

# Testimony in Support of HB2020 (Clean Energy Jobs Bill)

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In my previous testimony, I provided four valid reasons to pass a strong HB 2020.

- **It's the right thing to do**, and Oregon has always prided itself as a land of pioneers!
- There will be an **economic cost for covered entities** to invest in more efficient devices and renewable energy sources, but the savings in fuel expenditures pays back those investments within a decade.
- There will be a **much more serious economic cost for all of us**, including loss of life and property, if we do not stop our pollution quickly.
- By moving now, Oregon will **give its businesses a head start** on their competitors, and it will build the industries and jobs of the future. Clean energy is already the number one creator of new jobs in America, and these jobs cannot be outsourced or automated.

I made the analogy that climate change is like a steam locomotive that is starting to speed out of control and that we **MUST** stop adding more fuel as quickly as possible. The reason is because that locomotive is heading towards a minefield of methane bombs that could completely derail our global civilization and send the climate into a run-away heating scenario that we would not be able to reverse.

What's the Methane Bomb? CO<sub>2</sub> levels are currently 410 ppm and will grow to 750 ppm by 2100 if we follow a business as usual pathway. The resulting heating impacts are currently triggering significant releases of methane in the Arctic, and methane has a global warming impact that is 86 times the impact of CO<sub>2</sub>.

The evidence is right in front of us. The melting Arctic ice cap means that shrinking ice formations are replaced by absorptive seawater, which increases the amount of sunlight absorbed and leads to increased heating. Thawing of the arctic tundra is already releasing significant amounts of methane emissions as the formerly frozen biomass starts to decay. Even more significant are the methane clathrates (methane ice on the shallow ocean floor) that have started to evaporate due to the significant warming of the Arctic sea. Multiple plumes of methane gas, a few over a mile in diameter, have been spotted in the Arctic sea in summer.

This is a threat to human existence, and we **must** take aggressive action to prevent such a catastrophe. The sudden release of large amounts of methane from clathrate deposits has been identified as a cause of past climate change events. The [Permian-Triassic extinction event](#), colloquially known as the Great Dying, occurred about 252 million years ago, and is the Earth's most severe known extinction event, with up to 96% of all marine species and 70% of terrestrial vertebrate species becoming extinct. The [Paleocene-Eocene Thermal Maximum](#) occurred around 55.5 million years ago and was a time period with more than 8 °C warmer global average temperature than today.

To address this threat, we must have comprehensive solutions to limit climate change impacts that require governments to lead in transforming our energy, agriculture, forestry and social systems. As my state representatives, I encourage you to be bold and courageous, and insist on the strongest possible HB 2020 bill.

In spite of all the climate denial and economic doom-and-gloom rhetoric you have been recently hearing, the 11 states that have already implemented cap-and-invest programs have experienced growing economies, falling CO<sub>2</sub> emissions, stable energy prices, and thousands of jobs created. Oregon must be next. The independent economic study of HB 2020 shows that it will add to household income across all tax brackets by creating more than 50,000 good-paying jobs, and that the transition to cleaner energy will lower costs for people and businesses.

And we are not alone! By the end of 2020 over 25% of global GHG emissions will have a price on pollution, according to the 2018 World Bank statistics on regional, national and subnational carbon pricing initiatives.

Below are the key elements of HB 2020 we want to preserve or improve.

- 1) Restore the percentages allocations regarding investments for the Just Transition Fund (15%), and the Climate Investment Fund (85% divided as 50% - impacted communities; 20% - natural and working lands; 20% - statewide; 10% - tribes.)
- 2) No exemptions. This includes Jordon Cove, Covanta, marine/aviation fuels, and semi-conductor HFCs.
- 3) No covered emitting entity should receive more that 90% free allowances.
- 4) Restore the Citizen Advisory Committee.
- 5) Limit offset to 4%, and keep the requirement that half of these provide environmental benefits in Oregon.
- 6) Rely on best available science, which currently indicates a target of zero GHG emission in 2050.
- 7) Do not rollback of existing emission standards.
- 8) Require the PUC to adopt as its core mission supporting Oregon's transition to a clean energy economy.

Thank you for your leadership on this issue.

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Dr. DeLaquil has been a leader in the commercialization of clean and renewable energy technologies for over 35 years. He is currently CEO of DecisionWare Group, which is a small business that develops and uses MARKAL/TIMES models to perform policy analyses, conduct energy supply - energy security studies, and undertake capacity building and model transfer on behalf of donors, governments and the private sector to identify optimal pathways for achieving economic development and environmental goals.

Dr. DeLaquil's expertise covers technical, market and financial services to government, multilateral and private sector clients interested in the development, commercialization and market introduction of clean, renewable and energy efficient technologies. He was recently Director of IRG-Analytics for International Resources Group, which is an international development consulting company working for USAID, Asian Development Bank and others. He has led the formation of two clean energy start-up companies: EnergyWorks, a Bechtel-PacifiCorp joint venture, which out-sourced energy services for major industrial companies in developing countries through renewables and cogeneration, and another to market biomass gasifier systems to agribusiness customers in developing countries.

Prior to that, Dr. DeLaquil managed Bechtel's interests in the development and commercialization of renewable energy technologies. Key projects developed by Dr. DeLaquil and his group were the PV-USA Project with Pacific Gas & Electric and the 10 MW Solar Two Power Tower Project with Southern California Edison.

Dr. DeLaquil started his career in renewable energy technology development at Sandia National Laboratories, where he performed several studies evaluating the cost and performance of solar power tower technologies for both utility and industrial process heat applications.

Dr. DeLaquil holds a Ph.D. in Nuclear Engineering from Massachusetts Institute of Technology and a B.Sc. in Marine Engineering from the US Merchant Marine Academy. He has authored over 100 papers, reports, and articles on solar and renewable energy including chapters in two books on renewable energy technology. He was a contributor to the 2<sup>nd</sup> IPCC report and holds a patent for a high temperature solar receiver.

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My name is Dr. Pat DeLaquil, and I have been fighting to mitigate the impacts of climate change for almost 40 years, first to commercialize solar energy technologies, then implementing small-scale renewable energy projects in developing countries and rural communities, and currently modeling national energy systems to advise government policy in transitioning to a clean and low-emission economic system.

This bill will be a benefit to both our economy and climate. Key finding by an independent economic study of HB 2020 shows that it will add 2.5% to Oregon's gross domestic product by 2050 and add to household income across all tax brackets by creating more than 50,000 good-paying jobs, and that the transition to cleaner energy will lower costs for people and businesses. In addition, within 9 years Oregonians could save at least \$2 billion annually in health care costs by reducing pollution. <https://www.e2.org/cleanjobsor/>

The bill results in 50-times more clean energy jobs than fossil fuel jobs in Oregon, and all 36 counties are home to clean energy workers, including 11,000 in rural Oregon.

Major investment will go to reduce pollution and grow opportunities for low-income and rural communities, tribes, communities of color, and for training workers in Oregon.

Hundreds of millions of dollars per year in proceeds from Clean Energy Jobs will be reinvested in clean energy solutions -- putting Oregonians to work by making clean power like solar available to more people, improving energy efficiency in homes and businesses to save people money, building affordable housing near transit and investing in more transportation options.

In spite of all the climate denial and economic doom-and-gloom rhetoric from industry, the 11 states that have already implemented cap-and-invest programs have experienced growing economies, falling CO<sub>2</sub> emissions, stable energy prices, and thousands of jobs created. Oregon must be next.

I urge you to pass the strongest Clean Energy Jobs bill possible. This is an emergency and the Legislature should act accordingly to protect Oregon's environment and economy.

Thank you for your leadership on this issue.

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