

NHA draft outline in response to DOE RFI on Section 242 definition – “inadequate electric service”

The National Hydropower Association (NHA) appreciates the opportunity to submit comments in response to the Department of Energy’s (DOE) July 8, 2021 request for information (RFI) on the definition of “inadequate electric service” included in Section 3005(a) of the Energy Act of 2020. NHA represents more than 250 companies including public and investor-owned utilities, independent power producers, developers of large and small hydro projects, manufacturers, environmental and engineering consultants, attorneys, and public policy, outreach, and education professionals.

Hydropower, in all its forms, will play a crucial role in the clean energy transition. Hydro operators provide critical balancing services to integrate other renewables including ramping, load-following, regulation, operating reserves and voltage control. Hydropower already provides critical grid services in most areas of the country on a non-emitting basis. In order to reach President Biden’s ambitious goal of a zero-emission grid by 2035 and a net zero economy by 2050, we must not only retain the existing hydropower fleet but we must grow all forms of renewables including new hydropower resources.

Section 242 is a critical incentive payment program that invests in facilities that add generation to existing infrastructure such as non-powered dams and conduits. The Energy Act of 2020 created a *new* class of hydropower projects that would be eligible for 242 funding. This new project class is untethered to existing infrastructure. However, the Act placed several limitations on the class including a 20MW cap, a requirement for construction authorization by FERC and a geographic limitation to areas of “inadequate electric service” as determined by the Secretary (taking into account access, outages *or* affordability). NHA respectfully requests DOE to consider NHA’s comments regarding how to define “inadequate electric service”.

Category 1 – inadequate electric service - Should the evaluation of “inadequate electric service” consider resource adequacy, or other uses of “adequacy” as a standard electric system planning term?

Resource adequacy is vital to a decarbonized grid. As the dispatchable, thermal fleet is replaced with more intermittent renewables, the ability for each electric system to maintain enough resources to ensure energy adequacy in all hours will be tested. The blackouts in CAISO (August 2020) and ERCOT (February) demonstrated that having enough resources “on paper” is not the same as having firm, flexible energy when the grid needs it. Although many areas are reforming the way capacity is measured (especially as it relates to energy limited and intermittent resources), most areas of the country still consider all capacity as substitutable and don’t take into account the evolving energy mix or correlated outages. As NERC cautioned in its 2020 long term outlook¹, “reserve margins and capacity-based estimates can give a false sense of comfort” to grid planners. Traditional resource adequacy measurements may not indicate whether a particular area is in need of clean, firm capacity. NHA cautions DOE against using any one single measure to determine if an area has sufficient resources. We recommend DOE consult with NERC (North American Electric Reliability Corporation) as it conducts regional energy assessments that may provide more granular insights into an area’s resource adequacy.

DOE should consider hydropower’s contribution to grid resilience and critical electric infrastructure on a case-by-case basis. For instance, a new hydro facility that can provide blackstart capability or that serves critical electric infrastructure (as defined in 10 CFR 1004.13) can contribute to resilience even if the specific area has sufficient resources to meet a 1 in 10 loss of load expectation.

Category 2 – Access - What challenges do owners and operators of hydroelectric facilities face in gaining physical access to the electric grid? Should special considerations be made for hydroelectric facilities operating outside of the interconnected U.S. electrical grid such as independently operating

¹ [NERC: 2020 Long Term Reliability Assessment](#), December 2020 at page 6.

grids of Alaska, Hawaii, the Electric Reliability Council of Texas (ERCOT), Puerto Rico, or territories of the United States?

New hydropower development involves a lengthy federal permitting process that can take years and in some instances a decade or longer. Developers must also navigate an expensive and prolonged interconnection process that can make development more challenging. A recent LBNL presentation² found that among projects with signed interconnecting agreements, hydropower projects spend the second longest time in the interconnection queue (an average of 2,444 days).

Given the complex and lengthy development timeline, special consideration should be given to certain areas of the country where grid access is vital to an area's economy. Specifically, areas of the country that are outside of the eastern and western interconnected grids should be included in the definition of a region with inadequate electric service. Hawaii and Alaska's lack of access to an interconnected grid makes their energy situation more complicated than other parts of the country. The lack of interconnectivity has, among other things, required both states to rely on petroleum products for electricity generation³. As a result, both states have higher than average residential electricity costs. According to 2019 data from EIA⁴, the average monthly residential electricity rate in Alaska and Hawaii was 23 cents/kWh and 32 cents/kWh respectively. Both rates are significantly above the U.S. average of 13 cents/kWh. Given the lack of access to an interconnected grid and the significantly higher electricity rates, NHA recommends that Alaska and Hawaii should be included in an area of inadequate electric service.

² [Queued Up: Characteristics of Power Plants Seeking Transmission Interconnection As of the End of 2020](#), slide 17.

³ Alaska and Hawaii are number one and two in the amount of electricity produced from petroleum products.

⁴ https://www.eia.gov/electricity/sales_revenue_price/pdf/table5_a.pdf

Category 3 – Frequent electric outages - What metrics are appropriate for consideration of the frequency of electrical outages? For example, WPTO is considering examining System Average Interruption Duration Index (SAIDI) / System Average Interruption Frequency Index (SAIFI) as possible metrics. Are there other metrics available to assess the adequacy of electric service that are suitable for comparison?

SAIFI and SAIDI are widely used and well-understood metrics regarding the duration and frequency of outages. As retail metrics, they are heavily influenced by a utilities' investment in the distribution system. For instance, one utility area may experience frequent outages due to lack of tree trimming while another area may not experience distribution outages but nonetheless needs firm capacity. SAIFI and SAIDI should be considered in determining electric outages but should not be the only metric. More utilities are adding outage reporting that augments SAIDI and SAIFI. In fact, ten states have adopted CEMI metrics (customers experiencing multiple interruptions) that could add more data to an areas electric service. NHA recommends that DOE be flexible in determining whether any particular area has frequent outages as compared to a national average. Given the complexity of electric outage causes and in order to ensure the determination is not overly restrictive, NHA recommends that a utility's poor performance in any one reliability metric should be enough to satisfy the "frequent electric outage" prong.

Category 4 – Affordability of electricity - When determining the affordability of electricity, should the cost of electricity be compared against the national average? Is retail cost of energy a reasonable a proxy for affordability, or would other tools that capture the ratio of income to energy costs, such as the Low-Income Energy Affordability Data (LEAD) Tool or the Electricity Affordability Metrics Tool, provide more useful information?

When determining affordability of electricity, cost should be a significant factor. An area that has higher than the national average retail costs should automatically be sufficient to meet the affordability

prong. However, the legislation used the phrase “affordability of electricity” rather than “cost of electricity”. Some areas may experience lower than average costs but because of socio-economic factors, the energy burden is greater. For example, West Virginia’s retail rates are lower than the national average but compared to California, energy consumers in WV have a higher energy burden when you consider income. While cost should be considered, NHA urges DOE to use the low-income energy affordability data tool or LEAD to determine if any areas, outside of those areas whose cost is already above the national average, have a higher than average energy burden.

Category 5 – General questions - Are there any other related issues that WPTO should consider regarding the proposed definition and its intended use?

The December 2020 amendments were broad, creating a new category of new projects not tied to existing infrastructure. NHA believes, based on legislative text, that marine energy under 20MW could be considered a “qualified hydroelectric facility” and that it should be eligible for Section 242 funding (provided it meets the other criteria including that it interconnects to the grid at a point with “inadequate electric service”). NHA urges DOE to consider marine energy in its application of 242 funding given the substantial expansion of the program under the Energy Act of 2020.