

Title 4—DEPARTMENT OF
ECONOMIC DEVELOPMENT
Division 240—Public Service Commission
Chapter 22—Electric Utility Resource Planning

4 CSR 240-22.055 Distributed Energy Resource Analysis

PURPOSE: This rule specifies the minimum standards for the scope and level of detail required for ~~a~~Distributed ~~e~~Energy ~~r~~Resource analysis and reporting. Planning for future Distributed Energy Resources ~~are-is to be evaluated-conducted~~ as part of the ~~triennial~~ resource planning process, but due to the rapidly evolving technology, relative speed of deployment, and site specific characteristics, this regulation requires some targeted analysis that is different from other rules in Cportions of chapter 22.

(1) Definitions. For purposes of this rule:

~~(A) Customer generator means a customer owned qualified electric energy generation unit that meets the criteria set forth in 4 CSR 240-20.065(1)(C);~~

~~(A)B~~ Congestion means a situation where the desired amount of electricity is unable to flow due to physical limitations;

~~B) Cost-effective means that a resource passes one of the standard cost-effectiveness tests prescribed in the National Standard Practice Manual published by the National Efficiency Screening Project (NESP);~~

~~(C) Distributed Energy Resources (DER) means a resources sited close to customers that can provide all or some of a customer's~~their~~ immediate electric and power needs and can also be used by the system to either reduce demand, beneficially modify the net consumption of energy by customers (such as energy efficiency) or provide supply to satisfy the energy, capacity, or ancillary service needs of the distribution grid. The resources, if providing electricity or thermal energy, are small in scale, are connected to the distribution system, and close to load. Examples of different types of DERs include, but are not limited to, solar photovoltaic, wind, combined heat and power (CHP) or other types of distributed generation (DG), energy storage, demand response (DR), electric vehicles (EVs), microgrids, and energy efficiency (EE);⁺ and~~

~~(D) Distributed Generation means generation of electricity from sources that are near the point of consumption.~~

~~(DE) Planning horizon means a future time period of at least three-twenty (320) years' duration over which the costs and benefits of alternative resource plans are evaluated.~~

(2) ~~Existing Database of existing DERDistributed Generator and& Energy Storage Database~~~~devices owned by the Utility or by Distribution Customers, database.~~ ~~U~~Electric utilities shall create, and update annually, a database of information on distributed generation andDG & energy storage devices for purposes of evaluating current penetration and planning for future increases in the levels of distributed generation andDG & energy storage. This database shall be filed as part of each utility's Chapter 22 filing and also made publicly available in electronic format. The purpose of maintaining the publicly available data is to provide customers with circuit condition information to encourage efficient distributed generation andDG & energy storage deployment. The publicly available database will include customer privacy and utility

Commented [HM1]: Grammatical edit.

Commented [HM2]: Like any other part of the IRP process, the evaluation of DERs should be updated annually as needed; the update need not be as detailed as the triennial process.

Commented [HM3]: Some DERs – particularly utility-owned DERs – could fail to meet this definition. Therefore, DE recommends expanding the definition of DERs to encompass these other types of DERs, perhaps by relating such DERs to their location on the distribution system.

Commented [HM4]: See note below regarding wind and solar; keeping this language could alleviate the concern so long as it is not strictly interpreted to mean that DERs can only be resources that directly serve customers. The deletion would also be inconsistent with the NARUC definition used by Staff in its report.

Commented [HM5]: Grammatical edit

Commented [HM6]: Wind (and storage) may not always be DERs, so it is worth considering how to qualify this list of examples to indicate that wind and storage must be related to customer-supplied energy or connection to the distribution system in order to count as DERs.

Commented [HM7]: DE assumes that this could include thermal storage, mechanical storage, chemical storage, and others. If not, then DE recommends including a list of different types of storage in the definition.

Commented [HM8]: This could address DE's concern if applied to the above definition of DERs and not strictly interpreted to mean resources that directly serve customers.

Commented [HM9]: DE is concerned that the reference to device-specific information may result in the disclosure of customer-specific information.

⁺NARUC DER Manual at p. 45.

~~protections related to physical and cyber security concerns, and will have capacity data aggregated and customer-specific information removed.~~

~~(A) Electric utilities will be responsible for maintaining the following information in the database:~~

~~(A)1. Existing distributed generation and DERs DG & energy storage presently connected to the utility's grid;~~

~~(B)2. Information characterizing the location (according to Geographic Information System coordinates) on the distribution circuits where distributed generation and DG & energy storage DERs are connected;~~

~~(C)3. Aggregate capacity of distributed generation and energy storage DERs for each feeder or load; and~~

~~(D)4. Relevant interconnection standard and standby service requirements, as applicable, that specify distributed generation and DG & energy storage DER performance of legacy and modern DER.~~

~~(B) To the extent that a utility is not in possession of any of the information required herein, it shall state which information it does not possess, the reason the information is not possessed, and how the utility will obtain the information for future filings for planning purposes.~~

~~(C) The publicly distributed generation and energy storage DERs database shall be maintained and available to the public on individual utility websites and made available upon request to any party.~~

(3) ~~Market potential for DER Adoption Potential.~~ As part of each triennial compliance filing, the utility will ~~consider evaluate~~, at a minimum, the ~~market~~ potential for cost-effective DERs within its service territory to help fulfill the fundamental planning objective ~~and associated constraints or limitations~~ set out in 4 CSR 240-22.010 ~~and to facilitate customer options in sources for their utility services~~. This study must cover no less than a ~~three~~ twenty (20) year planning horizon, and will ~~consider evaluate~~ both utility-owned DERs and non-utility-owned DERs. ~~With respect to all DERs except utility-incentivized DG, utility-incentivized CHP, utility-owned or managed EVs, utility-owned or managed energy storage, and utility-incentivized energy storage, the study requirement can be satisfied by relying upon assessments of market potential developed as part of the utility's load analysis and forecasting pursuant to 4 CSR 240-22.030, the utility's supply side analysis pursuant to 4 CSR 240-22.040, and/or the utility's demand side analysis pursuant to 4 CSR 240-22.050, provided that references to such analyses are included in the study described herein. The assessment of potential shall consider evaluate options for utility management incorporation of existing and potential DERs not currently owned or managed by the utility into the utility's planning processes and system management, e.g., at the request of a customer.~~

(4) Evaluating DERs as part of the Chapter 22 resource planning process. ~~The evaluation must be conducted utilizing the methods described elsewhere in Chapter 22. In accordance with the definition of "cost effective" prescribed above, and as part of each triennial compliance filing the overall resource planning process. The utility will include planning for future levels of DERs, and how they will be integrated into the utility's distribution system as follows:-~~

Commented [HM10]: This clause was previously suggested by DE and is important for purposes of protecting privacy.

Commented [HM11]: "Evaluate" implies analysis, as opposed to only "considering."

Commented [HM12]: The referenced rule section addresses both a primary objective and potential constraints or limitations on meeting that objective.

Commented [HM13]: DE is not opposed to this type of exemption provided that utilities adequately assess these DERs elsewhere in their IRP filings and provide reference to these analyses in their DER study.

Commented [HM14]: There is no reason to limit proactive planning to existing DERs.

Commented [HM15]: While DE recognizes that the sentence could apply to concepts such as KCP&L/GMO's "DERMS," DE recommends this clarifying the language to indicate that such management should be on a voluntary basis by customers.

Commented [HM16]: DE recommends the original language. Like any other part of the IRP process, the evaluation of DERs should be updated annually as needed; the update need not be as detailed as the triennial process.

(A) In order to facilitate greater DER penetration, the evaluation will acknowledge and reference the obligation of utilities to provide cost-based interconnection and standby service to qualifying facilities, as defined in the Public Utility Regulatory Policy Act of 1978. Qualifying facilities includes both small power production facilities (see 18 C.F.R. §§292.203(c) and 292.204 for size and fuel use, as well as 18 C.F.R. §292.207 as to certification as a qualifying facility) and cogeneration facilities (see 18 C.F.R. §§292.203(b) and 292.205 for operation, efficiency and use of energy output, as well as 18 C.F.R. § 292.207 as to certification as a qualifying facility). There is no size limitation for qualifying cogeneration facilities.

(B) DERs will be ~~considered~~ evaluated in the transmission and distribution (T&D) analysis required by 4 CSR 240-22.045. This includes existing and potential utility-owned DERs and non-utility-owned DERs. The utility will describe and document:

1. ~~Areas Reliability concerns, which could include~~ ing areas of congestion, ~~which that~~ could be improved by DERs;
2. Avoided or deferred transmission and distribution (T&D) costs as defined in 4 CSR 240-22.045(2) associated with, but not limited to decreased congestion, reduced transmission network losses, and the implementation of “non-wires” alternatives; and
3. Acceleration or modification of planned T&D improvements and associated costs and benefits due to increased penetration of DERs.

(~~BC~~) Evaluation of future deployment of cost-effective DERs ~~is to~~ will be based on utility-owned or managed DERs and customer-owned DERs.

~~(C) DERs will be examined as part of the demand side resource analysis in accordance with 4 CSR 240-22.050.~~

(D) The utility will evaluate the potential for integration of utility and customer-owned DERs to impact grid reliability, to beneficially modify customer energy consumption ~~reduce peak demand~~, and to delay or reduce the size of supply-side resources additions.

~~(E) In addition to other requirements, DERs will also be modeled, considered, described and documented by the utility consistent with RTO requirements to do so.~~

(~~EF~~) The evaluation, including load forecasting, must ~~cover~~ address no less than a ~~three~~ twenty (20) year planning horizon, on a year-by-year basis to assess annual and cumulative impacts of DER deployment. ~~The utility is not required to utilize a twenty (20) year planning horizon as required elsewhere in Chapter 22.~~

(~~FG~~) The evaluation must ~~cover~~ address an estimate of the reduction in ~~When assessing opportunities to reduce transmission and distribution line network losses among the supply side resources pursuant to 4 CSR 240-22.045(1)(A), the utility must conduct a detailed line-by-line analysis of the transmission and distribution systems. This assessment will be conducted based upon existing and potential utility- and non-utility-owned DERs, as well as existing non-utility-owned DER.~~ The utility may focus its analysis on particular portions of its T&D systems based on factors including, but not limited to, the need for location-specific upgrades.

Commented [HM17]: DE is OK with this deletion if the concept is included in the text proposed above for subsection (3). If not, DE recommends retaining this language.

Commented [HM18]: There is no reason to limit proactive planning to existing non-utility DERs.