Open Source Ecology develops technology, business models, and enterprise training services to accelerate the development of a new economy based on clean energy. We are an innovative non-profit startup, based in Missouri, that was founded by Marcin Jakubowski, a 2011 TED Fellow* and Princeton graduate with a PhD in Physics from the University of Wisconsin. We would like to discuss working with the John Merck Fund to reduce carbon and diesel emissions through an inventive approach that has the potential for widespread application.

Open Source Ecology is a network of fabricators, engineers, farmers, and multi-skilled collaborators working together to create the Global Village Construction Set (GVCS), a technology platform of the 50 key industrial/agricultural machines that are responsible for high living standards in many parts of the world. We design open source versions of conventional machinery that are easy to manufacture, low in cost, and based on multiple clean energy technologies including biomass, solar, and wind energy. Our designs are, on average, 70% cheaper than products sold by commercial manufacturers when fabricated by the end user, and the increased accessibility accelerates their rate of adoption and multiplies our impact.

We provide extensive documentation and training materials to facilitate independent replication of the technology anywhere in the world with basic fabrication tools (welders, drill presses, etc.). Documentation includes: (1) design rationale; (2) 3D CAD files; (3) 2D fabrication drawings; (4) CAE analyses; (5) CAM files (where applicable); (6) exploded parts diagrams; (7) bills of materials and sourcing information; (8) scaling calculations; (9) A-Z instructionals; and (10) cost and performance comparisons to industry standards. All documentation is openly available on our website, along with high-quality video tutorials showing how to fabricate the machinery.

We would like to write a grant proposal to the John Merck Fund to develop an open source 50kW Wind Turbine and create training materials so that people anywhere in the world can build the technology themselves. The work would take place in Missouri, where our OSE Fellows learn to fabricate prototypes and conduct field testing operations in the context of GVCS development. The estimate cost to design, prototype, field test, and document the GVCS Wind Turbine is $61,000 for a 12 month period.

We are initiating a process of translating vital human innovation into the open source domain for everyone’s benefit. There, it will impact the world for generations, as people continue to rethink its design, refine it, and conduct an intergenerational dialog sharing economic best practices. A seed grant to develop a mid-level, open source wind turbine could start a chain of events affecting tens of thousands of people not just in the Midwest, but across the world. Thank you for considering our letter.