energy in developed and developing countries throughout the world because their advantages outweigh their disadvantages.²⁰ Feed-in tariffs are more “simpl[e], transparent[], and democratic[] than other schemes” for promoting renewable energy.”²¹ Unlike schemes such as tax credits or research and development, most feed-in tariff systems do not consume general government revenue because their cost is spread among all utility ratepayers.²² Additionally, feed-in tariffs can create a rapid deployment of renewable energy sources and “accelerate the cost reduction of renewable energy technology.”²³ They are inclusive, which allows investment from any person interested in producing renewable energy.²⁴ Perhaps most importantly, feed-in tariffs are “performance-based,” paying for the actual generation of renewable electricity output onto the electrical grid, whereas other schemes provide grants for buying equipment.²⁵

Because utilities are forced to pay a premium price for renewable energy generated as a result of feed-in tariffs, some opponents of feed-in tariffs argue that they “raise[] utility bills unnecessarily.”²⁶ Others contend that feed-in tariffs primarily encourage the development of small-scale renewable energy generation and that large-scale, more cost-effective installations should be included in the scheme.²⁷

¹⁸ *Id.* at 1–2.

¹⁹ *Id.* at 6.

²⁰ Miguel Mendonça & David Jacobs, *Feed-in Tariffs Go Global: Policy in Practice*, RENEWABLEENERGYWORLD.COM (Sept. 17, 2009), <http://www.renewableenergyworld.com/rea/news/article/2009/09/feed-in-tariffs-go-global-policy-in-practice>.

²¹ *Id.*

²² *Id.*

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.*

²⁶ Stokes, *supra* note 3, at 37.

²⁷ Mendonça & Jacobs, *supra* note 20.

B. INTERNATIONAL BEGINNINGS AND DEVELOPMENT OF FEED-IN TARIFFS

The modern development of feed-in tariffs dates back to Germany's 1990 Electricity Feed-in Law, which first established how a feed-in tariff scheme should be structured.²⁸ Since the 1990 law, Germany has redefined its scheme,²⁹ and many additional countries have enacted similar legislation in hopes of realizing the same type of renewable energy growth as Germany has witnessed.³⁰

1. GERMANY DEVELOPS THE MODERN FEED-IN TARIFF

German renewable energy policy dates back to 1974, however the primary impetus for the feed-in tariff legislation occurred in 1986.³¹ In 1986, the Chernobyl nuclear accident in Ukraine and reports regarding catastrophic climate change substantially affected many Germans' attitudes toward energy production.³² In response to these events, in the late 1980s Germany created two small programs to support wind and photovoltaic³³ energy by providing funding for a portion of the investment costs.³⁴ In addition, in 1989 Germany modified its legal framework, allowing renewable energy sources compensation at a rate above avoided cost.³⁵

At the turn of the decade, German political support for feed-in tariffs coalesced and the result was its Electricity Feed-in Law of 1990 ("Feed-in Law").³⁶ Under the Feed-in Law, an electric utility had to interconnect with renewable energy sources and pay the generators for the electricity a rate equal to 65–90 percent of the rate the utility ultimately charged its customers.³⁷ The feed-in tariffs provided a substantial financial incentive for investors and promoted Germany's

²⁸ See Lauber & Mez, *supra* note 2, at 601.

²⁹ *Id.* at 609

³⁰ Martin, *supra* note 6.

³¹ Lauber & Mez, *supra* note 2, at 599-600.

³² *Id.* at 600.

³³ Photovoltaic energy is produced by a photovoltaic device, which is a "solid-state electrical device that converts light directly into direct current electricity of voltage-current characteristics that are a function of the characteristics of the light source and the materials in and design of the device." *Solar Energy Technologies: Glossary*, U.S. DEPARTMENT OF ENERGY, http://www1.eere.energy.gov/solar/solar_glossary.html (last visited May 8, 2011).

³⁴ Lauber & Mez, *supra* note 2, at 601.

³⁵ *Id.*

³⁶ *Id.*

³⁷ *Id.*

goal of leveling the playing field between renewable energy sources and conventional electricity generation sources.³⁸

After surviving challenges and modifications throughout the 1990s, the German government repealed the Feed-in Law of 1990 and adopted the Renewable Energy Sources Act of 2000 (“2000 Act”).³⁹ The 2000 Act continued to utilize feed-in tariffs to encourage the creation of renewable energy sources.⁴⁰ Moreover, the 2000 Act improved both feed-in tariff rates and security by establishing rates fixed for twenty years, whereas before there was no guarantee that the rates would remain constant for specific period of time.⁴¹ The year a renewable energy source starts producing energy on the grid determines what rate the producer will receive.⁴² Each year, the rate that new sources receive decreases by approximately 7–10 percent in order to “encourage the early adoption of new technologies.”⁴³ In 2004, Germany amended the 2000 Act.⁴⁴ The amendment primarily tweaked the rates for specific technologies, decreasing rates for onshore wind but increasing rates for biomass and photovoltaics.⁴⁵

Due to the German government’s policy decisions in the Feed-in Law of 1990 and subsequent legislation, the feed-in tariff program has been extremely successful. The rate system is a “cost-plus arrangement” that pays renewable energy generators enough to cover cost of production and a profit of 5–7 percent.⁴⁶ Utilities pass on the cost of the feed-in tariffs to all of their electricity customers, which allows the program to operate “independent of government budgets and subsidies.”⁴⁷ In 2007, the feed-in tariff cost each household approximately 1.5 to 4 euros a month.⁴⁸ For this cost, renewable energy has risen from 5 percent of Germany’s electricity supply in 1998 to 15 percent in 2008, while between 1999 and 2004 the price of photovoltaic systems decreased 25 percent.⁴⁹ Evidence suggests that the feed-in tariffs

³⁸ *Id.*

³⁹ *Id.* at 603, 609.

⁴⁰ *Id.* at 609.

⁴¹ *Id.* at 610.

⁴² *Id.*

⁴³ Stokes, *supra* note 3, at 36.

⁴⁴ Lauber & Mez, *supra* note 2, at 610.

⁴⁵ *Id.*

⁴⁶ Stokes, *supra* note 3, at 36.

⁴⁷ Martin, *supra* note 6.

⁴⁸ See Stokes, *supra* note 3, at 37; PETERS & WEIS, *supra* note 1, at 5.

⁴⁹ Martin, *supra* note 6; Stokes, *supra* note 3, at 36.

have also positively affected employment: German jobs in the renewable energy industry increased from about one hundred sixty thousand in 2004 to approximately two hundred fifty thousand in 2007.⁵⁰

The history of Germany's feed-in tariffs demonstrates a nation's political conviction to supporting and increasing the generation of energy from renewable resources. Results indicate that Germany is achieving its goal of increasing renewable energy because of the feed-in tariffs. Germany's success has motivated numerous countries and individual U.S. states to enact German-style feed-in tariffs in order to reap similar benefits.

2. THE WORLD JUMPS ON THE FEED-IN TARIFF BANDWAGON

Since Germany enacted its Electricity Feed-in Law of 1990, feed-in tariffs have become extremely popular throughout the world. By the end of 2008, approximately fifty countries, states, and provinces had enacted and deployed feed-in tariffs.⁵¹ Feed-in tariffs span a diverse spectrum of geographical locations, industrial development, and political regimes. They are found on every continent except Antarctica, including diverse locations such as South Africa, Canada, and South Korea.⁵² Feed-in tariffs exist in industrial countries such as Germany and France, as well as developing countries like Kenya and Pakistan.⁵³ Democracies utilize them as well as communist China.⁵⁴ Despite this diversity, feed-in tariffs have shown great potential to quickly mobilize renewable energy projects throughout the world.⁵⁵

One example of feed-in tariffs that have successfully stimulated growth of solar photovoltaic energy generation is the feed-in tariffs of many of the new member states of the European Union.⁵⁶ The twelve new member states are Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, and

⁵⁰ Jane Burgermeister, *Renewable Energy Jobs Soar in Germany*, RENEWABLEENERGYWORLD.COM (Apr. 8, 2008), <http://www.renewableenergyworld.com/rea/news/article/2008/04/renewable-energy-jobs-soar-in-germany-52089>.

⁵¹ Mendonça & Jacobs, *supra* note 20.

⁵² *Id.*

⁵³ *Id.*

⁵⁴ *Id.*; *Renewables—Greater China News Review*, CHINESE NEWS DIGEST, July 28, 2009.

⁵⁵ See Mendonça & Jacobs, *supra* note 20.

⁵⁶ See generally INTELLIGENT ENERGY EUROPE: PV-NMS-NET, STATUS OF PHOTOVOLTAICS IN THE EUROPEAN UNION NEW MEMBER STATES 2008, at 3 (Stanislaw M. Pietruszko ed., 2009), available at <http://www.pv-nms.net/pvnms/web/files/NMS2008.pdf>.

Slovenia.⁵⁷ All twelve states have some form of governmental support for solar photovoltaics, but nine of the states utilize feed-in tariffs.⁵⁸ The cumulative installed photovoltaic power in the new member states has increased from 948 kW in 2003 to 62,699 kW in 2008.⁵⁹ The Supporting Development of Photovoltaics in the European Union New Member States Network (PV-NMS-NET) project⁶⁰ examined the growth of renewable energy in the new member states and concluded that, although the states use a combination of policies, “the real engine of significant [photovoltaic] market growth is the effective feed-in tariffs.”⁶¹ Four countries have seen particularly drastic increases in installed photovoltaic power. These countries—the Czech Republic, Slovenia, Cyprus, and Bulgaria—owe the growth of their annual photovoltaic markets to an “effective [photovoltaic] support mechanism, especially adequate Feed-in Tariff systems.”⁶² The Czech Republic’s total installed photovoltaic power has increased from 330 kW in 2003 to 54,674 kW in 2008.⁶³ In particular, the Czech Republic had a dramatic increase from 2006 to 2008 when the total installed photovoltaic power increased from 740 kW to 54,674 kW.⁶⁴ This increase could be partially due to Czech Republic feed-in tariff rates approximately doubling on January 1, 2006.⁶⁵ Likewise, the cumulative installed photovoltaic power in Bulgaria has increased from 75 kW in 2007 to 1,407 kW in 2008.⁶⁶ PV-NMS-NET attributed this increase to “[twenty-five]-year guaranteed generous feed-in tariffs”⁶⁷ The empirical evidence in the new member states shows that feed-in tariffs can be successfully used to quickly create renewable energy generating capacity.

In Spain, however, feed-in tariffs may have been *too* successful. In 2007, Spain created a solar panel feed-in tariff for all projects brought

⁵⁷ *Id.* at 1.

⁵⁸ *Id.* at 5 (the three states that do not provide a feed-in tariff are Malta, Poland, and Romania).

⁵⁹ *Id.* at 3.

⁶⁰ “PV-NMS-NET is supported by the European Commission within the intelligent Energy Europe Framework Programme.” It was “created to increase solar energy application in production of electricity in [the European Union], in particular in New Member States.” PV-NMS-NET, <http://www.pv-nms.net/pvnms/web/wfrontend.php/article?article=yes&id=27&rootMenuItem=67&path1=MENU&path2>About+the+Network&path3=Introduction> (last visited May 5, 2011).

⁶¹ INTELLIGENT ENERGY EUROPE, *supra* note 56, at 5.

⁶² *Id.* at 3.

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Id.* at 6.

⁶⁶ *Id.* at 3.

⁶⁷ *Id.* at 4.

online by September 2008.⁶⁸ The feed-in tariff paid a maximum of 44 euro cents per kWh, but according to reporter Paul Voosen, “a loophole in the tariff allowed bundles of small, ground-based projects to receive up to 575 percent of the average electricity price.”⁶⁹ As a result of the generous feed-in tariff, the Spanish government witnessed the installation of approximately three gigawatts of solar capacity within an eighteen-month period.⁷⁰ In 2008, Spain accounted for “more than 40 percent of the world’s total solar installations.”⁷¹ The Spanish government thought it would take until 2010 for the country to accumulate a total of 400 MW of solar capacity.⁷² The incredible growth of solar capacity committed Spain to “solar payments estimated at \$26.4 billion, which in turn led to taxpayer backlash and bust.”⁷³ The Spanish government reacted by reducing the feed-in tariff rate by 30 percent after September 2008, capping the program at 500 MW, and revising the feed-in tariff every quarter.⁷⁴ The Spanish experience indicates how powerful of an incentive feed-in tariffs can be for creating small-scale renewable energy generation. However, this experience also shows that political entities need to be concerned with the actual design of their feed-in tariff. When Spain reduced its tariff, demand for solar panels decreased, creating a surplus of panels and reduced prices, which ultimately caused Spain’s solar industry to lose more than twenty thousand jobs.⁷⁵

Ontario, Canada provides an example of how quickly excitement can build for a feed-in tariff before any renewable projects are built. On May 14, 2009, Ontario’s Green Energy Act received Royal Assent and became law.⁷⁶ Implementation of Ontario’s feed-in tariff occurred in September 2009, and the Ontario Power Authority began accepting applications for the program on October 1, 2009.⁷⁷ The feed-in tariffs are available for biogas, biomass, landfill gas, solar photovoltaic, hydro, and

⁶⁸ Paul Voosen, *Spain’s Solar Market Crash Offers a Cautionary Tale About Feed-In Tariffs*, N.Y. TIMES, Aug. 18, 2009, <http://www.nytimes.com/gwire/2009/08/18/18greenwire-spains-solar-market-crash-offers-a-cautionary-88308.html?pagewanted=1>.

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² *Id.*

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ *Ontario’s Green Energy Act*, ONTARIO MINISTRY OF ENERGY, <http://www.mei.gov.on.ca/en/energy/gea/> (last visited June 3, 2011).

⁷⁷ *Ontario’s Feed-In Tariff Program Backgrounder*, ONTARIO POWER AUTHORITY (Mar. 9, 2010), <http://www.powerauthority.on.ca/news/ontarios-feed-tariff-program-backgrounder-0>.

wind projects.⁷⁸ Very small projects, defined as projects generating 10 kW or less of electricity,⁷⁹ “have a different application process than larger commercial projects and will be administered as micro-feed-in tariff . . . projects.”⁸⁰ The feed-in tariff rates vary by technology and size.⁸¹ In addition, they include a domestic content provision for wind and solar projects, which is “intended to help foster investment, green manufacturing, construction and installation jobs in Ontario.”⁸² The provision requires that an enumerated percentage of a project’s costs be a result of Ontario goods and labor.⁸³

Before the Ontario Power Authority awarded a single feed-in tariff contract, concrete evidence indicated that the Ontario feed-in tariff is going to be a long-term success.⁸⁴ In September 2009, the Ontario provincial government “ordered Hydro One to immediately begin planning a \$2.3 billion transmission expansion,” in order to “reduce congestion and help integrate renewable energy into the [electrical] grid.”⁸⁵ In December 2009, Canadian Solar Inc., a solar module developer, committed to bringing part of its manufacturing work force to Canada.⁸⁶ The company decided to shift approximately five hundred manufacturing jobs from China to Canada in order to take advantage of the domestic content provision of the feed-in tariff.⁸⁷ The company expects to produce 200 MW of solar panels a year.⁸⁸ The most significant

⁷⁸ ONT. POWER AUTH., FEED-IN TARIFF PROGRAM: PROGRAM OVERVIEW 2 (2010), available at http://fit.powerauthority.on.ca/Storage/11160_FIT_Program_Overview_August_new_price_version_1.3.1_final_for_posting-oct_27.pdf.

⁷⁹ *Id.*

⁸⁰ Sharon Wong, *Ontario Launches Programs to Implement its Green Energy Act*, BLAKES (Sept. 25, 2009), <http://www.blakes.com/english/view.asp?ID=3431>.

⁸¹ *Feed-In Tariff Prices for Renewable Energy Projects in Ontario: Base Date: September 30, 2009*, HONEYBEE SOLAR.COM, http://www.honeybeesolar.com/images/10863_FIT_Pricing_Schedule_for_website.pdf (last visited May 11, 2011).

⁸² Wong, *supra* note 80.

⁸³ *Id.* For wind, the requirement starts at 25% and increases to 50% on January 1, 2012. For micro solar photovoltaic (10 kW or smaller), the requirement starts at 40% and increases to 60% on January 1, 2011. For larger solar photovoltaic, the requirement starts at 50% and increases to 60% on January 1, 2011. *Id.*

⁸⁴ ONT. POWER AUTH., *supra* note 77 (stating that the Ontario Power Authority will start to offer feed-in tariff contracts in February 2010).

⁸⁵ Lisa Wood, *Ontario Takes Steps to Expand Renewables: Plans Transmission, Regulates Feed-in Tariffs*, ELECTRIC UTIL. WK., Sept. 28, 2009, at 27.

⁸⁶ Tyler Hamilton, *Solar Firm Bringing Jobs Home; Canadian Solar Makes Products in China, but New Ontario Factory to Create Work for 500*, TORONTO STAR, Dec. 4, 2009, at B01, available at <http://www.thestar.com/business/article/734345--solar-firm-bringing-jobs-home>.

⁸⁷ *Id.*

⁸⁸ *Id.*

early evidence that the feed-in tariff is going to be a long-term success was the large number of feed-in tariff and micro-feed-in tariff applications the Ontario Power Authority received. In the first two months after the Ontario Power Authority started taking feed-in tariff applications, it received 1,022 feed-in tariff applications totaling approximately 8,000 MW of potential renewable electricity generation.⁸⁹ With only 2,500 MW of “available transmission connection capacity,” the Ontario Power Authority had to review the applications and give priority to “shovel-ready” projects.⁹⁰ In addition, over the same two month period the Ontario Power Authority received 1,193 micro-feed-in tariff applications that could ultimately produce 8,611 kW of renewable electricity.⁹¹

C. PURPA ENCOURAGES SMALL RENEWABLE ENERGY PROJECTS

Although enacted twelve years before Germany promulgated its Feed-in Law of 1990, PURPA has a similar goal of stimulating small-scale renewable energy generation. Congress created this law to “encourage the development” of Qualified Facilities (QFs), which are either cogeneration facilities or small power production facilities consisting of biomass, wind, solar, or hydro electricity generation with a capacity no greater than 80 megawatts.⁹² Unfortunately for proponents of German-style feed-in tariffs, PURPA sets the individualized, maximum rate a utility has to pay a QF at the utility’s avoided cost.⁹³ A utility’s avoided cost and the German feed-in tariff, which covers the generator’s cost of capital and a reasonable profit, are almost always mutually exclusive concepts because a utility’s avoided cost is the cost of producing the same amount of electricity in the cheapest manner possible.⁹⁴ Almost without exception, a large utility can produce its own renewable power or purchase it at wholesale from a large wind farm at a lower cost than what it would pay pursuant to a German-style feed-in

⁸⁹ ONT. POWER AUTH., *supra* note 77.

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *Am. Paper Inst., Inc. v. Am. Elec. Power Serv. Corp.*, 461 U.S. 402, 404–05 (1983); 16 U.S.C. §§ 796(17)(A), 18(A) (2006).

⁹³ 16 U.S.C. § 824a-3(c)–(d) (2006).

⁹⁴ *See* 16 U.S.C. § 824a-3(d) (The definition of avoided cost is “the cost to the electric utility of the electric energy which, but for the purchase from such cogenerator or small producer, such utility would generate or purchase from another source.”).

tariff.⁹⁵ Because the cost of the tariff exceeds the utility's avoided cost, PURPA bars states from enacting German-style, mandatory feed-in tariffs.

Congress has given states limited authority to regulate small-scale, non-utility renewable electricity generators.⁹⁶ PURPA implements its goal of encouraging alternative energy sources by requiring utilities to sell and purchase electricity from QFs at a rate that is "just and reasonable" to the utility's consumers, is "in the public interest," does not discriminate against QFs, and does not "exceed[] the incremental cost to the electric utility of alternative electric energy."⁹⁷ The Federal Energy Regulatory Commission (FERC) administers PURPA and promulgates regulations to carry out the law. FERC regulations, when read together, indicate that an electric utility must purchase electricity from QFs at a rate equal to its avoided cost, unless the "[s]tate regulatory authority . . . determines that a lower rate is . . . sufficient to encourage [QFs]."⁹⁸

Aside from the limited cases where Congress has granted states the authority to regulate wholesale sales of electricity, such as in the case of QFs, the FERC's jurisdiction is plenary and extends "to all wholesale sales in interstate commerce . . ."⁹⁹ The FERC has declared that states do not have the "authority outside of PURPA to set QF rates at wholesale."¹⁰⁰ If a renewable generator chooses not to become a certified QF, then the FERC will set its wholesale rates on a "cost-of-service or market basis."¹⁰¹

Courts and the FERC have used strong language to establish that a utility is not required to buy electricity from a QF for more than the utility's avoided cost. The U.S. Supreme Court has held that "PURPA sets full avoided cost as the maximum rate the [c]ommission may prescribe."¹⁰² The FERC declared that "states cannot . . . require rates that exceed avoided cost for QF sales at wholesale."¹⁰³ The supreme court of

⁹⁵ See generally Matthew L. Wald, *What's So Bad About Big?*, N.Y. TIMES, Mar. 7, 2007, http://www.nytimes.com/2007/03/07/business/businessspecial2/07big.html?_r=1&pagewanted=1.

⁹⁶ See 16 U.S.C. § 824a-3.

⁹⁷ 16 U.S.C. § 824a-3(a) and (b).

⁹⁸ 18 C.F.R. § 292.304(b)(2)-(4) (2010).

⁹⁹ Fed. Power Comm'n v. S. Cal. Edison Co., 376 U.S. 205, 216 (1964).

¹⁰⁰ Conn. Light & Power Co., 71 FERC ¶ 61,035, ¶ 61,153 (1995).

¹⁰¹ S. Cal. Edison Co., 71 FERC ¶ 61,269, ¶ 62,080 (1995).

¹⁰² Am. Paper Inst., Inc. v. Am. Elec. Power Serv. Corp., 461 U.S. 402, 413 (1983).

¹⁰³ Conn. Light & Power Co., 71 FERC ¶ 61,151.

Kansas stated that the FERC has established avoided costs as the “maximum rate” for buying QF electricity.¹⁰⁴

D. STATE INTEREST IN GERMAN-STYLE FEED-IN TARIFFS HAS RECENTLY GROWN

American states have just recently become interested in developing legislation aimed at emulating Germany and other foreign countries’ feed-in tariff programs. Some states, such as Vermont, Hawaii, Washington, and Wisconsin, have taken noteworthy action regarding the establishment of feed-in tariffs. The proceedings of these states are discussed below. Other states, such as Michigan, Minnesota, New York, and Indiana, are also considering feed-in tariffs.¹⁰⁵ Paul Gipe, author of Wind-Works.org and a past executive of the Ontario Sustainable Energy Association, labels California and Oregon’s recent legislation as “feed-in tariffs in name only.”¹⁰⁶ He says that “California’s [feed-in tariff] has come under attack from renewable advocates because prices are tied to the cost of natural gas-fired capacity, while Oregon’s [feed-in tariff] is based on the value of the generation to the [electrical] grid, not actual development costs.”¹⁰⁷

1. VERMONT ENACTS FEED-IN TARIFF LAW IN MAY 2009

In May 2009, Vermont became the first state to mandate German-style feed-in tariffs when Governor James Douglas allowed H. 446, *An Act relating to Renewable Energy and Energy Efficiency*, to pass into law without his signature.¹⁰⁸ This law, known as the Vermont Energy Act of 2009 (“Act 45”),¹⁰⁹ modified Vermont’s Sustainably Priced Energy Enterprise Development (SPEED) resources program by “establish[ing] default prices for the standard offer for different

¹⁰⁴ Kansas City Power & Light Co. v. State Corp. Comm’n, 676 P.2d 764, 765 (Kan. 1984).

¹⁰⁵ Martin, *supra* note 6.

¹⁰⁶ Mary Powers & Lisa Wood, *Feed-in Tariffs Aimed at Encouraging Renewables Approved by Hawaii and Vermont Regulators*, ELEC. UTIL. WK., Oct. 12, 2009, at 15; WIND-WORKS, <http://www.wind-works.org/> (last visited May 29, 2011).

¹⁰⁷ Powers & Wood, *supra* note 106 (quoting Paul Gipe).

¹⁰⁸ Phil Taylor, *Renewable Energy: House Will Get Another Shot at Feed-in Tariffs*, GREENWIRE, Aug. 3, 2009; Letter from James H. Douglas, Governor of Vt., to the Clerk of the House of Representatives Regarding H. 446, (May 27, 2009), *available* <http://www.uvm.edu/~gflomenh/ENRG-POL-PA395/readings/2009Gov-H446.pdf>.

¹⁰⁹ VT. PUB. SERV. BD., DOCKET NO. 7533, ESTABLISHMENT OF PRICE FOR STANDARD OFFER UNDER THE SUSTAINABLY PRICED ENERGY ENTERPRISE DEVELOPMENT (“SPEED”) PROGRAM 4 & n.3 (2010) [hereinafter DOCKET NO. 7533], *available at* http://psb.vermont.gov/sites/psb/files/docket/7523/7533_final_board_order.pdf.

technologies, and largely cost-based criteria for determining the price paid to developers of renewable power purchased through the SPEED program.”¹¹⁰ The Act 45 standard offers are available to methane, wind, solar, hydropower, and biomass power plants with a capacity of 2.2 MW or less.¹¹¹ The feed-in tariff contracts are available until the statewide capacity is equal to or greater than fifty MW.¹¹² Fifty MW constitutes approximately 4 percent of Vermont’s total energy need.¹¹³ The length of contract for the standard offer is ten to twenty years; however, the solar power contract length is ten to twenty-five years.¹¹⁴

The Vermont Energy Act charges the Public Service Board to use three criteria when setting the feed-in tariff rate: the generic cost for each technology category (utilizing an economic analysis), a “rate of return on equity not less than the highest rate of return on equity received by a Vermont investor-owned retail electric service provider,” and the ability to make “adjustment[s] to the generic costs and rate of return on equity . . . as the board determines to be necessary to ensure that the price provides sufficient incentive for the rapid development and commissioning of plants.”¹¹⁵ On September 15, 2009 the Vermont Public Service Board issued an interim feed-in tariff rate order, which set the rate of return on equity at 12.13 percent and the following prices per kWh for the qualifying types of production: landfill methane, \$0.12; farm methane, \$0.16; wind (fifteen kW or less), \$0.20; wind (over fifteen kW), \$0.125; solar PV, \$0.30; hydropower, \$0.125; and biomass, \$0.125.¹¹⁶ From the beginning, Vermont’s feed-in tariff program received a lot of interest within Vermont. The Vermont Public Service Board instituted a lottery system for solar projects when it received 185 applications for the 12.5 MW of solar capacity.¹¹⁷ It ultimately offered contracts to sixteen applicants.¹¹⁸ On January 15, 2010 the Vermont

¹¹⁰ VT. PUB. SERV. BD., DOCKET NO. 7523, IMPLEMENTATION OF STANDARD OFFER PRICES FOR SUSTAINABLY PRICED ENERGY ENTERPRISE DEVELOPMENT (“SPEED”) RESOURCE RE: INTERIM PRICES 4 (2009) [hereinafter VT. INTERIM PRICE ORDER], available at <http://psb.vermont.gov/sites/psb/files/orders/2009/7523interimpriceorder.pdf>.

¹¹¹ VT. STAT. ANN. tit. 30, § 8005(b)(2)(A)(i)–(iv) (2010).

¹¹² VT. STAT. ANN. tit. 30, § 8005(b)(2).

¹¹³ Joel Banner Baird, *Solar Power Looking Up*, BURLINGTON FREE PRESS, Oct. 29, 2009, at 1A, <http://www.burlingtonfreepress.com/article/20091029/NEWS02/91028028/Solar-power-looking-up>.

¹¹⁴ VT. STAT. ANN. tit. 30, § 8005(b)(2).

¹¹⁵ VT. STAT. ANN. tit. 30, § 8005(b)(2)(B)(i)(I)–(III).

¹¹⁶ VT. INTERIM PRICE ORDER, *supra* note 110, at 3, 9.

¹¹⁷ Baird, *supra* note 113.

¹¹⁸ *Id.*

Public Service Board instituted permanent feed-in tariff rates.¹¹⁹ The Board decreased the rate of return on equity to 9.75 percent because it determined that the rate of return on equity should correspond to the rate that the state's two largest utilities receive.¹²⁰ As a result, most of the permanent rates are initially lower than the interim rates.¹²¹ However, the permanent rates (except solar PV) are indexed for inflation, and therefore increase every year.¹²²

2. HAWAII PUC APPROVES FEED-IN TARIFF PROGRAM IN SEPTEMBER 2009

On September 25, 2009, the Hawaii Public Utilities Commission implemented feed-in tariffs for Hawaiian Electric's three utilities.¹²³ The "primary motivation" for the feed-in tariffs is to reduce Hawaii's dependence on imported fossil fuels.¹²⁴ Specifically, the feed-in tariffs will assist the state in meeting its goal of obtaining 40 percent of its power from renewable sources by 2030.¹²⁵ The initial feed-in tariff will include rates for solar photovoltaic, concentrated solar power, onshore wind, and in-line hydropower projects.¹²⁶ Hawaii plans to differentiate rates on the basis of project size.¹²⁷ Other types of renewable power will be able to apply for a baseline feed-in tariff rate, which equals the "lowest specified [feed-in tariff] rate for any given project size."¹²⁸ The qualifying project size limit is set at "1 [percent] or less of a utility's total firm capacity . . . or . . . a net output of 5 MW or less, whichever is lower."¹²⁹ The overall cap for each utility is 5 percent of its peak demand in 2008.¹³⁰ The feed-in tariff standard offer contracts between the utility and power producer have a mandatory term of twenty years, regardless

¹¹⁹ DOCKET NO. 7533, *supra* note 109, at 6.

¹²⁰ *Id.* at 79.

¹²¹ *See id.* at Attachment II; Vt. INTERIM PRICE ORDER, *supra* note 110, at 3.

¹²² VT. PUB. SERV. BD., DOCKET NO. 7533, INVESTIGATION RE: ESTABLISHMENT OF PRICE FOR STANDARD OFFER UNDER THE SUSTAINABLY PRICED ENERGY ENTERPRISE DEVELOPMENT ("SPEED") PROGRAM 2 (2010), available at <http://psb.vermont.gov/sites/psb/files/orders/2010/7533OrderClarifying.pdf>.

¹²³ In the Matter of Public Utilities Commission Instituting a Proceeding to Investigate the Implementation of Feed-in Tariffs, Haw. Pub. Util. Comm'n, Docket No. 2008-0273, at 1 (Sept. 25, 2009) [hereinafter Hawaii Order]; Powers & Wood, *supra* note 106.

¹²⁴ Hawaii Order, *supra* note 123, at 16.

¹²⁵ Powers & Wood, *supra* note 106.

¹²⁶ Hawaii Order, *supra* note 123, at 31.

¹²⁷ *Id.* at 78.

¹²⁸ *Id.* at 36.

¹²⁹ *Id.* at 41.

¹³⁰ *Id.* at 55.

of the technology type.¹³¹ In a future order, the Hawaii Public Utilities Commission will set the rate of return that renewable producers will receive and the actual tariff rates for different technologies and project sizes.¹³²

3. WASHINGTON'S UNIQUE QUASI-FEED-IN TARIFF LEGISLATION

The state of Washington has set up a feed-in tariff system that shifts the burden of the feed-in tariff cost from a utility's ratepayers to the state's taxpayers. Since 2005, Washington has provided an incentive for "individuals, businesses, and local governments that generate electricity from solar power, wind power, or anaerobic digesters."¹³³ The incentive is production-based and exhibits many of the feed-in tariff elements discussed above.¹³⁴ However, the incentive is not a true German-style feed-in tariff because the state, not utility ratepayers, is ultimately liable for the program's cost.

The base incentive rate is \$0.15/kWh and is multiplied by factors that depend on type of generation and whether or not the equipment used to generate the electricity was manufactured in Washington, which results in incentives ranging from \$0.12 to \$0.54/kWh.¹³⁵ The maximum incentive a generator can receive is five thousand dollars annually.¹³⁶ The utilities pay the incentives to the renewable generators and then receive a tax credit equaling the total cost of the incentive payments.¹³⁷ A utility's participation is not mandatory, but Jesse Broehl, editor of RenewableEnergyAccess.com, believes that because "[t]he utilities are allowed to write-off the cost of providing the credits against their state taxes . . . they see an inherent value in participating."¹³⁸

¹³¹ *Id.* at 85.

¹³² *Id.* at 100.

¹³³ *Washington Renewable Energy Production Incentives*, DSIREUSA.ORG, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=WA27F&state=WA&CurrentPageID=1 (last visited May 29, 2011).

¹³⁴ Jesse Broehl, *Washington State Passes Progressive Renewable Energy Legislation*, RENEWABLEENERGYWORLD.COM (May 10, 2005), <http://www.renewableenergyworld.com/real/news/article/2005/05/washington-state-passes-progressive-renewable-energy-legislation-28478>; *see supra* Part I.A.i for a discussion of the elements of a feed-in tariff.

¹³⁵ Broehl, *supra* note 134.

¹³⁶ *Washington Renewable Energy Production Incentives*, *supra* note 133.

¹³⁷ *Id.*

¹³⁸ Broehl, *supra* note 134.

4. WISCONSIN REJECTS MANDATORY FEED-IN TARIFFS PARTIALLY BECAUSE OF PURPA

In 2008, Wisconsin Governor James Doyle's Task Force on Global Warming recommended that the Wisconsin Public Service Commission (WI-PSC) establish a mandatory feed-in tariff.¹³⁹ In the past, the WI-PSC approved voluntary feed-in tariffs on a utility-by-utility basis, which has resulted in "the five largest investor-owned utilities, one municipal utility, and one generation cooperative" currently offering feed-in tariffs.¹⁴⁰ The eligible feed-in tariff technology and the offered rates varied by utility, based on individual rate cases.¹⁴¹ In response to the recommendation of the Governor's Task Force, the WI-PSC opened a docket¹⁴² to "examine whether and how to expand the availability and use of [feed-in tariffs] in Wisconsin and promote greater uniformity in the [feed-in tariffs] offered by Wisconsin electric utilities."¹⁴³

The WI-PSC ultimately rejected mandatory feed-in tariffs in favor of continuing its current system of voluntary tariffs.¹⁴⁴ Chairperson Eric Callisto and Commissioner Lauren Azar declined to support mandatory feed-in tariffs primarily because of the federal PURPA law, and because the commissioners thought that Wis. Stat. §§ 196.025(1)(c)(1) and 196.378(4m)(a) did not allow them to impose additional renewable resource requirements on a utility that was already complying with the state's renewable portfolio standard.¹⁴⁵ The Wisconsin Utility Regulation Report noted that Chairperson Callisto found that PURPA "sets avoided costs at the maximum rate that a state [c]ommission may require a utility to pay a qualified facility at wholesale."¹⁴⁶ It also reported that Callisto indicated that if the WI-PSC "were to set a mandatory tariff at an amount above the avoided costs, the utility could challenge that tariff and in his opinion, likely prevail."

¹³⁹ GOVERNOR'S TASK FORCE ON GLOBAL WARMING, FINAL REPORT TO GOVERNOR JIM DOYLE 120 (2008), available at http://dnr.wi.gov/environmentprotect/gtfgw/documents/Final_Report.pdf.

¹⁴⁰ Briefing Memorandum from Robert Norcross, Adm'r, Gas and Energy Div., and John Shenot, Advisor, Comm'rs' Office, to the Pub. Serv. Comm'n of Wis., at 2, 4 (May 20, 2009), available at <http://www.renewwisconsin.org/policy/ARTS/PSCW%20Docket%20on%20ARTs%205-EI-148/PSCW%20Memorandum/Briefing%20Memorandum%20Revised.pdf>.

¹⁴¹ *Id.* at 4, 18.

¹⁴² *Id.* at 2.

¹⁴³ *Id.*

¹⁴⁴ PSCW Open Meeting, *supra* note 10, at 7-9.

¹⁴⁵ *Id.* at 8.

¹⁴⁶ *Id.*

Callisto found that “federal law would not specifically prohibit the [WI-PSC] from setting a mandatory tariff, but to the extent the utility believed that amount was greater than the utilities’ specific avoided costs, the [WI-PSC] would have a fight in their hands.”¹⁴⁷

Although the Commissioners rejected mandatory feed-in tariffs in 2009, the topic received attention in the Wisconsin legislature in early 2010. On January 6 and 7, 2010, State Representatives Black and Soletski and Senators Miller and Plale introduced companion bills in their respective chambers on the topic of climate change.¹⁴⁸ According to the Legislative Reference Bureau, these bills would require the WI-PSC to “issue an order directed at each retail electric utility that requires such a utility to offer to purchase the renewable energy generated at renewable facilities within the utility’s service territory”¹⁴⁹ Moreover, the order “must specify standard purchase terms for each type of renewable facility, including terms for prices paid for renewable energy, payment schedules, and maximum limits on generating capacity.”¹⁵⁰ In April 2010, the Senate defeated the legislation when it adjourned for the year without taking a vote on the Senate version of the bill.¹⁵¹ As a result of the defeat, Wisconsin continues to rely on voluntary, not mandatory, feed-in tariffs.

II. STATE SOLUTIONS TO THE FEED-IN TARIFF–PURPA PROBLEM

Although states cannot create a German-style feed-in tariff under PURPA, they do have viable options for promoting small-scale renewable energy generation. A state can calculate a higher avoided cost for any utility, can shift the financial burden of the feed-in tariffs from ratepayers to taxpayers, can introduce voluntary feed-in tariffs and provide utilities an incentive for giving QFs the voluntary rates, or can offer front-end loaded rates. However, if states want to provide true German-style feed-in tariffs without the threat of litigation from utilities, they must lobby Congress to reform PURPA and to make it feed-in tariff friendly.

¹⁴⁷ *Id.*

¹⁴⁸ Assemb. B. 649, 2009–2010 Leg. (Wis. 2010); S.B. 450, 2009–2010 Leg. (Wis. 2010).

¹⁴⁹ S.B. 450, 2009–2010 Leg. (Wis. 2010).

¹⁵⁰ *Id.*

¹⁵¹ *Senate Adjourns Without Taking Up Many Bills*, CHANNEL3000.COM (Apr. 23, 2010, 8:05 AM), <http://www.channel3000.com/politics/23236100/detail.html>.

A. JUSTIFY A GREATER AVOIDED COST

The FERC has given states “great latitude” to determine a procedure for calculating a utility’s “avoided cost.”¹⁵² This latitude comes from the state’s authority to implement PURPA.¹⁵³ FERC has stated that determining if a rate was “above avoided cost was best left to the appropriate state or judicial forum.”¹⁵⁴ FERC provides the state with a list of factors within its regulations that should be used to calculate avoided cost and maintains that the “factors shall, to the extent practical, be taken into account.”¹⁵⁵ States retain discretion over how they apply these factors. As the Idaho Supreme Court held, FERC “provides no precise formula for calculating a utility’s avoided cost.”¹⁵⁶ For example, one factor is the relationship between the availability of a QF’s energy and capacity compared to a utility’s ability to avoid costs associated with deferring construction of new capacity or reducing the use of fossil fuels.¹⁵⁷ When determining the utility’s avoided costs, states may account for environmental costs that a utility actually incurs, but will avoid by purchasing from a QF.¹⁵⁸ The list of avoided cost factors also includes “[t]he availability of capacity or energy from a qualifying facility during the system daily and seasonal peak periods.”¹⁵⁹ The use of these factors when determining a utility’s avoided cost makes the process individualized to a utility’s operation at a specific place and time. Because FERC’s regulations require individualized avoided cost calculations for each utility, feed-in tariff rates that mandate a uniform value for all utilities may be facially invalid under PURPA and FERC regulations.

When a state’s determination of an avoided cost is challenged, state courts tend to give a fair amount of deference to their state’s public service commission. For example, the supreme court of North Carolina found that the North Carolina Utilities Commission’s methodology for calculating avoided cost was appropriate even though it resulted in a total avoided cost of \$1.39 million less than the Virginia State Corporation

¹⁵² S. Cal. Edison Co., 70 FERC ¶ 61,215, ¶ 61,677 (1995).

¹⁵³ *Rosebud Enters., Inc. v. Idaho Pub. Utilities Comm’n*, 917 P.2d 766, 771 (Idaho 1996).

¹⁵⁴ *Conn. Light & Power Co.*, 71 FERC ¶ 61,035, ¶ 61,150 (1995).

¹⁵⁵ 18 C.F.R. § 292.304(e) (2010).

¹⁵⁶ *Rosebud*, 917 P.2d at 771.

¹⁵⁷ 18 C.F.R. § 292.304(e)(3).

¹⁵⁸ S. Cal. Edison Co., 71 FERC ¶ 61,269, ¶ 62,080 (1995).

¹⁵⁹ 18 C.F.R. § 292.304(e)(2).

Commission's avoided cost calculation for the same utility and QF.¹⁶⁰ The court held that FERC regulations require that each state ensure that a utility does not pay more than its avoided cost.¹⁶¹ Furthermore, each state may use its own measures for calculating avoided cost, even for a utility operating in multiple states.¹⁶²

The supreme court of Idaho upheld the Idaho Public Utilities Commission's decision to calculate avoided cost based on one type of generating facility instead of another because the first type of facility represented what the Idaho commission decided was the utility's "actual avoided" costs.¹⁶³ The court refused to overturn the state agency's determination of avoided costs unless "it appears that the clear weight of the evidence is against the conclusion."¹⁶⁴ In a separate case, the supreme court of Idaho also affirmed the Idaho Commission's decision to set an avoided cost rate that was fixed for the entire length of contract between a utility and QF and was "not subject to the Commission's continuing jurisdiction."¹⁶⁵

The supreme court of New Hampshire held that the state Public Utilities Commission had the authority to approve rates that reflected a utility's avoided cost at the time a QF applied for a rate, even if that rate exceeded the utility's avoided costs in the subsequent rate order.¹⁶⁶ Furthermore, the court upheld the commission's decision to issue a "front-end loaded, long-term rate order" whose rate exceeded the utility's avoided cost in the early years of the contract, then declined in the later years of the contract.¹⁶⁷ A justification for the greater front-end rate is that the risk to the utility's ratepayers is balanced with the benefits of the QF project.¹⁶⁸ The court stated that it "will not reverse a decision of the [commission] . . . unless the appealing party demonstrates by a clear preponderance of the evidence that the order was unjust or unreasonable."¹⁶⁹

A state's wide latitude when calculating avoided cost means it can effectively achieve desired feed-in tariff rates by justifying a greater

¹⁶⁰ State Utilities. Comm'n v. N.C. Power, 450 S.E.2d 896, 900-01 (N.C. 1994).

¹⁶¹ *Id.* at 900.

¹⁶² *Id.* at 901.

¹⁶³ *Rosebud*, 917 P.2d at 776.

¹⁶⁴ *Id.* at 775.

¹⁶⁵ Afton Energy, Inc. v. Idaho Power Co., 693 P.2d 427, 434 (Idaho 1984).

¹⁶⁶ Appeal of Pub. Serv. Co. of N.H., 539 A.2d 275, 283 (N.H. 1988).

¹⁶⁷ *Id.* at 277, 283.

¹⁶⁸ *Id.* at 278.

¹⁶⁹ *Id.* at 281.

avoided cost. A state should review its process for calculating avoided cost to ensure it is including all the costs the utility would actually avoid when it buys power from a QF. For example, a state will likely find additional authority to raise avoided costs under the “reduction of fossil fuel use” factor of FERC’s regulations.¹⁷⁰ A state can take into account all aspects of reducing fossil fuel use when calculating an avoided cost. A determination of the present and future value of renewable energy credits that count toward a utility’s required renewable portfolio standard could increase the avoided cost value. As the federal government progresses toward cap-and-trade and carbon tax measures, a state can reassess the likely economic cost to the utility of complying with future carbon regulation. However, FERC cautions states that they “may not set avoided cost rates . . . by imposing environmental adders or subtractors that are not based on real costs that would be incurred by utilities.”¹⁷¹

A fundamental element of PURPA is that it requires a state to calculate each utility’s avoided cost separately. A state will not be able to set a single feed-in tariff rate that applies to all QFs of a certain type and size. In addition, FERC regulations set limits as to what factors a state can consider when determining an avoided cost. Even after a state justifies a new maximum avoided cost, the resulting value may still be much less than the state’s desired feed-in tariff rate. But, reevaluating avoided cost from a broader point of view can raise the rate paid to a QF and may make a QF’s renewable resource project profitable.

B. SHIFT THE FEED-IN TARIFF FINANCIAL BURDEN FROM RATEPAYERS TO SOCIETY

FERC is aware that the limitations of the avoided cost calculation may minimize states’ ability to “encourage renewable generation.”¹⁷² FERC suggests that states could overcome this problem by requiring utilities to build renewable generation, giving renewable generators direct subsidies or tax incentives, or imposing a tax on fossil fuel generation that would “increase the cost which would be incurred by utilities in building and operating plants that use that fuel.”¹⁷³

As discussed earlier, the state of Washington has shifted the burden of a feed-in tariff from the utility’s ratepayers to the state’s taxpayers. Since 2005, Washington has provided an incentive for

¹⁷⁰ Conservation of Power and Water Resources, 18 C.F.R. § 292.304(e) (2010).

¹⁷¹ S. Cal. Edison Co., 71 FERC ¶ 61,269, ¶ 62,080 (1995).

¹⁷² *Id.*

¹⁷³ *Id.*

“individuals, businesses, and local governments that generate electricity from solar power, wind power, or anaerobic digesters.”¹⁷⁴ The incentives range from \$0.12 to \$0.54/kWh depending on the type of generation and where the equipment was manufactured.¹⁷⁵ The utilities pay the incentives to the renewable generators and “earn a tax credit equal to the cost of those payments.”¹⁷⁶ A utility’s participation in the incentive program is voluntary.¹⁷⁷

Similar to Washington, a state could set a feed-in tariff rate schedule and allow utilities to voluntarily pay those incentive rates to QFs. The state would then provide utilities with a tax credit equal to the total amount paid to renewable generators as incentives. The Washington system appears to recognize that global warming is problematic not only for utility customers, but for all of society, so financing the cost of controlling greenhouse gases through taxation is appropriate. Moreover, Washington’s approach recognizes that if the government wants to enact measures to reduce greenhouse gases, it should be willing to pay for the cost of these measures. This system would withstand a PURPA challenge better than would the currently proposed feed-in tariffs. The utilities are not being asked to provide a rate greater than their avoided cost; the utilities are receiving the cost of the incentive back as a tax credit. The potential problem with the Washington system is that it relies on taxpayers, and not the ratepayers, to pay for the incentives. State legislatures may have difficulty passing feed-in tariffs that require financing from their state’s general fund.

C. VOLUNTARY FEED-IN TARIFFS WITH SUBSTANTIAL UTILITY INCENTIVES

Another option for a state would be to create a voluntary feed-in tariff. A FERC regulation states that “[n]othing in this subpart requires any electric utility to pay more than the avoided costs for purchases” of electricity from QFs.¹⁷⁸ This regulation does not prohibit the utility from voluntarily paying more than the avoided cost. Moreover, a related regulation states that nothing in the regulation “[a]ffects the validity of

¹⁷⁴ *Washington Renewable Energy Production Incentives*, *supra* note 133.

¹⁷⁵ *Id.*

¹⁷⁶ *Id.*

¹⁷⁷ Broehl, *supra* note 134.

¹⁷⁸ Conservation of Power and Water Resources, 18 C.F.R. § 292.304(a)(2) (2010).

any contract entered into between a qualifying facility and an electric utility for any purchase.”¹⁷⁹

The voluntary feed-in tariff could include a rate schedule based on the type, size, and location of the renewable generation. To spur participation, the state could also create a substantial incentive for the utilities that voluntarily pay the state’s specified feed-in tariff rates to QFs. An example of such a substantial incentive would be allowing utilities to include their cost of purchasing power from QFs in their rate base and earn a rate of return on the purchase cost. The utilities would be motivated to encourage growth in QF generation because they could earn a profit for selling electricity generated by a QF. Ratepayers, though, would see higher electric rates because they would be paying for the premium feed-in tariff rates paid to QFs and the profit their utility earns on that cost.

D. FRONT-END LOADED RATE ORDERS

Another method a state can use to promote renewable resources, and which will not violate PURPA, is to provide a front-end loaded, levelized incentive to encourage the construction of QFs. A “front-end loaded, long-term rate order” provides a QF a rate in the early years of a contract that exceeds the utility’s avoided cost and a rate lower than the expected avoided costs in the later years of the contract.¹⁸⁰ The greater front-end rate balances the risk to the utility’s ratepayers with the benefits of the QF project.¹⁸¹ The net present value of the front-end loaded rate, over the entire course of the contract, equals the net present value of a rate that is not front-end loaded.¹⁸² The Commonwealth Court of Pennsylvania permitted this type of payment arrangement when it held that “[f]ederal law encourages, rather than prohibits, levelized capacity payments.”¹⁸³ The supreme court of New Hampshire has upheld the New Hampshire Public Utility Commission’s authority to approve contract terms that include front-end loaded rates.¹⁸⁴

A state could provide a front-end loaded rate to encourage the development of QFs. This rate would allow the QF to receive a reasonable profit early in its contract with a utility. The QF could invest

¹⁷⁹ Conservation of Power and Water Resources, 18 C.F.R. § 292.301(b)(2) (2010).

¹⁸⁰ Appeal of Pub. Serv. Co. of N.H., 539 A.2d 275, 277, 283 (N.H. 1988).

¹⁸¹ *Id.* at 278.

¹⁸² *Id.* at 277.

¹⁸³ Barasch v. Pa. Pub. Util. Comm’n, 546 A.2d 1296, 1310 (Pa. Commw. Ct. 1988).

¹⁸⁴ *Pub. Serv. Co. of N.H.*, 539 A.2d at 283.

the early profit in an asset with a large enough rate of return that would make up for the lower rate of return the QF receives in the later years of the contract. The front-end loaded rate is an opportunity for the QF to be better off financially at the end of a contract in comparison to just receiving the avoided cost throughout the entire contract. Although the front-end loaded rate does not provide the same incentive as a feed-in tariff, it does encourage the building of QFs and does not conflict with PURPA.

E. PERSUADE CONGRESS TO CHANGE PURPA

All of the solutions discussed earlier involve working within the current PURPA framework. This is because PURPA does not allow states to require that a utility purchase electricity from a small-scale renewable energy generator for more than the utility's avoided costs.¹⁸⁵ As WI-PSC Chairperson Callisto was reported as finding, PURPA "would not specifically prohibit the [WI-PSC] from setting a mandatory tariff, but to the extent the utility believed that amount was greater than the utilities' specific avoided costs, the [WI-PSC] would have a fight in their hands."¹⁸⁶

The best way to create an effective, German-style feed-in tariff in the United States is to eliminate the statutory bar that prevents a utility from paying a renewable energy generator more than the utility's avoided costs, so a state can require a utility to pay small-scale generators a reasonable rate of return. Under federal law, a rate-setting authority must adhere to three rules when setting a utility's rate for purchasing electricity from a QF.¹⁸⁷ The rate must be "just and reasonable to the electric consumers of the electric utility and in the public interest," it must not "discriminate against . . . qualifying small power producers," and the rate must not exceed the utility's avoided costs.¹⁸⁸ Congress could allow states to implement German-style feed-in tariffs by eliminating the last requirement that rates not exceed avoided costs. This relaxation of the rules would not grant unfettered authority to set rates because the rate-setting authority is still bound by the just and reasonable, public interest, and discrimination requirements. Another option would entail Congress retaining the final requirement, but placing an explicit exemption in the statutes that allows states with a federally approved,

¹⁸⁵ Federal Power Act, 16 U.S.C. § 824a-3(a)-(d) (2006).

¹⁸⁶ *PSCW Open Meeting*, *supra* note 10, at 8.

¹⁸⁷ 16 U.S.C. § 824a-3(b).

¹⁸⁸ *Id.*

German-style feed-in tariff to disregard the final provision. A final option would be for Congress to allow rates that exceed a utility's avoided cost to a certain percentage, for example allowing feed-in tariffs up to a rate that is 150 percent of the utility's avoided costs.

CONCLUSION

Concerns about climate change are causing states to propose ways to reduce greenhouse gas emissions. One way to achieve this goal is to stimulate the growth of small-scale renewable electricity generation. Feed-in tariffs, such as those used in Germany, Spain, Czech Republic, and Ontario, Canada, appear to be one of the best mechanisms for quickly creating the capacity to generate renewable energy. Several states have already implemented a feed-in tariff. The federal PURPA law does not prohibit feed-in tariffs per se, but it mandates that a utility cannot be required to pay renewable energy generators purchase rates that exceed the utility's avoided costs. This provision conflicts with the goal of feed-in tariffs, which is to provide the renewable energy generators cost recovery and a reasonable rate of return. States can work within the PURPA framework to create a regulatory program similar to feed-in tariffs that achieves the same objective of providing an incentive to generate small-scale renewable energy. They can justify greater avoided costs, shift the burden of the feed-in tariff from the ratepayer to society, create voluntary feed-in tariffs with substantial utility incentives, or offer front-end loaded rates. However, the most viable option for creating a legal environment where states can mandate German-style feed-in tariffs is probably one in which an amended PURPA explicitly allows feed-in tariffs.