Portland General Electric Company
121 SW Salmon Street • Portland, Oregon 97204

March 21, 2017

The Honorable Michael Dembrow, Chair
Senate Environment and Natural Resources Committee
Oregon State Capitol, Room 347
900 Court St. NE
Salem, OR 97301

Dear Senator Dembrow,

You have before your committee Senate Bills 789 and 790, scheduled for a hearing on March 29th, 2017. Both of these bills are unnecessary, either because the subject of the bill has already been accomplished or because the bill seeks to regulate a state of affairs that no longer exists:

> Senate Bill 789 requires a public utility to file a bond with the State Department of Agriculture if it seeks to grow *Arundo donax L.* or other invasive species for use as biomass. Portland General Electric ("PGE") is the only public utility growing Arundo and is ending our cultivation of it;
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> Senate Bill 790 requires the College of Agricultural Sciences at Oregon State University ("OSU") to conduct a study regarding *Arundo donax L.*, including a risk assessment for unintended migration, and report its findings to an interim committee. OSU has already studied Arundo, including the potential for winter kill in eastern Oregon and the state has performed two risk assessments of the plant.

The legislature has twice now considered and rejected proposed legislation on this topic. In 2013, the House Committee on Energy and Environment heard and determined not to move forward on HB 2813, a bill that would have declared *Arundo donax L.* a noxious weed meriting eradication. In 2015, the House Committee on Agriculture and Natural Resources heard testimony on HB 2183 and determined to not move the bill forward. HB 2183 would have required the posting of a bond if growing *Arundo donax L.* Further, in May 2012, this committee held an informational hearing on the topic and heard from PGE, crop scientists and invasive species experts and took no action to develop legislation. The reason why no bill has moved forward is at least partially due to the fact that PGE has been extraordinarily open, consultative and cautious in growing its test plots of Arundo.

In 2009, Portland General Electric began investigating the use of biomass at our Boardman coal-fired generating unit even as we were engaged in an administrative process to require the plant to cease coal burning operations by the end of 2020. We viewed this investigation as an R&D project with the potential to convert the Boardman facility into a qualifying resource for the Renewable Energy Standard. Such a conversion has the potential to retain property value and jobs for the Boardman community and to offer a "baseload" renewable resource for periods of the year where wind resources generate less frequently. Crucial in the conversion of a facility the size of Boardman is a reliable source of biomass.

Our initial investigation focused on dedicated energy crops rather than forest biomass and *Arundo donax L.* was chosen as an experimental crop in part because it had been test grown without incident by the University of Washington and Washington State University ("WSU") extension in Prosser, WA for six years prior to 2010, and in part because it showed great promise in terms of per acre production. At the time we began our research project, ornamental varieties of Arundo were available for purchase in nurseries across Oregon for gardening and landscaping and there were no restrictions on the planting of *Arundo donax L.* in the state. Indeed, it was through our open and collaborative process in this project that the state now has administrative rules regarding planting and cultivation of Arundo. We have, at every step, engaged with crop scientists, invasive species and weed control experts, and state agencies as we have conducted our research into this plant and its potential for serving as an energy crop.

Experimental plantations of the species had occurred in Oregon before our project, including a five-acre plot in Lane County in 2008 and 2009. However, aware of escaped populations in other areas of the United States, we took the proactive step of meeting with OSU extension, the Oregon Department of Agriculture, Morrow County Weed Control and Umatilla County Weed Control. We drafted a control plan with Morrow County and had the full support of the county before sourcing Arundo rhizomes from California. Before and after planting, we engaged the agricultural research scientists at the Hermiston Agricultural Research and Extension Center to help understand the risk of unintentional spread, were open regarding our activities with the Oregon Weed Board and Oregon Invasive Species Council, and invited interested parties to tour the approximately 90 acre test plantings. While the plant's potential for spread is cause for caution, we never believed that it should eliminate the plant from inclusion in our R&D project, whereas there were some species that were discounted out of hand due to the higher risk of uncontrolled spread, such as Miscanthus – also known as Elephant Grass.

In February 2011, the Oregon Department of Agriculture conducted a Plant Pest Risk Assessment for *Arundo donax L.* In this second risk assessment conducted by ODA[1], the department found that the plant should remain on the ODA Watch List to allow for a Control Area Order to be established and to allow continued review and research on a limited production level. This assessment found that a medium score on the risk assessment was attributed to "its lack of seed production, lower risk of natural spread, limited economic impacts, lack of health impacts, capacity to control, and probability of detection." Pursuant to this assessment, the Oregon Department of Agriculture developed the state's first control area rules for Arundo in 2012, including restrictions on growing near waterbodies and the requirement to post bonds for eradication. These rules also contained a phase out of the nursery trade.

Befitting an R&D project, we continued to study the potential for torrefied Arundo as a fuel replacement for coal. With the University of Washington, WSU, OSU and Portland State University, we investigated the carbon implications of closed-loop biomass (*Using Closed-loop Biomass to Displace Coal,* Lewis, Garcia-Perez, Pan, Horneck, Wysocki and Bass, June 7, 2012). We looked at water needs for dedicated crops, especially Arundo, in eastern Oregon (*Water Resources Discussion in Support of Arundo Agronomy*, PGE, January 2012). We developed best practices for use of farm equipment, requirements for phytosanitary certificates on vehicles used in loading and transporting or traveling out of state, and other inspection and documentation procedures. And most importantly, Oregon State University studied the agronomy of *Arundo donax L.,* including node establishment and survival, seed germination, rhizome cutting establishment, surface establishment, and winter survival (*Agronomy of Arundo donax in North-Central Oregon*, Bechtoldt, Horneck and Wysocki, October 1, 2014). We would be happy to provide a copy of this study to the committee so that the committee can determine whether SB 790 is needed in light of the findings that OSU has already provided.

[1] The first was in 2007.

PGE, its partners in the biomass project and regulatory agencies have built a compliance structure to prevent and mitigate Arundo invasiveness. We predicated our weed control strategy on a philosophy of early detection and rapid response. We are quite proud of the work we have done in this area and have found no escaped populations. This "defense in depth" practice included:

Biological barriers and low viability in eastern Oregon
- No runners, no flowering, seeds are sterile
- Susceptibility of stems and rhizomes to desiccation
- Strong tensile strength resists wind breakage
- Demonstrated non-dispersion from growth sites in Oregon and Washington

Administrative barriers
- Morrow County growing conditions
- State of Oregon Control Area plan requirements
- Morrow County Stakeholder Advisory Committee Review

Physical monitoring and removal
- Weekly inspection of planted fields at edge and beyond
- Periodic and annual Morrow County Weed Control inspection at field edge
- Annual Morrow County Weed Control inspection and documentation at field edge for feral plants
- PGE, NRCS, SOLV cooperatively sponsored riparian zone monitoring, including photo documentation of waterways and dry washes in the area of plantings

Assessment
- Validated eradication and control procedures
- OSU weed science group validation of herbicide efficacy for control

It should be clear from the above that PGE has taken on this project with seriousness consistent with the reputation of invasiveness of *Arundo donax L.* Ultimately though, through intensive testing, we have determined that the plant does not produce an amount of biomass to justify its continued planting. After reducing the acreage in cultivation from approximately 90 at maximum to about 30 for the last several years, we have determined that we will cease production completely this growing season and begin a process of eradication of the remaining acreage followed by at least two years of post-eradication monitoring. We have already gained experience with eradication methods and the state can benefit from our efforts there as well. Therefore, as the only public utility in the state that is currently contracting for growing of Arundo, SB 789 is unnecessary if we cease production as we plan to do.

PGE has taken steps toward a sustainable solution for the Boardman coal plant, one that looks at the three overlapping rings of sustainability: community, ecology and economy. We believed we owed it to our customers, the environment, the community of Boardman and the rest of the state to research whether reuse of the Boardman plant was feasible. When we started this R&D project, no entity in the world had attempted to convert a 585 MW coal facility to one burning torrefied biomass. Last month we completed a 100% test burn where the plant was operated for several hours on 100% torrefied biomass, including Arundo harvested from these test plots. That is quite an accomplishment and carries with it benefits as we consider moving into a low-carbon future.

There will always be individuals who disagree with the method in which we operate our business, including those who have attempted now several times to close down this project through legislative action. We have disagreed with them in the past and continue to disagree that legislative action is necessary on this matter. We disagree not because we do not believe that Arundo can be an invasive plant. We disagree because as we move forward into a low-carbon future, we must explore different ways

to produce renewable energy in a responsible, least-cost manner. The Boardman Arundo project is one of those explorations and the lessons of the project have been valuable to PGE, our customers and the state.

I hope that I have provided the committee with a deeper understanding and perspective on this project. PGE would be pleased to testify at the upcoming hearing to further explain the issues presented in this letter.

Respectfully,

Brendan McCarthy
State Environmental Policy Manager
Portland General Electric