

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

LC 73

In the Matter of

PORTLAND GENERAL ELECTRIC
COMPANY,

2019 Integrated Resource Plan.

Initial Comments of
Renewable Northwest

I. INTRODUCTION

Renewable Northwest is grateful to the Oregon Public Utility Commission (“the Commission” or “PUC”) for the opportunity to comment on the 2019 Integrated Resource Plan (“IRP”) filed by Portland General Electric (“PGE”) on July 19, 2019. In these comments, we support several elements of the IRP as reasonable, including in large part the IRP’s need assessment and action plan. We also offer suggestions on how to strengthen other elements of the IRP, including PGE’s approach to assessing flexible capacity, its Transmission Addendum filed on August 30, 2019, its solar integration cost methodology, and its analysis of the costs and benefits of PGE’s ownership of Colstrip Units 3 and 4.

Finally, and most importantly, we applaud PGE’s proactive commitment to addressing climate impacts while adhering to the regulatory paradigm of least-cost, least-risk resource planning. At a time when the ethical imperative to address climate change has never been clearer and the Intergovernmental Panel on Climate Change (“IPCC”) has reported that “limiting global warming to 1.5°C ... would require rapid and far-reaching transitions in energy,” PGE is establishing itself as an industry leader in facilitating those crucial transitions.¹

II. BACKGROUND

Under ORS 756.040(2), the Commission has the broad “power and jurisdiction to supervise and regulate every public utility and telecommunications utility in this state, and to do all things necessary and convenient in the exercise of such power and jurisdiction.” Exercising that

¹ Intergovernmental Panel on Climate Change, *Special Report on Global Warming of 1.5°C*, Summary for Policymakers, SPM-21 (Oct. 8, 2018), available at http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf.

authority, the Commission has promulgated OAR 860-027-0400, which requires each investor-owned utility to file an IRP “detailing its determination of future long-term resource needs, its analysis of the expected costs and associated risks of the alternatives to meet those needs, and its action plan to select the best portfolio of resources to meet those needs ... within two years of its previous IRP acknowledgement.” In Order 07-047, the Commission adopted IRP guidelines setting as the primary goal of the IRP to “select[] a portfolio of resources with the best combination of expected costs and associated risks and uncertainties for the utility and its customers.”² The guidelines also direct the utility to address risk by, *at a minimum*, considering cost risk and the risks associated with physical and financial hedging.³ Finally, the guidelines direct the utility to put forward an IRP that is “consistent with the long-run public interest as expressed in Oregon and federal energy policies.”⁴

While this and other past Commission orders set forth the high-level requirements for utility IRPs, Order No. 17-386 partially acknowledging PGE’s most recent IRP perhaps provides the most salient guidance the Commission may use as it considers this 2019 IRP.⁵ In that Order, the Commission made several observations about the evolving electricity sector as context and guidance for PGE’s resource planning processes. Noting that now is a “time of significant change and uncertainty within the electric utility industry and markets,” the Commission explained that “we expect utility resource plans to reflect actions that manage risk and uncertainty, balance the interests of present and future customers, and allow for course corrections as industry evolution comes into greater focus.”⁶

In furtherance of that balanced approach, the Commission “recognize[d] that incrementally adding renewable energy resources over time may be a reasonable operational and cost-risk mitigating strategy to achieve this major system transformation.”⁷ More specifically, the Commission advised PGE “that near-term action to address long-term renewable energy obligations may be appropriate, provided that more attention is paid to balancing short- and long-term tradeoffs and to mitigating long-term risks.”⁸ The Commission listed factors to guide PGE’s development of a revised action plan in the 2017 IRP cycle: “PGE should more fully consider short-term impacts and long-term risks, including renewable resource portfolio diversity and alignment with near-term system needs, strategies for avoiding or mitigating front-loaded

² Oregon Public Utility Commission, Docket No. UM 1056, Order No. 07-047, Appendix A at 1-2 (Feb. 9, 2007).

³ *Id.* at 2.

⁴ *Id.*

⁵ Oregon Public Utility Commission, Docket No. LC 66, Order No. 17-386 (Oct. 9, 2019).

⁶ *Id.* at 2.

⁷ *Id.*

⁸ *Id.*

rate impacts, [and] resource sizing that maintains long-term optionality[.]”⁹ These factors remain relevant in the 2019 IRP.

Additionally, the Commission in Order No. 17-386 adopted several requirements for PGE’s 2019 IRP. Specifically, the Commission directed PGE to improve its load forecasting process, develop clear portfolio scoring metrics, begin to incorporate distribution system planning into the IRP process, and explore ways to incorporate transmission into the IRP process as well.¹⁰

Considered in light of the rapidly changing electricity sector nationwide, and measured against the guidelines set forth in Orders 07-047 and 17-386, PGE’s IRP does many things well. It takes a nuanced approach to load forecasting that separates out the potential effects of demand-side and distributed energy resources as well as electric vehicles across a range of futures in order to assess both likely future load growth and a range of reasonable futures. It uses a new, similarly nuanced approach to assess capacity, energy, and flexibility needs, moving on from the increasingly outdated paradigm of stacking variable resources on top of dispatchable thermal generators operating at high capacity factors and instead recognizing that system needs may be met by diverse portfolios of carbon-free resources. Rather than trying to frontload procurement to meet those needs, the IRP establishes a glide path to mitigate risk and remain open to new, difficult-to-predict solutions that may yet arise. As part of the workshop process, PGE also sought feedback on the development of its well-defined set of scoring metrics early and often. Finally, in designing its action plan PGE acknowledged the current transmission landscape by proposing a new approach that would apply to 2020 Renewables RFP and other procurements of renewables.

III. COMMENTS

1. PGE’s Action Plan Is Supported by a Reasonable Need and Resource Analysis.

a. PGE’s Load Forecast, Capacity Need, Energy Need, and RPS Need Are Reasonable.

In Chapter 4.1, PGE explains the methodology it used to forecasting load across a planning horizon that extends to 2050. Beginning with a top-down load forecast, PGE removed embedded energy-efficiency, electric-vehicle, and behind-the-meter solar impacts to create a “base load” figure (with a meaning distinct from the traditional use of that term).¹¹ PGE then separately applied an econometric growth factor to that base load while separately projecting scenarios for

⁹ *Id.* at 3.

¹⁰ *Id.* at 19.

¹¹ IRP at 100.

deployment of energy efficiency, electric vehicles, and behind-the-meter solar.¹² Finally, PGE re-combined these figures to create a range of potential load forecasts.¹³ Based on our review of PGE’s methodology to date, Renewable Northwest supports this load-forecasting approach and the assumptions embedded within it as reasonable.

Having established a load forecast, PGE set out to determine its capacity need, energy need, renewable portfolio standard (“RPS”) need, and flexibility need.

As with its load forecast, PGE worked to incorporate uncertainty and risk into its capacity need analysis by assessing a range of futures. The IRP reports both that “the range of uncertainties considered within PGE’s need analysis encompasses a future in which all capacity needs is met in 2025 if PGE were to successfully negotiate for capacity to replace the contracts that expire between now and then” and that “the uncertainty analysis also encompasses a future in which PGE would require an additional 707 MW of capacity in 2025 in addition to capacity that would replace expiring contracts.”¹⁴ Assessing these results, PGE concludes that “[t]his wide range of potential future conditions necessitates a near-term procurement plan for capacity that is both flexible enough to respond to changing conditions and robust enough to provide an avenue for significant capacity procurement if needed.”¹⁵

Although the IRP does not say so directly, PGE’s conclusion squares with the Commission’s observation in Order No. 17-386 that “we expect utility resource plans to reflect actions that manage risk and uncertainty, balance the interests of present and future customers, and allow for course corrections as industry evolution comes into greater focus.”¹⁶ With contracts expiring and the IRP reporting a reference-case capacity need of 246 MW in 2023 growing to 685 MW in 2025, however, it is reasonable to conclude that PGE will likely have some near-term capacity need.¹⁷

Moving on to energy need, the IRP announces a new assessment approach. Renewable Northwest agrees with PGE that “the usefulness of traditional energy needs analysis has evolved over time” as the electricity sector evolves, and that the previous “operational paradigm” of baseload generation “may be less relevant in a market with increasing levels of renewables and carbon pricing.”¹⁸ Instead of the traditional energy needs analysis, PGE’s new approach

¹² *Id.* at 101-102 & Table 4-6.

¹³ *See, e.g., id.* at Figure 4-10.

¹⁴ IRP at 107-08.

¹⁵ *Id.* at 108.

¹⁶ Order No. 17-386 at 2.

¹⁷ IRP at 288, Table G-1.

¹⁸ *Id.* at 109.

“compares forecast loads to forecast generation from existing and contracted resources and is described across 54 futures that encompass uncertainties in both PGE needs and market conditions.”¹⁹ PGE asserts that this approach “more specifically captures market dynamics and the associated uncertainties” as compared to traditional approaches.²⁰ Using this new approach, the IRP projects a 2025 energy need of 515 MWa in the reference case and a value greater than 344 MWa in 90 percent of futures, accounting for distributed energy resources and energy efficiency gains.²¹ While some of that energy need may be met with market purchases, PGE points out that “exposure to the market ... potentially introduce[s] economic risks to customers related to the potential for high market prices.”²² All in all, PGE presents a flexible and reasonable approach to energy need that again squares with the Commission’s guidance in Order No. 17-386.

As to RPS need, PGE’s preference for relying on physical Renewable Energy Certificate (“REC”) compliance is not only good policy but also reasonable risk management. In the IRP, “PGE forecasts that in the Reference Case a strategy of compliance through REC bank depletion could meet RPS obligations through 2035” but would also “require PGE to procure an additional 627 MWa by 2037 to ensure compliance ... and would significantly delay the benefits of bringing new renewable resources onto the system.”²³ Given certainty about the low price of renewable energy resources on today’s market and uncertainty about the cost of RECs in the future, particularly in light of a growing movement for the adoption of decarbonization and clean energy policies throughout the west, maintaining PGE’s REC bank and meeting its RPS obligation through physical compliance is sound risk management. Renewable Northwest supports PGE’s method of assessing RPS need as reasonable.

b. PGE’s Approach to Flexibility Is a Reasonable Start Requiring Additional Development.

Renewable Northwest welcomes PGE’s efforts to quantify the flexibility value of resources added to its system.²⁴ PGE’s external study used the term “flexibility” to describe the “system’s ability to avoid reliability events due to the variability of net load.”²⁵ The California Independent Systems Operator conveniently describes “net load” as “the difference between forecasted load and expected electricity production from variable generation resources.”²⁶ PGE’s 2019 IRP does

¹⁹ *Id.* at 110.

²⁰ *Id.*

²¹ *Id.* at 111.

²² *Id.* at 112.

²³ *Id.* at 113.

²⁴ *Id.* at Table 6-5.

²⁵ *Id.*, External Study F at 2.

²⁶ California ISO, “What the duck curve tells us about managing a green grid” (2016), *available at* www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf.

not yet have a flexibility value for “Solar + Storage”, and we understand this absence to be due to time constraints. Renewable Northwest recommends that the flexibility value of hybrid resources (such as combinations of wind + solar + storage that will be in place at PGE’s and NextEra’s Wheatridge Facility²⁷) be undertaken in a timely manner such that bids into any subsequent RFP can be appropriately valued.

The Flexibility Adequacy Study carried out by Blue Marble Analytics concluded that PGE’s system “appears to have considerable ramping capability, but load and renewable forecast errors along with inflexible resource commitment timing can cause flexibility-related reliability events” for an “average-year set of conditions for 2025, with an emphasis on “upward flexibility challenges.”²⁸ There appears to be a role for renewables + storage to both ameliorate any upward flexibility challenges in the first place and also potentially contribute to resolving them.

Renewable Northwest recommends that PGE determine the criteria whereby renewable resources paired with storage count as variable generation for the purposes of calculating net load and determining flexibility needs.

c. PGE’s Action Plan Appropriately Balances Expected Cost and Associated Risks and Uncertainties To Meet PGE’s Needs.

Renewable Northwest supports the 2019 IRP’s renewable action, which was selected after a careful portfolio analysis as part of a robust stakeholder process. PGE proposes to conduct a renewables request for proposals (“RFP”) seeking approximately 150 average megawatts (“Mw”) of Oregon RPS-eligible renewables that would enter PGE’s portfolio by the end of 2023.²⁹ This renewable action is consistent with PGE’s portfolio analysis that shows that procuring renewables in a timeline that allows PGE to leverage the value of federal tax credits would save customers approximately \$180 million.³⁰

The 2019 IRP’s renewable action centers meeting PGE’s needs while providing value to customers and incorporates learnings from the 2016 IRP and the workshop process. PGE includes a cost-containment screen to ensure that any resources procured are a net benefit to PGE’s customers, and a proposal to return to customers the value of RECs generated from resources procured in the RFP prior to 2030.³¹ These features of the renewable action indicate an

²⁷ PGE, Wheatridge Energy Facility, [/www.portlandgeneral.com/our-company/energy-strategy/resource-planning/wheatridge-renewable-energy-facility](http://www.portlandgeneral.com/our-company/energy-strategy/resource-planning/wheatridge-renewable-energy-facility).

²⁸ IRP, External Study F at 26.

²⁹ IRP at 216.

³⁰ *Id.*

³¹ *Id.*

effort by PGE to incorporate lessons from the 2016 IRP process and are aimed at enhancing the value to customers associated with the renewables action. PGE's renewable action also recognizes the importance of an improved transmission approach in a 2020 Renewables RFP, something that stakeholders raised consistently throughout the workshop process. We are encouraged by PGE's proposed approach, which we discuss below.

Renewable Northwest commends PGE for a capacity action that similarly shows the Company's efforts to incorporate lessons from the 2016 IRP process. We strongly support the Company's focus on non-emitting resources for an eventual capacity RFP under the capacity action 3C. We encourage PGE to similarly focus on non-emitting resources as part of its planned exploration of the bilateral capacity market under its proposed capacity action 3B.

2. PGE's Interim Transmission Solution Is a Positive Step and Requires Additional Details and Improvements.

Renewable Northwest commends PGE for proposing to allow reliance on transmission arrangements that better recognize the nature of variable energy resources and that can lead to more efficient use of the transmission system. We appreciate PGE's commitment to a five-year program, especially in light of our understanding that PGE plans to re-evaluate the program characteristics to incorporate program learnings in future procurements. Renewable Northwest supports that approach and urges PGE to include stakeholders in any process to review PGE's experience and learnings.

While we are encouraged by the direction that PGE's Interim Transmission Solution ("the Proposal") signals, we have not yet seen important details that would allow us to fully evaluate it. Some of those details have traditionally been addressed in an RFP approval proceeding, such as contract clauses and bid scoring details. However, we encourage PGE to provide these details in this proceeding so we can assess how PGE's Transmission Solution may affect competitiveness in future renewable procurement processes.

PGE provided some information on how it would evaluate different transmission arrangements from a price score perspective. We include below suggestions to enhance PGE's Proposal on that front. We again appreciate PGE's efforts to develop a Proposal responsive to the current transmission landscape and look forward to continuing to work with PGE, Staff, the Commission, and other stakeholders to strengthen PGE's Proposal.

a. PGE's Proposed Suite of Acceptable Transmission Arrangements Is a Good Start.

Renewable Northwest appreciates the increased flexibility in transmission arrangements that PGE would accept under its Proposal. Indeed, PGE proposes to accept project bids that would rely on Conditional Firm Reassessment and Conditional Firm Bridge transmission, in addition to those that would rely on Long Term Firm transmission. Additionally, we are encouraged by PGE's movement to a framework whereby a portion of the maximum output of the facility can be delivered relying on short-term transmission products. We offer the following comments and recommendations with an eye towards strengthening the Proposal.

We encourage PGE to enhance the Proposal by adopting a more flexible approach to where a project could deliver. PGE proposes to require that bidders deliver to PGE's system.³² We understand that PGE has sufficient transmission from Mid-C to its load. We encourage PGE to explore accepting project proposals that would deliver to Mid-C, with PGE bringing project output to load over its own transmission rights as such an approach would likely contribute to a more efficient usage of the transmission system.

PGE proposes to not accept deliveries on non-firm transmission for the portion of maximum output (20% or less) that can be delivered over short-term transmission.³³ We suggest that PGE articulate in response comments its rationale for proposing to reject non-firm transmission as an option for that portion of a project's output. We also encourage PGE to explore allowing delivery of that portion of a project's output over non-firm transmission as PGE does not plan to account for that portion in a bid's capacity valuation regardless of the short-term transmission product used.³⁴ We suggest that PGE consider updating this aspect of the Proposal in light of the limits that the Bonneville Power Administration ("BPA") imposed on its Hourly Firm transmission product under the TC-20 Settlement Agreement,³⁵ as well as the potential for future restrictions on that product.

b. Changes to RFP Price Scoring Should be Better Informed by Historical Curtailment Data.

PGE proposes to adjust its capacity contribution/valuation methodology to account for any increased risk of delivery failure associated with the suite of transmission products that it

³² PGE's 2019 IRP Addendum - Interim Transmission Solution (Aug. 30, 2019) at 5.

³³ *Id.* at 10.

³⁴ *Id.*

³⁵ Bonneville Power Administration, TC-20 Settlement Agreement, Attachment 1: Terms at 2, available at [https://www.bpa.gov/Finance/RateCases/BP-20/Meetings/TC-20%20Settlement/Final_TC-20%20Settlement%20Agreement%20\(11-13-08\).pdf](https://www.bpa.gov/Finance/RateCases/BP-20/Meetings/TC-20%20Settlement/Final_TC-20%20Settlement%20Agreement%20(11-13-08).pdf).

proposes to accept.³⁶ In its anticipated 2020 Renewable RFP, PGE proposes that, for bids that rely on conditional firm (“CF”) service, “the expected output of the resource will be diminished by the number of hours of allowed curtailment identified in the transmission service offer or plan.”³⁷ Rather than assuming all potential hours of curtailment for a CF transmission contract actually occur, we strongly encourage PGE to rely on information about historic actual curtailment of CF contracts to consider a more limited and realistic risk of curtailment of these contracts.

PGE also proposes to “assume that the curtailment occurs in those hours in which PGE experiences the greatest capacity need as it is reasonable to assume that the curtailment occurs during the periods of greater system stress also experienced by PGE.”³⁸ Renewable Northwest questions PGE’s assumption that curtailments will coincide with PGE’s peak load events given our understanding that curtailments usually take place in constrained areas, such as South of Alston, and have generally been driven by California peaks. We encourage PGE to evaluate data on what times of the year curtailment of CF, STF, or non-firm transmission rights historically occur, as these times may not generally coincide with the typical daily or annual output profiles of renewable resources or with PGE’s peak load events.

c. PGE Should Provide Greater Detail on its Proposed Changes to RFP Non-Price Scoring.

PGE proposes to change the non-price scoring methodology in its anticipated RFP and “assign higher non-price scores to those offers which have greater shares of long-term service and to those offers that rely on long-term firm service as opposed to conditional firm service.”³⁹ Renewable Northwest encourages PGE to provide greater detail on how it plans to score different transmission arrangements as this information is important to evaluating what the impacts of the Proposal may be.

d. PGE Should Provide More Information on its Proposed Changes to Contract Requirements.

PGE states that it would need to modify contract requirements to address “new risks for project deliverability” associated with more diverse transmission products and offers general descriptions of the contractual requirements it would modify.⁴⁰ PGE’s proposed modifications include “more clearly assigning deliverability responsibility to the supplier through more robust

³⁶ Proposal at 6.

³⁷ *Id.* at 10.

³⁸ *Id.* at 10-11.

³⁹ *Id.* at 11.

⁴⁰ *Id.* at 6.

contract terms” that would address “quality of transmission procured for output above the level supported by LT transmission,” changes to the terms and conditions of the CF service, minimum production guarantees, and failure-to-perform provisions should short-term transmission products not be available or BPA cease to offer CF service.⁴¹ While contract terms are typically discussed in the RFP, the reasonableness of PGE’s proposed terms is an important factor in evaluating the Proposal. As a result, we encourage PGE to provide more specific information regarding how contract requirements would change and how PGE intends to assign or share risks with suppliers.

PGE also proposes to include contractual provisions requiring commercially reasonable efforts to convert CF to LTF, including that any existing CF service is included in future BPA TSEPs or future system expansion efforts.⁴² We encourage PGE to expand on what would be considered commercially reasonable and where cost responsibilities would lie for such a change. This information is important to evaluating the Proposal and will be crucial to prospective bidders in an RFP.

Finally, PGE proposes to refuse “assignment by default” proposals.⁴³ Renewable Northwest strongly encourages PGE to continue to be receptive to bidders assigning their transmission rights to PGE. We understand that such refusal could affect bidders without larger portfolios of transmission rights over BPA, as those entities would be less able to efficiently and flexibly manage their transmission rights to ensure delivery compared to organizations with large portfolios of transmission rights, like PGE. Renewable Northwest encourages PGE to seek less stringent approaches to address its concerns regarding a potential increase in risk and management burden.

e. The 2020 RFP Requirements Should Account for BPA’s Timelines.

Renewable Northwest encourages PGE to account for the timelines for BPA’s TSR Study and Expansion Process (TSEP) in establishing requirements for its 2020 Renewables RFP.

3. PGE Should Continue to Explore its Solar Integration Cost Methodology and the Costs and Risks Associated with Colstrip Units 3 and 4.

As we expressed throughout the workshop process, Renewable Northwest is concerned about the potential that PGE’s methodology to determine solar integration costs may be overstating the

⁴¹ *Id.* at 6-7.

⁴² *Id.* at 7.

⁴³ *Id.*

variability of solar that PGE is likely to integrate and therefore overstating the actual cost of integrating that solar. Specifically, we understand that PGE uses linear scaling based off one shape. This approach likely produces results that systematically exaggerate the variability of larger single solar plants and of a more diverse buildout of the solar resources that PGE is likely to integrate. We are concerned with any potential uses of solar integration costs that rely on that methodology, whether in future RFPs, avoided cost rates, or in any other potential applications. We strongly encourage PGE to refine its methodology before using the solar integration costs included in this IRP.

Renewable Northwest appreciates PGE's receptiveness to our requests that PGE explore the impacts of exiting Colstrip Units 3 and 4 by 2027. We are encouraged by PGE's findings that there may be economic benefits to exiting Colstrip Units 3 and 4 earlier than 2034.⁴⁴ We also acknowledge some of the concerns that PGE raises. However, we strongly encourage PGE to continue to evaluate the costs and risks of actions related to colstrip in the action plan. This evaluation is especially important as more owners express an interest in depreciating Colstrip by 2027.⁴⁵

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⁴⁴ IRP at 210.

⁴⁵ Robert Walton, "Puget Sound plan to shutter Colstrip coal units approved," *Utility Dive* (Dec. 8, 2017), available at <https://www.utilitydive.com/news/puget-sound-plan-to-shutter-colstrip-coal-units-approved/512542/> ("For Units 3 and 4, the order speeds cost recovery for those units by 18 years through 2027."); see also PacifiCorp, 2019 Integrated Resource Plan (IRP) Public Input Meeting October 3-4, 2019 at 14, available at https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2019-irp/2019-irp-presentations-and-schedule/PacifiCorp_2019_IRP_October_3-4_2019_Public_Input_Meeting.pdf (including 2027 retirement of Colstrip 3 and 4 as part of PacifiCorp's preferred portfolio).

IV. CONCLUSION

Renewable Northwest again thanks the Commission for this opportunity to comment. We support PGE's action plan as a path to meet the utility's needs that appropriately balances cost, risk, and uncertainty. We encourage PGE to further refine its Transmission Proposal as well as its solar integration cost methodology and its analysis of the costs and risks associated with its ownership of Colstrip Units 3 and 4. We also strongly support PGE's commitment to decarbonization while adhering to the regulatory paradigm of least-cost, least-risk resource planning and look forward to continued collaboration with the Commission, PGE, stakeholders, and Commission Staff throughout this IRP proceeding.

/s/ Silvia Tanner

Silvia Tanner
Senior Counsel and Analyst
Renewable Northwest
421 SW Sixth Ave. 975
Portland, OR 97204
(503) 223-4544

/s/ Michael H. O'Brien

Michael H. O'Brien
Regulatory Director
Renewable Northwest
421 SW Sixth Ave. 975
Portland, OR 97204
(503) 223-4544

/s/ Max Greene

Max Greene
Staff Counsel and Analyst
Renewable Northwest
421 SW Sixth Ave. 975
Portland, OR 97204
(503) 223-4544

/s/ Natalie McIntire

Natalie McIntire
Consultant
Renewable Northwest
421 SW Sixth Ave. 975
Portland, OR 97204
(503) 223-4544