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Energy Trust Protocol for Renewable Energy Demonstration Projects

Energy Trust's formal policies and program implementation manuals set out the conditions under which our renewable energy programs fund projects. Generally, we fund projects that deliver renewable power for the benefit of PGE or Pacific Power customers over the long term, using commercial technology, such that an Energy Trust subsidy allows the project a reasonable, risk-adjusted, project-specific rate of return.

Building a pipeline of financially sound projects large enough to meet Energy Trust goals in the long term will require us in some case to invest in demonstration projects. These demonstration projects may not meet all the conditions above. This protocol describes two classes of demonstrations that may be eligible for funding, and how we will distinguish demonstrations compatible with our mission from those that are not.

Guiding principles for all demonstration projects

These principles will guide our investment in all demonstrations

- ***Must lead to projects*** We will only entertain demonstration projects that increase the likelihood that additional projects will be constructed and operated within the timescale (by 2025) and geography (the Oregon service territories of Pacific Power and PGE) contemplated by the Legislature in setting up the public purpose fund. We will not undertake basic science, research or development.

- ***Must have dissemination plan.*** Demonstration proposals must include a clear plan of what is going to be demonstrated to whom, and how. That is, there must be clear idea of how the knowledge gained will be used to build a market for future projects in Oregon. Where the program participant intends to undertake this activity themselves, it may add to above-market costs.

- ***Incentives based on standard analysis*** We will calculate incentives based on Energy Trust's approved above-market cost methodology.

- ***Must deliver benefits to Energy Trust stakeholders*** Demonstration projects must be located in Oregon. They must either a) deliver electric power to PGE or Pacific Power, b) deliver green tags to Energy Trust on behalf of PGE or Pacific Power ratepayers, or c) deliver both power and tags. If projects do not deliver power to PGE or Pacific Power, there must be a clear likelihood that a successful demonstration will facilitate the construction of future projects that do deliver power to PGE or Pacific Power.

A. Demonstrations of pre-commercial technology

Energy Trust's renewable energy programs typically limit project funding to commercial projects. We define "commercial" in terms of operating history for the technology or approach in question; easy availability of components from stable business entities; the

use of standard performance warranties; access to service, maintenance and replacement parts; and the provision by vendors of complete documentation.

We will consider funding projects using pre-commercial technology under these conditions:

- ***Realistic conditions:*** We will fund demonstrations of pre-commercial technology in user facilities under normal operating conditions (i.e., beta tests). We will not fund demonstrations in laboratory or other controlled conditions (i.e., "alpha" tests).
- ***Reasonable duration:*** The demonstration must be designed deliver power for at least 5 years. We will prioritize projects designed to deliver power over a longer term, ideally 15 – 20 years.
- ***Stable operator:*** The project must be owned by a stable business entity, using technology offered by a stable business entity.
- ***Market significance:*** We will prioritize demonstrations of technology that could uniquely fill a clear market niche (e.g., systems of a size not otherwise available in the market, or able to use an underutilized fuel), or compete with existing systems so as to improve quality and drive down prices.

In most cases, these projects will pose higher risk than projects using commercial technology. Reflecting these risks, project owners may require a higher-than-usual rate of return. While Energy Trust may accommodate the need for higher returns, we will require program participants (or their project partners) that stand to gain financially from the development of a new technology to share some of that risk. We also acknowledge that demonstrations of pre-commercial technology pose higher risks for Energy Trust, due to technology failures.

B. Demonstration of commercial technology not in common use in Oregon

In some cases, we will fund demonstrations of commercial technology not widely available in Oregon or not commonly used by specific market segment. These demonstrations will differ from standard projects chiefly in their higher costs associated with publicity, tours and related activities to inform the market. The evaluation criteria above for duration, operator and market significance would be used to evaluate the value of the additional cost for demonstrations of commercial technology.

Questions

- Are these the appropriate criteria? Are they sufficient?
- Should we be primarily reactive toward demonstrations, or should we actively seek them out, for example through an RFP?