

**Externalities: Revealing Hidden Natural Costs Through Product Labeling Legislation**

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### **Abstract**

The planet is going through a mass extinction event brought on by human influence: biodiversity elimination, habitat destruction, climate change, and many other cascading effects. The toll on nature is already unconscionable, yet this is already effecting human populations as well, and will only exponentially increase in the coming years. It won't just be our children experiencing this crisis, it is us, now. It is already happening. Arguably a primary reason for these environmental issues falls to environmental externalities in our economic systems. The only way to fundamentally address this is through a systemic introduction of labeling or reporting the environmental costs of products and services.

Externalities are the hidden costs, or the costs not calculated in the production or use of a good or service. Through a lack of transparency, intentional obfuscation, and willful or pure ignorance, we as a species profoundly lack knowledge on how the products and services we consume affect the world around us. In fact, of 1000 global primary production sectors, none generate the profit needed to cover their cost in natural capital (TruCost, 2013). The only way we can even have a chance to mitigate our impact is to be provided that data before we spend our money. As such, products and services must report their impacts on the environment through a standardized metric or grade on a label or report that is easy to understand and will capture information on biodiversity loss, climate change, pollution and waste. The only way for this to effectively take hold and maintain transparency is through governmental legislation and the associated infrastructure to provide a method for businesses to make such a calculation. This paper describes the effort to design such policy, provide it to legislators and pass it.

Most ideally, this would be integrated into a larger systemic bill designed to economically shape the country in a sustainable way. As such, this initiative is being proposed as an amendment to be added to House Resolution 109, the "Green New Deal." Assimilating this as a specific initiative within the GND, which is currently more or less a framework of mission statements, provides a more solid groundwork for a successful legislative effort. The underlying concept is to enable the consumer with needed and usable information. There is no true guarantee of a "happy ending," but at its core, it will help to hold businesses accountable and ultimately empower the common consumer to make informed choices, from whence the fate of our planet can at least be decided honestly.

### **Externalities: Revealing Hidden Natural Costs Through Product Labeling Legislation**

In November of 2016 and in the time since, I realized that life does not always follow the path that we think that it will, or that it should. I fretted about the state of the world for the better part of a year, poring over dismaying news reports on politics and the environment. My second child was born in August of 2016, and both of them are still young. This was particularly fresh in my mind, that my children would encounter these hardships, this climate apocalypse and the impending crash of biodiversity. The best case environmental models predict weather disasters, droughts, sea levels rising, mass displacement of persons, and a negative feedback loop of a warmer planet and our efforts to keep comfortable. The worst predictions include mass extinctions not just of various animal species, but even of humans. As a parent, I felt increasingly burdened in that I am supposed to provide a prosperous and verdant future for my children, and I see that as being ever more difficult. As with any parent, I would step in front of a train for my children. This growing environmental disaster is very much like said proverbial train, it's just moving much slower. It took me almost a year before I realized that the only way to ease my mind and to effect change in a meaningful way was to confront these things myself. If I don't do it, maybe someone else will someday, but that is no way to live. This realization has led me to the project described in this document.

Every product and service we interact with has a cost that we pay for with currency. However, we don't typically know the actual true cost of that product or service. This should lead to a series of questions that have been largely ignored for the sake of convenience. We don't know what percentage of what we paid went into profit. We don't know the cost of componentry, manufacture, or man hours. We don't know what cost is associated with maintaining or regenerating the source of such products. In particular, if those materials came from the Earth, as all products ultimately do, who is paying the Earth? This is not to reference the cost of extraction; rather, why is our environment not receiving its share of the transaction for its capital? Natural capital refers to the value of Earth's resources; not only their literal cost in currency, but how they maintain life. What are we doing to the planet to get what we want out of our purchases? What is the carbon footprint of a product and how does it contribute to global warming? What habitats are being destroyed? What is the social cost on indigenous or third country nationals doing the work for significantly less money and in worse conditions than what they would experience in first world countries? These supposed hidden costs are called

externalities, costs caused by businesses but that are not paid for by those businesses. Externalities are an economics black hole, largely intentionally ignored, and a catalyst for profit. A study was completed in 2013 by Trucost, an environmental risk assessment company, on behalf of The Economics of Ecosystems and Biodiversity and the United Nations Environmental Program. In this study, unpriced natural capital costs for only 1000 global primary production and processing sectors totaled \$7.3 trillion in greenhouse gas emissions, land use, water consumption, air, sea and land pollution, and waste. That \$7.3 trillion equates to 13% of the entire world's economic output in 2009, all off the back of Mother Nature with no reinvestment or mitigation to those costs (Trucost, 2013). Consumption and economic and population growth has only continued to grow exponentially over the last ten years.

This is completely unsustainable. In fact, according to the TruCost study, none of the industries generate enough profits to cover their natural capital costs (TruCost 2013). This is frankly insane, an entire economic system built on lies. As we face an ever-escalating environmental crisis, the only way we can hope to address it is through understanding how our consumption effects the world around us. As such, we must capture and bring light to those externalities, to gain an immensely deeper understanding of a product or service's value. It helps identify the intrinsic nature of consumption and how the user of said product or service is interacting with our planet, beyond the tangible and immediate. Only then, once we confront our own personal input to this multi-faceted issue, understand the responsibility we all hold, can the metaphorical fight be taken to the worst offenders of environmental wreckage.

### **The Project**

There is no current significant economic or financial driving force to reach this goal of eliminating externalities and revealing the hidden costs to the common consumer. Many businesses don't understand or calculate such numbers through their logistics chain in the first place. Fewer still would willingly adopt such a program without at least the knowledge that all of their competitors would be held to the same standard, as the infringement upon profits and stakeholder investments would be considerable if not crippling while other companies continued on with the status quo. Therefore, the only effective way to get to this end goal is through governmental mandate: permanent legislation requiring labels and reports on products and services that communicate to the consumer their costs on the environment. This would enable the

consumer to make informed choices and initiate an all-encompassing better understanding of our place in the world and how our choices effect it. Further, to facilitate this mandate, it must be embedded in a program designed to re-vitalize our economic systems, specifically House Resolution 109, the “Green New Deal.”

To build this initiative, and especially to enact legislation, a coalition was formed. One of the first steps in forming a team was to express a vision to provide direction. The directive vision here was thus: “As the preeminent species on this planet, it is our responsibility to be stewards of nature and know our impact on the world around us. The only way this is truly possible is by systemically vanquishing environmental economic externalities so as to understand the largely uncalculated costs to the biosphere as a result of industrial or commercial activity.” This statement was calculated specifically to emphasize the importance of personal and collective responsibility in this effort, rather than an impossibly broad “save the world” statement with no quantifiable accountability.

Ascertaining a vision is valuable, even inspirational, but attaining lasting support for a cause takes more. A sense of urgency is necessary. To communicate this, an “elevator pitch” and presentation was generated to resonate with stakeholders, specifically following my personal journey and the evolving understanding of personal and collective responsibility. This really centered on the aspect of children, to ensure the universal realization of that aforementioned slow moving train. Just in November another study was released in the academic journal *BioScience*, a serious and respected scientific source. The study catalogued the work of 11,000 climate and earth scientists raising the alarm to the impending climate emergency. Phrases in the report included, “We declare clearly and unequivocally that planet Earth is facing a climate emergency,” and “The climate crisis has arrived and is accelerating faster than most scientists expected. It is more severe than anticipated, threatening natural ecosystems and the fate of humanity” (*BioScience*, 2019). These are seriously alarming statements for a scientific peer reviewed journal. For those who trust and understand these studies and their implications, especially as it relates to our children, there should be no better way to light the fire aside from experiencing personal hardships themselves.

With the vision determined and the implications of failure realized, the team was consolidated. There are a number of relevant personnel needed to create any piece of public

policy, especially one as all-encompassing as the desired regulation here. Subject matter experts were needed on supply chain and production, economics, natural capital, biological and environmental sciences and conservation, political science and public policy. There were some European ministries, such as the Danish, pursuing labelling supermarket foods with their carbon footprints. Unfortunately, the effort in Denmark fell through, and root causes were not identified upon inquiry. After this, efforts were made to contact the authors of the aforementioned TruCost study on natural capital, as well as Energy Star officials at the Environmental Protection Agency (EPA). Some excellent feedback was received from the EPA Climate Protection Partnerships Division Director of Communications, Stephan Sylvan. Part of Energy Star's success has been based on business' voluntary accession into the program, and that this has come about through believing it is in their best interest. This helped identify the methodology in presenting this legislative provision as an opportunity, rather than an infringement on the free market. Also discussed was the importance in accessibility of the information in the label; too much quantitative data becomes difficult for the common consumer to track and understand. As such, we discussed the possibility of a grading system on the label: that products friendly to the environment according to our calculus could be rated "A," something less ideal a "B," etc. From there, consumers could follow a link or scan code to see further externality details on the product.

Mr. Sylvan also suggested reaching out to the Sustainable Purchasing Leadership Council (SPLC), liaising between buyers, suppliers and public interest advocates towards sustainable purchasing between 178 companies, private institutions and stakeholders. Arizona State University is actually a founding member. Utilizing this organization is ideal as a focal network and test site for externality reporting and labeling amongst its membership before enacting final legislation.

There was another enormously important element of the team, that being the elected representatives that would bring our policy into public view and integrate it into their platform and public relations machine. This kind of bill would have a difficult time on its own in the House or Senate due to its lightning rod sensitivity as an issue touching literally every walk of life and putting the economic status quo of externalities on notice. As such, this bill needed two things: to be integrated into a larger systemic piece of legislation, and a strong elected

representative to be its guiding advocate in the court of public opinion. To capture these in one fell swoop, the architects of the Green New Deal (GND) were contacted, Massachusetts Senator Ed Markey and New York Representative Alexandria Ocasio-Cortez. Initial attempts to contact them through affiliates and the actual authors of the Green New Deal went without response, as well as direct requests to their congressional offices, though there were very real crises that no doubt affected this. Representative Ocasio-Cortez was involved in election campaigns, and both offices were completely overwhelmed in the emergency response to the COVID19 crisis. Nevertheless, sustained contact attempts will result in a response, and through shared research and communication of concepts, this labeling initiative to identify externalities will definitely fit within the GND.

Pursuing a confluence with the GND was by design. The GND is a proposed bill aimed to address climate change and economic equality through sustainable practices and systemic changes in our economic system through renewable energy and resource efficiency. Truly, it was a perfect home for this project in the sense that by integrating measurements of impacts on the environment and informing the public as such, it would enable the other provisions in the GND, such as achieving net-zero greenhouse gas emissions, creation of jobs and economic security grounded through sustainability, sustainable infrastructure, as well as clean air and water, healthy food, and the promotion of social justice through protection of indigenous peoples and vulnerable communities (Ocasio-Cortez, 2019).

Because the GND is largely a framework bill, the specifics of the governmental institutions necessary to govern a labeling and reporting program were not yet essential, but some core concepts were defined. For the common consumer to understand the concept, the labels and reports could not be too complicated, but still needed to address effects on biodiversity, climate, pollution and waste. As discussed with Mr. Sylvan, this would be coded with a grading system. The calculations and regulations to determine those grades would be drawn up with the subject matter experts in the EPA, the agency most appropriate for such a system, akin to Energy Star ratings. As such the verbiage of the provision within the GND would begin with the vision of this project and carry on with the directive for labeling and reporting: “As the preeminent species on this planet, it is our responsibility to be stewards of nature and know our impact on the world around us. The only way this is truly possible is by systemically

vanquishing environmental economic externalities so as to understand the largely uncalculated costs to the biosphere as a result of industrial or commercial activity. Informing the American public of this environmental impact must be accomplished through externality labeling and reporting on all goods and services, calculated with a transparent and accountable process based in scientific applications of economic models accounting for natural capital.”

Next, a communication plan must be engaged with each of the audiences necessary to bring about a successful campaign for adoption of the GND with its new provision. The most immediate messaging required is to engage with other legislators and elected representatives to find support for the new provision. Considering the realities of the current political environment, reaching into the Republican ranks to garner support is a challenge. However, one of the most excellent aspects of our provision to identify externalities is its total grounding in enabling the individual consumer, that it is a provision of freedom and choice. It does not restrict or anyone or levy tax, it simply informs. This is a proverbial olive branch through internal channels so that the inner workings of politics can be processed before rollout to voters. Emphasizing the political capital possible in supporting such a measure is also important, that there are people who notice environmental support and appreciate the systemic nature of change and issue representation in the GND.

Once support is gained, the next step will be bringing this to the voters, so that they would understand to vote for representation that would advocate for and pass the GND with an externality labeling provision. This would be handled through external methods but in a personal way so as to feel internal to the voters, as through the representatives talking to their constituents and using social media to highlight and include the concept in their personal campaigns and news outlets when appropriate. Representative Ocasio-Cortez, for example, has been conducting personal broadcasts on her Instagram account during the COVID19 response, and various other Congressional members have been conducting virtual townhalls. To appeal broadly, the message will be that through this policy people get to take control of what they consume, how we interact with the world around us, and that we must no longer be misled.

There are detractors, of course. Because this campaign was designed through a grassroots effort, industry and business leaders and lobbyists were not a part of the conversation that led to this legislation attempt, and as such are not especially supportive. There is a real implication of

economic hardship that looms over many businesses once they report their externalities, especially in this new economic climate. Nevertheless, there was still a positive spin to be communicated to business leaders and their lobbyists, that externality reporting does not have to ruin their business ventures; rather, with a well-judged pivot, it can enhance their supply chain and production efficiency and actually lead to being a part of the leading wave of sustained profits. Arizona State University School of Sustainability faculty member Bruno Sarda has been blazing this trail in the media, speaking on news programs and publishing articles in esteemed publications like Bloomberg to invigorate this opportunity (Bloomberg Green, 2020).

As these communication channels have continued to unfold, there has been increased attention on the topic, even amid the maelstrom of Washington politics and the COVID19 crisis. In fact, as Mr. Sarda emphasized, understanding externalities are an essential component to economic recovery in this difficult time. People are yearning for real policy, a method to put trust back in government, anything besides the current spectacle. There has been no better time to put forth this effort. We now have to see if the American people can see themselves to a place where these policies can be understood and made into a reality.

### **Strengths**

There are several strengths to this project. Its greatest is the beauty in the result of its success. A safer and softer and happier world for future generations is of course the most ideal goal, but this is too simple. The final result in this endeavor is not a guarantee of a saved world. Rather, it is the enabling of the consumer through informing their choices. With the information at least provided, what we collectively choose will be what we deserve. If we are unable to overcome our programming of infinite growth without consideration to the future, then this will be an unfortunate inevitability. Passing this legislation gives us a fighting chance, however, as opposed to the status quo of a generally opaque understanding of product costs.

Beyond this, the sheer unique and systemic angle of this project appears to resonate with audiences when presented honestly and without preamble. Because it is based upon revealing a hidden aspect of our everyday lives, audiences are generally receptive, even if their political or belief predispositions would normally indicate a negative reaction.

Another particular strength of this concept is its timing. The best time for this to have been designed would have been at the birth of the industrial revolution, of course. As the adage goes, and with all significant efforts to effect change, if the best time was yesterday, then the next best time is now. It has taken decades, arguably centuries for our species to come to grips with and accept that the planet is not exclusively ours, and that what we do with it has real repercussions. The political will has been rising; climate marches and strikes the world over have gained supporters and public attention (Yale, 2019) even despite the current policy of social distancing. We are at a metaphorical tipping point.

There are several examples of increased consumer information resulting in significant change. Cigarettes and tobacco products were a product of common use decades ago, and still are. However, the Institute of Medicine and the American Center for Disease Control (CDC) have determined that labelling tobacco products with health warnings is the most effective way to inform consumers of associated tobacco and nicotine risks. Graphic warnings are even more effective (Tobacco Free Kids, 2019). This is not to say that tobacco use has been wiped out, of course. However, the choice is made available to the consumer with the full knowledge of what can take place, and roughly 17 million in America will die prematurely from their tobacco use. This is their prerogative. At the same time, significantly less people smoke today than decades ago. Further, the Food and Drug Administration (FDA) ascertained that when factual information was combined with emotional appeals on such labels, their effectiveness roughly doubled in convincing people to quit smoking (Nicotine & Tobacco Research, 2016).

The Energy Star rating on products and construction has been an enormously successful program in improving energy efficiency and environmental protection. The label has become synonymous with smart purchases and savings, known to reduce costs over the lifetime of the product. It has proven incredibly effective at reducing greenhouse gases (over 75 million metric tons) and energy costs (\$7 Billion+) in 2003 alone (EPA, 2003). The EPA estimated in 2012 that Energy Star products prevent more than 150 million metric tons of greenhouse gas emissions annually. Since its inception in 1992 as a “public-private” partnership to monitor and reduce energy use in computers and computer screens, Energy Star labels and reporting are now used globally in over 60 product categories, and in which most of those products now utilize half the energy they would have without Energy Star specifications. Roughly 80% of American

consumers recognize and understand the label (EPA, 2012). If such a label from a government agency can be so successful, other similar labels could absolutely be utilized to inform the public of how their choices will both save the environment and their wallet.

While similar in some principles to other forms of eco-labeling, the distinction of the proposed externality label is its tie back to a transparent and systemic governmental program that compiles the product's externalities and determines its impact in an easy-to-understand "grade" of environmental friendliness.

### **Weaknesses**

To pass any law, especially in this current political environment, is a feat in and of itself. A bill with such wide-ranging and perceived harmful economic implications is another level of difficulty. The political polarity in the American government has not been this exacerbated since the Civil War (Hare, Poole, 2014). Sadly, the political right has swung very far to the right over the last several decades, and especially more so in the last couple years. Further complicating this, since the Supreme Court's Citizens' United case in 2010, money in politics has become an ever-increasing factor of influence. As such, business interests are fighting the GND tooth and nail, as it is perceived as a direct threat against the status quo of relative low effort for inflated profits, especially amongst the worst purveyors of environmental destruction like the fossil fuel industry and animal agriculture (TruCost, 2013). The GND and the externality provision would significantly shake up the common economic equation and redefine how profit is calculated and understood. True economists know and understand these principles of externalities and how we have been living on borrowed time and resources, but it will come as a shock to many, and many wholly innocent can easily fall through the cracks without the other provisions and protections of the GND. This is why this policy must be integrated within a larger systemic piece of legislation, because the natural inevitability of a singular bill results in businesses figuring out how to squeeze through any loopholes possible and leaving the common worker and consumer left out to dry, as has played out through history time and time again.

Not only this, but the actual policy and its associated calculations required by all businesses and services is a complex one, relying on a pre-conceived notion of values that is not prevailing in economic models. Every business will incur a cost to not only label and report their externalities, but just to understand the concept.

Of worry also is the accuracy, and especially sustained accuracy of this label. The calculus determining the grade of a product or service must be transparent and incorruptible, especially as there will be those putting in active effort to do so. If the label loses its legitimacy, or it can be argued as such, it will have lost its power. This is why there is very little compromise in how the program must be driven. Loss of focus will result in loss of legitimacy.

A few considerations taken into account reference the efficacy of such a policy and the reports and labels required by it. While a particularly effective method of alerting people to the urgency of a situation is discussing the effects on their children, this can inadvertently introduce guilt or otherwise infer that parents are not raising children the correct way. People are very particular about parenting advice and do not take well to being told they are deficient in such skills, and guilt in particular is not an effective method of instigating change.

### **Opportunities**

While businesses, and in particular their workers, have legitimate reason to be wary of such changes as suggested by this project and resulting legislation, as mentioned earlier there are still very much prospects to which one can appeal. Rather than something to be afraid of, there is ripe opportunity. As our world continues to suffer the industrial effects of the last two hundred years and we collectively realize the reality of the difficulties ahead, there is going to be a swing to sustainable solutions. Now is the time to ride the front of that wave. The market is going to favor the carbon conscious and sustainable profits are going to be the inevitable necessity. Entirely new markets will spring from this labeling mandate and the Green New Deal, as has been proven time and again through other labeling initiatives designed to protect and inform consumers. There will still be those that pursue quick schemes, but the human species has proven capable of grand accomplishments when necessary. Those that believe the same will be realizing soon, if they haven't already, that businesses must scale towards sustainable, linear growth, rather than exponential, and that the only way this can be accomplished is to know the true cost of things. This is not a business killer. It is a revolutionary business sustainer.

Further, the COVID19 crisis is laying bare some of the worst aspects of our governmental and economic systems. Rest be unto those who are suffering, but the timing has never been better to implement a method that will identify to consumers how to avoid suffering

in the future. People need hope, need to see methods of foreseeing and preventing the pain of today. This initiative can do that.

### **Threats**

Again, American political polarity has brought gridlock to effective governance. Associated moneyed interests have invested endlessly to continue sitting on their empires and maintain the existing state of affairs. This is unfortunate and disappointing, but inevitable. There will of course be a cost to the existing market in implement this externality provision, and the scale is truly global. There are plenty of ways in which these primary industrial forces can stack the deck and overcome our efforts, or why this is too big of a project to attempt, but to lend them credence is an exercise in futility. There are also plenty of examples in history where the proletariat overcame the bourgeoisie. And as I realized not too long ago, the only way to bring about change is to become it.

### **Conclusion**

At the outset, this concept was dismissed as too big, an impossible scale. There was no way it could be successful. It needed to be pared down to something more manageable. This is wholly untrue. It is a perhaps absurdly ambitious concept to get off the ground from scratch. There is hardly any precedent, there is no rulebook, and the opposing forces are some of the strongest, wealthiest, most entrenched political and industrial actors in all of history.

All the same, if even the most optimistic scientific predictions of environmental ruin come to pass in the coming century, our children are going to ask us what we did when we learned of what may happen, what world we were going to leave them. Regardless of the final outcome of this effort, no matter how Quixotic, we surely would prefer to look them in the eye and say we made the effort, and we tried to make a difference. Perhaps it is purely animal instinct, to fight for our offspring to the end. So be it. Regardless of ultimate success, this is one of the keys to the puzzle. It is the right thing to do. By informing the common consumer of the externalities associated with their choices, there is at least the legitimate opportunity for them to do the right thing, as well. With this knowledge available, we will collectively choose the future we deserve.

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**Appendix**

SWOT Analysis

	Helpful	Harmful
Internal	<p><b>Strengths</b></p> <p>Honesty - not a guarantee of a saved world.                      Enables consumer through information.                      Universal interest as all consumers want to know better how they are spending their money.                      Timing: general understanding of human environmental impact always improving.                      Many examples of successful product labeling.                      Underpinning of governmental fidelity</p>	<p><b>Weaknesses</b></p> <p>Reliance upon communicating/transforming economic values/understanding.                      Complexity of calculus in determining environmental impact in individual product labels.                      Accuracy of labels and susceptibility of corruption. With loss of transparency comes loss of trust in system.                      Possibility of introducing guilt in consumer decisional</p>
External	<p><b>Opportunities</b></p> <p>Timing: impending market swing to sustainable solutions.                      New markets founded in labeling/GND.                      Marketing as “revolutionary business sustainer.”                      COVID19 crisis showing governmental/economic systems. Labeling integrated in systemic economic policy will ultimately avoid future suffering.                      People need hope/faith in governmental systems.</p>	<p><b>Threats</b></p> <p>American political polarity.                      Global economic and political elite/vested interests in status quo.</p>