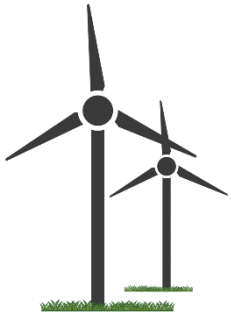
Energy 101: Public Utility Regulatory Policies Act of 1978 (PURPA)



The Public Utility Regulatory Policies Act of 1978 (PURPA) has played an important role shaping energy markets and encouraging renewable energy nationally—and in Oregon—for more than 40 years.[1] This section is designed to provide Oregonians a better understanding of current perspectives on the policy and the potential effects of PURPA reform on Oregon's evolving electric sector, and includes a summary of key aspects of PURPA, its role in renewable energy development, and a high-level overview of current discussions about potential policy reform.

History of PURPA

In 1978, Congress passed PURPA as a legislative response to the energy crises of that decade. In its passage, Congress aimed to reduce dependence on imported fossil fuels and increase diversity in energy resources by encouraging development of alternative energy resources. At the same time, the legislation encouraged conservation of electric energy and increased efficiency in the use of generation facilities and resources by electric utilities while ensuring equitable retail rates for electric consumers.[2]

One of the ways that PURPA was designed to accomplish its goals was through the creation of a new class of generating facilities known as "non-utility generators," or as they are now more commonly known: qualifying facilities. Qualifying facilities are often called "QFs" and fall into two groups:[1]

1. **Small power production facilities.** Generating facilities of 80 MW or less whose primary energy source is renewable (hydropower, wind, solar, biomass, or geothermal); and
2. **Cogeneration facilities.** Generating facilities that produce both electricity and another form of useful thermal energy (such as heat or steam) in a way that is more efficient than the separate production of both forms of energy.

To encourage the development of QFs by independent power producers, PURPA authorized the Federal Energy Regulatory Commission to adopt rules to determine the eligibility of QFs for special rates and exemption from certain regulatory requirements.[4] According to FERC, small power producers seeking to connect to the utility grid before PURPA was enacted often faced three "major obstacles."[4] First, utilities were not required to purchase the output from power projects owned by IPPs. Second, some utilities charged high rates to IPPs for back-up grid service for their projects. And third, in many cases, an IPP exporting wholesale electricity to the utility grid could actually be considered an electric utility itself, and therefore would be subject to considerable federal and state regulation.[4] To overcome these three barriers, PURPA created certain rights for QF projects that fall into three categories:[5]

Independent Power Producer or IPP: A corporation, person, agency, authority, or other legal entity or instrumentality that owns or operates facilities for the generation of electricity for use primarily by the public, and that is not an electric utility.[3]

1. **The right to sell electricity or capacity to a utility at the utility's avoided cost rate.** PURPA imposes a mandatory purchase obligation on utilities, requiring utilities to purchase electricity from QFs at either an avoided cost rate or a negotiated rate. The avoided cost rate is intended to represent the incremental cost to the electric utility of electric energy or capacity which, but for the purchase from the QF, the utility would have to generate itself or purchase from another source. An avoided cost rate is somewhat analogous to the marginal wholesale price for a utility to acquire another kilowatt-hour of energy.
2. **The right to purchase certain services from utilities.** PURPA gives QFs the right to interconnect to a utility's transmission or distribution system by paying a fair price for upgrade costs on a non-discriminatory basis. PURPA also gives QFs the right to purchase supplementary power, back-up power, maintenance power, and interruptible power from utilities as needed at rates which are just and reasonable.
3. **Relief from certain regulatory requirements.** Federal and state laws define an electric utility and subject entities falling within such definitions to significant regulation and oversight. PURPA exempts QFs from obligations under the Public Utility Holding Company Act of 1935 and provides an exemption from certain state laws and regulations regarding the rates and financial organizational aspects of electric utilities.

Since its inception in 1978, PURPA has undergone several changes as energy markets have evolved in the United States. During the 1990s and into the early 2000s, federal legislation, combined with regulatory action at FERC aimed at increasing competition, led to substantial restructuring of wholesale electricity markets across the country.[i] In particular, these actions led to the development of competitive, centralized markets for buying and selling wholesale electricity in much of the country. These markets were and remain administered by independent system operators or regional transmission organizations.[ii] As a result of these changes, there were several efforts to modify or repeal PURPA. Elements of the original legislation were increasingly viewed by some stakeholders as being unnecessary, particularly given the development of competitive, centralized markets where QFs could sell power.

Energy Policy Act of 2005

In 2005, Congress amended PURPA through the Energy Policy Act of 2005 (EPAct 2005) to account for changes in wholesale electricity markets, such as the development of organized wholesale dispatch markets, among other changes in the industry.[6] Significantly, EPAct 2005 created a procedure to relieve utilities of their must-purchase obligation from certain renewable QFs, provided the utility seeks such a waiver from FERC, and that the Commission finds that such QF projects in the utility's service territory have non-discriminatory access to competitive electricity markets. In implementing this provision through Order 688, FERC found that some organized markets (but, notably, not CAISO at the time as it had not yet launched its Day-Ahead Market) offered sufficient, non-discriminatory access to renewable QFs between 20 MW and 80 MW in size and thus utilities operating in those

[i] For example, see: the Energy Policy Act of 1992 and FERC Orders 888 (creating the Open Access Transmission Tariff), 889 (creating the Open Access Same-time Information System), and 2000 (encouraging the formation of Regional Transmission Organizations).
[ii] For more on Regional Transmission Organizations, see ODOE's 2021 report on RTOs: www.oregon.gov/energy/energy-oregon/Pages/RTO.aspx

markets were relieved of their must-purchase obligations for those projects pursuant to PURPA.[7] In 2011, FERC found that California's three large investor-owned utilities also qualified for this waiver.[8] Notably, in Order 688, the Commission also established a rebuttable presumption that projects equal to or smaller than 20 MW do *not* have non-discriminatory access and thus the must-purchase obligations of utilities remained unchanged. This change for renewable projects larger than 20 MW lessened the effect of PURPA in some states, while the core elements of PURPA remained essentially unchanged in Oregon and the Pacific Northwest.

FERC Order 872

In 2020, FERC further revised its regulations implementing PURPA. In Order 872,[5] FERC reduced the minimum size of a renewable QF that is presumed to have non-discriminatory access to power markets from 20 MW to 5 MW for projects located within certain ISO or RTO markets. This provision essentially relieves utilities operating within these markets of their must-purchase obligations for renewable QFs sized between 5 MW and 80 MW (the maximum size of a renewable QF pursuant to PURPA). The order also granted additional flexibility to state regulatory authorities to establish avoided cost rates for QF projects. This change affected state regulatory authority regardless of whether the QF was located inside an ISO or RTO market.

Role of the State

Though FERC has broad authority to prescribe rules for PURPA implementation throughout the nation in many instances, Congress reserved discretion to state regulators (public utility commissions in the case of investor-owned utilities, and governing boards in the case of consumer-owned utilities) to determine implementation in others. This allows states to tailor elements of PURPA implementation to the specific market and industry conditions in their state, which can vary significantly in terms of existing resource mix, prevailing power rates, and interconnection considerations. The following are core elements of PURPA implementation over which states exercise significant authority, including some indication of the range in how different states exercise this authority:[9]

- **Avoided Cost Pricing**. States have wide discretion to define what is reasonable and non-discriminatory when establishing avoided cost rates that utilities must pay for the energy and the capacity delivered from QF projects. The intention of PURPA is that utilities should pay QFs for the power output of their projects at a rate that represents the "avoided cost" to that utility of having to otherwise procure or purchase that amount of energy and capacity elsewhere, in the absence of the QF project existing.

  Historically, many states have developed avoided cost pricing based on market prices for purchasing a marginal MWh of power, which in recent decades would often be set by a natural gas plant. Other states, meanwhile, have looked to market pricing for renewables, specifically, to set the avoided cost rates paid to renewable QFs. There is significant diversity in how states develop avoided cost pricing. Nationally, avoided cost pricing for QFs varies widely with some states offering higher or lower rates for output during different times of the year.

  For a summary of PURPA implementation by state, including avoided cost pricing, the National Regulatory Research Institute maintains the following online database: https://www.naruc.org/nrri/nrri-activities/purpa-tracker/

- **Fixed vs. Variable Energy Rates**. Pursuant to FERC Order 872, states acquired the authority to offer either fixed-price energy contracts or to offer variable-price energy contracts to QFs based on the time the energy is delivered. To determine a fair variable price, the purchasing utility can rely upon market pricing from an ISO or RTO market, where one exists, or from another wholesale bilateral market trading hub (such as the Mid-Columbia, or Mid-C, in the Pacific Northwest) in areas that operate without an ISO or RTO. In either case, QF projects retain the ability to opt for fixed-price capacity payments.
- **Contract Terms and Conditions**. State regulators have authority to adopt standard terms and conditions for QF contracts, or to require bilateral negotiations between individual QF projects and the utility obligated to purchase the output.
- **Contract Duration**. The duration of contracts offered to QF projects varies widely across the country. Most states offer contract durations in the 10- to 20-year range, with some exceptions as short as 2-year and as long as 25-year contract terms.
- **Interconnection Agreements.** States also exercise authority over the type of interconnection agreements required for QF projects in their state and the associated fees that utilities can charge for interconnection.

PURPA Implementation in Oregon

Since the inception of PURPA, Oregon has taken numerous actions to implement the legislation, including enacting its own complementary legislation in ORS 758.505-555.[10] Oregon's PURPA implementation legislation was designed to fulfill the state's goal of promoting "the development of a diverse array of permanently sustainable energy resources" while ensuring that the rates paid to PURPA QFs are "just and reasonable."[9] For the state's consumer-owned utilities, each governing board has adopted its own rules for administering its PURPA obligations, including the establishment of pricing and contract durations.[9]

Meanwhile, for the state's IOUs, the Oregon Public Utility Commission is responsible for regulatory oversight of PURPA.[9] The OPUC aims to implement the legislation such that it encourages the economically efficient development of QFs, while protecting ratepayers by ensuring that utilities pay rates equal to what they would have incurred in lieu of purchasing power from a QF project.[11] While there have been numerous regulatory proceedings at the OPUC related to PURPA implementation, there are three groups of decisions that shape how PURPA is implemented today:

- **Order No. 05-584 (2005)**:[12]
  - Established standard contracts for QFs smaller than 10 MW with uniform terms and conditions, 20-year contract duration, and 15-year fixed prices.
  - Established a process for calculating avoided cost pricing and required utilities to develop several pricing options.

  - QFs larger than 10 MW would receive avoided cost rates via negotiated contracts rather than standard offers.[iii]
- **Order No. 14-058 (2014)**:[12]
  - Reconsidered the provisions adopted in Order No. 05-584.
  - Reaffirmed decision to maintain 10 MW eligibility cap for standard contracts with a 20-year contract duration and 15-year fixed prices, in addition to provisions intended to reduce transaction costs for QF development.
  - Modified avoided cost method to: (1) account for the capacity contribution of different QFs, and (2) to incorporate wind integration costs.
  - Committed to revisit solar integration costs in the future after more solar QF development occurs.
- **Orders No. 16-129 (2016),[13] No. 16-130 (2016),[14] and No. 19-016 (2019):**[15]
  - Reaffirmed its decision to maintain 20-year contract durations with 15-year fixed prices.
  - Identified that some solar developers were able to circumvent the 10 MW threshold to qualify for standard contracts by developing multiple, smaller projects.
  - Reduced the size threshold for standard contracts, as adopted in Order No. 05-584, for solar QFs (but *not* for non-solar QFs) from 10 MW to 3 MW for Idaho Power (Order No. 16-129), PacifiCorp (Order No. 16-130), and PGE (Order No. 19-016).

Effects of PURPA on Renewable Development in Oregon

According to data from the U.S. Energy Information Administration, more than 169 gigawatts (GW) of renewable generating capacity became operational in the United States between 2000 and 2020. Of that total, PURPA QF projects account for 21 GW (or approximately 12 percent). Solar PV projects account for nearly two-thirds of those QF projects (approximately 13.5 GW of capacity), driven by significant reductions in solar technology costs in recent years. By contrast, wind energy projects account for less than one-quarter of those QF projects (approximately 5 GW of capacity).[16]

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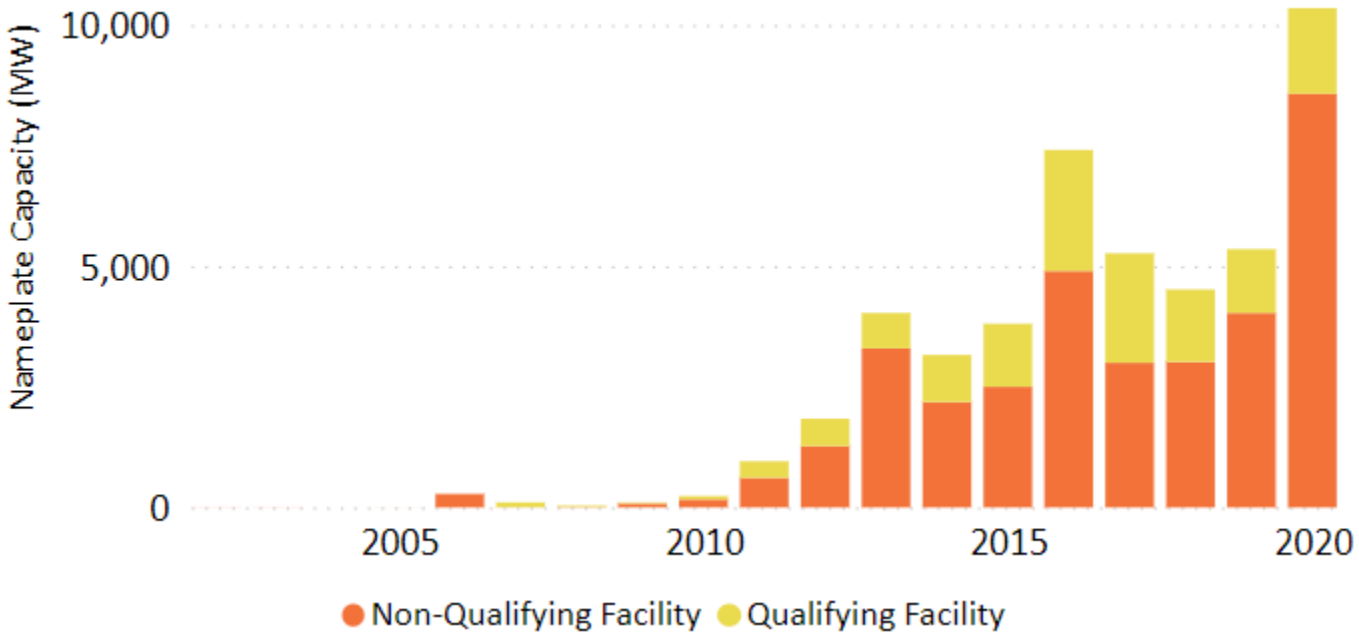
Figure 1 shows the national growth in solar capacity since 2000, with QFs continuing to account for a significant share of total projects through 2020.

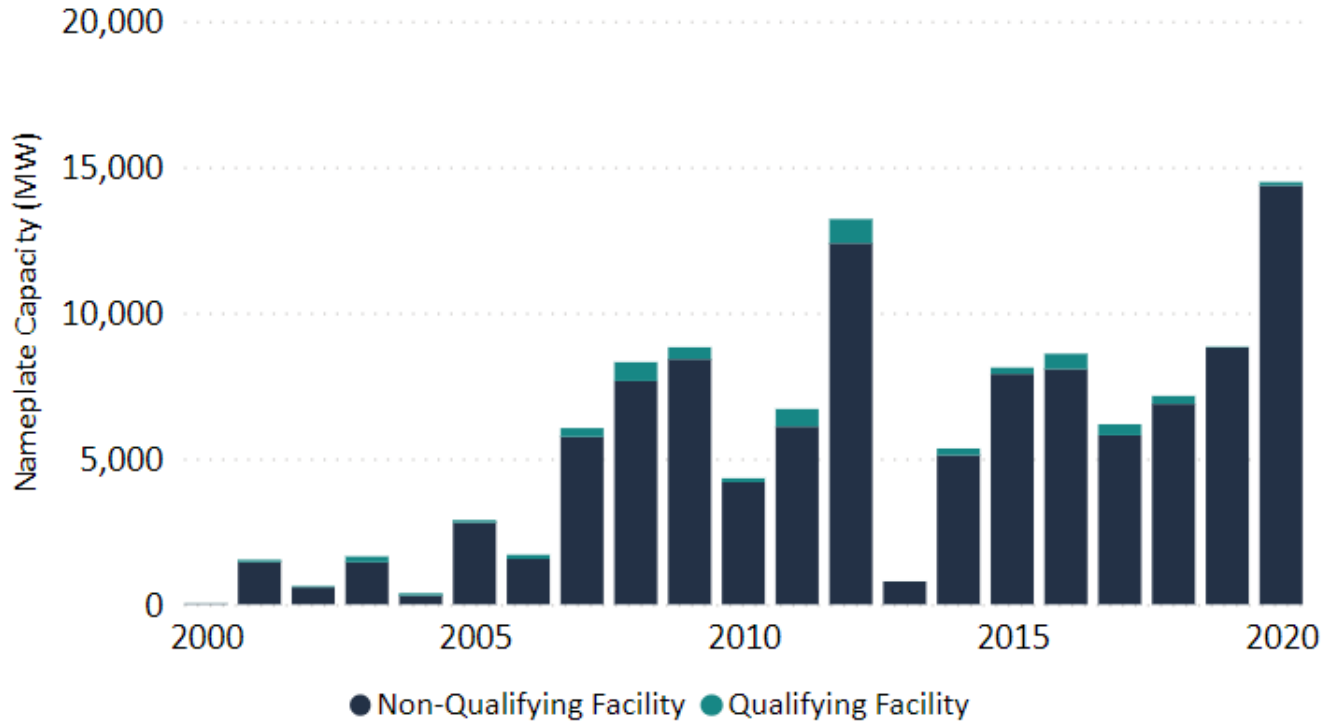
[iii] OPUC Order No. 07-360 established guidelines for determining negotiated rates for large QFs consistent with 18 CFR 292.304(e). For more information: https://apps.puc.state.or.us/orders/2007ords/07-360.pdf

Figure 1: U.S. Solar Nameplate Capacity (MW) by Year and QF Status[16]



Meanwhile, Figure 2 illustrates the deployment of wind energy capacity since 2000, which tells a different story. Major deployments occurred earlier (by the mid-2000s) and the contribution of QF projects is noticeably smaller than with solar.

Figure 2: U.S. Wind Nameplate Capacity (MW) by Year and QF Status[16]



Between 2000 and 2020 in Oregon, approximately 4.5 GW of renewable generating capacity became operational, of which PURPA QFs accounted for approximately 650 MW (or approximately 14 percent

of all renewable projects). Solar QF projects account for 420 MW of that capacity (or roughly two-thirds of all QFs in Oregon). By contrast, wind QFs account for 143 MW of that capacity (or less than one-quarter of all QFs in Oregon).

Figure 3: Oregon Solar Nameplate Capacity (MW) by Year and QF Status[16]

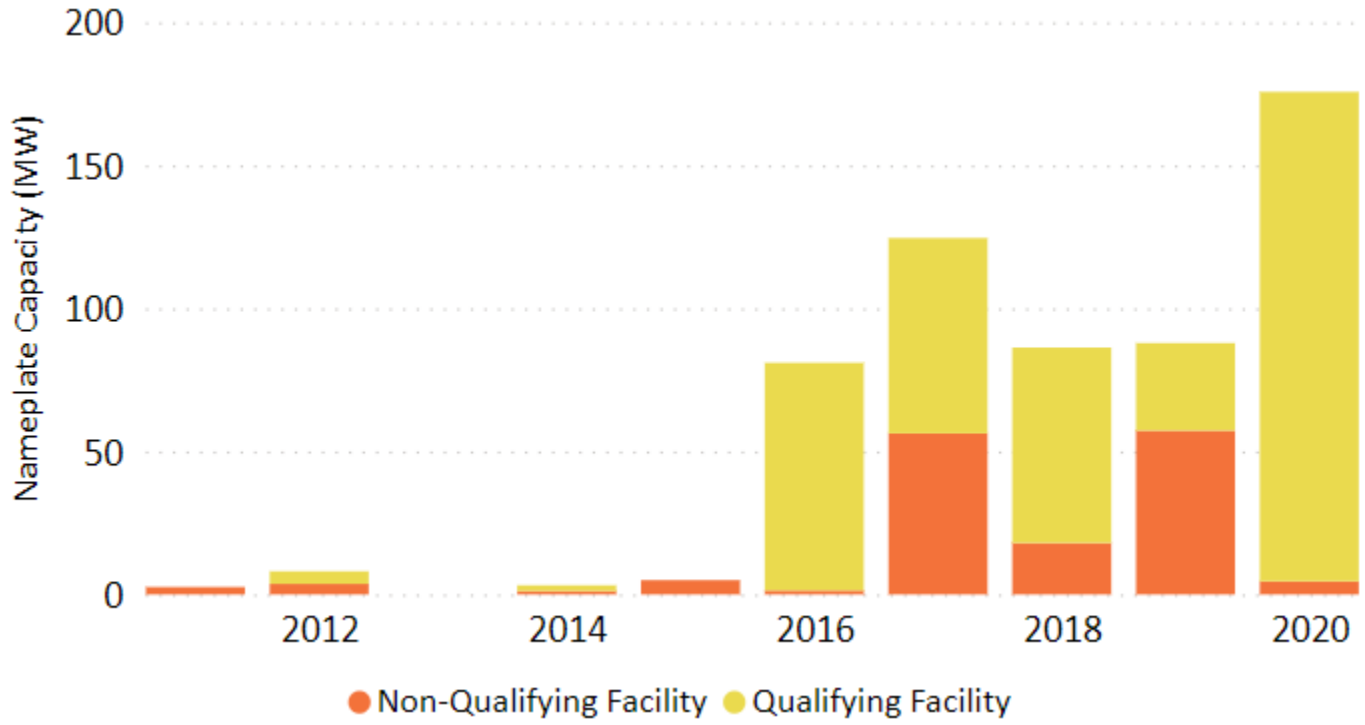
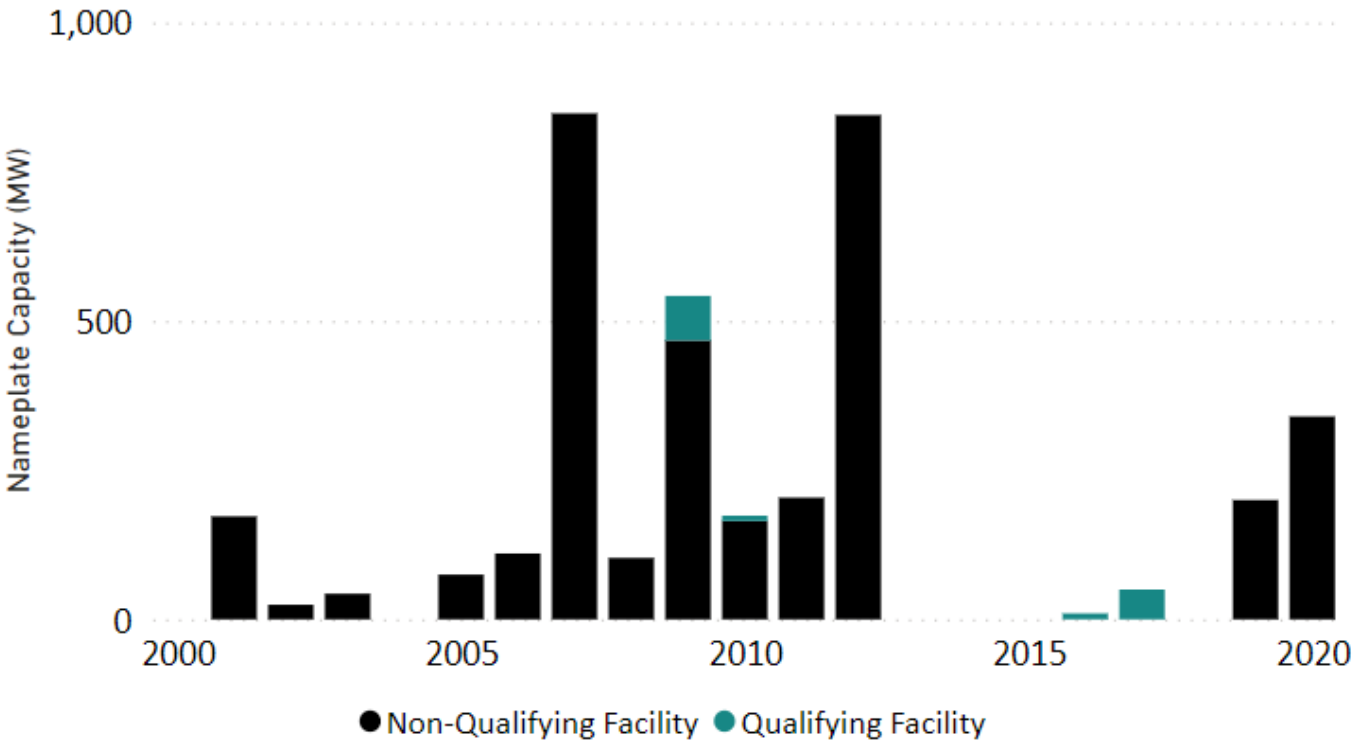


Figure 4: Oregon Wind Nameplate Capacity (MW) by Year and QF Status[16]



Next Steps: The Future of PURPA

The electric utility sector has changed dramatically since the adoption of PURPA in 1978. As shown above, the deployment of utility-scale renewables has grown significantly in the last two decades. This has been driven by state policies responding to an increased awareness of the threat posed by climate change combined with technology advancements and cost reductions. As of 2022, renewable projects of all sizes are increasingly cost-effective in the power sector. And recent actions taken by FERC in Order 872—such as reducing the must-purchase obligation for utilities from renewable QFs larger than 20 MW to those renewable QFs larger than 5 MW in certain RTO markets, and giving authority to states to adopt variable-priced avoided costs at the time of delivery—reflect these fundamental changes to the competitiveness of renewables in the marketplace. While PURPA has driven meaningful development of renewable projects in the past, there are divergent perspectives about the continued role of PURPA in helping Oregon to meet its clean energy goals in the decades ahead.

As of 2022, renewable projects of all sizes are increasingly cost-effective in the power sector.

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