

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 ~~d~~Distributed ~~e~~Energy ~~r~~Resource analysis and reporting. Planning for future Distributed Energy Resources are to be evaluated 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);~~

~~(AB) 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 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);<sup>+</sup> 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 DER Distributed Generator and Energy Storage Database devices owned by the Utility or by Distribution Customers. database. UElectric utilities shall create, and update annually, a database of information on distributed generation and DG & energy storage devices for purposes of evaluating current penetration and planning for future increases in the levels of distributed generation and DG & 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 and DG & energy storage deployment. The publicly available database will include customer privacy and utility~~

<sup>+</sup> ~~NARUC DER Manual at p. 45.~~

protections related to physical and cyber security concerns, and will have capacity data aggregated.

(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 public 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, at a minimum, the market potential for cost-effective DER within its service territory to help fulfill the fundamental planning objective set out in 4 CSR 240-22.010. This study must cover no less than a three-twenty (20) year planning horizon, and will consider both utility-owned DER and non-utility-owned DER. -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. The assessment of potential shall consider options for utility management of existing DER not currently owned or managed by the utility.

(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:-

(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 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 areas of congestion which 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 DER is to 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 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 an estimate of the reduction in 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-owned DER, 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.