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IOWA UTILITIES BOARD

First and foremost, Industrial Energy Applications, Inc. (IEA) wishes to thank the Iowa Utilities Board, its Board Members and staff for its initiative and forward thinking in the area of distributed generation.

While the current monolithic utility model has served the economic development and comfort needs of Iowa for the past 100 years, there are a number of factors which could bringing about tremendous change in the coming decades. A decade ago few would have predicted the technological gains in wind and solar that are now possible. As a result, Iowa is a leader among electricity produced from wind, while solar's viability increases daily as panel cost continue to fall. One cannot predict with accuracy what technological gains in generation or storage will lead to next decade's electrical energy breakthroughs. The issue is whether the market will be ready to adopt that technology and how rapidly it can be deployed. To that end there are a number of issues that will enable the next wave of generation development and deployment.

To start thinking about distributed generation, it helps to think about, *"What is the problem we are trying to solve?"* Is it a solution in search of a problem, just wanting advocates or are there bonafide economic, environmental or social good to be served?

Before much progress can be made, some definition of "distributed generation" needs to be made. A working definition might be that it is anything less than investor owned utility (IOU) scale generation. But this is hardly a compelling definition since utility scale varies contextually. In the pre-1950's, coal based boiler, steam turbine electrical generation of 50-100 MW (some which remain in service) were considered utility scale. By the late 1970's 1,000 MW coal and nuclear plants were the rage. Many IOUs today deploy combustion turbine peaking plants ranging from 10 to 150 MW per unit. IOUs have also committed to wind as a result of Iowa's renewable portfolio standards, fielding individual turbines of only 1.5-2 MW aggregating up to 100s of MW in a single wind farm. Generally, the categorization of electrical customers as industrial, commercial and residential has been commonly accepted within the State of Iowa's regulatory processes. So for the purpose of providing some order of magnitude description of distributed generation one might consider:

- Industrial: 1-50 MW
- Commercial: 50-1,000 kW

- Residential: 1-50 kW

Another aspect of definition may be who owns the generation? In the end, it could be argued that it does not matter whether distributed generation is privately owned or owned by IOU's, rural electric coops (REC) or Municipalities.

It is also useful to consider who benefits from distributed generation. The short answer is distributed generation if implemented effectively should benefit consumers, the citizenry at large, the environment, business competitiveness for existing business, as well as the ability to attract new business and jobs to the State. Distributed generation achieves the following general objectives:

- It locates production and consumption in closer proximity reducing transmission and distribution losses and improving fuel efficiency for those generation sources relying on fossil fuels.
- Further increases efficiency by fostering co or tri-generation once on-site electrical generation is employed.
- Reduces emissions, lowers greenhouse gas production and minimizes the imprint on Iowa's air, water and land resources.
- Provides more future cost certainty to those customers where energy is a significant component of their cost structure.
- Enables better emergency preparedness response, quicker disaster recovery and business resumption.
- Delays the construction of large, IOU centralized generation stations.
- Delays the construction of IOU or regional transmission company transmission projects, while freeing capacity for export of Iowa wind resources.
- Enhances reliability for customers with electrical power sensitivity issues.
- Creates good paying jobs for those involved in the design, construction, operations and maintenance of distributed generation.
- Affords consumers at all levels freedom of choice.

A number of enablers are required to further the cause of distributed generation, including, but not necessarily limited to:

- IOUs need to see distributed generation not as an erosion of their traditional rate base, but as future investment opportunity.
- The regulatory process to approve new generation needs to become more nimble. Whereas today, IOUs may only request principals for rulemaking

on newly proposed power plants every few years, in the future, with distributed generation as part of their portfolios, request for new generation can be expected on a much more frequent basis.

- IOUs need to be more receptive to smaller scale purchase power agreements (PPAs) for projects where excess MW's are produced or for which no identified host facility to off-take the power exists. Or in lieu of PPAs, utility tariffs should be developed which accomplish the same ends.
- IOUs need to become timelier in processing their interconnect agreements.
- Utility tariffs should be restructured to reduce "standby charge" or as a minimum to employee probabilistic means in determining capacity charges. Otherwise, these standby charges kill most on-site or co-generation projects.
- Utility tariffs also need to make provisions for peak shaving. Today neither of Iowa's IOUs rate structures adequately incentive-ize customers to help in shaving daytime peak loads.
- The IUB needs to revisit the interruptible rate credits of both IOU's in the state. In particular, IPL's credit level has not been revised since EEP-02-038 (the better part of a decade). A more robust credit level improves the returns for those distributed generation projects involving standby, peaking or power reliability and reduces or delays the need for peaking generation and additional transmission previously discussed.
- Utility tariffs also do not allow for aggregation of customer load for the purposes of participating in the interruptible program; alternatively, the level at which customers could participate could be reduced to allow more amongst those choosing to install distributed generation.
- If there are going to be more generation projects, those producing emissions will need permits from the IDNR. Additional funding and manpower will need to be dedicated to the IDNR through the State's budging process to support timely process of permit applications and issuance.
- Sources of project funding need to be identified. Historically, IOU's have been good at aggregating large sums of capital to deploy at lower levels of return than private industry at a whole, with IOU returns on equity typically in the 10-12% range. Many projects which might otherwise be completed at industrial customers are not because of the return expectations (typically <2-3 year simple payback) imposed by corporations on their production facilities or the undue rigors of bank financing that have been imposed

following the 2008 financial crisis. A pool of funds accessible by all classes of customer would significantly enable the distributed generation market.

- Tax credits: In lieu of action on the part of IOUs and to systematically make access to benefits and funding available throughout the State, the Legislature should consider enacting tax credits for distributed generation.