

OVERVIEW

Energy Trust seeks proposals from qualified individuals demonstrating excellence in research capabilities and an interest in advancing net zero energy buildings in Oregon. Energy Trust may award up to two fellowship grants, not to exceed a combined total of \$50,000, to support net zero energy research over 12 to 18 months.

Background

Net zero buildings are the result of thinking about energy in a whole new way. While net zero buildings have gained traction, widespread adoption requires new research to advance design best practices, technologies and policies. Energy Trust is calling for professionals to apply to become Net Zero Fellows and undertake research that helps advance the net zero community in Oregon.

The Net Zero Fellowship aims to address market, technological and/or policy barriers to net zero buildings and grow the community of practitioners advancing net zero energy design and construction.

Energy Trust has identified potential research topics, detailed on page 2 of this Fellowship Application, and candidates are encouraged to consider one of these subject areas in their application. Selected fellows will work closely with members of Energy Trust's Net Zero Advisory Panel and/or Energy Trust New Buildings staff on the research.

ELIGIBILITY CRITERIA

Building industry professionals, including architects, engineers, building science professionals, urban planners, policy professionals and academics, are encouraged to apply. Work must be relevant to Oregon; however, the fellow is not required to be an Oregon resident. Applicants must be eligible to work in the United States and Oregon for the entire duration of the fellowship. Fellows must be available to attend Oregon events to share research, as well as meetings with advisors or Energy Trust as necessary.

Application and Selection Process

To apply, interested individuals should complete and submit all required application materials (see page 3 of this Fellowship Application) to newbuildings@energytrust.org as a combined PDF by the due date indicated in the Timeline below. Complete application submissions will be reviewed and evaluated by the Net Zero Advisory Panel made up of leading Oregon building and energy professionals. They will be judged based on the strength and comprehensiveness of their application, including the relevance to Oregon, the quality of the research topic, their experience, demonstrated capacity to conduct technical research, and contributions to greater understanding and market advancement.

Contracting and Allocation of Grant Funding

The selected applicant(s) will be required to execute a written grant agreement with Energy Trust that details the terms and conditions for the fellowship grant funding (sample available in Appendix A to this Fellowship Application). Grant payments will be made to individuals based on achievement of incremental milestones as established in the grant agreement. No award will be considered a commitment, and no obligations or legal relations shall exist between Energy Trust and any selected applicant until a final and binding written contract has been executed by and between Energy Trust and such selected applicant. Prolonged contract negotiations will not be undertaken; if it appears that contracting negotiations are not proceeding in a timely manner, Energy Trust may opt to terminate the discussions and select another applicant. Any party involved in these contracting discussions can terminate negotiations at any time and for any reason.

Timeline

The fellowship will follow the schedule below, with potential modifications by Energy Trust:

- | | |
|------------------------------------|---|
| • September – December 2016 | Launch, outreach, and communications |
| • January 9, 2017 | Fellowship Applications due to Energy Trust |
| • January 10, 2017 – February 2017 | Application review |
| • February 17, 2017 | Fellowships award notification and contracting process begins |
| • March 2017 | Research begins |

Business Energy Solutions – New Buildings

100 SW Main Street, #1500, Portland, OR 97204
1.877.467.0930 **telephone** 503.961.7642 **fax**
newbuildings@energytrust.org **email**

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FELLOWSHIP TOPICS OF INTEREST

Policy Implications

- **Policy Barriers to Net Zero Energy Buildings** – Lack of disclosure policies and building benchmarking are key issues, as are other barriers in building, permitting and zoning, including policies that affect building form and lack of solar access codes. Permitting guides may be valuable to consider as a useful resource geared to building owners and developers building new buildings, design teams and municipalities.
- **District Scale/Community Based Net Zero Energy** – Opportunities exist to implement net zero energy at the community, campus and district scale, yet financial, operational and other barriers often prevent this approach from being implemented. Further investigation can be useful to overcoming these barriers.

Business Case for Net Zero Energy

- **Cost/Benefit Studies** – Investigating the incremental costs and specific benefits to owners and occupants that are associated with the performance levels of net zero energy buildings, including capital and operational costs and benefits.
- **Ownership and Occupant Benefits** – Investigation into the measurable first cost, operational cost, energy savings and non-energy benefits associated with net zero energy buildings, and how these can be prospectively estimated to inform the business case.
- **Operations, Maintenance and Occupant Behavior** – Getting to zero energy performance goes beyond the design of buildings. Facilities operations and maintenance are critical to achieving persistent performance. Occupant behavior is a fundamentally important role that is well recognized but not well studied. Research efforts could help identify effective operational best practices, document post-occupancy performance issues and successes, and create guides and case studies that might inform effective long-term achievement of zero net energy buildings.

Technical Strategies

- **Deep Retrofits** – Retrofits are more challenging due to existing site and envelope constraints, as well as potential occupants in the building. More examples, guidance and process on overcoming specific challenges are needed for deep retrofits. Research efforts could uncover successful best practices for deep energy and net zero retrofit projects.
- **Modeling Protocols/Advanced Modeling** – Wide variability in modeling protocols and lack of adequate prototypes for high-performance buildings have resulted in inconsistent data and wide variances between estimated and actual energy use. This drives the need for more detailed and consistent metrics and better building energy modeling methods that can be shared with the design community, as well as better data to ensure comparable results.
- **Control Strategies** – Further understanding of the trainings and systems needed to achieve the optimum level of occupant engagement in control strategies for different building types, use types, and occupants.
- **Monitoring and Feedback** – The lack of regular monitoring and feedback data has resulted in missed opportunities for building designers, operators and occupants. Improved collection and dissemination of actual performance data through dashboards and displays can help inform assumptions made in design, and later inform building system adjustments and influence occupant behavior toward additional energy efficiency.
- **Advanced Envelope and HVAC** – Advanced technologies and improved systems need deeper research to demonstrate replicable cost and energy savings. As fundamental new system types emerge, new research is needed to understand interactions with other systems, obtain reliable cost and performance data, and optimize operations.

APPLICATION REQUIREMENTS

Applications must be submitted to newbuildings@energytrust.org as a combined PDF that includes:

Submittal Materials	Descriptions	Requirements
Basic Applicant Information	<ul style="list-style-type: none"> Contact information Affiliation(s) Disciplinary field(s) Educational background Professional positions held Honors and awards Publications 	Resume is acceptable
Research Statement and Plan	<p>The research statement should describe why the research is important and outline the goals, approach and budget. The statement should address the following:</p> <ul style="list-style-type: none"> What is the scope of research? How will it address challenges or market barriers? What are the specific research goals and methodologies? What is significant or innovative about the research? If you expect to work with others, what unique value/qualifications do they bring? How will you engage with the building industry to disseminate your research results? Provide a general timeline in which you expect to deliver the work. Provide a budget that describes expenses, including those for research, travel, materials, taxes and other for reimbursement. If selected, how will you address this fellowship with your current employer? 	Statement limited to two pages of text, prepared in 12-point font with 1-inch margin. Up to three relevant figures and images may be included on a separate third page.
Personal Impact	<p>Address the following:</p> <ul style="list-style-type: none"> Why do you wish to undertake this research project? What specific qualifications, training or experiences will help you serve as a Net Zero Fellow? How do you expect to benefit from the fellowship personally and/or professionally? 	Limited to one page of text, prepared in 12-point font with 1-inch margin
Relevance to Oregon	<p>Statement on the applicability of your research proposal to Oregon.</p> <ul style="list-style-type: none"> What contribution will the project make toward the Net Zero Fellowship goals? How does the work support Energy Trust goals? How will Oregon's building industry benefit from the research? 	Limited to 500 words
Research Context	Summary of the current research landscape that is the focus of the proposed study. This may include what information is already developed, examples of relevant literature and other research sources that will be studied, and how this new research will fill important gaps in the market.	Optional. Limited to one page of text, prepared in 12-point font with 1-inch margin.
Letters of Recommendation	Two letters of recommendation from individuals personally familiar with your work, professional ability and ability to conduct research.	Each letter should not exceed two pages
Portfolio and/or Supplemental Materials	Supplemental materials, such as articles, books, plans, speeches or similar indicators of your work. The submission of supplemental materials is optional, although a portfolio is strongly encouraged for those whose work has a visual quality.	Optional. Limited to three examples.

To be considered complete for review and evaluation, the submitted application (combined PDF) must include all items listed above (except for those items clearly marked as 'optional').

FOR MORE INFORMATION

Please visit <http://energytrust.org/pathtonetzero> or call 1.877.467.0930.

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APPENDIX A: SAMPLE DRAFT GRANT AGREEMENT

SAMPLE DRAFT ONLY: This sample draft form of agreement is not an offer and is not meant to create any enforceable obligation.

NET ZERO FELLOWSHIP GRANT AGREEMENT

SAMPLE DRAFT ONLY

This Grant Agreement effective [INSERT DATE] ("Agreement" or "Grant Agreement") is between Energy Trust of Oregon, Inc., an Oregon not-for-profit corporation ("Energy Trust") and [INSERT NAME] (the "Net Zero Fellow"). Energy Trust and Net Zero Fellow are also referred to individually in this Grant Agreement as a "Party" and collectively as "Parties".

A. Background: Energy Trust's Net Zero Fellowship ("NZF") aims to address market, technological or policy barriers to net zero buildings and to grow the community of practitioners advancing net zero energy design and construction in Oregon. Energy Trust's NZF seeks to achieve these goals by supporting research that helps to advance Oregon's net zero community.

Net Zero Fellow submitted an NZF application to Energy Trust seeking funding in support of Net Zero Fellow's proposed research plan. Following review by its Net Zero Advisory Panel, Energy Trust selected Net Zero Fellow to receive an NZF grant in support of Net Zero Fellow's research as set forth in this Grant Agreement.

B. Form of Grant and Duties of Net Zero Fellow

1. Energy Trust agrees to provide Net Zero Fellow a grant of \$[INSERT DOLLAR AMOUNT] (the "Grant") payable in increments as set forth more specifically in **Exhibit A** which is attached and fully incorporated into this Grant Agreement by this reference.
2. Net Zero Fellow shall provide Energy Trust with a completed **IRS Form W9**.
3. The Grant shall be used by Net Zero Fellow exclusively towards the NZF research activities as set forth in **Exhibit A** (collectively, the "Permitted Purposes").
4. Books and records of the Grant expenditures must be maintained and made available for inspection by Energy Trust should it so desire.
5. Any portion of the Grant not used for the Permitted Purposes, unless prior written approval has been obtained for any significant variance, shall be repaid by Net Zero Fellow to Energy Trust.

C. Term and Termination: This Grant Agreement is effective from [INSERT DATE], until [INSERT DATE] unless terminated earlier in accordance with **Section F** below.

D. Payment Procedures: Energy Trust will pay the Grant to Net Zero Fellow in installments as indicated in the Payment Schedule set forth in **Exhibit A**. Net Zero Fellow shall submit to Energy Trust, at accountspayable@energytrust.org, documentation as detailed in **Exhibit A** confirming that it has met requirements to request Grant funds payments. Energy Trust will remit payment within thirty (30) days of receipt of all required documentation. Such installment payments shall be conditioned upon Energy Trust's determination, in its sole discretion, that (i) any portion of the Grant funds previously provided to Net Zero Fellow have been used only for Permitted Purposes; and (ii) no conditions exist that would warrant termination of this Grant Agreement and recovery of any unspent Grant funds pursuant to **Section E** of this Grant Agreement.

E. Termination and Survival of Terms: Energy Trust may terminate this Grant Agreement immediately and recover any unspent or improperly spent Grant funds upon written notice delivered to Net Zero Fellow in the event Net Zero Fellow fails to comply with any provision of this Grant Agreement as determined by Energy Trust in its sole discretion. **Sections E, F, G, I, J, K** and any other provisions of this Grant Agreement which by their nature extend beyond the term of this Grant Agreement shall survive termination of this Grant Agreement.

F. Copyright License Agreement:

1. Net Zero Fellow hereby grants to Energy Trust the nonexclusive, worldwide, perpetual, irrevocable, royalty-free and sub-licensable right and license to reproduce, distribute, perform and display (publicly or otherwise), and prepare compilations and, subject to the last sentence of this **Section F.1** derivative works based upon, all or any portion of any copyrightable works submitted to Energy Trust by Net Zero Fellow in connection with Net Zero Fellow's **Exhibit A** work under this Grant Agreement, including without limitation, any literary works and any separate copyrightable works, (e.g. charts and graphs) incorporated therein ("Submissions"). If the Submissions were created in the course of the Net Zero Fellow's employment as a "work made-for-hire", then Net Zero Fellow's employer as identified in the Signature area of this Grant Agreement ("Employer") hereby grants to Energy Trust the nonexclusive, worldwide, perpetual, irrevocable, royalty-free, and sublicenseable right an license to reproduce, distribute, perform and display (publicly or otherwise), and prepare compilations and, subject to the last sentence of this **Section F.1** derivative works based upon, the Submissions. Energy Trust may distribute the Submissions in print, digital, electronic or any other format or medium now known or hereafter discovered. For clarity, Energy Trust's right to create derivative works based upon the Submissions does not include the right to modify the substantive content of the Submissions, but does include the right to modify and reformat the Submissions in order to reproduce and distribute the Submissions in differing formats and media consistent with the preceding sentence.

2. Net Zero Fellow and, if the Submissions were created in the course of Net Zero Fellow's employment as a "work made-for-hire," Employer (together the "Contributor"), agree not to reproduce, distribute, perform and display (publicly or otherwise) the Submissions or any compilation or derivative work based upon the Submissions prior to Energy Trust's NZF publish date, for which the Submissions is made and to which it is submitted. For clarity, this **Section F.2** does not limit Contributor's right to circulate pre-publication drafts of the Submissions for peer review.

3. Net Zero Fellow represents and warrants that (i) the research it develops as outlined in the Submissions are original and authored solely by Net Zero Fellow (ii) that Net Zero Fellow or Employer, as applicable, has the right and authority to enter into this agreement and to grant the rights granted in this agreement; and (iii) that provision of the Permitted Purposes and Submissions to Energy Trust will not violate rights of others, including rights relating to defamation, contract rights, copyrights, trade secret rights, patent rights, and rights of privacy or publicity.

4. To the extent that Net Zero Fellow has any "moral rights" with respect to the Submissions, including any right of inspection or approval of the uses of any Submissions or any portions thereof, Net Zero Fellow agrees to waive and decline to assert such rights, and agrees that Energy Trust may reformat and otherwise modify the Submissions regardless of medium into which the Submissions may be modified and regardless of the effect of such modifications on the integrity of the Submissions; provided that Energy Trust may not modify the substantive content of the Submissions. For clarity, Energy Trust may provide the Submissions as parts of compilations in various formats including, without limitation, ink on paper, Adobe Acrobat (.pdf) format, Microsoft (.doc, .ppt, and .xls), graphics and web formats. Net Zero Fellow hereby grants to Energy Trust and its authorized representatives permission to publicly identify Net Zero Fellow by name as an author of the Submissions and to include biographical information in any materials related to Energy Trust's NZF.

G. Attribution: Net Zero Fellow shall acknowledge the Energy Trust's NZF Grant contribution in any public statements regarding NZF. The statement shall read: "This research has been supported by an Energy Trust of Oregon, Inc. Net Zero Fellowship grant."

H. Notices: Notices required by this Grant Agreement will be deemed effective (i) if delivered personally, on receipt, (ii) if mailed, three business days after being mailed by U.S. certified mail, return receipt requested, (iii) if sent by facsimile, on generation by the transmitting machine of a confirmation of both successful transmission and receipt, or (iv) if emailed, on confirmation of both successful transmission and receipt. Notice will be given to the persons at the contact information listed below or to such other persons or contact information as may be designated by a party by notice pursuant to this provision.

Fellowship Application

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If to Energy Trust:

Energy Trust of Oregon, Inc.
421 SW Oak Street, Suite 300
Portland, Oregon 97204
Attn: Legal/Contracts
Phone:
Email:

If to Net Zero Fellow:

Attn:
Phone:
Email:

I. Relationship of Parties: This Grant Agreement is not intended to form a partnership or joint venture between Net Zero Fellow and Energy Trust.

J. Indemnification and Limitation of Liability: Net Zero Fellow will indemnify and defend the Energy Trust and its directors, officers, employees, agents, representatives, and affiliates (the "Energy Trust Indemnified Parties") and hold them harmless from and against any and all losses, liabilities, damages, claims, suits, actions, judgments, assessments, costs and expenses, including without limitation interest, penalties, attorney fees, any and all expenses incurred in investigating, preparing, or defending against any litigation, commenced or threatened, or any claim whatsoever, and any and all amounts paid in settlement of any claim or litigation asserted against, imposed on, or incurred or suffered by any of them, directly or indirectly, as a result of or arising from the negligent or wrongful acts or omissions of Net Zero Fellow, from any breach of this Grant Agreement by Net Zero Fellow, or from any finding, judgment or other determination or settlement whereby Energy Trust is deemed or considered to be the employer of Net Zero Fellow. Energy Trust is not responsible for any tax liability which may be imposed on the Participant as a result of any Grant Funds. **Energy Trust's liability to Net Zero Fellow in connection with this Grant Agreement shall be limited to any amounts owed Net Zero Fellow under this Grant Agreement. In no event will Energy Trust be liable to Net Zero Fellow for any other damages, whether characterized as general, special, direct, indirect, punitive, consequential or otherwise.**

K. Governing Law and Jurisdiction: Any disputes arising in connection with this Grant Agreement will be governed by Oregon law, without reference to its principles of conflict of law. The exclusive jurisdiction for resolution of such disputes will be Oregon.

L. No Third Party Beneficiaries: This Grant Agreement is made and entered into for the sole purpose and legal benefit of the parties, and no other person shall be a direct or indirect legal beneficiary of, or have any direct or indirect cause of action or claim in connection with, this Grant Agreement.

M. Severability: Should any provision of this Grant Agreement be held by a tribunal of competent jurisdiction to be invalid or unenforceable, the remainder of the Grant Agreement will remain in full force and effect.

N. Integration and Amendment: This Grant Agreement supersedes all other agreements between the parties regarding the particular subject matter of this Grant Agreement, and contains their entire understanding as to its particular subject matter. This Grant Agreement may not be amended or modified except by a written instrument duly executed by authorized representatives of the parties. This Grant Agreement will not be varied, supplemented, qualified or interpreted by any prior course of dealing between the parties or by any usage of trade.

N. Authority: Each of the individuals signing below represents and warrants that he or she has been properly authorized by his or her respective organization to enter into this Grant Agreement and that by their signatures each of the parties does intend and is hereby legally bound under the terms of this Grant Agreement.

EXECUTED IN DUPLICATE on the dates indicated below.

ENERGY TRUST:

ENERGY TRUST OF OREGON, INC.

Signature:

NET ZERO FELLOW:

[Insert Name]

Signature:

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Fellowship Application

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Print Name:

Title:

Date:

Print Name:

Date:

EMPLOYER:

(If required pursuant to **Section F**, an individual authorized to sign on Employer's behalf must also sign here)

[Insert Employer's Name]

Signature of Individual Authorized to Sign on Employer's Behalf:

Print Name:

Title:

Date:

Attachments: *Exhibit A, Research Plan and NZF Grant Payment Schedule*

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