

A Green Economy for New Jersey: A Proposal to the New New
Jersey Governor Phil Murphy



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Postscript: Going Wider and Deeper with the Green Economy

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Dear Governor Murphy, First Lady, Lieutenant Governor Oliver, Cabinet, & Sub-Cabinet Officials:

I'm an Adjunct Professor at Ramapo College of New Jersey teaching a course this spring called Ecology, Economics, & Ethics in the School of Social Science & Human Services. The course is really about Sustainability Economics, a good part of which analyzes green economy concepts. Anticipating Governor Murphy's tenure when planning this course, I included a final group course requirement for a "Paper on a Green Economy for New Jersey for the New Governor." We just finished it and I offer it to you here for your consideration.

I note the First Lady, Tammy Murphy, was recently quoted saying, "We must reject the false rhetoric that we can either have clean water and air OR jobs. We can and will grow our economy while protecting our environment!"

However, there are many ways, even beyond the conventional green jobs, renewable energy expansion, and RGGI re-entry initiatives you have mentioned or announced that are still untapped by which to do so.

The concepts chosen and the conclusions and recommendations made in this Paper are the students' choice, although as the instructor I provided guidance, background, and some sources. I think you will find that to a large degree, these are consistent with some of your early policy choices and direction. It does take things further, building on them in several ways, some of which are not that well known. However, as it comes out of a sustainability course, which recognizes and at times struggles with some difficult and long term societal issues, it cannot avoid also suggesting some ways to approach those as well. It is not, though, a Paper about New Jersey and sustainability, which could get into many other things. Still, sustainability and some of its deeper issues and implications are never far from the surface.

You will also see the students' work covers several important bases; may ease some of the perpetually wrenching "economics versus environmental" dilemmas with which Governors are often faced, by opening up some new possibilities and options (which is not to say all green economy issues are easy); and may surprise you at times.

If you or a member of the Cabinet wishes to contact them for a follow-up, that could be arranged.

Finally, as personally I've been on this topic for 40 years and written over a dozen articles, reports, and other documents on it, I will bow out now. However, as a small class cannot cover every green economy concept and idea, I have left extensive final thoughts, including how you could take this much further if you wish, as a Postscript in the second Appendix. The Paper before that, nearly in its entirety, is their work. However, even together, these certainly do not cover every green economy topic. But those mentioned would provide a good baseline upon which to build for any follow-up efforts by State Government to study, further develop, and implement an ever-increasing and possibly even full-blown green economy.

I hope you and your Cabinet find my class' Paper useful, perhaps even as soon as a resource for, or even topic of, the First Lady's June 21st keynote speech at the Sustainability Summit at TCNJ.

I wish great success for your tenure as Governor of New Jersey.

Regards,



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Executive Summary

The following Paper is a proposal created by six students under the guidance of their professor at Ramapo College as part of their spring, 2018 “Ecology, Economics, and Ethics” course. Throughout the course these students were exposed to various strategies for how to approach economics in an ecologically sustainable way. These students met with experts on different topics from sustainable business to conservative economics. Based on what was learned, we would like to share our thoughts on how New Jersey can become a leader in sustainable economics, focusing on the green economy concept. These suggestions came from weeks of brainstorming and research.

We, as a class, have chosen to write this Paper to present to our new governor, Governor Phil Murphy, in hopes that he will become aware of some possible new strategies that New Jersey could implement in order to continue to improve New Jersey’s economy, which are mostly in line with his stated principles, while doing right by our environment.

We conclude that New Jersey can resume its historic leadership with the green economy idea by taking it to new and possibly unprecedented levels, both in scope and depth. Recommendations are offered to support this conclusion. Finally, two Appendices provide summaries of historically related articles and reports, which contain potentially other ideas that could be tapped which could further extend that leadership; and then how to further deepen the green economy.

Introduction

New Jersey has long been known as an industrial state. When people from other states think of New Jersey, they sometimes picture large smokestacks spouting black clouds of smoke from whatever is being burned in our numerous factories and power plants. Given our reputation,

it would come as a surprise to many that New Jersey actually has some of the lowest emission rates from power plants in the country. “According to the U.S. Energy Information Administration (EIA) data, New Jersey’s sulfur dioxide (SO₂) emission rate is amongst the five lowest, nitrogen oxide (NO_x) emission rate among the three lowest, and carbon dioxide (CO₂) emission rate amongst the nine lowest among states in the nation” (NJDEP, 2015). Based on this, the argument could be made that in some ways New Jersey is already a green leader. In addition, as of July of 2016, New Jersey had the eighth largest economy of the fifty states, as measured by Gross Domestic Product (New Jersey Almanac, 2017).

We are a very successful state in many areas, especially in some environmental and economics areas. That being said, we still have many significant challenges. Plus, we now have the good news/bad news of new state recognition of the immensity of our climate change challenges, which are unlikely to be easily overcome and will very likely need some creative new approaches. To that end, we are proposing ways to create a green economy, which we recognize the Governor has already begun (Phil Murphy Democrat for Governor, 2017). We show ways to build on that. Because New Jersey had been a recognized leader in the past, we can resume that leadership role by focusing on a green economy at a state level. This could be a model for others, despite where the country is as a whole.

Given that the current federal administration under President Trump has pulled our country out of the Paris Agreement, our state government could do its share to continue the work that the former federal administration had started, to which the Governor recently committed (Warren, 2018). An expansive green economy would provide one new way to meet this commitment to be “Still In” the goals of the Paris Agreement, or perhaps do even better as these ideas have untapped potential.

The six students who wrote this Paper of proposals are environmental studies majors, with one accounting major. While we have all had environmental and sustainability courses, for most of us this was our first economics course. It focused on what the latter brings to the former, where they come together productively, and where economics seems less useful. It covered many topics and perspectives, including fairness issues, and we even attended a lecture and discussed the views of a visiting climate change contrarian economist.

We are diverse in our passions and have come together to create proposals that will both benefit our environment and economy, based on research on their interconnections. We think these ideas will help New Jersey's economy, both in the short run by, among other ways, pointing to environmentally-linked opportunities, and in the longer run by helping us protect the ecological capital which supports growth.

Our goal and hope is that these proposals are read with open minds and may possibly be used in the Governor's consideration of future environmental and economic policies and laws to keep our state truly the Garden State.

If that does prove to be the case, we would be delighted to hear it!

We start by describing what we mean by a green economy and green jobs, and the interrelationship between them, as these have been seen in different ways.

GREEN ECONOMY, GREEN JOBS, GREEN GROWTH

A Green Economy

One definition of a green economy, as defined by the United Nations Environmental Programme (UNEP), is an economy "that improves human well-being and social equity, while reducing environmental risks and ecological scarcities." Another, by the Green Economy Coalition, is "a resilient economy that provides a better quality of life for all within the

ecological limits of the planet.” There are many definitions and no standard one (United Nations Department of Economics and Social Affairs, n.d.).

A green economy is not a new concept. Globally, it has been around since 1989 when the term was first used in a report written by a group of environmental economists, entitled “Blueprint for a Green Economy” (United Nations Department of Economic and Social Affairs, n.d.).

It has been developed since then, particularly by UNEP, and received special attention both at the U.N. Climate Change Conference in Copenhagen, as a response by a number of governments to the financial crisis in 2008, and at the U.N. Conference on Sustainable Development Rio+20 in 2012.

It has been seen, among other things, as a “green stimulus” and “an ambitious...response to the multiple crises facing humanity...” (United Nations Department of Economic and Social Affairs, n.d.). Other ways of seeing it are explored in “Appendix II,” but these seem to be the main ones: green jobs, a relatively untapped and potentially useful way to address environmental challenges, and as a major means to sustainability.

Green Jobs

The typical types of jobs referred to as “green jobs” are solar and wind jobs, jobs that involve improving building efficiency, and perhaps recycling. A somewhat broader way to look at green jobs are any that involve protecting the environment and natural resources. This could include many jobs such as urban farmers, green building developers, and green design professionals. Appendix II offers a much more expanded view of the potential range and character of green jobs than perhaps any seen to date.

Green Growth

Yet another related term is green growth. There are several ways to look at this, as well. It can be contrasted with conventional economic growth, which in sustainability circles is sometimes criticized for, among other things, generating and not adequately caring about the immense externalities (i.e. pollution and inequities) it generates, and, fundamentally, is ultimately limited on a finite planet. This remains a point of contention, hence one of the benefits of green growth is its emphasis on what can still grow, such as the above-mentioned green jobs. Part of the sustainability field also emphasizes the term, “development,” although this also is not without controversy. This would emphasize the types of jobs (again) and lifestyle activities that are minimally polluting, such as the arts and community activities. A third theme, such as the one implicitly emphasized in this Paper, could be considered “decoupling,” or creative ways to continue to grow while severely stripping out the historically former-seen-as-inherent polluting property.

The summary of the “Developing and Implementing a Sustainable Growth Strategy for New Jersey” White Paper in Appendix I wrestles more with the “growth issue” and suggests a number of other ways to look at it.

The Relationship Between The Green Economy and Green Jobs

Given that these terms do not have universally accepted meanings, their relationship can be seen in different ways, too. This Paper offers the view of the former as containing more (and potentially much more) expanded versions of the latter than are customary (i.e. way beyond solar and wind), the direct and indirect policies to facilitate them, and some actions outside of both the government and business sectors.

KEY GREEN ECONOMY CONCEPTS

Of the many green economy concepts, these are the ones prioritized.

Carbon Tax

During the inauguration, the Governor spoke of the need for the state of New Jersey to rejoin RGGI, the Regional Greenhouse Gas Initiative, carbon trading program. This “cap-and-trade” program effectively acts to raise the price of emitting carbon over time. This is a major step towards reducing emissions and improving air quality in our communities. While it is a good idea to maintain this cap-and-trade program, a larger scale, more general tax on carbon leveled on emission causing agents, based on the amount of carbon emitted, would further reduce our use of fossil fuels. It is also fully consistent with reducing externalities, a basic point of Environmental Economics 101. This tax could be placed on gasoline and resources used to create power such as oil and natural and fracked gas. Depending on the price per ton agreed upon, this money could be used to support the green industry, help develop sustainable power-producing infrastructure, and/or be rebated back to lower and middle income residents. If the amount of permits sold to the power producers through RGGI is reduced in quantity over time, supply and demand dictate that the price would probably increase, and the push to green energy would quicken.

A tax would be unpopular but if we are serious about reducing emissions to the necessary levels, it may be necessary. The same is also true for one on excessive water use, a technique used in water scarce regions. One way that we can relieve the backlash from a carbon tax is by simultaneously decreasing income taxes. Most people would support paying less income tax. This support would help alleviate the opposition as carbon emissions become more expensive.

Pricing Nature

When people think of pricing nature, they tend to only think about pricing carbon through carbon taxes. This, however, is only one example of what needs to be done to price nature and

create market incentives for better decision-making. Pricing nature is about internalizing externalities. Pollution and waste are examples of negative externalities where the cost of the pollution is not assumed by the polluter, but instead by a third party. “The failure to internalize [negative] externalities in the selling price (of products) can be viewed as an indirect subsidy” (Cloete, 2013) because it creates a market distortion where the price of products are not reflective of their true cost. This market failure incentivizes the degradation of our natural capital because we are not accounting for it and it therefore provides artificially higher profits. We need to consider all of the services that ecosystems provide and put some sort of a price on them in order to make well informed decisions. People may argue that we will not be able to accurately price nature, but as Timperley (2016) points out: “Is it better to put an imperfect price on nature, or continue with economic models that currently regard the natural world and the services it provides as valueless?”

In New Jersey, we have valued our natural capital before and the findings showed “that New Jersey’s natural capital, both living and non-living, make a substantial contribution every year to New Jersey’s economy and quality of life” (NJDEP, 2007). Since this report is over ten years old, a new report should be conducted that includes costs from hidden subsidies, such as those that encourage rebuilding along vulnerable coastlines (Meyer, 2013). Updating New Jersey’s natural capital valuation will help improve policy decision-making by providing missing information that needs to be considered.

Green Design

Green Design encourages an early focus on thinking critically about the environmental and energy impacts of new and re-designed products at every stage of their life cycle, as well as the development of projects and buildings, at a point when minimizing them is most feasible. To

the degree impacts can be “designed-away” with better choices, you never have to worry about regulating or addressing them (McDonough & Braungart, 2002).

This under-utilized concept could greatly benefit the development of New Jersey business’ products, infrastructure and buildings in our future. How can we reduce the energy required to do this task? What materials should we use to reduce our footprint, toxicity, and facilitate future re-use? For buildings, it can mean choosing a shaded location so that energy consumption could be reduced. These are some of the questions which might be asked during the design stage.

If more companies practice green design, they will likely save money and help the state’s progress in meeting the Governor’s goal of moving towards 100% renewable energy (Phil Murphy Democrat for Governor, 2017).

Relatedly, as you may know, New Jersey has a trade association for green buildings, the New Jersey Green Building Council. Their website (see the “References” section) shows some of their accomplishments. One of these is membership growth. From 2002 to 2016 they gained over 1000 new members, which is great, but considering New Jersey’s population is almost 9 million people, there’s still room for improvement.

The other example on the website explains how they gave grant funding for professional work to two public schools in New Jersey. Once again, that’s fine work but still on a very small scale.

Another area that the Council could improve upon is doing more work in the central part of the state. Their north and south branches are more involved with green buildings than their central branch. This could possibly be due to where the members of the Council live, but the central region is heavily populated.

This Council does great work and truly understands the concept of green buildings. If the Governor could help put this area further on the map by promoting it to more people, it might result in accelerated growth of green buildings in all areas of the state.

Green design can be applied in the early stages of development probably in most sectors of the economy. If we could find additional ways to encourage its use, green design would allow us to reduce waste, reduce energy consumption, save water, and save money.

Carbon Sequestration

Due to climate change, carbon management is one of the most important issues affecting the planet right now, and while controversial, it may be necessary to develop and eventually implement carbon sequestration if carbon emission reductions prove to be insufficient. It is most commonly known as CCS, or Carbon Capture and Sequestration, and there are a number of ways to practice it, some of which may be more feasible and less risky than others.

One way is to pull carbon out of the atmosphere, transform it into a liquid material, and deposit the waste in underground reservoirs. The waste, no longer in the atmosphere, cannot add to global warming (assuming proper monitoring). This particular technique, called direct-air capture, has not taken off, in part because of its price. According to a 2011 report by the American Physical Society, “it would cost at least \$600 per ton of CO₂ removed from the air.” An alternative, capturing carbon at a power plant would be “roughly \$80 per ton” (American Physical Society, 2011). There are also other ways being developed or conceived which could prove more promising.

Although it will not, and should not be, the only system used to combat environmental damage, some form(s) of CCS could seriously complement direct emission reductions in the

Garden State, may very well be needed, and therefore should be part of the state's response to climate change.

Sustainable Business and the Triple Bottom Line

New Jersey has a program, the Sustainable Business Initiative (SBI) and Registry, developed and administered by the New Jersey Department of Environmental Protection (NJDEP) and the New Jersey Small Business Development Center (NJSBDC), which recognizes businesses for taking sustainable actions. This is important, but it's not enough. There should be a dedicated governmental office that helps businesses become more sustainable in multiple ways. New Jersey even used to have one, the Office of Sustainable Business (OSB), which supported sustainable business practices and helped address misconceptions about sustainability practices (New Jersey Interagency Sustainability Working Group, 2001). This new office could get advice from, partner with, or be modeled on the New Jersey Sustainable Business Council (NJSBC), a relatively new green trade association (NJSBC, 2017). Appendix II discusses the SBI in further detail.

Having a sustainable business does not just mean recycling, reducing waste, or energy efficiency. Such thinking is too narrow and we need innovative new thinking on how business looks at and practices sustainability. Much more is possible (see Appendix II).

A part of a sustainable business is about making it easy for customers, in turn, to be more sustainable through the use of their products. For example, products could be made to be repaired or to be collected at the end of their useful life in order to reuse parts. This can save businesses money because their resources would be reused, and even if they paid to take back their used products, it would likely be less than buying and creating new parts.

Also retail stores should stop using plastic bags, and food stores should discount expired products because the dates that gets marked on food does not mean it cannot be eaten after that date (until, of course, the food actually does risk becoming spoiled) (Nguyen-Okwu, 2016). But this would require state policies to prevent people from suing stores for selling expired, but still good products. These are just a very few of many examples of how re-thinking the ways we do business could make New Jersey's economy more sustainable.

A powerful concept in the sustainable business field, associated with John Elkington, is the Triple Bottom Line (TBL). Traditionally, businesses are one of the leading causes of unsustainability because, historically, the cheapest way to do something is the most unsustainable. But instead of just focusing on the traditional measure of profits, a sustainable business must also focus on people and the planet. For a business to be truly sustainable, it must earn profits in ways which are socially and environmentally responsible. This is the TBL framework being adopted by many businesses wishing to become more sustainable. For example, Seventh Generation, a company that makes cleaning products, has adopted this framework. Their cleaning products are environmentally sound, while effective at the same time. They use natural ingredients, which protect people and the environment, while maintaining a profit (Hendricks, 2016). With the Governor's support, the State could encourage more businesses to adopt the TBL framework. This would help make New Jersey a better and safer place.

Agriculture and Ecosystem Services

What many people are not aware of, including those within this sector, is agriculture can and needs to be more sustainable. It not only benefits everyone involved in the agricultural industry, but will also benefit the environment and those who eat their products. Conservation

will increase and with it so will the economy. Fewer valuable resources will be wasted and greenhouse gas emissions will decrease. By reducing the amount of resources used we can save money and at least sometimes increase crop yield, stimulating the economy.

With food shortages already a problem in some countries around the world, it is apparent that we must make a drastic change toward sustainability in agriculture. Seeing as we are the Garden State, New Jersey can lead the way in making this change. Protecting ecosystem services (already discussed in the “Pricing Nature” section) can help us make this change because they play an important role in agriculture, especially pollination, but they are often taken for granted or ignored. Ecosystem services are “the benefits that humans obtain from ecosystems...produced by interactions within the ecosystem.” They include provisioning, regulating, cultural services, and supporting services (Millennium Ecosystem Assessment, 2005, p. 3). Despite their importance, there are many ways that we are degrading our ecosystems in order to grow our food.

The agricultural sector is one of the most resource intensive sectors, accounting for 70 percent of all water use and 14-18 percent of greenhouse gas emissions (Nichols, 2016). With a growing number of mouths to feed, this level of resource consumption is not sustainable. Because farming is water-intensive, water conservation is important in order to improve its sustainability. Therefore, there is a need for precision agricultural techniques to prevent overdrafts from groundwater sources (Millennium Ecosystem Assessment, 2005). Another viable method of reducing water consumption, and thereby improving sustainability in agriculture, is hydroponics. Hydroponics is a promising method of farming that allows crops to be grown indoors and even vertically, reducing the land requirements for crops. It reduces the amount of

water required by recycling it as it irrigates crops. The energy requirement is one of the only concerns with this technique and can easily be compensated for with renewable forms of energy.

We are also degrading our ecosystems through fertilizer and pesticide usage and use of monocultures. Fertilizers contribute to nutrient loads and pesticides can be unhealthy, while monocultures prevent proper nutrient cycling. Monocultures also mean less genetic diversity and therefore less resilience to changes, such as those that may come from climate change.

Weißhuhn, Reckling, Stachow, and Wiggering (2017) show the advantages of using polycultures instead:

Perennial polycultures [provide ecosystem services such as] enhance[d] soil fertility, soil protection, climate regulation, pollination, pest and weed control, and landscape aesthetics...Additional positive factors provided by perennial polycultures [include] reduced costs for mineral fertilizer, pesticides, and soil tillage.

Polycultures can also increase crop resilience by increasing diversity.

Integrated pest management (IPM) is another technique that can make agriculture more sustainable by allowing for natural pest management, therefore reducing the amount of pesticides used. A study by Lindell, Eaton, Howard, Roels, and Shave (2018) found that “vertebrates consume numerous crop pests, a key ecosystem service, and that this consumption often reduces crop damage.”

Since the production of fertilizers and pesticides is fossil fuel-intensive, reducing their use not only reduces the amount of harmful chemicals used, but also reduces the amount of CO₂ emissions.

At the State Agricultural Convention, the Governor showed a commitment to New Jersey agriculture (Wolfe, 2018). Jersey Fresh is definitely a great program which facilitates peoples’

support of our local farmers, but it should be expanded for organically or somewhat similarly grown crops. There should be a new offering, maybe “Jersey Fresh Organics,” or “Sustainable,” which would allow people to also support local organic or even regeneratively-grown foods.

With the Governor’s continued support, New Jersey can be a pioneer in sustainable farming, using any or all of these approaches, and proving their benefits to the rest of the world.

United Nations Sustainable Development Goals

New Jersey has the ability to set yet another example to the world by working to achieve the Sustainable Development Goals posed by the United Nations (UNSDGs). The UNSDGs, also known as Global Goals, aim to end all forms of poverty. The Goals call for action by all countries to promote prosperity, while protecting the planet. It recognizes that eliminating poverty and building sustainable economic growth go hand-in-hand.

Some of the other Goals include zero hunger, quality education, sustainable cities and communities, decent work, and several others. The complete list of Goals are shown in the following image.

Figure 1



(Source: United Nations Development Program)

By following this framework, other states will be encouraged to also, and hopefully the UNSDGs could at some point be adopted at the federal level.

Improving Sustainability in Education

While the connection to a green economy is indirect, a recommendation in a 2001 State Government report said: “The State should consider incorporating sustainability as a standard component of the public education curriculum” (New Jersey Interagency Sustainability Working Group, 2001, p. 103). We concur. If we are really pushing for 100% renewable energy, and moving forward towards sustainability, students should learn about it at the middle and high school levels. This would give them opportunities to keep up with current events, as well as know about and potentially discover an interest in the field.

Sustainable Jersey does something similar to this (Sustainable Jersey, 2018). They’re a non-profit organization that, among other things, supports and gives incentives to schools that want to step into sustainability programs. For example, they host a two hour conference about the importance of composting. That’s just one of the things that they do. It would be great to see students learn more about sustainability and enjoy programs like Sustainable Jersey’s.

The above-State report said education should not simply teach environmental history, but also discuss the economy and personal responsibility. We need to teach the youth new ways to develop win/win situations. Students, teachers, and administrators should work towards understanding our energy usage.

Education on sustainability is important for future business leaders and state employees, as well. They would benefit from learning about sustainability at a young age because it can play a role in their future actions. Future shoppers can learn about the

environmental characteristics of products and services, which may perhaps guide them in their market choices towards greener companies. That would complement decisions companies make in that direction.

Ecological Modernization

Ecological Modernization is an overarching concept for the economy which has been discussed mostly in Europe for some years, but is largely unknown in our state. As Gibbs (1998) describes it, “Ecological modernisation specifically argues that economic development and ecological crisis can be reconciled to form a new model of development for capitalist economies.” Gibbs describes some of its tenets:

- (as discussed above in the “Sustainable Business” section) “...integrating environmental and economic policy can be both profitable for business and contribute to sustainable development”
- (citing Mol and Spaargaren, 1993) “...a central role (is) assigned to science and technology,” with (citing Gouldson and Murphy, 1997) increasing “use of new and clean technologies by individual firms”
- “..a major transformation...of the industrialization process in a direction that takes account of the need to maintain the sustenance base”
- (citing Mol, 1994) “The process of production and consumption can be restructured on ecological terms through the institutionalization of ecological aims”
- There is a “decoupling (of) economic development from the relevant resource inputs, resource use and emissions”
- Ecology is “economized” “by placing an economic value on nature...”
- Environmental policy goals are “integrated into other policy areas.”

So industrialization or “modernization” is maintained--and even moved forward and, in effect, defined in increasingly environmental ways, the very opposite of seeing them as in conflict. While Gibbs points out the field has its critics, one can see how the ecological modernization perspective offers a large scale potential guide to New Jersey’s integrated economic/environmental future. That brings up an interesting question for New Jersey: why couldn’t we try to incorporate this idea into our state?

Conclusions

In conclusion, New Jersey is actually in a good position to improve its growth and environment, simultaneously, by strongly considering and then implementing an expanded version of its already-announced sense of a green economy. We already have one of the best green economies in the United States, but need to do much, much better.

New Jersey should become the leading state in reducing carbon emissions, saving water, and pushing green energy sources, and can get there, and more, in part through pursuing a green economy. Over time, New Jersey can increase both the scope of a green economy, by increasing the number of business sectors participating in it; and the depth, by increasing the amount and dedication to green economy practices by these sectors.

Such a pursuit of green economy practices by business sectors would be complemented, both directly and indirectly, by certain public policies, including but not limited to K-12 education.

If the State of New Jersey pursues the integration of its economy and environment towards a green economy, we could set a framework for other states, perhaps eventually our country, and even other countries to replicate and build on our practices.

Recommendations

While this Paper is not primarily a Policy document, certain policies would complement the changing nature of this economic re-gearing. In some cases, the policy would directly enhance how businesses increasingly take the environment into consideration; in other cases the effects would be indirect or even long-term (such as when kids grow up).

A new report should be conducted to value New Jersey's natural capital since it has been over ten years since the original report the State did (see the "Sustainable Business and Triple Bottom Line" section-above). There are several ways the old report could be improved upon. One way would be to utilize the expanded knowledge and experience of valuing natural capital by seeing how other countries value their natural capital. Another way would be to consider the climatic effects New Jersey has already experienced, such as during Hurricane Sandy, and incorporate what has been learned from that. Additionally, an updated natural capital report could consider market distortions - besides externalities - such as the effects subsidies have on our environment through the distortions they create, such as subsidies affecting over-development at our shores. Of course, it is not enough to then just know these values; it has to be incorporated into governmental and market decision-making.

The way we currently get our food creates a lot of waste, including (but not limited to) the packaging of food, to the plastic bags we bring our food home in. One major way to reduce a part of the food waste problem would be through a new state policy to allow retail stores to sell expired foods that are still safe to eat. European countries have already taken the lead on this so the Governor's staff might consider looking into what they have done to see what can be transposed to New Jersey, and how mistakes could be avoided. Additionally, it would be useful to explore how legal issues could be minimized if stores do this (up until the point that the food actually has spoiled).

While looking abroad, the Governor's staff could also consider following the lead of European and other countries to institute a plastic bag ban. This would not be popular since it is inconvenient, which is why the push to use reusable bags at ShopRite stopped. To address packaging waste, the Governor could consider promoting package-free grocery stores or bulk sections in larger stores. Many people are unfamiliar with this concept of bringing and filling your own containers. It could help if educational advertising campaigns show how to bulk shop and where to find stores which offer it.

New Jersey should expand the Jersey Fresh Program to include a program for organic or regeneratively-grown foods.

The Governor should consider reopening the Office of Sustainable Business, or creating something similar in an existing office, in order to help guide businesses in New Jersey to be more sustainable in an increasing number of ways. The Governor's staff could ask the NJSBC for advice on what a governmental office to help businesses become more sustainable could look like and what it should do.

New Jersey has already proposed "the 'Fair Repair Act,' a bill that would require electronics manufacturers to sell replacement parts and tools to the general public and independent repair companies. It would also require them to make repair guides publicly available" (Koebler, 2017). It was introduced and referred to the Assembly Consumer Affairs Committee last June. Its passage should be accelerated.

The Appendix II section has many more recommendations, particularly if the idea of pursuing an even greener economy becomes attractive.

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Appendix I

Earlier New Jersey Green Economy Reports/Articles/Letters

There have been earlier reports on a green economy for New Jersey, although they didn't usually use that description. Readers might benefit from summaries from some of these, which are shown below.

Co-authors chose some excerpts from these in the body of this Paper, but these sources have more insights which could be studied and potentially utilized.

Strategic Thinking: New Jersey's Garden-Variety Environmentalism

This article explains how there should be a push towards green economic development. In other words, businesses should start to become greener and the article lists several ways they could do so. It talks about how some of the leading sustainable business speakers come to New Jersey, but there's not much gain from it. It also mentions how there are lectures at different colleges, but state environmental and economic people, and people from the U.S Environmental Protection Agency, don't show up for them.

New Jersey has a great opportunity to be the leading state for green economic development, with other states learning from us. But if we don't make that a priority, another state could take the opportunity, which would be a big loss for the state of New Jersey.

First Annual Survey of New Jersey Business Sustainability

This Survey, done over five years ago by Fairleigh Dickinson University's Institute for Sustainable Enterprise and PublicMind, provides us with a lot of great information and potential about sustainable business in New Jersey. One of the findings in this Survey is that over 50% of the businesses responded being at least somewhat engaged in sustainability practices. Just this finding alone is reassuring because over 300 business responded to the

survey. The biggest sustainability practice of these businesses is recycling which 92% practiced. That's pretty impressive but on the flip side it shouldn't be that hard for a business to recycle. Improving energy efficiency and supporting employees in participating in community volunteerism were the next highest rated sustainability practices. This was also a good finding because these are not well-known.

Renewable energy and green LEED certified buildings were less common. It seems that sustainable approaches that are older and more common tend to be widely used, while newer sustainability practices are less common and still getting integrated.

New Jersey businesses care about sustainability practices and realize that sustainability can bring cost savings. Larger companies generally see more integration of environmental practices than smaller companies, but they both generally have the same beliefs in sustainability.

The survey also contained questions about business motives for sustainability actions, which uncovered some surprises. The highest rated sustainability motives were the belief that sustainability is the right thing to do and cost savings. The former is a very important finding because it shows the attitude of some businesses in New Jersey. And when companies believed that practicing sustainability was the right thing to do, they oftentimes enacted greater numbers of actual sustainable changes.

It was also found that satisfying investors was a key motive for implementing sustainability practices.

Letter to Senator Smith: Business and a Proactive Approach to Addressing Climate Change

This was a letter sent from Matt Polsky to Senator Smith and some New Jersey business trade associations. It contained several links to websites that show businesses have supported

efforts to address climate change, including lobbying for legislation. Some of the articles explain the negative economic impacts of not addressing it. Other articles talk about the opportunities for business if they address climate change.

It asserts that businesses can be leaders in this area, both in New Jersey and the country.

Developing and Implementing a Sustainable Growth Strategy for New Jersey

This White Paper, also by the Institute for Sustainable Enterprise, uniquely promoted the idea of the state's economic sectors embracing CSR, or corporate social responsibility, as a major way to address both environmental and economic concerns. This is a key factor because society and businesses are intertwined and impact each other.

It wrestled with the difficult issue of whether economic growth can be maintained on a finite planet, reconciling it in these ways: (a) to have sustainable growth in New Jersey we need to ensure both environmental protection and a strong economy. Anything less will be false growth, leading to instability in the future; (b) the state of the economy in New Jersey is closely related to the health of the environment. A green economy can only happen if it focuses on protecting and restoring the environmental assets upon which the economy rests; (c) it is important to explore the synergies between the economy and the environment, instead of aiming for a balance; (d) you cannot have a successful business in a society which is falling apart. That is why it should be in a business' interest to help create the best society. Education, health care, equal opportunity, and safe working conditions are all aspects of a good society. So it would be in the best interest of business to support these because, among other things, it supplies them with a healthier, happier, and more educated workforce; (e) instead of needing more of everything, we need better. In order to support sustainable growth we need better housing, better transportation, better energy generation, smarter technologies, and smarter government--not

more; (f) it has been noted that our traditional way of economic growth was simply not working to give us historically “high levels” of it; (g) “growth in real wealth is not only possible but increasingly necessary;” and (h) a green economy will need to encompass potentially all New Jersey economic sectors.

So without resolving this perennial issue, it provides several ways to look at it.

It also pointed out a sustainable approach to businesses will be important for future consumers, and that while New Jersey (at that time) was considered to be the second best green economy behind California, we could be doing better.

On the different (but complementary) issues of government spending and regulation, it advised: New Jersey needs to “distinguish between wasteful spending and necessary investment;” and we need to change conversations from arguing for less or more regulation, to “about how to get the right kind of regulation,” respectively.

The conclusion of this White Paper (in an apparent pattern) is that New Jersey can be a leader in what it calls “Sustainable Growth,” both globally and in the United States.

Governing with the Future in Mind: Working Together to Enhance New Jersey’s Sustainability and Quality of Life

This 2001 Report, by several agencies of state government, had some interesting recommendations to improve our sustainability practices. New Jersey should increase programs that support sustainable practices for manufacturing businesses. Many businesses are not aware of innovative changes in sustainability, and therefore do not put as much effort into this area as they could. Business leaders should not be under the impression that sustainability is a risky investment, but rather an essential investment for their company and New Jersey business as a whole.

State owned buildings and facilities should establish a goal to reduce their energy consumption by 25% over the next eight years. This is important because when the state prioritizes reducing energy within its own establishments, businesses may follow. Also, when the State takes the initiative, society may also follow, expediting the process of state sustainability.

Another recommendation stated: “All State agencies should incorporate sustainability concepts into goal-based strategic plans.” As each agency has a different function, each should have their own particular set of plans that goes beyond a “one size fits all” model.

This Report summed up by saying that it is important not only to improve the present state of sustainability, but also look to empower future New Jersey residents to take more sustainable actions. Therefore, another recommendation is for future generations of New Jerseyans to learn sustainability. “The State should consider incorporating sustainability as a standard component of the public education curriculum.” As also stated in the above-“Education” section, education should not simply teach environmental history, but also discuss the economy as well as personal responsibility. We should aim to teach the youth new ways to look for win/win situations and act to make these possible.

Returning more directly to business, it also said: “The State should expand the funding capabilities of the (then-existing) Sustainable Development Loan Fund.” Newly formed businesses focused on sustainability would be better able to receive funding.

A Look at Sustainable Development in New Jersey: How Have We Done and What are the Opportunities--If We Want Them?

This retrospective article stated the overarching challenge of the 21st century is achieving sustainable development. In order to do so, people must be open to learning new things, and lose the “we don’t know what we don’t know” mindset. New Jersey’s past is filled with missed

opportunities to implement sustainability initiatives, although there certainly have been some successes.

One of the sustainability successes in New Jersey is 410 municipalities pursuing or achieving certification by Sustainable Jersey. There have been other successes like Dodge Foundation's support of Sustainable Jersey; the longevity of, and green buildings manuals produced by, the New Jersey Higher Education Partnership for Sustainability (NJHEPS), an association of colleges in the state interested in sustainability, and some of its members' new educational offerings.

Some of the state's sustainability failures include, the demise of the OSB within state government, and the termination of the New Jersey Sustainable State Institute at Rutgers University. Most efforts to alert legislators about sustainability measures have been ignored. Even the environmental community has not been interested in green economy ideas.

Appendix II

Professor's Postscript:

Going Wider & Deeper with the Green Economy

“Some men see things as they are, and ask why. I dream of things that never were, and ask why not.”

--Robert Kennedy

“We can seize opportunities to help this nation lead in green business...lead in what the future is going to be all about.”

--Senator Cory Booker, Fairleigh Dickinson University's Institute for Sustainable Enterprise's 10th Anniversary, April 7, 2016. Morristown, New Jersey

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Executive Summary of Appendix II

This second Appendix picks up on the Students' earlier proposal for a green economy for New Jersey, extends it, offering a vision of a unique, comprehensive, ever-deepening economy. It defines a green economy as much more than conventional green jobs. The degree of change proposed is substantial, many possibilities are offered, and the time frame is long. A lot of both opportunities and issues will come up, some of which are foreseeable. It becomes more than a proposal by exploring anticipated bigger picture issues and providing guidance on how to move through them.

A look at how others have seen a green economy and green growth shows a range of definitions. An important one, for example, links it to an ecologically-informed economy. The projections of conventional green jobs numbers have been methodologically problematic and criticized. So while green job creation remains an important reason, the principle purpose of a green economy is as a new, creative way to address serious environmental and, increasingly, social problems. Another is that as the possibility and desirability of long term conventional economic growth is controversial in the sustainability field, green growth may be the best and most viable societal response to the environmental and social conflicts, and resource shortages we will otherwise see. It therefore may be our best choice. In any event, the studies cited show, perhaps surprisingly, that conventional green jobs may not necessarily be the largest category of jobs in a green economy.

As there is no standard view of what a green economy is, one is created, which, as mentioned, is comprehensive. A big and unique part of it is the inclusion of sustainable business and CSR. Many aspects of sustainable business are not generally recognized. One is that it is a field in itself, with some significant accomplishments and goals, including companies taking

unprecedented and surprising actions. These include zero emission goals, going out of their way to hire refugees, CEOs resigning in protest from Presidential Advisory Boards, supporting controversial social choices on such issues as gay rights, gun control, refugees. Some companies are explicitly social or “Purpose”-driven, and others give evidence of actually caring about the environment, not one of the now-conventional motives often given for why companies take sustainable actions. There are even reasons now for companies to tackle a tough, but crucial issue such as biodiversity, which would not appear to lend itself to positive voluntary company actions. One of these is that some companies starting to recognize and quantify that their business success depends on ecosystem services.

So while unconventional, why not seek to take advantage of these developments, and see how much further potential there might be?

A good place to start are the four existing New Jersey sustainable business initiatives, which, while having some gaps, are seen as solid and improving, but without a compelling and powerful vision to guide them. If provided, these could be a solid foundation upon which to build a more ambitious green economy.

Another unique feature of Appendix II is the meta-issue of underlying and (sometimes) quiet attitudinal obstacles, called “Mindset Barriers,” to a green economy. There are a range of these observed over the decades, including the perennial issue of whether there is “too much regulation.” The latter, in particular, can make it difficult to even consider the possibilities of a green economy. Guidance is offered on the latter, including linking its treatment with spurring a green economy, using, in part, insights from some of the older studies summarized at the end of Appendix II.

The main conclusion is that the more ambitious the level of a green economy sought, the better. It could be described in a number of ways such as “A Green Economy on Steroids.” However expressed, it could become a major goal of economic policy in the state. It should grow to include nearly all sectors, and most companies within those sectors. Companies do not have to be even close to perfect, but they should be ever-improving. The overall approach is voluntary, but companies which do not choose to participate will in the long run risk competitive pressure from those who do, as well as shopper disfavor.

The main recommendation is for the Governor and key senior managers to accept as ambitious and comprehensive an approach to a green economy as they see as ultimately feasible—even beyond their time in Office. They should make clear that this is the direction of state economic policy. Most of the other 36 recommendations over the long run support this one. An early one is to add the NJBPU’s clean energy program initiatives, which were not included in this Appendix. Other sectors should be considered for focused attention in the near to medium-term, particularly agriculture. Sister agencies to NJDEP and NJBPU should support this direction from their end. The agencies involved should maintain a learning ethic, as with such a comprehensive approach, there is much going on, both in-state and outside our borders. There is much that can be learned that could enhance this initiative.

While still early, the greening of New Jersey’s economy could be a candidate for a legacy for a Governor to leave behind, and one with multiple benefits.

Introduction to Appendix II

The Paper up until now is largely the students’ work, with their selection of green economy concepts, conclusions, and recommendations. One aim of that is to bring greater

attention and consideration of green economy prospects to the Governor and key staff. This Appendix is the Professor's work.

This second Appendix extends the argument for a larger scale greening of New Jersey's economy. Its relationship to the preceding section is interrelated. It takes advantage of the foundation laid by the earlier work; and both supports and builds on it to take certain concepts deeper.

Appendix II goes beyond being just a proposal. It seeks what is being called "Transformational Change" in the European sense (Waddell, 2016), or large scale change comparing to current state economic greening—although plenty of guidance is provided for those more familiar and comfortable with much more incremental-level improvements. It assumes Transformational Change is possible in New Jersey. Such comprehensive change, if feasible, would be unique, and likely bring with it both a lot of potential, as well as many issues, some of which are fairly new. It tries to anticipate some of the issues which may come up, and gives some suggestions on how to deal with them.

It should be useful to more than very high level government decision-makers. If some level of extended, more ambitious greening of the economy is undertaken, administrators and staff assigned to it, their partners, and any other contributors or participants, will find ideas, lessons, choices, and many possibilities for direction of such a program. That includes both the near-term and much further into the future.

This Appendix extends the earlier discussion about a green economy and green jobs; it goes into much more detail about the accomplishments and potential of sustainable business and CSR, including addressing a couple of particularly difficult challenges: biodiversity and morality; describes a few concepts with substantial potential, such as farming; and explains four

existing state sustainable business programs. It has its own Conclusions and a very lengthy and extensive Recommendations section, apart from those in the Students' earlier section. Like it, it also summarizes some other earlier studies of a green economy in New Jersey, and some of their insights are extracted for use in the text. However, the sources used for this Appendix are included within the earlier "References" section; not here.

As part of its bigger picture view, it explores possible mindsets that have been obstacles in the past to consideration of more ambitious green economy ideas within government, business, non-profit, academic, media, and citizen circles (all of which the author has participated in). This Appendix calls for their questioning as a pre-requisite, or at least parallel step, in considering the other ideas.

It is based on 40 years of work on this issue, including as a graduate student, taking separate Masters' in atmospheres with very different perspectives and views, including about who the "enemy" was; teaching; reading; writing, including for two sustainable business journals; attending many hundred conferences and forums, including taking a final run over the past year at forums of three of the State's four relevant initiatives (hoping an opportunity such as this would emerge); 12 years as a Senior Fellow at Fairleigh Dickinson University's (FDU's) Institute of Sustainable Enterprise (ISE), including working with businesses; and NJDEP experience as the one-time Sustainability Team Leader. The latter included: being the departmental liaison to the then-Office of Sustainable Business at the then-New Jersey Department of Commerce, leading the Interagency Work Group on Sustainability assigned to implement one of then-Governor Whitman's Sustainability Executive Orders, co-chairing the NJDEP Sustainable Communities Work Group, staffing the government/business/environmentalist partnership, the "Green & Gold" Task Force, which aimed to develop common

ground on some issues then before the department, and co-running a seven-year sustainability seminar series.

This Appendix focuses on what doesn't usually come up, therefore as large as it is, it doesn't go much into areas somewhat further along reaching mainstream circles. See Table 1 for what is missing or de-emphasized. It also functions as a repository of ideas, and a large assembly of references, which exist nowhere else.

This Appendix is also for anyone who would like to take things further, whether they're around now or emerge in the future; whether they know they have this interest, or something emerges to alert them that they do. Perhaps the times ahead will find some value in it, whether during Governor Murphy's tenure or sometime afterwards.

What This Appendix Is Not

Appendix II does not discuss or provide much of the immediate-below (or, else, this 40-years-informed Appendix could turn into 50, 60 or--never get done). There is no implication that any of these areas are unimportant. Hopefully, this clarification will be useful for readers, but, ultimately, if anyone in State Government is charged with developing a comprehensive green economy initiative, they'll know some of the holes that could be plugged.

Table 1

What this Appendix Does Not Provide
<ul style="list-style-type: none"> • All reports ever done about New Jersey and the green economy, although, along with those in Appendix I, it summarizes most of them. The "Recommendations" in this section mentions a few more • Most motivations for businesses to take sustainability actions, as these are somewhat well known now, although it does discuss a possibly emerging one, an actual concern for the planet and society • Most of the types of actions businesses have taken (beyond regulatory requirements), although it does mention some of the more recent, path-breaking ones • All types of green jobs/sectors, although it does list quite a few in Table 2. Skill sets are not listed, although it could be anticipated in a greening economy, employees won't always be doing the same things they always have

- A full plan to implement a green economy in New Jersey, although it should substantially inform one that could be chartered. It does not get into some aspects of what could be in a plan, such as funding and staffing
- Any real focus on the conventional green jobs discussed earlier in the Paper, or any attention to the important work of the New Jersey Board of Public Utilities' (NJBPU's) Clean Energy Program, electric vehicles, charging stations, storage, smart grids, community or distributed energy or micro-grids. These are obviously extremely important, however most are either fairly well known or already getting some attention
- This section spends little time with other key sectors, such as services; environmental technologies or "environmental industries," usually for remediation or pollution control; non-renewable energy-oriented clean technologies; bio-based products; natural products and non-toxic alternatives; resiliency/adaptation; transportation including light rail; sustainable finance developments, including the more recent alternative currencies, socially responsible investing, impact investing, social impact bonds, green bonds, Property Assessed Clean Energy; greening of the water infrastructure and green infrastructure; recycled products/de-manufacturing/re-use/upcycling sub-sectors; software; appropriate technology; does not give enough attention to rural areas of the state; or any to more futuristic possibilities difficult but not necessarily impossible to imagine
- The focus is on ideas, without the "numbers" which may eventually be necessary
- Does not discuss much about how a green economy potentially connects with apparently (but not necessarily) un-related fields and challenges, such as in planning/development
- All sub-fields and branches of the sustainable business/CSR field and those fields similar to it, although it lists, but does not describe most of them (See Table 3). It does discuss a few of the key ones
- Ways to overcome "mindset" issues which are barriers to the consideration of green economy ideas, although it does provide ideas and suggests some guidance for how to approach the problem (whether actual or perceived) of "over-regulation" and/or "hostile regulators" which can prevent people from even "hearing" the potential of a green economy. It does identify several such mindsets
- Provide current information on the status of earlier-existing related initiatives in green jobs training, including at vocational schools; relevant internship programs; green economy information sources; jobs for the disabled; national and international green economy organizations, and the academic and United Nations literature on the green economy, although it mentions some of these
- Go into fairness as much as would be desirable, noting the green economy field has not yet developed that much in this emerging area beyond environmental justice, which to some degree is now a prominent part of many sustainability forums
- Provides limited discussion as to how other agencies of New Jersey State Government besides the ones to which this document is addressed could play useful roles in a green economy, although obviously they would need to. It does provide a start
- Is unlikely to provide much help in dealing with the current issue of siting of natural gas pipelines. However, in the medium-term, Loorbach, a leader of the European Transitions field, suggested in a similar situation in the northeast part of The Netherlands, an 8-10 "revolution toward "phasing out the use of natural gas in households..." utilizing efforts by both government and business as a way to reduce the need for it over time (Loorbach, 2014)
- While irrelevant to most readers, for future students of "Ecology, Economics, & Ethics,"

the ideas in this Paper and Appendix are not the full answers to all the dilemmas studied.

Certainly, if interest in an expanded green economy comes about, many of these gaps could be filled by the subsequently assigned government staff and/or through partnerships both with other agencies and those outside of government.

More on Greening: The Economy, Jobs, Growth: What Does it Tell us?

The Students' section discussed the Green Economy, Green Jobs, Green Growth and some of their connections. It also gave a couple of definitions of the former. As there is no standard way to look at this, it is worth exploring more deeply how others have seen these. We could use this to pull out some insights that could be useful for conceiving and developing a green economy in New Jersey—even if it doesn't tell us everything. It may also inform us about some pitfalls to try to avoid.

Lester Brown, an environmental giant (and Rutgers graduate), has some unique insights on the “shape of” the green economy, although he used his own term: “eco-economy:”

- “An economy is sustainable only if it respects the principles of ecology”
- “A sustainable economy respects the sustainable yield of the ecosystems on which it depends...”
- “The value of [ecosystem] services needs to be calculated and incorporated into market signals if they are to be protected...”
- “...relying on distorted market signals to guide investment decisions is a recipe for disaster”
- “...we have little choice but to systematically restructure the global economy...there is no precedent for transforming an economy...”

- “We will not succeed with a project here and project there...we do not have a strategy for the systematic economic change that will put the world on a development path that is environmentally sustainable.”
- “...shift taxes from income to environmentally destructive activities...”
- “Building an eco-economy will affect every facet of our lives...it will give us a world where we are a part of nature, instead of estranged from it”
- “...will contrast profoundly with the polluting...ultimately self-destructive economy of today...”
- “...as it shifts from the linear economic model...to the reuse/recycle model...closed loop system...” “yielding no waste...”
- “... [will be] bicycle- and pedestrian-friendly...”
- While “somewhat speculative...however it is not as open-ended as it might seem because...broad outlines are defined by the principles of ecology”
- “No sector of the global economy will be untouched...” (Brown, 2001).

Some of this we’ve seen in the Students’ report. We can see how different this economy would be compared to where we are now. Among other key points, our economics would be heavily influenced by ecological thinking. While there’s a lot we don’t know, Brown gives us some valuable guidelines.

Bowen (2012) gives us a few definitions and perspectives of green growth:

- “...steady increases in output without adverse environmental consequences”
- Citing the World Bank (2012), “...is efficient in its use of natural resources, clean in that it minimizes pollution and environmental impacts...” and is “inclusive”

- “...consistent with the development of the ‘weightless economy,’ in which a much higher proportion of economic activity is dependent on the generation of new ideas and a much lower fraction on the throughput of physical resources” (Note this one is different than the first definition.)
- “...green’ growth is likely to be the only sort of growth that is feasible in the very long run” (Bowen 2012).

Again we see there is not just one view about green growth or the economy, but, also again, we are offered some clear guidance, including a very important one...in the long-run, we don’t have much choice.

Finally, it might be useful for a somewhat bigger picture look at other green economy initiatives than is typical. This was done by Peters, Eathington, & Swenson (2011) who looked at a number of reports and green economy initiatives around the country, including some of their “numbers,” as well as methodological issues around defining them and their jobs impact. It brought out some factors not usually seen on this subject:

- Citing the U.S. Department of Commerce (2010), it offers one definition of green products or services: “those that conserve energy and other natural resources and those that reduce pollution.” One definition of green jobs used by the Bureau of Labor Statistics are those “in which workers’ duties involve making their establishment’s production process more environmentally friendly or use fewer natural resources”
- “Current green economy rhetoric implies that this transformation (to the green economy) is inevitable, linear, and reasonably predictable. In reality....will be influenced by both policy and market forces, which may work to thwart or delay expected changes”

- Studies of the number of projected green jobs have used different methodologies and are not easily comparable. They find the green jobs growth expectations of at least one study “overly optimistic,” and complain “there is little academic research...and very few peer-reviewed studies defining green jobs or the green economy...”
- It may not be a valid assumption that what this Proposal is calling conventional green jobs are the biggest source in the green economy. Citing one study by Global Insight (2008) using a somewhat expanded view, found “Renewable Power Generation” to be only 17% of them in 2006. In their definition, “Engineering, Legal, R&D, and Consulting” counted as green jobs, and made up almost 56% that year. Citing a study by The Pew Charitable Trusts (2009), found “Clean energy” and “Energy efficiency” together, with the latter including “white collar technical and management...” at 22%. Many more green jobs were in “Conservation and Pollution Mitigation.” Pew did have Clean Energy and Energy Efficiency growing faster than other “Clean Jobs,” but not nearly as fast as “Environmentally Friendly Production,” which grew 67% in its planning forecast (1998 to 2006)
- Other methodological and conceptual issues are that some “firms produce mixes of goods,” some of which are not necessarily “clean,” or may have “shades of green” (which one study tried to account for), and “not all of the green occupations are created equal.” This means that some “tend to have lower-than-average wages compared to the current all-occupation average.” This isn’t necessarily all bad news, especially for entry level employees (although the question of a subsequent career path remains). Citing the UNEP/ILO/IOE/ITUC (2008), the Green Jobs Initiative, a Labor-sponsored group, found “both positive and negative social and economic consequences.” As an example of, the

latter, the quality of green jobs in some sectors, such as biofuels (assuming you want to count that) “are evaluated less positively on the decency scale”

- It also looks like green jobs opportunities in rural areas will be less than in metropolitan areas, although studies of agriculture are “somewhat contradictory,” and with one exception (i.e. “small, organic heirloom crops farms...with great expansion potential”) did not appear to include the possibilities mentioned in the Students’ section on Agriculture or in Appendix III. Then there’s the biomass issue again, plus (at least in conventional agriculture) as farming gets more efficient over time, there can be less employment. On the other hand, while not a focus of this Appendix, there is the wind potential in some rural areas
- There’s also the possibilities of underestimation. Estimates and projections may miss indirect effects of green jobs (i.e. secondary job creation through them), “potential advances in technology...,” and possibly “the emergence of new occupations...” (although two studies tried to account for these). The O*NET Resource Center projects “45 new occupations are expected to emerge, either as completely new occupations or as offshoots of existing occupations.”

Looking at all of this, including these last three references summarized, what are some conclusions about green economies, how does this help us better understand it and its potential, and how to encourage and develop it?

- (1) No other states, or anyone else, are taking as comprehensive a view of a green economy, including CSR as part of it
- (2) Farming is not usually mentioned (although there have been some exceptions)
- (3) We’re not going to achieve substantial improvements to sustainability without it

- (4) It's largely missing from the relatively new attention in New Jersey to climate change, but we're not going to achieve ambitious carbon reductions without an expanded version of it (that is, beyond conventional green jobs, which does come up)
- (5) If the State of New Jersey does become interested again in serious, comprehensive pursuit of sustainability as a major policy goal, some of the measures to get there might be politically painful once the easier measures are taken. Greening of economy measures are usually not politically biting; so the more of these, the less unpopular measures may be necessary
- (6) Green economy initiatives are not automatic successes and green jobs will not always be panaceas. The "job creation" argument, while still valid, should probably be secondary even though this is not the typical way they are discussed. But job projections are too uncertain, extremely dependent on definitions and what is included in studies. Methodologies are not standardized, and depend a lot on continuing policy choices and their implementation (which can push them up). Methodologically, there should probably be a deduction for non-green jobs lost, although this is not usually done. Plus, conceptually in the long-run, if "all jobs will be green" as overall greening proceeds (see below), it will be increasingly questionable to separate them out from any other job growth. And in the medium-long-run, if green growth is the best, least painful way to preserve economic growth, it may be the only way to avoid a very difficult, painful ideological fight about "growth." Further, green jobs are not always going to be great jobs, although perhaps that was an unrealistic expectation during a past era when green jobs were getting a

lot of attention, and even non-great jobs can be important (albeit with caveats). A “number” for green jobs seems less and less meaningful

- (7) Certainly estimates of green jobs may be made, but the limitations of methodology understood and used more as guides for policy planning and evaluation, instead of taken literally. There are reasons to criticize some studies for being over-optimistic, or the overly easy solution to periods of major unemployment, but there are also reasons that actual jobs could be much higher than projected, too
- (8) All of the above studies’ views of a green economy were much less comprehensive than in this Appendix
- (9) So, the main argument for the green economy is as an unexpected, unlikely way to help us address severe environmental and social problems—although, all the other reasons for it remain valid.

Philosophically, what sectors belong in a green economy, how can this question be looked at, are there better and worse ways of belonging, and how could we build towards a description of the most ambitious, but not impossible goal? Here’s one interpretation that could be considered as guidelines and revised as future discussions ensue:

- Companies don’t have to be perfect practitioners of sustainable business, but they should be aware of their deficiencies, be thinking about how to improve, and then continue that improvement
- Certainly, the traditional clean and green products (renewable energy, EPA-certified green cleaners, electric vehicles powered by renewable energy) are the easy call, even if they, too, are not perfect

- While there is some likely limit to how far the greening of the economy could be extended in terms of sectors, actual expression of it conceivably could go all the way up to that limit
- To start the discussion, traditional environmental thought might say sectors which are over that limit—although arguments can be made to the contrary, are any fossil fuels, ethanol, resource recovery, nuclear power, GMOs. (Certainly we’re seeing more and more arguments that nuclear energy is needed to address climate change, including from some environmentalists, some of whom have also turned around on GMOs.) Toxic products, products which emit potentially harmful radiation, and plastics also deserve their own discussion, such as under what circumstances, if any, can they be considered still acceptable because they provide essential benefits and have no substitutes. Nanotechnology can be seen as sustainable (DiNapoli, n.d.), but not all will see it that way. This is not likely a complete list of arguably inherently unsustainable sectors. The social area would bring up more unsustainable candidate sectors, including whether there are ways to avoid that characterization
- Even those sectors deemed inherently “unsustainable” should be encouraged to take any environmentally and socially beneficial actions they could
- Somewhat similarly, for those sectors making products not thought inherently unsustainable, but with problems, perhaps the use of a toxic in a product which is increasingly suspected of being a carcinogen, or an endocrine-disruptor, it may be possible to make greener versions

- It could also be argued that even the more traditional environmental pollution control, clean-up and remediation, water filtration systems, lead and mold clean-up sectors could still be included in a larger green economy
- Perhaps we can say we should be open to having a “big green tent,” (thanks to Marty Rosen for that one) but not one that has to include every sector, or every company
- There are levels of it and gray areas. Some sectors seem more at home in a green economy than others even if the latter can stake a credible claim, particularly if they make improvements that reduce any objectionable element. Similarly, individual companies can be at various stages in their level of greening.

A tentative vision, putting together all these steps, is offered in the “Conclusions” section.

Types of Green Jobs/Sectors Besides Conventional Green Ones

There is no perfect list of green jobs/professions/sectors, and indeed it may be impossible to comprehensively list them, especially if and when more sectors/professions “green,” but here’s a placeholder for many that go beyond solar, wind, and improving energy efficiency (as important as they are). It can be anticipated that new types of jobs will be generated, as well.

Table 2

Expanded Green Jobs
<ul style="list-style-type: none"> ○ Green designers, green architects, green builders ○ Inventors ○ Retail (including supermarkets, appliance, furniture, hardware) ○ Journalists and writers ○ Eco and ag-tourism, travel planners ○ Plumbers ○ Electricians ○ Outdoor recreation guides, park rangers, gear and clothing manufacturers (fishing, hiking, canoeing, climbing, photography, skiing, etc.)

- Health care
- Landscape designer, supply, maintenance
- Arborists and foresters
- Consultants
- Engineers
- Scientists
- Toxicologists
- Green Chemists
- Fish farmers, Aquatic ecologists, Marine veterinarians
- Agronomists
- Geothermal geologists
- Watershed hydrologists
- Mediators and facilitators
- Sustainable farmers
- Horticulturalists
- Social scientists
- Ecosystem restoration
- Environmental technicians
- Compliance officer
- Industrial hygienists
- Diplomats
- Clergy
- Educators
- Communicators, including social media
- Photographers
- Artists
- Politicians
- Lawyers
- Judges
- Hospitality
- Transportation planners
- Environmental planners
- Fashion
- Bicycle manufacturers, mechanics (and their electric cousins)
- Software
- More efficient and less toxic versions of traditional products, natural products
- Ecologically-informed economists
- Geologists
- Sustainability-informed finance professionals
- Corporate Sustainability Officers (CSOs)

More on Sustainable Business (or CSR)

Sustainable business was discussed earlier in the document by the students as a key focus area. Here we go much further as, to a significant degree, it can be seen as one of the most important, if overlooked, parts of an expanded green economy.

It may not be commonly understood that, as mentioned in the “Mindsets” section below, sustainable business is a field. It’s a field which continues to evolve, with companies taking more types of actions, some of which can be surprising and a few even startling. It deserves to be recognized and its greater potential discussed, even with the appropriate respect for often-noted concerns and reactions. These include: (a) naivety, (b) “it’s all greenwash,” (c) “Let’s see them prove it” skepticism, (d) “No, it’s simply impossible,” (e) “No, they’re the very problem,” (f) “They might want to but their shareholders (or the marketplace) would never allow it,” (g) “But their motivations aren’t right,” (h) “There’s no economic theory to support it,” to (i) obvious inconsistencies with their other actions (with “their” being other companies, or even those same companies making claims for, or even doing, good things).

One major way to address some of these is to note the actual evidence for it keeps increasing, even if the presence of these efforts are mostly confined to certain journals and conferences in the field. When “corporate responsibility” does make the mainstream press, it’s usually its flip-side, or the “irresponsibility” of some, that gets the attention. And that reinforces existing beliefs.

If we’re going to even tentatively consider the positive side, typically that’s done by emphasizing the low hanging fruit, the easy parts, which is still what businesspeople are generally hearing. However, if we’re prepared to look beyond more efficient light bulbs and sealing window leaks (not that these aren’t important), we might see some surprises. We’re seeing corporate commitments and/or actions to:

- Zero emission goals
- Buy green power (e.g. Google and Apple) (Plumer, 2018 and see the “Recommendations” section)

- The TBL framework (as described earlier in the Students' section)
- Aligning their goals with the UNSDGs (also see the Students' section)
- Sharing their trade secrets with competitors as a way to accelerate joint knowledge-creation to solve a tough environmental problem (e.g. Patagonia and environmentally damaging wet suits)
- Pressuring their suppliers to improve their whole chain's performance (e.g. Walmart)
- Educating customers while also improving a supply chain to only purchase and sell sustainable seafood (Ocean Currents, 2012)
- Self-imposing a carbon tax to get ready for the future (e.g. Disney) (Gunther, 2013)
- Protesting immigration sweeps (Tom Cat Bakery) (Rao, 2017)
- Hiring refugees and taking flack for it (Chobani) (Gelles, 2016)
- Coming out against unnecessary consumption of their own product (Patagonia again, in a full page New York Times advertisement, which still puzzles as it seems to go against basic business logic)
- Aiming for Net Positive, which means "a promise by business to put more into society than [it] takes out," a "handprint" over a "footprint." For example, Dell "announced its aim to make its overall positive impacts 10 times greater than its negative impacts by 2020" (Wheeland, 2016)
- Giving retail store employees off on Black Friday (REI) (Egan, 2017)
- Collecting ocean litter (a huge and increasing problem) and using it in their product (Interface) (Elks, 2013)

- Besides the somewhat common job title, Corporate Sustainability Officer (CSO), we're starting to see new roles within companies: Activism Manager, Design Ethicist & Product Philosopher, Chief Manifesto Officer
- In these political times, despite perhaps not necessarily wanting to (or even knowing exactly how), some are reacting to expectations from customers, employees, or even coming from the CEO himself/herself, and taking pro-sustainability public policy stands on issues like climate change (See summary of the "Letter to Senator Smith" in Appendix I), gun control, gay marriage, transgenderism, civility, racism, dropping out of Presidential Advisory Boards, very visibly protesting removal of protected status from public lands (Patagonia, yet again, saying on their website: "The President Stole Your Land.") (Taylor, 2017). These are risky steps to take and they can get it from both ends (e.g. Starbucks and racism) (Sorkin, 2018).

The Table discussed in Polsky (2015) in the "Morality" section below has many more surprising examples. A new online newsletter, "Brands Taking Stands," tracks this kind of thing (Howell, 2018).

Further, some of these corporate actions are not necessarily in areas that are close to their core business, breaking yet another rule.

Things have even proceeded so far in the gun control area with banks like Citigroup and Bank of America restricting financial services such as credit cards and loans to "gun makers that do not comply with age limits and background checks...sell high-capacity magazines and 'bump stocks'...", "...selling to people younger than 21...", or selling "AR-15-style rifles," that some

Congressmen are threatening action against their “social activism.” They are pressuring financial regulators and threatening legislation (Rappeport, 2018).

Looking at the possibilities another way, Table 3 shows a range of exiting concepts similar or related to, or sub-fields within, sustainable business and CSR that show the scope of still-outside-the-mainstream interest in this area. A few of the concepts included probably would be outside this paradigm, such as the coop-oriented Mondragon Model (Mondragon’s Corporate Model, n.d.), but are included to show an even greater sense of the available alternatives. (The late Prime Minister of The United Kingdom, Margaret Thatcher, made the famous statement: “There is no alternative,” or “TINA.” There actually are many.) Even those concepts outside the CSR paradigm could conceivably lend a compatible insight to an evolving CSR field.

Table 3

Concepts Similar to Sustainable Business/CSR or Other Alternatives to Business-as-Usual
○ Natural capitalism
○ Compassionate capitalism
○ Conscious capitalism
○ Inclusive capitalism
○ Circular economy
○ Values- or Purpose-driven companies
○ Social business
○ Shared value
○ Business-for-good
○ Business as an Agent of Positive Benefit
○ B Corps or Benefit companies
○ Regenerative economics
○ Fair trade (already practiced in Montclair)
○ Coops including the Mondragon Model
○ Transition Towns
○ Sharing economy
○ Local living economy
○ Gandhian economics
○ Humanistic economics
○ Bottom-of-the-Pyramid
○ Eco-economy
○ Social enterprise/innovation

A few of these are discussed immediately below and a few come up in the “Recommendations” section.

B Corps

B Corps are a form of business organization for companies that seek to “redefine success in business...using business as a force for good” (B Corp, n.d.-a), “...to use the power of markets to solve social and environmental problems” (B Corp, n.d.-b). Their “Declaration of Interdependence” states they are: “...purpose-driven and create benefit for all stakeholders, not just shareholders,” and that companies “act with the understanding that we are each dependent upon another and thus responsible for each other and future generations” (B Corp, n.d.-c).

B Corps are “for-profit companies certified by the nonprofit B Lab to meet rigorous standards of social and environmental performance, accountability, and transparency” (B Corp, n.d.-a). They state: “...one day all companies will compete to be best for the world...” (B Corp, n.d.-b).

There are currently nine B Corp-certified companies in New Jersey: Helpsy, Jetty, The Soulful Project, goodDog, AeroFarms, The National Society of Leadership and Success, Common Interests, Natural Systems Utilities, and Herbalist & Alchemist (B Corp, n.d.-d). One of them, Jetty, which offers surf clothing, says on its B Corp page: “It was created on a shared love of surf, art, travel, skate, and music.” Then it adds the mysterious line—interpretable in multiple ways: “Jetty wanted to draw their own line—and it’s a good thing, too, because coming from New Jersey, there was certainly no line to follow” (B Corp, n.d.-e).

7 Fronts of Mount Sustainability Framework

This is a framework developed by the sustainable pioneer, Interface Corp., a manufacturer of carpets, to describe their journey from the earliest, easiest sustainability steps,

towards the more difficult ones they know they will have to face. At the summit, is Mount Sustainability.

Their “easiest” front is “Eliminating Waste.” Their second “easiest” is “Zero Problem Emissions.” Their final front goes “beyond the wall of the factory,” to “inspire change in [both] customer behavior and changing business culture more broadly,” and is called “Redesign Commerce” (The 7 Fronts of Mount Sustainability, 2015). The latter was one reason their late CEO, Ray Anderson, was on the speaking circuit so much (he spoke twice in New Jersey, and one of his senior managers met with former NJDEP Commissioner Bob Shinn to talk about the importance of pursuing sustainability and how Anderson was re-orienting his company to try to do that. Anderson also took advice from some leading environmentalists, and co-chaired the multi-sector President’s Council on Sustainable Development, under President Clinton, which developed many recommendations for national sustainability policy.

Biodiversity

Turning to biodiversity, how could sustainable business possibly be a positive force for a tough nut like that? It might seem that there couldn’t be any connections upon which to make a positive business case for voluntary corporate protection of biodiversity. Sustainability originally gained entry into business in large part through paradigm-friendly ideas like eco-efficiency, or making your product with less waste. Money could be saved, a very non-threatening idea. While other arguments have been added to this one, most are still consistent, albeit expanding, on the “It’s-just-better-business” motive (e.g. good reputation, avoiding fines, better employee morale).

But how could saving critters, bugs, and plants possibly qualify as “better business?” What’s the connection and where’s the pay-off? It’s worth exploring as the endangered species

crisis, while not well known, is one of the most serious environmental issues we have, and therefore deserves special attention in a New Jersey green economy initiative.

There actually are a number of positive business: biodiversity connections. Most are discussed immediately below.

Earlier in this document in the “Pricing Nature” section, there was discussion of natural capital assessment of the state’s economy, with a call for an update and expansion. However, natural capital can be looked at from the perspective of a firm, as well, and some companies have started to look at their dependence on ecosystems (Waage, 2013). One that did, Puma Sneakers, found that factoring in the damage they had been causing, and placing a value on that, they really were losing money (Zeitz, 2011).

Another approach is the work of the Wildlife Habitat Council (WHC), which teaches and advises corporate landowners on how to improve it for purposes of conserving biodiversity. They even have a certification program for it (WHC, n.d.-a). WHC, which has a large corporate membership base, has identified a number of “common business needs that can be supported by conservation,” including some that “can contribute to business management targets with positive bottom line outcomes.” The latter includes employee engagement, government relations, and what it calls “nature-based solutions” (WHC, n.d.-b).

However even well-intentioned corporate efforts can benefit from knowing ecological relationships. Google suffered a loss to an otherwise good reputation as a corporate neighbor by allowing its employees to express their love of feral cats on its property by setting up feeding stations—at the expense of burrowing owls. The overall program was supposed to stop the cats from hunting, but did not (Steitfeld, 2018).

There is an early ecosystems market sub-field, called Payments for Ecosystem Services. The principle is “those who benefit from healthy natural environments pay those who own or control those environments to provide particular ecosystem services, like clean water, biodiversity habitat, or carbon sequestration” (Forest Trends, n.d.).

Forest Trends states: “Our research...shows that innovative financial approaches based on markets, payments, and investments...can...deliver significant conservation results.” Also, they “hope [their] work will inspire others to support pioneering conservation finance as one of many ways to turn environmental degradation into environmental stewardship.” One of the results of their work can be to help “policy makers...create more enabling environments.”

Forest Trends, working with a UCLA Law Professor, James Salzman, found that “about \$36 billion are exchanged for activities that provide or ensure ecosystem services, such as carbon capture, water filtration, and biodiversity conservation” (Thiel, 2018).

In the area of international affairs, the Treaty, the Convention on Biological Diversity (CBD), has developed the “Business and Biodiversity Pledge,” which companies can take. According to the CBD, “the pledge provides an opportunity for business leaders to call attention to the importance of biodiversity and ecosystem services for businesses and to reaffirm their commitment to take positive action in support of biodiversity” (CBD, n.d.).

Sections of the actual Pledge are unusually bold:

- We, the undersigned business leaders...are joining together to emphasize the importance to businesses of biodiversity and the ecosystem services it provides, the key role that businesses can play in conservation and sustainable use...and the urgency of addressing global biodiversity loss and ecosystem degradation
- Businesses have an important contribution to make in the...three objectives of the CBD: the conservation of biodiversity, its sustainable use, and the fair and equitable sharing of benefits from genetic resources
- Taking actions...can generate tangible benefits to businesses, including a more reliable supply of materials and products, cost savings and protection against natural disasters

- Part of the “Call for Action” includes: “Acting as ambassadors for responsible stewardship of biodiversity, focusing on the economic opportunities and solutions, and helping to strengthen and disseminate the business case for better integration of biodiversity considerations into decision-making by businesses (CBD, 2016).

Finally, there’s the idea of biomimicry, mentioned above, developed by Rutgers University graduate Janine Benyus, of using nature as either a literal physical, metaphorical, or inspirational guide by which to design products. The Biomimicry Institute defines it as “an approach to innovation that seeks sustainable solutions to human challenges by emulating nature’s time-tested patterns and strategies.” It expresses the “core idea” that “nature has already solved many of the problems we are grappling with” (The Biomimicry Institute, n.d.). The idea is that “as there’s no waste in nature,” why not learn from it?

Morality: Is a Corporate Conscience Even Possible?

What about morality and the above-charge that even if companies do the right thing, it’s not for the right reasons? Besides, it is thought morality is either irrelevant in an amoral or worse marketplace, counter-productive for companies to show when their competitors won’t, impossible, or even ridiculous to contemplate?

FDU ISE’s “First Annual Survey of New Jersey Business Sustainability,” summarized in Appendix I, found, surprisingly, that “believing that it is the right thing for the world was by far the investment motive most related to implementing sustainability practices.” Relatedly, the fourth most important “enabling organizational condition that most strongly explained the extent of sustainability practices were” “deeply-held company sustainability values.”

One of that study’s recommendations, which were presented by one of its co-authors to the audience at an SBI meeting, was “Don’t be afraid to go beyond just the narrow financial ‘business case’ in discussions about sustainability.” (Usually, that’s all that is done.) Another of

its finding was: “Values for community benefit also seem to matter a great deal to New Jersey business leaders.”

While the data in this Survey were self-reported, it seems silly to ignore this unexpected gift or not test it out.

Polsky and Aravkar (2013), picking up on this Survey, discussing messaging to business, quoted from it: “Not everything has to be couched in terms of ‘cost savings.’” It also quoted FDU ISE Executive Director Joel Harmon: “The fact that the business leaders we surveyed seemed to be investing in sustainability as much because it was the right thing to do as for pragmatic reasons was a little surprising but very gratifying to those who see the potential for business to strengthen society while helping the bottom line.”

Polsky and Aravkar suggest “...we might ask ourselves, how could the business version of ‘having a heart’ help New Jersey companies and the state’s economy in general take big steps towards forging a Green Economy?”

Further, Polsky (2015) wrote a three-part series exploring whether a corporate conscience is emerging, however “ridiculous” or “naïve” that may seem. He cited many points of evidence for it, including a Table in its own Appendix (I guess the author likes Appendices) in the first of the three parts that lists many surprising actions businesses have taken, in a large range of areas that do not appear to have an obvious or compelling traditional profitability motive.

Focusing on the less developed social areas here, there were commitments or actions involving: (a) inequality (as examples, the Aetna CEO, “after reading” about inequity, “gave his lowest paid employees a 33% raise,” and a Bon Appetite executive did something similar for pickers because “having a food system that keeps prices artificially low by enslaving workers in not acceptable...” (b) peace-building; (c) animal rights; (d) worker, migrant worker, human

rights, and child labor; (d) free speech; (e) gay rights; (f) sick leave; (g) disaster assistance; (h) occupational safety; (i) homeliness; (j) race relations; (k) veterans' health and jobs; (l) intellectual property; and (m) health.

For more details, see the Table called "Beyond the Business Case Mainstream Company Actions," including the environmental ones. There is no assurance, of course, that all of these commitments were kept without incident, that a profitability motive was completely lacking, or that any of the companies making them are perfect.

Polsky speculates in this series: is something happening here that we're missing?

Since this article was written, we have seen more of these unexpected initiatives, such as some of the actions mentioned at the start of this section, particularly the political ones.

Is it time to add morality to the other, accumulating arguments for companies to embrace more sustainability actions?

New Jersey's Four Existing Sustainable Business Initiatives

New Jersey actually has four sustainable business initiatives, three run by the State and one by a non-profit, with a State partner. What do they do and how can they fit into a green economy?

This section draws both from these initiatives' websites, and years of attendance at their meetings, including the making of a final run in the past year at three of them (in October in Hackensack and in February in Parsippany for SBI, in November in Hamilton for WasteWise, and in September, a webinar for Local Economies) done principally in case an opportunity like this one emerged to write about them. The author of Appendix II has made frequent oral and written suggestions at each over the years, and actually helped start two of them years ago. NJDEP's and New Jersey Small Business Development Center's SBI and Registry

The SBI was briefly mentioned in the earlier Students' work. This is the major initiative in the state. Its "vision is to raise awareness, educate, and motivate companies to pursue sustainability as a competitive business strategy and a shared community responsibility and account for its performance in terms of the TBL." One of its goals is "...to enhance economic success, environmental protection, and an improved quality of life" (NJSBDC, n.d.-a).

It provides speakers at its forums for stakeholders, has developed a Sustainable Business Registry (see below), now managed by the New Jersey Small Business Development Center (NJSBDC), and lists resources for businesses on its website.

To be eligible for the State's Registry, applicants must: (a) take five or more sustainability actions, (b) provide a measurement of the results of one of these, (c) show the economic savings from one (NJSBDC, n.d.-a); and (d) every other year add one additional sustainability practice, and one show one additional measurable result (NJSBDC, n.d.-b).

Actions could include:

- Establish annual environmental goals, or even "Aspirational" goals
- Participate in another certification program, such as (and it lists these): Environmental Stewardship (see below), the Clean Marina Program, LEED Green Building; or in the Garden State Green Hotels Project, or Greening Meadowlands Restaurants activities
- Environmental Restoration
- "Adopt a cause or project in the community" (NJSBDC, n.d.-b).

The NJSBDC, in turn, allows successful Registry applicants to: "use the NJSBDC logo" on their own website, be listed on NJSBDC's website with a "promotional profile," use a "Sustainable Business Seal which can be displayed" at the company's site (Smarth, n.d.).

The NJSBCD also provides free consulting to small business on sustainability practices (NJSBDC, n.d.-a).

The Registry has contributed to the environmental performance of member companies. For instance, according to their website, in total, companies have saved over 12 million gallons of water, and reduced their waste by almost 17 million pounds, and saved over \$6M (NJSBDC, 2017).

NJDEP SBI staff said in Hackensack, and Management confirmed at WasteWise in Hamilton, that the SBI has now “fulfilled its mission.” It has “reached its objectives to develop the Registry and do seminars.” They did not appear to hold the institutional memory that in this initiative’s early days, it was contemplated (if never implemented) to offer businesses regulatory incentives in return for substantial beyond-compliance goal-setting by them.

NJDEP’s Environmental Stewardship Initiative

Unlike the other three, NJDEP’s Environmental Stewardship initiative has not been visited for a while. FDU ISE did give the former Manager of this initiative a “Leadership” Award several years ago.

This initiative sees stewardship as “business voluntarily go[ing] beyond the minimum regulatory requirements...resulting in a positive benefit to the environment.”

The “positive benefits” it sees for companies include “saving costs and adding value, potentially reducing...regulatory responsibilities, improving environmental performance and reducing liability, and providing...a competitive advantage...”

It defines 21 categories of Stewardship for which businesses can select, including water use reduction, renewable energy use, carbon footprint, environmental enhancements (such as “wildlife habitat restoration, rain gardens, invasive weed control, or use of native species”), and

an innovative program “not recognized under other stewardship activities, such as being a member of a state sponsored voluntary program...” (NJDEP Compliance & Enforcement, n.d.-a).

It works through the normal enforcement mechanism of NJDEP inspectors visiting the company, discussing this atypical subject, and “observing [the] improvements” (NJDEP Compliance & Enforcement, n.d.-b).

Companies that satisfactorily show evidence of meeting one or more of these categories “receive a letter of recognition and certificate” lasting for one year (NJDEP Compliance & Enforcement, n.d.-c).

One way the department describes this program is as “an opportunity to be ‘caught’ doing something good and to be acknowledged for it” (NJDEP Compliance & Enforcement, n.d.-d).

According to NJDEP, “currently there are 1,505 sites that have received Stewardship recognition from the NJDEP” (Walker, 2018).

WasteWise

The New Jersey WasteWise Business Network, managed by NJDEP, offers forums at which speakers “help businesses and other organizations learn how waste reduction, recycling, and recycled product procurement not only help the environment, but also their bottom line.” In practice though, speakers sometimes do talk about ambitious sustainable business topics. (See below.) Their website also provides lists of resources (NJDEP, n.d.).

Sustainable Jersey’s Local Economies Activities

As municipalities pursue sustainability certification, there are actually two relevant sets of activities for businesses within those towns among SJ’s available actions. These are under the

Local Economies category: the Green Business Recognition Program and Green Jobs/Economic Development.

SJ updated the former in February, and seem to be giving more flexibility to applicants on criteria and on what must be provided, increasing their options, while promoting the use of criteria based on what is in the Sustainable Business Registry program (Sustainable Jersey, n.d.-a). To that end, they provide 10 points for the regular Green Business program, or 20 if the municipality uses criteria for business participation which borrows from the Registry, “and includes participation in the... [Registry]” (Sustainable Jersey, n.d.-b).

Some of the criteria applicants may choose from are interesting. They include: (a) “pay a living wage,” (b) “Allow employees on-the-clock participation in community service,” (c) “Compost food scraps and yard waste,” (d) “Recycle grey water, (e) “produce or sell environmentally friendly items” (Sustainable Jersey, n.d.-a).

According to their webinar, SJ will give 20 points instead of 10 for involvement in “sector-specific projects like ‘River-Friendly’ Certification.”

The website also provides resources and summaries of other municipalities’ programs in New Jersey and a few out-of-state (Sustainable Jersey, n.d.-a)

The Green Jobs/Economic Development initiative requires municipal applicants to “Submit a Green Economic Development Plan.” Applicants have to show a “meaningful initiative that drives investment in sustainable economic activities, stimulates demand for green labor, and/or provides green workforce training.” The definition of a green economy used is broader than just renewable energy jobs, but not as broad as in this Paper, saying “general economic development activities that do not specifically target the Green Sector will not count.”

It provides suggestions on how to go about doing the Plan, and some components of it, including bolder-than-usual ideas like: (a) “Use high-profile green business demonstration projects to raise the Municipality’s ‘Green profile,” and (b) “establish financial support for green businesses through tax incentives, abatements, rebates, reduced fees, or streamlined permitting,” in return for “requiring a minimum rate of local resident employment as part of green business incentives” (Sustainable Jersey, n.d.-b).

An accepted initiative gets the municipal applicant 10 points towards certification.

Currently 27 Municipalities in New Jersey are doing Green Business Recognition activities, and 4 are doing Green Jobs/Economic Development activities (Solomon, 2018)

Assessment of the New Jersey Sustainable Business Programs

All of the sustainable business programs in New Jersey are worthy, and have shown improvement over time. Although not that well known, attendance has grown at most of their events over the years. The environmental and academic communities, though, have almost never attended.

However, certain important themes rarely or infrequently come up:

- The urgency of some environmental issues and potential crises
- Acknowledgement and making use of the existence of a sustainable business field, which, as noted earlier, shows many new ways some businesses are showing their environmental and social responsibilities
- The need (and precedents) for taking more than small, incremental steps, including by small businesses
- Going beyond cost savings as the main motive
- Green design and biomimicry

- Politics, rarely policy, and, with some exceptions, not climate change
- The worth of taking sustainability actions that are not quantifiable
- And while Sustainable Jersey is taking an admirable step (elsewhere in its Program) to explore and develop Gold-level Certification for Municipalities, by requiring applicants to take unusually bold solid waste or energy measures, it is not also doing the same for its Local Economies set of activities.

There were a few exceptions when bold points did come up: (a) at the WasteWise forum, the Executive Director of the New Jersey Green Association expressed an unusual paradigm—for a business conference (as opposed to an environmental studies class), that “The Earth is alive...and hurting,” actually implying urgency, a speaker from Campbell’s Soup showed a video that discussed the “Need to change the food system,” implying big change, and a third speaker discussed a goal of some companies of “Zero Waste,” something that, at one time, would have been considered ridiculous; and (b) at the last two SBI forums, one speaker discussed her company CEO’s environmental ethic and how that drove the companies’ environmental product lines and activities, and another speaker (a Ramapo College graduate) spoke about basically shaking up his entire sector (hospitals), including by, among other things, questioning conventional wisdoms about what is possible, and doing a deeper dive on the actual costs for actions he wanted to take versus the numbers he was told to use.

Sustainable Jersey’s Green Business Recognition Program, in their February update, appears to have added some noteworthy new statements: (a) “[there is]...significant room for improvement in almost every industry;” (b) “social and environmental issues are pressing;” (c) “Business owners have an essential role in mitigating climate change impacts in their own businesses to help New Jersey become stronger overall; and (d) “Businesses and social

enterprises can be change agents for healthy growth and revitalization. They can influence government to remove obstacles, create incentives, and provide support to create an economic environment that is restorative, equitable, and sustainable” (Sustainable Jersey, n.d.).

They also mentioned Princeton held a “Green Business Great Ideas” forum, which is noteworthy.

While most of these were recent, they are very rare over the years. Still, they still hint at what is possible. Some of the recent trends are in the right direction, although it’s not clear that that’s been recognized as relevant for future planning.

It can be easily argued that these initiatives have been doing the best they can as it’s hard to know the financial and other constraints under which they operate. They are legitimately trying to help the companies which participate, and almost no stakeholders are telling them to “be bolder.”

However, there is a lack of vision about what they could achieve, and no apparent desire for an ambitious one.

We are fortunate to have them. They could be an excellent basis upon which to build a broader, or potentially much broader and ambitious, green economy in New Jersey.

Five Other Related Initiatives

Two other, somewhat similar, forums were also attended over the past year. Showing both similarity and contrast to the above, a meeting of the New Jersey Sustainable Business Council (NJSBC) in Neptune discussed their “Values-driven business membership base,” the TBL, and how public policy can help or hurt companies trying to pursue sustainability. This organization exists largely to promote pro-sustainability public policies that both help their

members compete and increase societal sustainability. It is involved in both environmental and social issues.

The Rutgers Eco-Complex in Bordentown, which has had tenant entrepreneurs for years, announced at a forum the start of a new Accelerator for Clean Technologies. It offers a 12-week training program, which includes the usual elements of entrepreneurial training. But it did not mention sustainability at either the forum or in describing the Accelerator, and had the same missing elements as the above. They were, though, receptive to hearing this message.

The New Jersey Corporation for Advanced Technologies (NJCAT) has always been in a largely different orbit from sustainable business, even when the latter was a larger part of State Government. The NJCAT “identifies, evaluates, and recommends specific technologies for which the regulatory and commercialization process should be facilitated.” It helps developers of environmental technologies address “numerous technical, financial, and regulatory impediments.” As an example of a regulatory obstacle, developers of storm water management technologies are faced with meeting a provision of the New Jersey Storm Water Rules (35 N.J.R. 154) that says “...devices may be used to meet the regulatory requirements provided the pollutant removal rates [it promises] are verified by NJCAT and certified by NJDEP” (Magee, n.d.).

It is not ideal that this function is separate from sustainable business efforts as it is possible we’re missing something from the lack of interplay.

Finally, going back longer than a year, attendance at forums of the Rutgers Food Policy Institute and NJIT’s Enterprise Development Center found little explicit attention to sustainability, greenness, or, in NJIT’s case, social enterprise. It would be incorrect, however, to say they had nothing going on which would qualify, either at the time or in their pasts, no

interest, or no faculty at these universities who could conceivably complement their existing entrepreneurial base. The former, in particular, had tenants whose business efforts did involve addressing social problems; and the latter certainly is interested in improving Newark. But it was not front-and-center, and with no promise to make it so. They also did not show awareness that adding sustainability or greenness would have to include more than treating such businesses as just another business, offering the same exact entrepreneurial skills, without the many nuances discussed in this Appendix about which budding sustainable business practitioners could benefit from knowing. They would also have to expose non-green business tenants to sustainability ideas, possibly getting them into the green category.

All-in-all, though, it's not a bad foundation upon which to pull together these existing initiatives and embolden them with a new and powerful vision.

Special Attention to Farming

While agriculture received disproportionate emphasis in the earlier Student report, it deserves even more, for six reasons: (a) going deeper finds many more-than-expected positive actual and potential interconnections between farming and the environment—which is in contrast to the more usual hostility expressed between farmers, environmentalists, and government; (b) it's a way to give some attention to the rural parts of the state; (c) it's yet another way to distinguish New Jersey's approach to a green economy as others' initiatives don't usually include it; (d) there's something misleading about the dismissive view some have of agriculture as a relic, not worthy of attention when considering glamorous “growth sectors,” and it's worthwhile for its own sake to see if the old-and-the-new can creatively be combined; (e) if the challenge (mentioned in the “Mindsets” section below) of hostility toward regulation and environmental protection efforts can be reduced here, it would likely provide lessons that could

be valuable elsewhere; and (f) it shows the potential value of a deeper dive into a sector, that could be modeled for other sectors.

Appendix III shows 44 ways farming and the environment (and some social areas) have or could come together productively. URLs are given for most of these articles and resources that show that particular positive connection. In a few cases, notes are shown from attendance at forums on that connection, or emails making a relevant point while announcing an event or initiative.

Some of these connections are: (a) crops with untapped market potential; (b) the same, but for non-food use (it's not just marijuana) and from waste as well; (c) farmer/environmentalist partnerships; (d) farmers or companies in the food business practicing CSR; (e) farmer recognition of the threats from climate change; (f) models of leading edge sustainability thinking and practice on farms, and sustainable farm demos; (g) finding ways to use biomass and bioenergy in environmentally-friendly ways; (h) carbon sequestration on farms; (i) ecosystem services-based businesses (see above); (j) farmer programs to combat food insecurity, train veterans, prisoners, and employ the disabled and refugees; and (l) social entrepreneurship.

Existing State Green Jobs/Internship Programs/Information Sources/Environmental Incubators

What about green jobs training, green internship programs, environmental incubators/accelerators in the state, and information sources on a green economy in New Jersey? The current status of any older New Jersey green job training and other programs is not clear.

The ones that existed in the past were: a) green jobs training programs (i.e. at Bergen Community College, Morris County College, the City of Newark's GREENCAP Apprenticeship Program, focusing on LEED-certified housing, Isles' Home Energy Action for Trenton focusing

on energy efficiency and solar power for high school students (Sustainable Jersey, n.d.-b), Transitioning to Green for professional jobs, vocational school training such as Sustainable Design, Construction, & Energy, relevant “crafts” training, Duke Farms’ urban agriculture training; (b) internship programs, like Montclair State University’s summer Green Teams; (c) information sources (e.g. the NJ Department of Labor, New Jersey Next Step, and a relevant blog); (d) jobs for the disabled programs (i.e. in Burlington and Warren Counties); and (e) sustainable technologies and social entrepreneurship incubators/accelerators (at least a few of which did not make it).

Jersey Renews did report that “In 2013, New Jersey ended its state incentive program that offered funding for companies to hire graduates of green jobs training programs.” This program paid “up to 50% of new hires’ wages for six months...” (Jersey Renews, n.d.).

Mindset Barriers to a Greening Economy

Beyond this or that policy or activity, deep but (sometimes) quiet attitudes can exist that make seeing and achieving the possibilities of a green economy much harder. Here are 14 of them:

- The focus by some on the issue, as they see it, of “over-regulation,” “onerous regulators/enforcers,” lost equity due to regulation creates such anger that it makes it hard to even engage a discussion of a green economy
- The apparent and certainly welcome-sounding agreement on just about all sides of debates that “we can have both economic vitality and environmental protection,” with perhaps one or two examples given, can hide that we’re not necessarily all talking about the same thing. If we’re inadvertently talking past each other, we’re not going to do our

best in actually achieving “both.” Further, we may not know how to do that, or what the best of “both” even looks like

- There is little knowledge (among all sectors) that there is such a thing as a sustainable business field; it has journals, conferences, graduate programs; that there has been an expansion of the range of sustainable business actions, including those which are unexpected, innovative, and bold (see above); and that the field has the potential to help address stubborn environmental and social problems. One consequence is the public and environmental groups don’t ask or pressure their political representatives or policy makers about it. Therefore, the latter may think no one cares about the subject
- While not necessarily true on any given issue, particularly when there is an emergency, and environmental groups certainly address certain issues, there is surprising, perhaps, lack of shared knowledge in the state about the urgency of the overall global environmental crisis. For instance, Lester Brown’s work on global environmental trends rarely comes up. The biodiversity crisis rarely comes up. On the other hand, this has fairly recently changed for climate change, but for decades interest was very modest
- There is also, perhaps, surprising lack of shared knowledge that protecting ecosystems is requisite for economic development (although it has been argued that the reverse is true, as well)
- There has been the expression that New Jersey is already a leader when it comes to businesses practicing sustainability, although there is limited evidence for it
- There is a strong belief that small businesses cannot be expected to do very much that is sustainable; they are pre-occupied with survival, have to tend to conventional operational matters, or don’t have the capital to invest in environmental actions—all of which are not

necessarily fully accurate, at least not all the time. As an example, the good news of welcoming small business to sustainability is countered with implied limited expectations as in this article from the New Jersey Economic Development Authority (NJEDA):

“...the most successful sustainability strategies often start with simple, low cost initiatives that even the smallest business can accomplish” (Smarth, n.d.). While certainly not wrong, as is typical it leaves it there. To see more imaginative views of the possibilities for small businesses, view this video: “A Passion for Sustainability” (Stacey, 2008)

- As discussed in the earlier summarized, “A Look at Sustainable Development in New Jersey” (Polsky, 2014) [there is] a widely shared and bi-partisan attitude: “there is nothing new under the sun.” Certain things everyone is familiar with could never change: businesses and environmentalists will always fight, and the same for Democrats and Republicans; degrees of regulatory aggressiveness just goes through cycles of “toughness” and “flexibility,” and that’s just natural; there aren’t any new ideas, and journalists won’t look to cover them; there’s not much to be learned from looking outside of New Jersey, or especially Europe; the public might say they support environmental protection, but don’t want to be inconvenienced in any ways, or pay more taxes or fees to get there
- Lack of apparent familiarity with systems thinking, at either modest or deep levels, and how it can relate to topics under discussion
- Strong preference in policy circles for values like practicality, political feasibility, legality, what is seen as “the real world;” over vision, creativity, what is seen as “academic,” explicit mention of “values” (not the numbers kind of value), or asking

“What is really possible...if?” or “What is really needed here?” Other sectors (business, environmental groups, academic, local government) have their own preferences. This makes it difficult to be open to the possibilities for productive hybrids made up of combinations of those favored and those not, such as “practical idealism” (Polsky and Lipoti, 2016), which could help in the pursuit of creative ideas

- A sense that big, transformational changes are not feasible, or not necessarily even desirable; that incremental, even baby-step changes are all that is necessary, or doable
- Not quite a mindset but an expectation—or a lack of one, senior managers in government do not seem to think they owe staffers an explanation of the status of reports completed and sent to them, or why their recommendations are not being considered or have been rejected. Further, staffers seem to not even expect a response. This is not an atmosphere conducive for innovation. In addition, such reports may or may not be posted on the agency’s website, or done so without special notice. So there also little expectation the public might benefit from knowing about and, if they choose, seeing the new ideas, even if these are not under consideration. Perhaps an occasional “What’s Coming Across Our Desks” blog entry on agencies’ websites would be a partial solution, and even better if it encourages informal public comment. However, as the public might assume the completion of such reports means the agency must be serious about incorporating their recommendations, it would have to be made clear when that is not the case. Perhaps the public, if it knows about, reads and gets excited about the contents could persuade government to change its mind on its importance
- Relatedly, while “stakeholder input” is widely practiced by these sustainable business initiatives at forums, it can tend to be process-heavy, with policy choices already made,

and unquestioned implicit borders to input and discussion. At times, those administering these initiatives are only modestly engaged, with little chance by stakeholders to move new ideas, particularly those that are out-of-the-box. Instead, engagement needs to be the norm, new ideas encouraged, and if possible criteria set for when initiative administrators will ask stakeholders to help them “co-create” new policy in a difficult but important area. The absence of environmental groups from the stakeholder processes of these sustainable business initiatives is not noticed (at least by most), but changing that has to be a two-way street

- Finally, while also not necessarily rising to the level of a “mindset,” there are a number of “language” and “framing” issues, and sometimes commonly held understandings associated with communications which could be obstacles. These are:
 - “Successful” sustainable businesses are sometimes seen that way just because of that feature, and “failed” ones also for the same reason, when that may or may not be the main reason for those outcomes
 - It is commonly asserted that “business is against XYZ regulation or policy,” when that isn’t necessarily true for, say, the NJSBC. Business should not be assumed to be monolithic (which is also true for the other players)
 - Any environmental claim at all by a business is seen as “greenwash” automatically in some circles, assumed to be illegitimate or fraudulent, which, among other things, does not provide much incentive for trying something new in an environmental area needing improvement and innovation
 - While sustainable business and CSR are called “Voluntary” in this Proposal and Appendix, this term and its opposite: “Mandatory” are not fully exhaustive of the

possibilities. A basically voluntary system could still work better at times if complemented with carefully considered regulations. Conversely, while voluntary and “Deregulation” are not the same thing, under four tightly conscribed circumstances, some degree of the latter are imaginable. These are: (1) as an element of a transparent and negotiated pilot, whose other elements include beyond-compliance performance requirements; (2) as part of a transparent and monitored pilot of a specific sector’s self-certification program, with re-regulation as a back-up if it fails; (3) if a green economy succeeds beyond any expectation.

For example, if widespread use of green design makes regulations, in certain circumstances, simply unnecessary as “pollution is designed out”; or, if upon examination of a particular situation, a fairly chosen representative group of businesspersons and environmentalists reach a consensus (or one that is reasonably close) and advise government that there is simply no need to regulate

- Lastly, and not at all specific to this subject, it has been noted that in these extremely partisan and even hostile political times, for some issues people decide their views based upon the position of the group (Mason, 2018), cable station, or figure with whom they most identify, or whom they are against, as opposed to trying to identify and weigh the merits and disadvantages of the idea. It would be unfortunate if that happens to the question of the greening of the economy, particularly as this topic has the potential to bridge some of those partisan gaps.

To get very far on any serious level of a green economy for New Jersey will require challenging these mindsets.

Conclusions

There are many reasons for a green economy, but none more important than as a potential major new way to address environmental and social problems. We're going to need it to reach our climate change goals, if State Government accepts the Students' earlier recommendation to adopt some of the UNSDGs, and possibly to meet other environmental, social, or even economic goals. Others will see the main reasons for it differently, which is fine, although those whose prime argument are the new jobs which will be generated should be aware of methodological and even conceptual problems with their estimation—which doesn't mean they shouldn't also be emphasized.

The main conclusion of Appendix II is the bolder and more comprehensive a New Jersey green economy, the better. While conventional green jobs (e.g. solar, wind, efficiency) are and will become more important (especially as the Governor very recently signed a bill to shoot for 50% renewable energy by 2030), they will not necessarily be the largest component if New Jersey makes a policy decision to aim for a more ambitious version of a green economy. Jobs will be generated in other sectors as well, including those that flow from encouraging the widespread business practice of CSR.

There are different ways to express parts or all of the vision of an ultimately extreme version of a green economy:

- A deepening, unusually comprehensive green economy over time. It is far from sufficient to rely on the “here today-gone-tomorrow” cycles of shopper interest, and business response, we have seen before. These changes have to be permanent this time
- To distinguish it from much narrower versions, a “Green Economy on Steroids”
- As discussed in Appendix I's summary of “Strategic Thinking: New Jersey's Garden-Variety Environmentalism,” (Polsky 2006) “...the state with the greenest economic base”

- An increasing part of “New Jersey’s Unique Economic Development Story”
- It will come to be seen as a major way to address environmental and social problems
- While somewhat of an exaggeration, it is not foolish way to envision that, at some point, the saying sometimes heard at green jobs forums could become largely true, especially if all employees are encouraged to play a role in their company’s performance: “Every job is a green job.”

The extreme green economy would have these characteristics:

- Even though participation by businesses would be voluntary, it should be clear the goal eventually is to include nearly all sectors, and nearly all companies within those sectors. If successful, most will have a role to play
- Companies’ performance will vary, but those sectors and most of the companies who choose to participate will constantly improve their levels of greening
- While there still may be a place, if declining, for companies that just meet regulatory limits, especially if greener competitors emerge, in the long-run the place for those companies with no interest at all in any aspect of greening will diminish. It is not because of regulation, at least not primarily. Customer interest in buying from them, both from individual shoppers and even their business customers, will fade. Greener competitors will emerge and be favored. They will not benefit from the other reasons often given for sustainable business actions (e.g. saving money, reputational effects).

A role of government, as well as other parts of society, including environmental groups and universities, is to assist in clarifying this vision (or a version of it) and, if they’re willing, helping to make it happen. A role of media is to report on it, and editorialists to comment on and critique both the vision and the progress towards meeting it. A role of the public is to factor the

level of greenness into their shopping decisions at a much larger and consistent scale than they have been, and in their role as citizens, ask political candidates about their views on a green economy.

Recommendations

There is one major recommendation and 36 to support it. Obviously, not all of these recommendations are equally important and some can be delayed until further into the initiative's progress, or until after a decision to take the then-achieved level of economic greening further and deeper. Implementation certainly won't be easy or problem-free, but as discussed both in the Students' section and in the above section on New Jersey's existing sustainable business initiatives, we are not starting from scratch. We also have some failed earlier attempts which can be learned from.

1. The major recommendation is for the Governor and senior managers to consider different degrees of a green economy beyond just conventional green jobs, and accept the most ambitious one seen as ultimately feasible. All of the others support this one by helping to catalyze and make successful more ambitious and comprehensive versions of a green economy. This would not be a modest, barely known initiative as the earlier sustainable business initiatives have been
2. Communications about a green economy should begin to go beyond thinking of it as just conventional green jobs, although the latter will remain, obviously, very important. A prominent communications theme should be that an expanded green economy will become an increasing part of overall State economic policy
3. For the first time, as previously mentioned in the summary of "Developing and Implementing a Sustainable Growth Strategy for New Jersey" (Polsky et al 2010) in

Appendix I, CSR would be a main element of strategy and practice. The State would be expressing the expectation that CSR is the direction it wants businesses in the state to operate, something no other state has done. It's just the way that over time business is practiced, in more and more sectors and companies, and eventually nearly all of them, and at higher and higher levels. Of course, the CSR measures have to be real and not greenwash.

The State should consider ways to facilitate the capacities of the state's businesses to engage in this path, including possibly providing incentives. It should ask for input and listen to what would be needed. It should also keep an eye on a very recent phenomenon: Congressional pressure to stop companies from trying to do the right thing (see the above discussion about pressure on regulators to prevent financial companies from reducing services to the gun industry that, among other things, sell to those underage) (Rappeport, 2018). If this gets worse, the State might have to get involved.

While CSR and sustainable business would be encouraged and possibly incentivized by State Government, it would not be required

4. It is important, if startling, that morality and "Purpose" should be an encouraged part of CSR strategies. There now seems to be sufficient evidence of increasing acceptance, despite the likely skepticism. If some reject the moral component, they don't have to participate with this element of it
5. Relatedly, there is room for a lot more than just nine B Corps in New Jersey, as well as related "Benefit" Corporations, which are legally entitled to pursue a TBL orientation. New Jersey actually passed a law allowing the latter, which was required

- for companies to have this protection from possible shareholder suits. But this is not well known
6. State Economic Authorities will respond this way from their end, as opposed to business-as-usual economic thinking and practice. Increasingly, discussions of state economic policy within their networks will seem as if they're missing something if environmental protection and social issues are not included
 7. "A Look at Sustainable Development in New Jersey," previously summarized in the Students' work, stated the SBI should "...be expanded and made the centerpiece upon which to build this integrated environmental/economic strategy" (Polsky, 2014). That is also true about the other three existing sustainable business initiatives described above. They all need to be looked at in terms of what this new policy direction means for changes to their priorities, objectives, and strategies
 8. The Governor's idea for a Public Bank (Johnson, 2016) should be examined for the role(s) it can play in the green economy area. It could look at New York State's Green Bank, that: (a) "...alleviates financing gaps in New York's clean energy markets;" (b) "...is a critical piece of New York's energy transition," and (c) "whose mission is to accelerate clean energy deployment by working with the private sector to transform financing markets" (Green Bank Network, 2018)
 9. If an expanded green economies initiative is accepted, other State agencies will need to be involved. For example, the Division of Consumer Affairs (DCA) would need to monitor the legitimacy of environmental claims made by producers of products. The amount and range of claims would ratchet up in a greening economy, so DCA might explore working with the NJCAT, and both might become familiar with the Federal

Trade Commission's latest guidance on these. In addition, some agency, possibly Treasury, will need to become familiar with current and new work by accounting organizations that have developed procedures to standardize corporate sustainability reporting.

Other agency involvement could involve Procurement in the Department of Treasury to re-look at the level of green purchasing by State Government, and determine if some more market-priming of pilot technologies is justified. The Division of Pensions could look at redirecting State investments towards sustainability goals. The Department of Agriculture could look at the range of farming/sustainability connections discussed both earlier in the Students' section and heavily in Appendix III. The Department of Education would look at the latest sustainability practices in the field, particularly those involving business and entrepreneurship, and whether New Jersey is keeping up. (See the "Education" section in the Students' Proposal for other educational priorities.) The Department of Labor would look at possibly revitalizing and updating green job training programs

- 10.** Greening of economy ideas should be integrated with state climate change efforts beyond just conventional green jobs and more ambitious renewable energy efforts. Obviously, the clean energy sector needs to be integrated into an expanded green economy. One area that would be a candidate for linkage between these two areas, and which is often overlooked, is business demand for green power. USEPA "tallied 780 100% Green Power Users—everything from local florists and breweries to Microsoft and Intel—that obtain all their electricity from renewables" (Cohan, 2016)

- 11.** Depending on how much the view of a green economy expands, some or even most of the other omitted sectors from this Paper's focus in Table 1, and those jobs and concepts mentioned in Tables 2 and 3 could be integrated in and made the subject of a deep dive
- 12.** One of two areas for likely near to medium-term focus should be ecosystem services, including payments, across sectors, including agriculture. One of the issues that should be monitored are developments in the understanding of soils' capacity to sequester carbon. The other sector for likely focus, because of its broad potential, is agriculture
- 13.** Any State "Innovation" initiatives, such as the work of the new Jobs & Economic Opportunity Council, should similarly have strong green economy connections. "Innovation" is such a popular theme that many are promoting it (Murphy, 2018). But a limited, occasional, secondary green economy connection, which is the role usually assumed for it by "Innovation," "Entrepreneurship," and "Incubator" initiatives is not sufficient. "Innovation" without sustainability isn't necessarily a step in the right direction, and is certainly a major missed opportunity. This has to be changed
- 14.** Regarding the "regulation" issue, bring veterans of the old Green & Gold Task Force and The Stockton Alliance, as well as others together on how to improve the regulatory/permitting/enforcement system, but linking that to how it could best complement sustainable business and the green economy. For the most part, that had not been a consideration of past efforts. This effort should invite the greenish trade associations, such as the NJSBC, NOFA-NJ, New Jersey Green Association, Green Buildings Council of New Jersey, Business Network for Offshore Wind, Solar

Energy Industry Association, Mid-Atlantic Solar Energy Association, New Jersey Work Council; the major conventional business trade associations; and environmental and social justice groups. It should be well-facilitated and include group-defined metrics of “success” of the group’s efforts--and later whether that is being attained.

Criteria for selecting a facilitator should consider: someone respected in all quarters, who understands or is at least open to sustainable business and developments in it, has some experience in regulatory matters, familiarity with processes to develop in-group empathy and the value of field trips, including to outdoor sites, and of course mediation.

Such an effort should draw from sections in the five documents summarized in the Students’ section or below: 1) “Letter to NJDEP Commissioner Bob Martin, Suggestions for the next ‘Economic Growth and Environmental Stewardship’ Speech,” 2) the Masters’ Thesis, 3) Cook EcoPolicy Report, 4) Guidance Document, and 5) the ISE White Paper.

A goal would be better regulation, not de-regulation except if one of the four narrow conditions discussed in the last bullet entry in the “Mindset Barriers” section is deemed to apply.

- 15.** Such a group, once organized, could be used for other tasks and challenges. One would be to discuss and consider how to overcome the other mindset issues discussed above. It should engage in brainstorming, including about untapped needs and how to address barriers. An expanded, TBL-oriented concept of “Competitiveness” should be defined and used in the evaluation of New Jersey’s future green economy efforts. Adaptability to difficult-to-forecast, but imaginable crises should also be discussed.

(Thanks to Rob Benjamin for that idea.) It could consider how the State's relevant Awards Programs could be adapted to encourage the types of achievements and ways to measure them (or whether they can be measured) important to this new direction.

Other issues are sure to arise that would benefit from ideas from such a group

- 16.** Adding to the earlier Recommendation regarding Education, social entrepreneurship needs to be promoted (Polsky, 2013b). If undergraduates have never have never heard of it (which often seems to be the case), they won't know to consider it for themselves. Green MBA programs should be offered at most of the state's MBA programs. It had not been at many (see below). One of them should consider resuming the focus ISE had on sustainable business, but adding its connection to policy. There should be exchanges from time to time between the initiative administrators and the academic community, from the former to the latter: "Here are the greening of economy research needs as we see them," and from the latter to the former: "Here are some interesting possibilities from research for the greening of the economy in New Jersey you might not know about." The Recommendation for green design discussed in the Students' section is critical and a way needs to be found to make this function more available to both students and professional product designers. Biomimicry should be part of that curriculum
- 17.** Parallel efforts at the region, county, and municipal levels in New Jersey should be encouraged, and efforts to communicate green economy efforts maintained. Similarly, there should be a sharing of knowledge about and potential implementation of ideas with both bordering states and those states known as innovators in parts of the

- Northeast and West Coast. This is particularly important for the bold, controversial ones
18. If other states develop leadership on some aspects of a green economy, it should be acknowledged and learned from. New Jersey cannot lead in every aspect. Those aspects where another state is pushing ahead with something novel and useful could be considered for possible replication or adaptation
 19. Monitor the Netherlands-informed, flood resiliency/adaptive-oriented re-development in Hoboken (NJDEP, 2016) and determine the green economy implications going forward
 20. Bring people together who were involved in past green economy efforts to discuss any failures—and there were some, and brainstorm what went wrong and the lessons learned
 21. The administrators of a green economy initiative should become and maintain familiarity with all state environmental labeling/certification programs, both State Government's (e.g. "Jersey Fresh") and non-profits' (The Natural Resource Conservation Service's or The Foodshed Alliance's "River-Friendly;" NOFA-NJ's "Organically Grown; relevant programs for farmers from the New Jersey Audubon Society [see Appendix III]; WHC's "Habitat-Friendly;" the Green Buildings Council of New Jersey's "LEED," and those mentioned above that the SBI allows options for); and seek to coordinate and encourage their use as appropriate. National and international labels/certifications, including those endorsing Fair Trade and species protection, could also be considered and possibly encouraged in New Jersey

22. Revisit the basic science function performed by former Governor Kean's Science & Technology Commission (NJSTC) and see if and how some of it could be re-created aimed at more difficult green economy challenges. One possible focus is how to deepen the environmental credentials of even clean technologies like solar and wind. NYSERDA in New York State, which combines the functions of the old NJSTC and some of NJBPU, has a wide range of programs, including research and development, technical assistance, and incentives. This includes biomass (NYSERDA, n.d.-a), Advanced Clean Energy Exploratory Research, Agriculture Energy Audit, Clean Energy Workforce Development, Environmental Research, Low-Income Forum on Energy, NY Prize for creating microgrids, and Smart Grid (NYSERDA, n.d.-b). New Jersey may want to consider replicating any of these not currently offered.

They even offer biomimicry (see that section above), saying: "Encouraging investors and entrepreneurs to bring technologies inspired by biomimicry from concept to market can help usher in a whole new world of production that is environmentally friendly and energy efficient" (NYSERDA, n.d.-c). This is one, but should not be the only way, that meets Lester Brown's version of an ecologically-informed green economy.

However, the work and focus of a revived New Jersey effort should not be just technology- or even ecology-oriented. Social impacts and considerations and social entrepreneurialism should also be included. NYSERDA offers behavioral design consulting, which it describes as "behavioral strategies to increase the effectiveness of their clean energy programs..." This includes "survey and other background research" and "evaluation of behavioral strategies" (NYSERDA, n.d.-d)

- 23.** Consider picking up any relevant and important green economy USEPA voluntary initiatives which are dropped by them at the state level. If impractical to do it alone, seek to manage it together with other similarly inclined states
- 24.** Get up-to-speed on the status of state green jobs training programs, including those for the disabled; state green economy information sources; and environmental incubators, including Rutgers University's Eco-Complex's clean energy entrepreneurship accelerator and Food Innovation Center. This will better position the initiative administrators to suggest and/or influence changes consistent with an expanded green economy.

New York State has a Pollution Prevention Institute (PPI) that does some unusual things like “enabling manufacturers to enter into new and existing green markets by helping them identify and comply with voluntary green standards and certification requirements....[that] help New York State suppliers market products that meet sustainability standards” (NYDEC, 2012). Their PPI has a Green Technology Accelerator Center which does: “competitive product benchmarking, life cycle assessments, environment and energy impact evaluation, and market viability assessments” (NYS P2I, n.d.). An Institute with some of these functions should be considered in New Jersey

- 25.** Similarly, the Administrators should establish links with the recently announced Institute for Corporate Social Innovation at Rutgers University (Bader 2018), as well as any other Rutgers, FDU, or other New Jersey academic efforts focused on social entrepreneurship

- 26.** The administration of a green economy initiative in New Jersey should have a learning culture, a willingness to reflect from time-to-time, as well as ask others: “What are we missing?” “Are we not asking the right question?”
- 27.** Administration staff should attend relevant forums in the state, and occasionally elsewhere, in order to follow (and contribute to) the sustainable business field. As discussed in “A Look at Sustainable Development in New Jersey” (Polsky, 2014), summarized in Appendix I, [we]...can take better advantage of promising ideas from around the world. But [this is] only available to us if we are willing to go outside our collective comfort zones.” Examples include Philadelphia’s “Impact PHL” project, which emphasizes impact investing (ImpactPHL, n.d.), New York City’s Circular Economy and Zero Waste plans, and the Urban Future Lab in Brooklyn. Besides some of the usual incubator services, the latter also emphasizes classes for K-12 students, forums for the public (Dorsey, n.d.) such as on green design, and has a connection with the government of and companies in Denmark. The latter provides exposure to European ideas.

The administrators should read some of the “Publications” on the ISE website, as well as older relevant documents not summarized in either of the two Appendices: NJPRO Foundation (2012), Polsky (1998a), Blue Green Alliance (2009), The Foodshed Alliance (2015), Williams (1997), and Platt (1991).

It should follow the related work of organizations such as the Global Green Growth Institute, The Partnership for Action on Green Economy, the National Blue Green Alliance, Environmental Entrepreneurs, and UNDP.

- It should keep up with some of the journals in the field, such as GreenBiz and Sustainable Brands, and occasionally contribute to them; read some of the main authors in the field, such as Bruce Piasecki, Bob Willard, Andrew Winston, Jeana Wirtenberg (from Rutgers Business School), Bill McDonough, Paul Hawken, and Gil Friend. Coming at this another way, as shown in the summarized Masters' Thesis, check-in on the development of the ecological economics field from time to time as it can eventually feed developments in sustainable business
- 28.** Over time, the administrators and staff should look to fill more of the “holes” in Table 1, as well as develop a fuller policy agenda, while considering the connections between government and business (Polsky, 2013c)
 - 29.** One area that deserves more attention is the fairness agenda, including attention to rural areas, the physically and mentally disabled, and others not doing well in our current economy and with few other prospects
 - 30.** If political compromises become necessary, the vision of a fuller greening of the economy should not be dropped, with more ambitious opportunities still pursued as they become available (or can be stoked)
 - 31.** Administration staff should explore and pursue supplemental funding sources from foundations, including relatively new ones from very wealthy entrepreneurs looking to give back, whatever grants are still available from the federal government, and consider innovative sources like Social Impact Bonds when applicable
 - 32.** In parallel, measures to stir (or steer) green demand from shoppers, both those from within and out-of-state (including global) for the products of New Jersey businesses pursuing greening should be considered. In particular, the significant problem of

swinging consumer demand for high-mileage cars and trucks, which depends so much on gas prices, has to be recognized, with attempts to overcome it (e.g. recall the carbon tax proposed by the Students). Both for purposes of informing interested shoppers and for tracking progress, compile, publicize, and continue to update lists of state companies practicing CSR, those with sustainability-oriented products or products with sustainability qualities. Such efforts complement companies' efforts to green

- 33.** Occasionally monitor relevant work of the European Transformation/Transition fields, which study large scale societal changes (or ask an academic partner to do so), including how such changes occur, and how positive ones could be developed and catalyzed into the mainstream. As a key element of thought in these fields concerns niches and pilots where small scale-large potential innovations can be developed, tested, and improved, New Jersey might want to think about what potential innovations could be candidates for a pilot. Perhaps something in the community energy/storage area would be a good candidate.

Another key concept from these fields is resistance from established regimes (in the case immediately below, an established sector) to an innovative, new entrant. An example of this, to be avoided in the future perhaps with guidance from these fields, was the auto dealers' pressure to prevent Tesla from selling its electric vehicles from a manufacturer store instead of through dealers (Musk, 2014).

(Outside the focus of this Paper, but very germane to the highly related energy area, a major case study studied in these fields is the EneGiewende, the highly ambitious and controversial German initiative to transform its energy sector, moving away from

both fossil fuel and nuclear energy. The Governor might remember this from his time as U.S. Ambassador to Germany. Perhaps their experience is worthy of consideration as the Governor just signed a bill to pursue 50% renewable energy by 2050.)

34. Encourage New Jersey companies to accept some of the UNSDGs as targets for themselves, as well as join the United Nations' Global Compact Initiative, which shows the business' acceptance of key international principles such as the human rights enshrined in "The U.N. Declaration of Human Rights" (Accenture, 2013)
35. Consider how emergent environmental and social problems could be at least partially addressed through a greening of the economy, and then act to catalyze those possibilities. For instance, could the problem of China now refusing to accept our exported recycled materials be turned into a green design and/or re-use opportunity?
36. Search the State Libraries for other previous reports relevant to a green economy
37. Finally, if Governor Murphy accepts this direction and New Jersey proceeds to pursue an expanded green economy, but the Governor after him retracts this initiative, pressure should be exerted from stakeholders in the key areas affected to get back on this track.

Acknowledgements

The author of this section asks readers to remember three late giants of the sustainable business field in New Jersey: Rob Young, Carl Henn, and Asher Derman. Their names deserve to be remembered by those who have entered the sustainability field in New Jersey over the years. These three people laid the early foundations.

Among the still-here, I would like to acknowledge an early sustainability business leader, Bryan Thomlison, who showed what was possible, even during a time of environmental

backlash; my colleagues at the former ISE, with whom we had many conversations on these issues: Jonathan Cloud, Joel Harmon, Jeana Wirtenberg, Gerard Farias, Bill Russell, Kent Fairfield, Claire Sommer; consultants who went beyond what conventional sustainable business consultants are allowed to talk about: Anna Clark and Andrew Winston; two former supervisors who let me run with earlier versions of these ideas: Leslie McGeorge and Marty Rosen; Marty, again, for his substantial editing help of Appendix II; a colleague who “lent me” some ideas: Rob Benjamin; a colleague pushing academia in new directions, and who was willing to travel from Maryland to Mahwah to guest lecture at my class on a range of issues, Ira Feldman; and two students: Stephanie O’Brien, who both co-edited the Student Proposal, wrote some of the sections of it, and prepared the three Tables for this Appendix II; and Caitlyn Montgomery, who wrote key sections of the Student work, added to other students’ sections, co-edited that work, and was the “Go To” on “References,” which itself required research on tricky questions.

More Older Related New Jersey Green Economy Reports

The Students’ report summarize a number of older reports on a green economy for New Jersey). Here are some more.

A Master’s Thesis on Incorporating New Economic Ideas into New Jersey Environmental Policy

This was a very early look from 1998 on how two (then) relatively new fields, both largely unknown in New Jersey, could be incorporated into state policy at a time of backlash against environmental protection efforts, and even help catalyze a “revitalization.” Sustainability efforts in New Jersey were then just starting and were noted, as were the realities of the policy process.

Ecological economics takes a deeper look at some of the relationships between economy and environment than related fields such as environmental economics and resource economics, including positioning ecosystems as the critical underpinning of economic vitality. In turn, the field is not far along on the “how business can help” side of that relationship compared to what was then called “The Greening of Industry.” Together, though, they could offer benefits to environmental problem-solving in New Jersey, even during a challenging political period.

Barriers to these fields were explored and guidelines given, along with Conclusions and Recommendations.

The theme of environmental regulations’ impact on the economy received considerable discussion. Six existing studies of that impact were mentioned, four specifically about New Jersey, and two were compared in an Appendix.

In addition, three other Appendices explored this, as well as presented an outline of a proposal to address it. It proposed a five-point “Social Contract” between State Government and business. Some of these points involved: (a) establishing a new relationship between the two (as well as re-gaining trust between government and environmental groups) in order to re-establish the vitality of government, which is necessary for what is now called a green economy; (b) linking this to greening of industry efforts, including what government could do to help; (c) taking advantage of the best thinking on how to structure environmental regulations, such as the work of Porter and van der Linde (1995), including “focusing on outcomes, not (requiring specific) technologies,” regulations should be “strict rather than lax...,” “employ...phase-in periods.” Also mentioned were trying to better distinguish between when regulations do and do not hurt the economy, along with whether properly structured regulations could actually help

economic competitiveness, and whether government could actually help willing businesses create competitive advantages—a couple of contrarian positions.

Finally, the importance of clarifying the meaning of key, but ambiguous terms, whose use hides lack of full agreement, was mentioned (Polsky, 1998).

Letter from Matt Polsky to Former NJDEP Commissioner Bob Martin on Economic Growth and Environmental Stewardship

This was in response to the Commissioner's speech to a business audience emphasizing improving "Customer Service" and better efficiency at NJDEP.

He was told this theme would be much better if paired with departmental help to the state's businesses to get "ready for the resource-constrained world of the 21st Century, or the opportunities available to them if they [do]..."

The letter included sections of a report from the Commissioner's former employer, Accenture, about the role business could play in society's pursuit of a sustainable future, but was not yet performing at that level. CEOs were quoted saying business needs the right policy support from government to play this role.

Efficiency-improvements within government are not enough.

He was encouraged to re-do his thinking on this for the next speech (Polsky, 2013).

An Early Report by Cook College on Economic Development Through Environmental Responsibility

This 1995 study by the then-Cook College EcoPolicy Center was discussed in the-above Masters' Thesis and cited as a rare example of "vision." The latter said about the former: "The major recommendations" [of this] "multisector-attended workshop about how state government, academia, and the business community could work together..." were: "New Jersey needs a

comprehensive integrated economic/environmental strategy...; a call for largely unprecedented public/private cooperative efforts to help ‘green’ industry through incentives, education, training, and information programs; and call for additional measures by specific, progressive New Jersey companies to promote some of these ideas. It proposes that New Jersey seek to become a leader in aligning economic development and environmental protection.”

This report also discussed stakeholders’ views of New Jersey’s relevant Strengths, Weaknesses, Opportunities, & Threats (SWOT) not picked up in the other reports, and discussed ideas to overcome regulatory issues (Decter & Meagher, 1995).

Guidance Document on NJDEP Efforts to Support Sustainability

This was an internal NJDEP report for managers and staff, also in the early days of sustainability, to help them understand how to begin to understand sustainability and guide the department’s future efforts. This summary of this Document includes some of the history of State Government sustainability efforts at that time, including the results of studies (much of which may not be well known).

The Work Group which wrote this Document did have some outside membership from New Jersey Future and the U.S. Environmental Protection Agency, Region II. It held a public meeting to get input on how the department should look at sustainability; had meetings with several divisions within the department to, after explaining sustainability, get the views of staff; met with the Office of State Planning to explore each’s view of sustainability; and invited a few sustainability-informed citizens to discuss their views, as well.

During this Work Group’s existence, former Governor Whitman issued two Executive Orders on Sustainability (which were shown in Appendices within the Document): establishing the Office of Sustainable Business (OSB); and requiring that State Government update the earlier

work of New Jersey Future to report on progress, or lack of it, using indicators of 11 overarching Sustainability Goals for the state--as well as to work towards achieving them.

The Document mentions some of the work of the OSB. (See below.)

Besides identifying areas needing clarity within the department about the meaning and implications of sustainability, two categories of its several recommendations fit within the subject of this Proposal: those directly on business, and those more indirect, that discussed some ways to look at the economics: environment relationship.

Regarding the direct connection to this Proposal, it states: "Promote sustainable business practices." Under this, it added, very uncommonly, a number of ways to couple this to regulatory reform. Usually these are treated as separate subjects.

Regarding the indirect connections regarding ways to look at economics/environmental connections, it stated:

- To the often expressed view that "Environmental protection and economic growth need not be antagonistic to each other," it added the unusual: "In fact, sustainability requires that both efforts proceed in increasingly complementary ways"
- "Traditionally, understanding the economic (and well as the social) implications of the decisions made in the Department has been done on an ad hoc, issue-specific or even project-specific basis. There is no consistent across-the-board understanding of economics or economic development issues, or even how to most appropriately think about and integrate economics." "Development of a greater level of economic capability in the Department will be necessary" for a number of reasons, including "development of market-oriented policies and tools"

- The Document had a footnote about decoupling. During this period, the NJDEP was also developing a relationship with the government of The Netherlands, to, among other things, exchange policy views. Therefore, it had this quote: “The Dutch are aiming to decouple their environmental and economic performance (through sustainability) and reduce their emissions per unit of GNP by a factor of between 2 and 10—an enormous challenge”
- This was also an era when a great deal of effort was being made on the subject of objectives and indicators. Therefore, the Document notes a need for new “Stewardship” objectives and indicators, that could include “numbers of businesses practicing life cycle analysis and full cost accounting,” “cap and then reduce per capital generation and use of natural resources such as energy, solid waste, toxics,” “number of companies with ‘Netherlands’-type covenants with the Department (an idea at the time for individual agreements between specific companies and NJDEP for the former to go beyond compliance, potentially significantly, in exchange for regulatory flexibility) and number of companies with pollution prevention goals greater than a to-be-specified percentage.” “Economic vitality” objectives could include “develop guidelines and a framework to maximize the economic gain of environmental protection measures and, where this is not feasible, how to minimize the economic impact; develop new measures of economic performance of the state that account for natural resource depletion, damage from pollution, and clean-up costs; and promote proactive environmental strategic thinking among New Jersey businesses.”

Again, most of these recommendations came from NJDEP staff, including those within the Department interviewed by the Work Group.

During the public hearing, relevant comments were:

- “Communities should be provided opportunities to say...what they want in the area of economic development”
- “[There should be]...a full cost accounting to put a value on air, water and land. Industry should use full cost accounting to evaluate their total cost of doing business, including putting a price on the value of environmental services they use, which in most cases is currently zero.” “They called for a vision of the role of heavy industry in the state.”

Lastly, “they stated that the State should embrace a zero emission goals.” “While zero emissions may seem economically irrational and technically infeasible, a few companies, including Interface Carpet Company, have actually adopted it as a goal. Interface plans to go beyond even this by adapting the concept of restoration as a further goal.” (See the above about Interface’s 7 Front model.)

(The OSB issued its own report in 2000, “Greening the Garden State,” a copy of which proved impossible to find these years later. The Guidance Document, fortunately, captured some excerpts from it, which are shown immediately below:

This report identifies more than 300 companies that are taking sustainable actions in New Jersey’s energy, manufacturing, agricultural and chemical sectors. This study also evaluated State programs and policies and how they affect sustainable businesses, identified opportunities for the further development and growth of sustainable businesses and made recommendations regarding how to target and assist businesses to broaden this sector of the economy.

Sustainability programs put forward thus far by the Office include:

- A \$1.75 million dollar loan fund for sustainable business initiatives
- A model green state government procurement program to leverage New Jersey’s \$2 billion dollars in purchasing power, the world’s 18th largest economy
- A clearinghouse for public-private inquiries and information sharing
- Sustainable business networking, including promoting New Jersey businesses to trade shows such as the DC Eco-Expo

- Building a Greener New Jersey, a program to bring manufacturers and builders together to create standards, practices, and partnerships for green construction.)

Finally, this Guidance Document emphasized the need to go further with equity, with a recommendation to “factor equity issues into governmental decision-making processes.” A few ways were provided by staff at some of the divisions by which to that.

The recommendations of the Guidance Document were not considered or implemented by NJDEP Senior Management and the Work Group ended, although one interpretation at the time was that its efforts, and some of its staff, were re-directed to focus on leading the implementation of Governor Whitman’s second Executive Order on Sustainability.

(That latter effort was led by the inter-agency New Jersey Sustainability Working Group. They produced two reports: Living With the Future in Mind, which updated the State’s performance on the sustainability indicators originally developed by New Jersey Future, and Governing With the Future in Mind, which both looked at what each state agency was doing that was considered sustainable, and developed recommendations for going beyond that, as discussed in the earlier “Summary” section. The work of these two reports was accepted by Governor Whitman and her immediate successor, but this entire initiative, including both reports, their recommendations, and the existence of the Interagency Working Group was ended by Governors after that. The OSB, as mentioned in the earlier Students’ section, was also eliminated.)

Appendix III

44 Non-Regulatory Ways Farming and the Environment (and Some Social Areas) Come Together Productively—or Could: Resources for How One Sector Could be an Example of Innovative Action & a Re-Thinking of the Overall Economic/Environmental Relationship

Matt Polsky

“The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land... A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.”

--Aldo Leopold

Farmers’ Customers: Industrial (Wholesalers, Food Companies, Retailers, Restaurateurs) and Health and Environmentally-conscious Consumers Increasing their Sustainability Expectations and Making More Demands on Farmers

(Consumers’ interest in health and the environment, and therefore demand for more information about their food is not likely to go away. Therefore, it’s an opportunity, as well as a threat.)

<https://www.fooddive.com/news/sustainability-pledges-are-no-longer-a-luxury-for-big-food/513241/>

<https://www.drbronner.com/all-one-blog/2018/01/moving-towards-regenerative-organic-certification/>

<https://shift.newco.co/amazon-whole-foods-could-transform-us-farming-6f733651ef6d>

<https://oceanconservancy.org/blog/2012/06/26/does-only-selling-sustainable-seafood-work-a-qa-with-whole-foods/>

<https://news.stanford.edu/2018/01/09/grocery-store-programs-improve-farmers-environmental-practices/>

<http://earthwatch.org/corporate-partnerships/partnership-profiles/starbucks-coffee-company>

Farming of New Crops with Untapped Market Potential

<https://www.npr.org/sections/thesalt/2017/12/26/572100613/americans-love-spices-so-why-dont-we-grow-them>

<https://www.mnn.com/money/green-workplace/stories/farmers-milkweed-parkas>

<https://www.greenbiz.com/article/these-14-businesses-are-growing-money-trees>

<https://www.facebook.com/events/1773663932933991/>

<http://foodpolicy.rutgers.edu/research.asp?id=6>

<http://foodpolicy.rutgers.edu/research.asp?id=51>

Grain project through a partnership between a winery (Villa Milagro Vineyards), a few farmers, and an environmental group

Ethnic foods <http://foodpolicy.rutgers.edu/research.asp?id=60>. <http://sustainable-farming.rutgers.edu/alternative-world-crops/>

Excerpt from a memo after hearing a lecture at Ramapo College by the owner of Meadows Bee Farm:

“Untapped Markets

In response to my direct question about what crops farmers can grow for which there are untapped markets in New Jersey she referred me to the work of Lee Reich. (See some of the products listed at: <http://www.leereich.com/lectures>).



[Lectures - Lee Reich](http://www.leereich.com/lectures)

www.leereich.com

My lectures combine my enthusiasm for gardening with my academic and practical experiences to give you information you can take home and apply to your own garden.

She mentioned poplars, persimmons could be turned into yogurt, and elderberry, whose flower could be used for batter for flour.

At other times, on the same subject, she mentioned: dandelions, cranberry viburnum, fruit trees, linden trees (whose crop could be used instead of lettuce). She added “bugs will be the next big thing,” and “we will have to start” eating them!

When I posed a question about a necessary yield reduction with her biodynamic methods, she said her “biggest problem is what to do with all the food she grows!”

Entrepreneurialism

As an ‘eco-products entrepreneur,’ she offered these suggestions: use weeds like nettle and dandelions for tinctures, teas, and wine. These could be sold on-line or through Etsy, ‘with great mark-ups.’ These have to be properly cleaned, labeled, and documented, with a caution about making health claims, particularly those against state laws. Medical advice should not be given.”

Extending the Growing and Farmers Market Season

<http://sustainable-farming.rutgers.edu/high-tunnels-in-new-jersey/>
<http://eastonfarmersmarket.com/hours/>

Incentive of an EV Charging Station say at a Possible New Rt. 80, Exit 12 Farmers Market

http://www.njspotlight.com/stories/17/12/17/in-nj-electric-vehicles-could-be-key-to-economic-environmental-progress/?utm_source=NJ+Spotlight++Master+List&utm_campaign=404b441b64-EMAIL_CAMPAIGN_2017_12_18&utm_medium=email&utm_term=0_1d26f473a7-404b441b64-398669053

New Industrial (Non-food or Partially Non-Food) Products from Farming (or Farm Waste) such as for clothing, art, medicine and health, etc.

<http://dukefarms.org/classes--events/event-detail?id=40839866139>
<http://www.njaudubon.org/SectionConservation/SAVE/SunflowerSeeds.aspx> (currently inactive)
<https://www.curbed.com/2017/11/29/16715530/biological-house-eeen-til-eeen-gxn-denmark>
http://plantbiology.rutgers.edu/natural_products_human_health.html
<https://www.dailyrecord.com/story/news/local/2015/08/07/long-valley-doctor-uses-farm-food-heal/31313289/>
<http://www.newtrient.com/>

Excerpt from notice from NJDEP's Sustainable Business Initiative:

“In exactly one month from today, Earth Friendly Products will be hosting a tour of their facility in Parsippany, NJ! The tour will take place on February 22, 2018. Registration for the tour will begin at 9:30 a.m. with the tour starting at 10 a.m.

In its entirety the tour should be an hour long.

Earth Friendly Products is a manufacturing plant that produces household cleaning products that **are derived from renewable resources and plant-based materials**. Earth Friendly Products is a member of the New Jersey Sustainable Business Registry and has received numerous awards regarding their sustainable practices!

Join us to learn more about what they do and to see a tour of a sustainable manufacturing plant in action!

As always, S3 events are of no cost! Please follow this link to register: <https://www.eventbrite.com/e/s3-winter-2018-tour-earth-friendly-products-tickets-42053776979>

Event Details

Thursday, February 22, 2018 9:30 a.m. - 11:00 a.m.

Earth Friendly Products Manufacturing Plant

[50 Lackawanna Ave, Parsippany, NJ 07054](#)

Hope to see you there!

Gina Gambacorto
New Jersey Department of Environmental Protection
Bureau of Energy and Sustainability
401 East State Street
Trenton, NJ 08625
609.292.6814
Gina.Gambacorto@dep.nj.gov

Incentives Offered by Another State

<https://www.npr.org/sections/thesalt/2017/03/16/520281317/how-to-make-farmers-love-cover-crops-pay-them>

Farmer Participation in a Food Hub to Address Distributional Challenges, Increase Availability of Locally Produced Food, and Find New Customers

<http://foodshedalliance.org/wp-content/uploads/2016/02/PlanDesignR1.pdf>
<https://ecotrust.org/project/foodhub/>

Farmers with Different Philosophies Getting Together to Learn from each other

No known precedents or outlets.

Local Food Interest Networking

<http://foodshedalliance.org/green-drinks/>

Farmland Preservation

<http://www.co.warren.nj.us/Land%20Preservation%20Dept/CADB.html>

Food Processing Businesses

<http://scitechconnect.elsevier.com/sustainable-food-systems-improving/>

Farmer Participation in NJRC&D's or Environmental Group's Environmental Certification Program

<http://foodshedalliance.org/river-friendly-farms/>
<http://northjerseyrcd.org/our-projects/river-friendly-farm-certification-program/>

Farmer Participation in Environmental Group's "Farm Day"

<http://explorewarren.org/node/1899>

Other Farmer/Environmental Partnership

<https://www.landolakesinc.com/Blog/November-2016/A-first-of-its-kind-partnership>

<http://www.nj.gov/agriculture/news/press/2007/approved/press071002.html>

<http://www.nj Audubon.org/SectionConservation/StewardshipProgram/StewardshipBlog/tabid/2006/entryid/323/Cooking-with-Future-Farmers.aspx> (currently inactive)

http://www.capemaycountyherald.com/community/article_bc0c488e-8147-11e6-99cd-3b13bd8366f5.html

<http://www.nj Audubon.org/default.aspx?tabid=2061> (currently inactive)

[file:///C:/Users/Owner/Downloads/IncentiveGuide%20\(1\).pdf](file:///C:/Users/Owner/Downloads/IncentiveGuide%20(1).pdf) (from New Jersey Audubon and active)

<https://www.cabotcheese.coop/vital-capital-index>

Farmer Utilization of North Jersey RC&D Programs-- and Promotion of It

<http://northjerseyrcd.org/our-projects/farm-energy-audits/>

Farmer Utilization of State and Federal Incentives Programs for Wildlife and Other Conservation Programs—and Promotion of It

<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/financial/equip/?cid=stelprdb1044009>

<http://www.nj Audubon.org/Portals/10/Conservation/PDF/IncentiveGuide.pdf> (currently inactive)

<http://www.state.nj.us/dep/fgw/whipart03.htm>

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/nj/programs/>

<http://www.nj.gov/agriculture/divisions/anr/feature/salem.html>

<http://www.nj.gov/agriculture/grants/sare.html>

<http://www.nj.gov/agriculture/grants/soil.html>

<http://nj.gov/agriculture/divisions/md/prog/jerseyorganic.html>

<http://nj.gov/agriculture/divisions/md/prog/thirdpartyaudit.html>

https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/?cid=nrcs143_008224

<http://www.nj.gov/agriculture/grants/farmersmarket.html>

Farmer Participation in a NJDEP Initiative That Promotes and/or Recognizes Better-than-Required Environmental Performance

Sustainable Business Initiative, Waste Wise, Environmental Stewardship Initiative

Farmer Joining of New Jersey Sustainable Business Alliance and/or E2 Association

Associations of businesses promoting government policy that supports sustainable business at the state and federal levels. <http://asbcouncil.org/membership/member-organizations/profile/new-jersey-sustainable-business-council#.WmY116inETg>
<https://www.e2.org/>

Farmers Practicing Corporate Social Responsibility and Promoting It

“How Sustainability Helps Farm Businesses Grow” <https://www.agweb.com/article/how-sustainability-helps-farm-businesses-grow-naa-nate-birt/> (An unusually good article, covering a number of the bases above and below.)

Such as through the Global Reporting Index, issuing a Sustainability Report.

<http://www.wildlifehc.org/knowledge-resource/role-of-private-sector-in-species-recovery-protection-2/>

Seeking help from the NJ Small Business Development Center on sustainability practices.

<http://www.njeda.com/Press-Room/News-Articles/News-Articles/Sustainability-Good-for-Business>. Participating in their Sustainable Business Registry. <http://registry.njsbdc.com/>.

<http://registry.njsbdc.com/news-events/how-sustainability-helps-farm-businesses-grow>

Aiming for the U.N.’s Sustainable Development Goals,

<https://www.unglobalcompact.org/library/4321>

<http://dukefarms.org/footer/blog/new-era-of-sustainable-farming-at-duke-farms/>

Becoming a “B” Corp. <https://www.bcorporation.net/what-are-b-corps>

From an environmental group:

“From: action=environmentnewjersey.org@mail.salsalabs.net

<action=environmentnewjersey.org@mail.salsalabs.net> on behalf of Doug O'Malley,

Environment New Jersey Director <action@environmentnewjersey.org>

Subject: How can chefs save bees?

I'm excited to announce our newest project to save the bees.

Earlier this month, we launched the Bee Friendly Food Alliance, a network of chefs, restaurants and others in the food industry who are concerned about what the massive bee die-offs we've seen mean for our food supply -- and we're calling for action to save our pollinators.

So far we've organized over 65 chefs and restaurant owners to join the alliance, and given the initial buzz on the project, we think it has potential. But we need your help to ramp up our efforts.

Will you help us organize more chefs and others in the food industry to join our call to action by [sharing our Facebook post and tagging your favorite chefs and restaurants?](#)

After all, who knows better what we stand to lose if bees go extinct.

Major sources of food could be lost, from a colorful array of fruits and vegetables to coffee, honey and the milk and cheese produced by dairy cows that eat bee-pollinated alfalfa.¹

The restaurant industry holds a lot of influence -- both with policy makers and the producers of our food. The Bee Friendly Food Alliance is uniting chefs and restaurant owners, from family-run pizza shops to fine dining destinations, to wield that insider influence in the defense of bees.

We're giving chefs, restaurant owners and others in the food industry opportunities to take political action and to educate customers about the vital role bees play in their businesses.

Help us unite more chefs and restaurants to save the bees. [Share our post today.](#)

Doug O'Malley
Environment New Jersey Director”

<https://www.nofany.org/resources/farmers-and-gardeners/farmers-pledge>

Farmer Recognition of the Threats from Climate Change, Support and Implementation of Measures to Address It, While Improving Farm Resiliency

<http://sustainableagriculture.net/blog/russell-climate-mitigation/>

<https://thinkprogress.org/trump-farmers-usda-climate-change-86839dd2f8bc/>

<http://sustainableagriculture.net/blog/russell-climate-mitigation/> (Another [unusually good article](#))

<http://climatechange.rutgers.edu/resources/climate-change-and-agriculture>

Farmers Practicing Some Form of Sustainable Agriculture and Promoting It

Such as organic, permaculture, regenerative, biodynamic agriculture. See this other excerpt from the memo mentioned above after the Ramapo College lecture:

“We’re talking biodynamic agriculture, which seems pretty synonymous with permaculture, perennial farming, agro-forestry; and a somewhat close cousin to organic.”

<https://www.cambridge.org/core/journals/american-journal-of-alternative-agriculture/article/local-food-systems-and-sustainable-communities/9CA628ACC99277766469B0101E0BAF49>

Seek models of leading edge sustainability thinking and practices on farms.

<https://www.theguardian.com/sustainable-business/2016/may/10/california-winery-eco-friendly-wines-worms>

Pollinator Partnerships. <http://northjerseyrcd.org/our-projects/pollinator-conservation/>.

<http://pollinator.org/>. <http://sustainable-farming.rutgers.edu/let-native-pollinators-add-to-your-farms-bottom-line/>

Gleaning, with benefits for reputation and possible eligibility for a tax credit.

<http://www.localsharenj.org/>

Farmer Encouragement of Local Municipality to Apply for Bronze/Silver Certification Status, if it has not; and start one or more of the “Local Economies” Green Initiatives as a way(s) to Claim Points Towards Certification

<http://www.sustainablejersey.com/actions-certification/actions/#open/action/46>

http://www.sustainablejersey.com/actions-certification/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=46&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=1b94560c448d3879e884bea71acf08ee

<http://www.sustainablejersey.com/actions-certification/actions/#open/action/47>

Renewable Energy and Energy Efficiency on the Farm

<http://www.njcleanenergy.com/commercial-industrial/home/home>

<http://sustainable-farming.rutgers.edu/farm-energy-use-self-audits/>

Finding Ways to Utilize Biomass and Bioenergy in Environmentally-Friendly Ways

<http://foodpolicy.rutgers.edu/research.asp?id=27>

<http://strive-bioecon.de/>

Carbon Sequestration on Farms

<https://www.drbronner.com/all-one-blog/2018/01/moving-towards-regenerative-organic-certification/>

Combining Eco and Ag-Tourism and Taking the Latter Further

Offer a Personal Farm Experience to visitors from suburban and urban areas, including on-farm education and work, discussion, and B&B with a host farmer

Wine growers better promoting their environmental measures and better explaining how wine tastings work (as potential customers may not know)

<http://foodpolicy.rutgers.edu/research.asp?id=24>

<http://sustainable-farming.rutgers.edu/agritourism-in-new-jersey/>

<http://www.njskylands.com/fmbirding071>

Recruitment of Up-&-Coming Chefs, Who Would Work in or Create New Restaurants Using Local Crops; Similarly, Connect to Established Chefs and Cooking Programs.

<http://hubcityfm.org/why-connecting-farmers-to-chefs-matters-to-everyone/>
<http://agsci.psu.edu/wagn/topics/virtual-field-days/farm-to-chef-relationships>
<https://www.nytimes.com/2018/05/29/dining/lady-of-the-house-detroit-restaurant.html?hpw&rref=food&action=click&pgtype=Homepage&module=well-region®ion=bottom-well&WT.nav=bottom-well>

Cultivate food critics to write about it.

What ingredients are current chefs finding difficulty obtaining?

<https://foodtank.com/news/2013/07/five-sustainable-culinary-programs-for-aspiring-green-chefs/>

Ecosystem Services-based Businesses

<http://www.ecosystemmarketplace.com/articles/new-initiative-lends-a-helping-hand-to-europes-green-entrepreneurs/>

https://www.huffingtonpost.com/entry/so-you-want-to-become-an-ecosystem-entrepreneur_us_596f907fe4b02700a905eb7f (Another good one on an unexpected subject.)

Food Incubator

<https://hardwickagriculture.org/farmers-food-businesses/shared-use-commercial-kitchen>

<http://foodinnovation.rutgers.edu/incubatoroverview.html>

Food Innovation Competition

<https://www.facebook.com/photo.php?fbid=10155850135645853&set=pcb.10157080359284606&type=3&theater&ifg=1>

Sustainable Farm Demonstration

http://www.cmpbs.org/sites/default/files/ad3.1-sust_farm.pdf

<https://shenandoah.ext.vt.edu/programs/sustainable-farm-demonstration.html>

Farmer/Food Company Partnership with Urban Gardeners

<http://www.sponsorship.com/About-IEG/Sponsorship-Blogs/Carrie-Urban-Kapraun/March-2010/Triscuit-Takes-a-Different-Approach-to-Hunger-Reli.aspx>

Farmer Education of the Community and Schools

<http://www.sunsetvista.org/onsite-learning-center>

<http://www.americasgrowarow.org/about/>

<http://www.njaudubon.org/SectionConservation/StewardshipProgam/StewardshipBlog/tabid/2006/entryid/44/NJ-Audubon-Helps-School-and-Farmer-Take-Action-to-Provide-Important-Habitat-for-Bird-and-Pollinator-Species.aspx> (currently inactive)

Farmer Wellness Programs to Businesses

<http://www.sunsetvista.org/onsite-learning-center>

Farming and Customer Work on the Farm

<http://www.asburyfarm.org/workshare.html>

Farmer Programs to Combat Food Insecurity

<http://www.sunsetvista.org/onsite-learning-center>

<http://www.americasgrowarow.org/about/>

Social Entrepreneurship and Food

<https://foodtank.com/news/2017/07/social-enterprise-accelerator-takes-aim-hunger/>

<https://www.theguardian.com/social-enterprise-network/2014/may/22/social-enterprises-disrupting-food-system>

https://link.springer.com/chapter/10.1007/978-3-319-46518-0_8

https://ssir.org/articles/entry/approaching_food_waste_from_all_sides

Training of Veterans

<https://www.ncat.org/armedtofarm/>

Training of New Sustainability-oriented Farmers

<http://csgatgenesisfarm.com/apprenticeship-program/>

<https://nofanj.org/beginning-farmer-program/>

Training for Agro-Forestry

<http://apprenticeship.wellspringforestfarm.com/>

Training on Good Agricultural Practices for Health

Through The Foodshed Alliance. <http://foodshedalliance.org/>

Training of Prisoners

https://www.huffingtonpost.com/2014/05/27/california-inmate-farm-program_n_5400670.html

Farming and the Disabled

<http://www.agrability.org/resources/disability-and-ag/>

<https://www.disabled-world.com/disability/finance/agrability.php>

Buyers Paying Extra to Ensure Farmworkers Get Paid More

<http://www.orlandosentinel.com/opinion/os-publix-farmworkers-tomatoes-scott-maxwell-20141206-column.html>

Food Companies and Refugees

<https://www.nytimes.com/2016/11/01/business/for-helping-immigrants-chobanis-founder-draws-threats.html>