Carbon Emissions and Climate Change Disclosure by the Wood Pellet Industry – A Report to the SEC on Enviva Partners LP

Partnership for Policy Integrity and Dogwood Alliance March 14, 2016

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## I. Synopsis

The electric power sector is a massive source of climate-forcing carbon dioxide emissions. Accordingly, global efforts to mitigate climate change have focused on promoting and subsidizing zero-emissions renewable energy technologies like wind and solar energy to replace fossil fuels. However, many countries also subsidize wood-burning power plants as renewable energy generators, despite the fact that these facilities actually emit more carbon dioxide per megawatt-hour on a day-to-day basis than modern coal-burning plants. While the carbon intensity of biomass power would seem to stand in stark contrast with the need to reduce greenhouse gas emissions, support for bioenergy has persisted in Europe (EU) and the United Kingdom (UK) based in part on a poorly understood European carbon accounting convention that counts carbon losses from forest harvesting as a loss in land-based carbon, rather than as an emission from the power plants that burn wood as fuel. This convention has contributed to confusion about actual emissions from wood-burning power plants.

Generous subsidies for bioenergy offered in the EU and UK have driven several large-scale coal-towood power plant conversions, as well as development of new wood-burning power plants. These facilities burn millions of tons of wood per year, a large proportion of which is imported as wood pellets manufactured from forests of Canada and the United States. Lifecycle greenhouse gas impacts of wood pellets are significant, encompassing carbon emitted during wood harvesting, pellet manufacturing, product shipping, and finally, consumption as fuel.

In light of the global urgency of reducing GHG emissions, utilities, wood pellet manufacturing companies, and others benefiting financially from the promotion of bioenergy may be tempted to downplay carbon emissions associated with their product and exaggerate environmental or regulatory benefits in order to promote customer interest or investment. Thus, to investors and consumers concerned with climate change-related risks and opportunities, an understanding of the emissions and other environmental impacts of wood pellets as compared with non-combustion technologies like solar and wind energy could be material to decisions on where to invest. Inaccurate disclosures, and omissions of relevant information, could mislead investors and cause them to misdirect their investments.

## Enviva Partners, LP

With six wood pellet-manufacturing plants in the Southeastern US, Enviva Partners, LP (New York Stock Exchange: EVA) is the biggest wood pellet manufacturer in the United States. Enviva primarily sells to overseas customers; to date, its biggest customer has been Drax, operator of the largest power plant in the UK. Initially operating as a privately held company, Enviva went public in April 2015 to fund its expansion and cover the costs of a recent acquisition of a large competitor in Florida. Enviva Partners LP had a market capitalization of \$350 million as of October 27, 2015.

The Securities and Exchange Commission, New York Stock Exchange, and Federal Trade Commission require US companies to meet standards of disclosure and transparency and to avoid misleading communications to shareholders and consumers. We examined Enviva's prospectus and the registration statement the company filed in conjunction with its Initial Public Offering of April, 2015.

We also examined disclosure documents Enviva has filed with the SEC since then, including its October 14, 2015 "Business Overview," as well as information posted on the Company's website. Our review identified misleading statements and omissions by Enviva about its emissions and environmental impacts. These fall into three categories:

- 1. Assertions that burning wood pellets reduces emissions compared to coal, without disclosure of the carbon accounting protocols upon which these assertions depend, including the non-inclusion of greenhouse gases emitted when the fuel is actually burned.
- 2. Inaccurate and misleading portrayals of current US and European policy developments, including incorrect statements that EPA does not currently regulate carbon emissions from wood-burning power plants.
- 3. Complex and self-contradicting discussions that in our opinion exaggerate the sustainability of feedstock sources and downplay the use of whole trees as pellet feedstock.

Throughout, the Company has made similar claims and assertions based on inaccurate, out-of-date or misleading information, and has failed to provide additional context needed to avoid misleading investors. In our opinion, the aggregate effect is to present a misleadingly optimistic view of environmental benefits and financial prospects for growth of the wood pellet industry.

The Securities and Exchange Commission issued a guideline in 2010 on disclosures related to climate change. In addition, the New York State Attorney General has recently brought attention to disclosure of environmental and climate related issues. We call for examination and oversight of wood pellet and other bioenergy industry claims by the Securities and Exchange Commission, the New York Stock Exchange and the New York State Attorney General. We ask that securities regulators examine, in particular, statements from companies that their products "reduce" carbon emissions, to ensure that such disclosures are accompanied by the clarification, where applicable, of carbon accounting protocols, including whether emissions from fuel combustion are excluded. In each instance, we request that the regulators assess whether the disclosures, such as they are, constitute materially misleading communications, whether each such communication involved an intent to mislead, and whether corrective or enforcement action is appropriate.

## II. Executive Summary

Biomass power generation – the combustion of wood, agricultural residues, and other biological materials as fuel in electrical generating plants – has increased significantly in the EU and UK in recent years, driven by the eligibility of bioenergy to meet mandated renewable energy targets and generous renewable subsidies available for renewable technologies. However, emerging demand for biomass is too large to be met with local sources, thus power companies in the EU and UK import millions of tons of biomass each year, a large proportion as wood pellets from a new and fast-growing wood pellet industry in North America. The growth in international biomass supply and consumption has been controversial, however. Unlike wind and solar energy, burning biomass emits carbon dioxide, a major greenhouse gas, and in fact, burning wood and other biomass fuels actually increases the amount of carbon dioxide that a power plant emits per megawatt-hour of electricity generated, compared to burning coal or gas. Treatment of biomass power as a renewable energy technology worthy of subsidization has been based in part on a carbon-counting protocol in the EU and UK that ignores these stack emissions and the considerable time-lag that exists between emissions and their eventual offsetting through new forest growth, and the lack of any institutional or legal mechanism for determining whether forest regrowth is actually sufficient to offset emissions.



Figure ES-1. Picture from a Washington Post article,<sup>1</sup> showing an area where trees were harvested and sold to Enviva for pellet manufacture. The paper's caption reads, "*Little remains but stumps and puddles in what was once a bottomland hardwood forest on the banks of the Roanoke River in northeastern North Carolina. Many of the trees were turned into wood pellets for burning in power plants in Europe. Others were sold for high-value uses such as furniture."* (Joby Warrick/The Washington Post).

Further, the demand for biomass is growing rapidly, and already requires harvesting millions of tons of wood from forests each year. Impacts are being particularly noted in the Southeastern United States,

<sup>&</sup>lt;sup>1</sup> Joby Warrick. How Europe's climate policies led to more U.S. trees being cut down. Washington Post, June 2, 2015. At https://www.washingtonpost.com/national/health-science/how-europes-climate-policies-have-led-to-more-trees-cut-down-in-the-us/2015/06/01/ab1a2d9e-060e-11e5-bc72-f3e16bf50bb6\_story.html

where the wood pellet manufacturing industry harvests wood from both pine plantations and native lowland hardwood forests that are valued for their exceptional biodiversity and high carbon storage value (Figure ES-1).

With six pellet manufacturing facilities, the publically traded company Enviva Partners LP is the largest wood pellet manufacturing and exporting company in the United States. Enviva exports pellets to companies in the EU, the UK, and Asia; currently, an important customer for the Company's pellets is

the Drax power plant in the UK, a 3,000 MW coal-burning facility that is converting part of its generation capacity to be fueled by wood. Enviva has made a variety of statements, both in filings to the Securities and Exchange Commission (SEC) and in public-facing materials from its website, that burning wood as fuel in power plants reduces carbon emissions compared to coal. However, data on use of the biomass as fuel at the Drax power station in UK demonstrates that per megawatt-hour, emissions are actually higher from burning wood than from burning coal (Figure ES-2).

As a company doing business in the US, Enviva is subject to disclosure and transparency requirements of the Securities and Exchange Commission (SEC) and the Federal Trade

#### 8.3 Carbon Dioxide (CO<sub>2</sub>)

The power station emits  $CO_2$  from the combustion of fuel as well as from the chemical reaction within the FGD process. The  $CO_2$  emissions are calculated and verified in compliance with the requirements of the EUETS. The breakdown for 2013 for each of the major combustion and process sources is provided in Table 6. Note that emissions from biomass are counted as zero within the EUETS.



	Actual CO <sub>2</sub> (t <sub>calculated</sub> )			EUET (t <sub>calo</sub>	SCO <sub>2</sub> culated)	
Coal and Petcoke	20,089,607		20,089,607			
Biomass	2,799,391			0		
Propane	53		53			
FGD	157,110	Drax	genei	ration	20	13
All Fuel Oils	72,737	Coal		TWh	23.3	88%
Total	23,118,898	Biomas	5	TWh	2.9	12%

Figure ES-2. Drax data on CO<sub>2</sub> emissions from burning fossil fuels and biomass in 2013. Inset shows electricity generated by coal and biomass. By combining these data sources, it is apparent that in 2013, the CO<sub>2</sub> emissions rate for coal at Drax was 1,901 lb/MWh ("pounds per megawatt-hour), while the emissions rate for biomass was higher, at 2,128 lb/MWh. See main text for details.

Commission (FTC). The SEC's rules require companies to disclose certain information to investors, with a focus on "material" information where there is a "substantial likelihood that a reasonable investor would consider it important in deciding how to vote or make an investment decision, or, put another way, if the information would alter the total mix of available information."<sup>2</sup> For companies engaging in marketing, the Federal Trade Commission labels a "representation, omission, or practice" as deceptive

<sup>&</sup>lt;sup>2</sup> Securities and Exchange Commission. Commission Guidance Regarding Disclosure Related to Climate Change, 17 CFR Parts 211, 231 and 241 [Release Nos. 33-9106; 34-61469; FR-82]. Page 11.

*"if it is likely to mislead consumers acting reasonably under the circumstances and is material to consumers' decisions."* <sup>3</sup>

Given the substantial greenhouse gas emissions from burning wood as fuel, the subsidization of biomass energy as "renewable" alongside zero-emissions technologies like wind and solar has proved controversial. In some cases, where policymakers have understood and acknowledged the magnitude of bioenergy emissions and the uncertainty that emissions will eventually be offset, they have removed or restricted these subsidies, as for instance in Massachusetts, where low-efficiency wood-burning power plants no longer qualify for renewable energy credits under the state's Renewable Portfolio Standard (combined heat and power plants that meet an efficiency standard still qualify).

Given the potentially large greenhouse gas and forest impacts of Enviva's wood use, we evaluated the Company's filings with the SEC, as well as the Company's public statements, to determine whether Enviva is meeting FTC and SEC disclosure requirements, particularly those set forth in a 2010 SEC guidance on disclosure of climate change-related matters. Our evaluation found evidence that Enviva is misrepresenting actual emissions from burning wood pellets as fuel by widely representing their product as "reducing" carbon emissions compared to burning coal without providing necessary context for understanding the limitations of that claim.

## **Carbon Emissions Are Off the Books**

Despite the physical reality that burning wood increases stack emissions of carbon dioxide relative to coal, Enviva repeatedly claims in its SEC filings and elsewhere that burning wood "reduces" emissions compared to coal. The claim exploits a policy loophole in the EU and UK that is increasingly recognized by scientists and policymakers as contributing to misinformation about the real impacts of burning wood. Because carbon accounting protocols under the United Nations Framework Convention on Climate Change (UNFCCC) count carbon losses from forest harvesting in the Agriculture, Forestry and Other Land Use (AFOLU) sector of countries where they occur, emissions from burning that wood as fuel are *not* reported in greenhouse gas accounting by EU member states, so as to avoid counting the emissions twice.<sup>4</sup>

The European Union has no unified rules for counting emissions from bioenergy, allowing member states to report as they see fit, and in the UK, the only bioenergy carbon dioxide emissions that are counted by the power sector are those from fossil fuels burned in the course of wood pellet manufacturing and transatlantic shipping. Thus, although renewable energy policy and incentives in the EU and UK have increased demand for wood and other biomass fuels by tens of millions of tons per year, in turn representing tens of millions of tons of carbon dioxide emitted when the wood is burned, if that wood comes from the US or some other country that does not report forest carbon losses under the Kyoto Protocol, the transfer of carbon from the forest to the atmosphere is effectively "off the books."

<sup>&</sup>lt;sup>3</sup> Federal Trade Commission. 16 CFR Part 260, Guides for the use of environmental marketing claims. At https://www.ftc.gov/sites/default/files/attachments/press-releases/ftc-issues-revised-green-guides/greenguides.pdf

<sup>&</sup>lt;sup>4</sup> See pages 14 - 16 of main report for a more detailed explanation of carbon accounting for bioenergy.

Enviva does not explain that its claim of "reduced" emissions is based on this regulatory accounting loophole that *excludes the CO<sub>2</sub> coming out the smokestack* when wood fuel is burned. The portrayal of wood pellets as reducing power plant emissions is pervasive and unqualified, as for instance in Figure ES-3, from a "Business Overview" document furnished to investors in November 2015.

For public consumption, the Company's "Frequently Asked Questions" webpage<sup>5</sup> states:

*"I have heard that burning wood pellets actually results in more carbon emissions than burning coal. Is that true?* 

## We Reduce Carbon Emissions

European Union 2014 report: biomass can lead to "significant greenhouse gas savings compared to fossil fuels"

Source: State of play on the sustainability of solid and gased biomass used for electricity, heating and cooling in the EU. European Commission. July 2014.

Figure ES-3. Graphic from November 2015 "Business Overview" Enviva filed at the SEC.

No. According to the UK Environment Agency,

switching from coal to biomass reduces emissions of carbon dioxide by between 74 and 90% on a lifecycle basis.[1] Enviva consistently exceeds the Greenhouse Gas (GHG) reductions targeted by governments like the UK.[2] We know this because we track, internally audit, and are regularly assessed by stringent 3rd party audits of all GHG emissions associated with the harvest, transport, processing, and shipping of our products. We report these total lifecycle emissions on a regular basis."

This is a misleading answer to the question, because the statement that "all" GHG emissions from harvest and "total" lifecycle emissions are counted would be interpreted by most people to include carbon in the wood that is removed from the land, which is oxidized to  $CO_2$  when the wood is burned. However, the protocol to which the Company refers does *not* include the carbon that is contained in the wood, and the GHG emissions associated with "harvest" in the statement refer only to  $CO_2$  produced from fossil fuels that are burned in the course of wood harvesting.

The SEC requires companies to disclose known material trends and risks in their filings, so that investors may evaluate the soundness of an investment. Environmental regulations are considered a risk for companies, sometimes involving costs of compliance. Enviva misrepresents the current status of US Environmental Protection Agency (EPA) regulation of biomass plant carbon dioxide in the US, downplaying the risk of regulation. In its risk disclosures to the SEC, Enviva states *"it is possible that in the future, US EPA or individual states may seek (or be required) to regulate carbon dioxide or other GHG emissions from biomass-fired power plants."*<sup>6</sup> However, in our opinion, the statement is misleading, because EPA already regulates these emissions, and has done so since 2014.<sup>7</sup>

<sup>&</sup>lt;sup>5</sup> http://www.envivabiomass.com/faq-most-frequently-asked/#emissions Accessed October 19, 2015

<sup>&</sup>lt;sup>6</sup> Prospectus page 30/39

<sup>&</sup>lt;sup>7</sup> Section IV.A.3

Also in its risk disclosures, Enviva discusses the importance of renewable energy subsidies to the power companies in the UK that buy its pellets, but does not disclose that the UK government discussed, and then executed, a reduction in one of the subsidy programs upon which Drax, Enviva's main customer, depends. The reduction was accompanied by a statement from the UK government that emissions from biomass energy are likely too high to meet the government's decarbonization targets.<sup>8</sup>

Enviva is eager to develop a market for its wood pellets in the United States, and has made other statements regarding the regulatory environment and the Company's US prospects that could mislead investors. The Clean Power Plan (CPP) is the EPA's set of regulations for reducing carbon dioxide emissions from the power sector. While the EPA has left the door open to some types of bioenergy as compliance measures under the CPP, the EPA did not include biomass energy as part of its approach for the "best system of emission reduction" for reducing emissions under the Clean Power Plan, and during the rulemaking, the agency acknowledged that co-firing biomass with coal can degrade facility efficiency<sup>9</sup> and thus *increase* CO<sub>2</sub> emissions. However, Enviva's press release upon CPP finalization may give the impression that EPA selected biomass as a favored technology. Titled "Enviva "Applauds EPA on Release of the Clean Power Plan," it states

"Converting coal-fired plants to dedicated or co-fired biomass plants is one of the quickest and most cost-effective ways of achieving substantial reductions in emissions of carbon dioxide and other pollutants."<sup>10</sup>

In our assessment, the statement is misleading because once again it does not acknowledge the physical reality that burning biomass in power plants actually *increases* day-to-day carbon dioxide emissions compared to coal.

Enviva's disclosures about the sources of wood it uses are also misleading in our opinion, because they downplay the harvesting of whole trees for pellet feedstock and the general impacts of forest harvesting. The Company obtains wood from a variety of sources, including sawmill residues and low-diameter tops and limbs left over after trees are cut for sawlogs ("forestry residues"). Data from Enviva show that 50% or more of the wood processed into pellets is from naturally regenerated hardwood stands (Figure ES-4), many of them located in wetlands.<sup>11</sup> Roundwood, rather than low-diameter forestry residues, is a major source of pellet feedstock (see Figure 4, main report).

<sup>&</sup>lt;sup>8</sup> Section IV.B.2.

<sup>&</sup>lt;sup>9</sup> U.S. Environmental Protection Agency. Documentation for EPA Base Case v.5.13 Using the Integrated Planning Model. Page 5-9. http://www.epa.gov/powersectormodeling/docs/v513/Documentation.pdf

<sup>&</sup>lt;sup>10</sup> Enviva press release, August 4, 2015. Available at http://www.reuters.com/article/2015/08/04/md-envivaidUSnBw046040a+100+BSW20150804#ZoEcKWYkQswM6oxc.97.

<sup>&</sup>lt;sup>11</sup> Enviva discusses wetland forest logging at http://www.envivabiomass.com/faq-forests-fiber-sourcing/#wetlands. The Dogwood Alliance has documented Enviva's logging in wetlands. Representative photos can be seen at http://www.dogwoodalliance.org/wp-content/uploads/2015/06/Wetlands-Logging-Investigation-Flyer.pdf

Species Information				
Mill	Species Breakdown (hardwood vs. softwood)			
Ahoskie	HW-78%, SW-22%			
Amory	HW-48%, SW-52%			
Monroe (Third-party supplier)	HW-82%, SW-18%			
Northampton	HW-89%, SW-11%			
Southampton	HW-100%			
Wiggins	HW-43%; SW-57%			

Figure ES-4. The balance of hardwood and softwood used at Eviva's pellet mills. <sup>12</sup>

However, Enviva's statements in its public materials and SEC filings more prominently describe the Company's feedstocks as coming from mill residues, forestry residues, and other sources of waste wood.<sup>13</sup> For instance, Enviva's prospectus, dated April 2015, states,

"Currently, our raw materials are byproducts of traditional timber harvesting, principally the tops and limbs of trees as well as other low-value wood materials that are generated in a harvest, and industrial residuals (chips, sawdust and other wood industry byproducts).<sup>14</sup>"

A brochure from Enviva's website states that feedstock is from "underused" residues, and only mentions "low grade round timber" (i.e., trees) in passing:

PUTTING UNDERUSED RESOURCES TO GOOD USE

Enviva produces wood pellets from both processed and unprocessed wood residues. Our processed wood raw materials include chips, bark, and sawdust by-products from wood processing facilities. Unprocessed residues include tree tops, branches, stumps, and other forestry debris remaining after the primary biomass (or the tree trunk) has been processed and shipped from the forest. These unprocessed residues would most likely otherwise go unused as a resource. Additional biomass sources currently include low-grade round timber.<sup>15</sup>

The use of roundwood by the pellet industry competes directly with wood use by the domestic pulp and paper industry, which is increasingly alarmed about the sharp increase in wood harvesting by the pellet industry. Representative concerns, as set out in a presentation<sup>16</sup> given on behalf of the pulp and paper company MeadWestvaco, are that the pellet industry will create damage and dislocation in domestic wood markets, that available forest resources won't sustain the harvesting pressure, and that the vast majority of the fiber is coming from whole trees, not residuals. A recent report commissioned by the American Forest and Paper Association (AFPA) concludes that the UK's new "contracts for

<sup>&</sup>lt;sup>12</sup> Enviva factsheet titled "Enviva Data for Trader EUTR Compliance," dated February 2015.

<sup>&</sup>lt;sup>13</sup> Section IV.C.2

<sup>&</sup>lt;sup>14</sup> Prospectus page 30/39

<sup>&</sup>lt;sup>15</sup> At http://www.envivabiomass.com/wp-content/uploads/ITR-21177-WoodPelletsBrochureResize\_v1a1.pdf

<sup>&</sup>lt;sup>16</sup> Irene Kowalczyk, Director, Global Sourcing & Policy, MeadWestvaco. "Forest Resource Sustainability – Forest Products Industry Persective." Presentation given at the Kentucky Industrial Utility Customers conference, March 13, 2014. Available at http://kiucenergy.com/wp-content/uploads/2013/08/Kowakczyk\_Presentation.pptx or http://www.pfpi.net/wp-content/uploads/2015/11/Kowalczyk\_Presentation.pdf

difference" scheme, which gives renewable energy generators a guaranteed price for energy, will allow pellet producers to pay up to \$53 per ton of wood fiber, far greater than the recent price of \$11 per green ton paid by domestic pulp and paper makers.<sup>17</sup> Partially in response to these concerns, the EU recently announced an investigation into the next coal-to-wood conversion of a boiler at the Drax plant, stating that the conversion could "significantly distort competition in the biomass market."<sup>18</sup>

Enviva also states that all of its forestry operations are certified "on an ongoing basis for sustainability," potentially creating the impression that forests are protected during harvesting, when in fact this appears to refer only to "chain of custody" certifications that separate certified sustainably harvested wood from uncertified wood. As far as we are able to ascertain from the disclosures, the Company does not disclose what portion of its forests are *actually certified as sustainably harvested*. The complex disclosures on this issue may create the impression for investors and the public that forests utilized by Enviva are more protected during harvesting than they actually are.<sup>19</sup> In fact, there seem to be few limits on the intensive forestry practices that Enviva employs, which include clearcutting hardwood forests that have remained undisturbed for decades.

The renewability of using trees as fuel is hypothetically valid, since in theory, new trees can replace those cut for pellet feedstock. However, the theoretical renewability of a fuel should not be conflated with having low emissions, or no emissions. Smokestack emissions from burning biomass are greater per megawatt-hour than from coal, and lifecycle emissions associated with manufacturing and transporting wood pellets overseas increase greenhouse gas emissions further. It may be inconvenient for the Company that its product, "when used as directed," increases day to day carbon dioxide emissions, but given the importance of environmental concerns in promoting its business it is essential for the Company to avoid distortion of those benefits by omitting necessary context. While Enviva's customers in the EU and UK may capitalize on a loophole in carbon accounting policy that exempts smokestack emissions from burning wood, Enviva itself has an obligation under US law, including SEC and FTC rules, to include sufficient additional disclosures so that its publications do not materially exaggerate environmental benefits.

Altogether, Enviva has made a number of statements that are misleading, both in public documents and in filings to the SEC, and has failed to disclose other facts that would be of significant interest and concern to investors, especially investors focused on renewable energy and sustainable investments. Enviva's statements that their pellets "reduce" emissions compared to burning coal is misleading without an explanation of how this conclusion is based a European carbon accounting framework that does not count emissions from actually burning the pellets; prominent statements that the Company primarily relies on mill and forestry residues for feedstock are misleading given the less prominent mentions and evidence from the company that roundwood and whole trees play a major role as pellet

<sup>&</sup>lt;sup>17</sup> RISI, 2015. An analysis of UK biomass power policy, US South pellet production and impacts on wood fiber markets. (Press release at http://afandpa.org/media/news/2015/11/18/new-research-shows-uk-wood-pellet-subsidies-distort-the-usmarket-for-wood-fiber)

<sup>&</sup>lt;sup>18</sup> European Commission - Press release: "State aid: Commission opens in-depth investigation into UK public support for Drax power plant." Brussels, 5 January 2016. At http://europa.eu/rapid/press-release\_IP-16-2\_en.htm.

<sup>&</sup>lt;sup>19</sup> Section IV.C.3.

feedstock; statements that EPA does not currently regulate CO<sub>2</sub> from wood-burning power plants are demonstrably incorrect; and the failure to disclose its customer Drax's loss of subsidies is another omission. We urge the Federal Trade Commission, the Securities and Exchange Commission, the New York Stock Exchange, and the New York Attorney General to examine these failings in disclosure individually and in the aggregate. We ask that the officials of these entities assess whether the Company has presented a materially misleading portrait of its environmental and financial strengths, then take appropriate corrective and enforcement action, including requiring the Company to revise, supplement, update or correct existing disclosures.

### III. Background

Subsidized as renewable energy alongside wind and solar, biomass electricity – burning wood and other plant materials as fuel in power plants – represents a growing industry in the European Union and the United Kingdom. Power companies are developing new wood burning power plants and converting coal plants to burn wood, making them eligible for renewable energy subsidies. However, European forests can't provide the millions of tons of fuel required by wood-burning facilities, so utilities are importing wood from other countries, including the United States. Shipping wood chips is inefficient, because wood is about half water by weight, thus to increase its value as fuel, wood is processed into pellets, which are manufactured by pulverizing, drying, and extruding wood through a die. In the U.S., wood use for pellet manufacturing was around 20 million tons in 2014, and is projected by Forisk, a forestry research consulting firm, to approximately double by 2018.<sup>20</sup>

With six operating wood pellet manufacturing facilities in the Southeastern U.S., Enviva is the largest pellet manufacturing and exporting company in the United States. To date, the most important customer for Enviva's pellets has been the 3,000 MW Drax coal plant in the UK, which has converted two of its six boilers from coal to wood, and are ramping up biomass use in a third unit with the goal of full conversion.

Enviva was a privately held company, but to fund expansion and reimburse the Company's recent acquisition of a large competitor in Florida, the Company went public in April 2015. To attract investment, Enviva needs to convince US shareholders and investors that its business model is solid - that it has an assured and growing market for its products in the EU and UK, and potentially in the United States. However, the Company is faced with a challenge when describing and promoting its product: The central premise upon which the wood pellet industry is based -

that it is beneficial to the climate – is at odds with the physical reality that wood-burning power plants emit as much or more

#### 8.3 Carbon Dioxide (CO<sub>2</sub>)

The power station emits  $CO_2$  from the combustion of fuel as well as from the chemical reaction within the FGD process. The  $CO_2$  emissions are calculated and verified in compliance with the requirements of the EUETS. The breakdown for 2013 for each of the major combustion and process sources is provided in Table 6. Note that emissions from biomass are counted as zero within the EUETS.

Table 6. CO<sub>2</sub> emissions 2013

	Actual CO <sub>2</sub> (t <sub>calculated</sub> )		EUETS CO <sub>2</sub> (t calculated)			
Coal and Petcoke	20,089,607		20,089,607			
Biomass	Biomass 2,799,391		0			
Propane	53		53			
FGD	157,110	Drax	generation		2013	
All Fuel Oils	72,737	Coal		TWh	23.3	88%
Total	23,118,898	Biomas	s	TWh	2.9	12%

Figure 1. Drax data on  $CO_2$  emissions from burning fossil fuels and biomass in 2013. Inset shows electricity generated by coal and biomass. Per megawatt-hour, emissions from biomass exceed those from coal (see text).

<sup>&</sup>lt;sup>20</sup> Forisk Consulting. Wood Bioenergy US report, Q4 2015.

carbon dioxide per megawatt-hour as coal burning units.

Data from Drax itself show the magnitude of wood use and emissions. In 2013, the facility burned about 1.6 million metric tonnes of pellets, emitting almost 2.8 million metric tonnes of carbon dioxide (Figure 1).<sup>21</sup> By combining emissions data with data on electricity generation provided in Drax's "biomass supply" document,<sup>22</sup> it is apparent that in 2013, the average  $CO_2$  emissions rate for coal at Drax was 1,901 lb/MWh (pounds per megawatt-hour), while the averaged emissions rate for wood was higher, at 2,128 lb/MWh.<sup>23</sup> Drax increased its wood use significantly in 2014, burning over 4 million metric tonnes of pellets<sup>24</sup> that represented more than twice as many tonnes of raw wood prior to processing and drying.<sup>25</sup>

Since the goal of generating renewable energy is to reduce carbon emissions and mitigate climate change, why would the UK subsidize companies like Drax to convert to burning wood, if burning wood emits more carbon dioxide than burning coal?

A key factor is a provision of EU carbon policy that treats combustion of the actual wood fuel as if it emits zero carbon dioxide<sup>26</sup> (as referenced in the Drax table of emissions at Figure 1, which states, *"emissions from biomass are counted as zero"* under European Union Emissions Trading System (EUETS) rules). The only CO<sub>2</sub> counted is that from fossil fuels that are burned in the course of manufacturing and transporting biomass fuels.

A 2014 report from the UK's Department of Energy and Climate Change (DECC) describes the emissions loophole ("LCA" stands for Life Cycle Accounting):

- 20,089,607 metric tonnes CO<sub>2</sub> x 1.10231 English tons/tonne x 2000 lb/English ton = 44,289,949,384.34 lb CO<sub>2</sub>
- Divided by 23.3 TWh x 1,000,000 MWh/TWh = 23,300,000 MWh
- 44,289,949,384.34 lb CO<sub>2</sub> ÷ 23,300,000 = **1,900.86 lb/MWh**
- Emission rate for biomass
  - 2,799,391 metric tonnes CO<sub>2</sub> x 1.10231 English tons/tonne x 2000 lb/English ton = 6,171,593,386.42 lb CO<sub>2</sub>
  - Divided by 2.9 TWh x 1,000,000 MWh/TWh = 2,900,000 MWh
  - 6,171,593,386.42 lb CO<sub>2</sub> ÷ 2,900,000 = **2,128.14 lb/MWh**

<sup>&</sup>lt;sup>21</sup> Drax Annual Review of Environmental Perfomance, 2013. At http://www.drax.com/media/56551/Environmental-Performance-Review-2013.pdf

<sup>&</sup>lt;sup>22</sup> Drax's biomass supply report for 2013 and 2014 is located at http://www.drax.com/media/56583/biomass-supply-report-2014.pdf

<sup>&</sup>lt;sup>23</sup> Emission rate for coal:

<sup>&</sup>lt;sup>24</sup> http://www.drax.com/media/56583/biomass-supply-report-2014.pdf

<sup>&</sup>lt;sup>25</sup> Industry estimates for the amount of roundwood required to make one ton of pellets range from 2 to around 2.24 tons. This estimate does not account for the mass of tops and limbs of trees harvested for pellet manufacturing, which are not useful as feedstock but are burned for energy at the pellet manufacturing plant.

<sup>&</sup>lt;sup>26</sup> As noted in a report by the Institute for Energy and Transport of the European Commission, "In the current European energy policy framework, biogenic CO2 emissions from combustion of forest biomass used for energy and transport purposes are set to zero." EU policies do hold companies burning biomass as responsible emissions from manufacturing and transporting wood fuel, because these emissions are not counted elsewhere under national-level policies. (Agostini, et al. 2013. Carbon accounting for bioenergy. Joint Research Centre, Institute for Energy and Transport, European Commission, Luxembourg.)

"The Renewable Energy Directive LCA methodology considers the emissions from the cultivation, harvesting, processing and transport of the biomass feedstocks. It also includes direct land use change where the land use has changed category since 2008, e.g. from forest to annual crop land, grassland to annual crop land. However, the Renewable Energy Directive LCA methodology **does not account for changes in the carbon stock of a forest, foregone carbon sequestration of land**, or indirect impacts on carbon stocks in other areas of land."<sup>27</sup>

The "carbon stock" in the above quote refers to the carbon in soil, trees, and other vegetation. All other things being equal, the carbon that is removed from the land as wood is equivalent to the carbon going up the stack (as carbon dioxide) when wood is burned in power plants. "Foregone carbon sequestration of land" is shorthand for saying that if trees were not cut for fuel, but instead were allowed to keep growing, they would continue taking carbon dioxide out of the atmosphere (thus reducing atmospheric carbon dioxide concentration). In summary, the LCA protocol does not represent "total" lifecycle accounting, because it does not include the largest source of carbon emissions associated with biomass fuel – the carbon dioxide emitted when wood is burned.<sup>28</sup>

The DECC report goes on to state that full lifecycle accounting is required to determine the GHG impacts of bioenergy:

"If the carbon stored in a forest reduces, carbon dioxide (CO2) is released to the atmosphere, whereas if the carbon stock of a forest increases, CO2 is removed from the atmosphere and sequestered as biomass in the forest.... Recent reports have shown that the **above factors omitted** in the Renewable Energy Directive LCA methodology can have significant impacts on the total GHG intensities of some types of bioenergy feedstocks, and therefore need to be considered if we wish to understand the true GHG intensities of different bioenergy feedstocks and technologies."

Similarly, a report from the European Commission's Institute for Energy and Transport notes<sup>29</sup> that the failure of EU and UK emissions accounting to include changes in forest carbon means policies promoting bioenergy may not reduce emissions in a timely way, especially when trees ("stemwood") are harvested for fuel:

*"in order to assess the climate change mitigation potential of forest bioenergy pathways, the* **assumption of biogenic carbon neutrality is not valid under policy relevant time horizons** (in particular for dedicated harvest of stemwood for bioenergy only) if carbon stock changes in the forest are not accounted for."

<sup>&</sup>lt;sup>27</sup> Stephenson, A.L., and MacKay, D.J.C. 2014. Scenarios for assessing the greenhouse gas impacts and energy input requirements of using North American woody biomass for electricity generation in the UK. Department of Energy & Climate Change, London, UK. At

https://www.gov.uk/government/uploads/system/uploads/attachment\_data/file/349024/BEAC\_Report\_290814.pdf.

<sup>&</sup>lt;sup>28</sup> The exception is that CO<sub>2</sub> emissions from burning biomass are counted toward a country's total emissions as reported under UNFCCC rules if fuel is obtained from areas in that same country where there is land-use conversion, as for instance if a forest is replaced by agriculture.

<sup>&</sup>lt;sup>29</sup> Agostini, A., et al. 2013. Carbon accounting of forest bioenergy. Institute for Energy and Transport, European Commission. At http://iet.jrc.ec.europa.eu/bf-ca/sites/bf-ca/files/files/documents/eur25354en\_online-final.pdf

The origin of the loophole that excludes bioenergy stack emissions was benign. Countries report national greenhouse gas emission totals under carbon accounting protocols of the United Nations Framework Convention on Climate Change (UNFCCC), a record-keeping mechanism that has no enforcement consequences. The UNFCCC protocol counts carbon impacts of forest harvesting in each country's Agriculture, Forestry and Other Land Use (AFOLU) sector, thus to avoid counting carbon impacts twice, carbon emitted from wood burned in power plants is *not* counted. However, this convention of not counting stack emissions was also incorporated into the EU rules governing power sector carbon accounting for renewable energy and emissions trading set up under the Kyoto Accord. In the UK, the only biomass-related carbon dioxide emissions that are officially counted are those from fossil fuels burned during biomass fuel manufacturing and transport – emissions from burning the wood itself are not counted. Thus, even as renewable energy policy and incentives in the EU and UK are increasing demand for imported wood fuel by millions of tons per year, if that wood fuel comes from the US or Canada, neither of which is party to Kyoto, the transfer of carbon from the forest to the atmosphere is effectively "off the books," recorded neither as a loss in carbon from forest harvesting in the home country, nor as stack emissions in the country where the fuel is burned.

The contradiction between the physical reality that burning biomass emits as much or more  $CO_2$  as burning fossil fuels, and the EU's policy of not counting emissions from biomass combustion, may induce wood pellet manufacturers to avoid discussing emissions, or even to actively state that burning wood *reduces* carbon emissions without adding the needed qualification that this reflects an accounting convention rather than physical reality. For instance, Enviva has advertised its wood pellets in the United States as a way to reduce emissions, claiming in a recent press release that

"Converting coal-fired plants to dedicated or co-fired biomass plants is one of the quickest and most cost-effective ways of achieving substantial reductions in emissions of carbon dioxide and other pollutants."<sup>30</sup>

As a publicly traded company doing business in the United States, Enviva is subject to disclosure and transparency rules set by the Federal Trade Commission (FTC) and the Securities and Exchange Commission (SEC). In particular, the SEC's rules require publically traded companies to disclose additional information to investors where necessary to avoid materially misleading them.<sup>31</sup> The definition of "material" information is where there is a "substantial likelihood that a reasonable investor would consider it important in deciding how to vote or make an investment decision, or, put another way, if the information would alter the total mix of available information."<sup>32</sup> (For a more detailed discussion of the SEC's requirements for Initial Public Offerings, please see the Appendix).

Among the SEC's required disclosures are environmental matters, such as the cost of complying with environmental rules. In 2010, the SEC issued new guidelines to assist companies in disclosing matters relating to climate change. These guidelines highlight the need for disclosure on direct risks arising

<sup>&</sup>lt;sup>30</sup> Enviva press release, August 4, 2015. Available at http://www.reuters.com/article/2015/08/04/md-envivaidUSnBw046040a+100+BSW20150804#ZoEcKWYkQswM6oxc.97.

<sup>&</sup>lt;sup>31</sup> SEC Rule 10b-5, 17 C.F.R. 240.10b-5.

<sup>&</sup>lt;sup>32</sup> Securities and Exchange Commission. Commission Guidance Regarding Disclosure Related to Climate Change, 17 CFR Parts 211, 231 and 241 [Release Nos. 33-9106; 34-61469; FR-82]. Page 11.

from existing or pending climate change-related legislation or regulation in the US or internationally; indirect risks such as the potential for decreased consumer demand; and reputational risks.

## The guidance states

"Disclosure decisions concerning trends, demands, commitments, events, and uncertainties generally should involve the:

- consideration of financial, operational and other information known to the registrant;
- identification, based on this information, of known trends and uncertainties; and
- assessment of whether these trends and uncertainties will have, or are reasonably likely to have, a material impact on the registrant's liquidity, capital resources or results of operations." <sup>33</sup>

Companies doing business in the United States are also required to comply with Federal Trade Commission (FTC) rules on unfair trade practices that require companies to avoid making misleading statements about their products. The FTC's "Green Guides" outline how companies should discuss claims of environmental benefit, deeming a "*representation, omission, or practice*" as deceptive "*if it is likely to mislead consumers acting reasonably under the circumstances and is material to consumers*" *decisions*." <sup>34</sup> The Green Guides also stress the importance of disclosures, stating

"To prevent deceptive claims, qualifications and disclosures should be clear, prominent, and understandable. To make disclosures clear and prominent, marketers should use plain language and sufficiently large type, should place disclosures in close proximity to the qualified claim, and should avoid making inconsistent statements or using distracting elements that could undercut or contradict the disclosure."

We examined Enviva's SEC filings and public statements in light of SEC and FTC rules on disclosure and transparency to explore whether Enviva has disclosed information that would allow a reasonable investor to evaluate the Company's claims about the value of burning wood pellets as a way to reduce power sector carbon emissions, and the viability of the Company as an investment.

Our investigation revealed misleading statements and omissions, which fall into three categories:

- 1. Assertions that burning wood pellets reduces emissions compared to coal, without disclosure of the carbon accounting assumptions and protocols upon which these assertions depend, including the failure to count stack emissions.
- 2. Inaccurate and misleading portrayals of current US and European regulatory restrictions including:
  - a. Incorrect statements that EPA does not currently regulate bioenergy carbon emissions.
  - b. Failures to disclose regulatory risks associated with wood-burning power plant emissions.

<sup>&</sup>lt;sup>33</sup> Ibid, page 17.

<sup>&</sup>lt;sup>34</sup> Federal Trade Commission. 16 CFR Part 260, Guides for the use of environmental marketing claims. At https://www.ftc.gov/sites/default/files/attachments/press-releases/ftc-issues-revised-green-guides/greenguides.pdf

- c. Failure to disclose subsidy losses by Enviva's leading customer.
- 3. Complex and contradictory statements regarding sources of wood that give disproportionate prominence to the role of forestry and mill residues and much less prominence to use of whole trees and "roundwood" as pellet feedstock.

The disclosure and omission of these issues, individually or in the aggregate, may mislead investors regarding the Company's environmental and financial strengths. We urge the Securities and Exchange Commission, the New York Stock Exchange, and the New York Attorney General to examine these disclosure issues and assess their materiality, and then to take appropriate action, including requiring the Company to revise, supplement, update or correct existing disclosures.

# IV. Omissions and Misrepresentations in Enviva's Disclosures

## A. Claims About Greenhouse Gas Emissions From Burning Biomass

Enviva makes multiple statements that either imply, or state directly, that burning biomass "reduces" power plant emissions. Enviva does not disclose in any SEC filing that combustion emissions are not counted under European carbon accounting protocols. Representative examples follow.

## 1. Claims in SEC filings that burning biomass reduces emissions

Enviva's "Business Overview"<sup>35</sup> was submitted to the SEC along with the Company's 8k report dated November 16, 2015. The document contains statements, some presented in a graphical form (Figure 2), claiming that the Company's product reduces carbon emissions. These statements rely on the fact that EU and UK policy treat emissions from burning wood pellets as zero by policy convention, and are thus misleading in the absence of additional information.

Representative statements from Enviva's prospectus and IPO filing document also do not disclose that EU convention ignores combustion emissions. The following statements are not false, but they lack the necessary clarification of carbon accounting conventions to make them not misleading:



Figure 2. Excerpt from "Business Overview" investor presentation furnished to investors and filed with the SEC in Form 8-K (Current Developments), November 16, 2015.

<sup>&</sup>lt;sup>35</sup> "Business Overview" presentation for investors submitted by Enviva Partners LP with Securities and Exchange Commission in Form 8-K (Current Developments). Initially dated October 14, 2015, updated versions have been published November 16, 2015, December 28, 2015; and February 25, 2016. Available at http://www.sec.gov/Archives/edgar/data/1592057/000110465915079191/a15-23007\_1ex99d1.htm

*a)* Wood pellets "enable major power generators to profitably generate electricity **in a manner that reduces the overall cost of compliance with mandatory GHG emissions limits** and renewable energy targets...<sup>36</sup>

*b)* Coal plant conversions "are attractive due to a combination of factors: they enable power generators to profitably extend the permitted lives of plants that provide critical baseload power generation; they help countries meet regulations regarding greenhouse gas ("GHG") emissions and renewable energy usage.<sup>37</sup>

Reading these statements, an investor could be misled, for instance, to believe that wood inherently emits less carbon at the smokestack per unit energy than coal, as is the case for natural gas.<sup>38</sup>

## 2. Claims in public documents that burning biomass reduces emissions

Enviva's promotional materials include press releases, its website, and company presentations. Some of the claims made in these materials appear to be misleading under FTC rules that regulate business-to-consumer transactions and business-to-business transactions. To the extent that claims made in public materials are not properly qualified or contextualized in company filings with the SEC, they also can be misleading to investors. Representative examples follow.

a) The Clean Power Plan (CPP) is EPA's rulemaking for reducing CO<sub>2</sub> emissions from the power sector. The EPA developed emission reduction goals for each state with a "best system of emission reduction" (BSER) that includes replacing some fossil-fueled generation with zero-emissions renewable technologies like wind and solar power. EPA explicitly did not include biomass energy as part of the BSER, and while EPA has indicated states may be able to burn some biomass under the Clean Power Plan, the agency has acknowledged that co-firing biomass with coal can degrade facility efficiency and increase CO<sub>2</sub> emissions.<sup>39</sup> Nonetheless, Enviva issued a press release<sup>40</sup> following EPA's finalization of the Clean Power Plan that may create the impression for investors that EPA is encouraging co-firing wood pellets with coal, or converting coal plants to burn wood, as a way to reduce emissions under the CPP. Titled "Enviva Applauds EPA on Clean Power Plan," it states:

"Converting coal-fired plants to dedicated or co-fired biomass plants is one of the quickest and most cost-effective ways of achieving substantial reductions in emissions of carbon dioxide and

<sup>&</sup>lt;sup>36</sup> Enviva Prospectus. Filed April 29, 2015. Page 4/12. At http://www.sec.gov/Archives/edgar/data/1592057/000119312515155449/d808391d424b4.htm.

<sup>&</sup>lt;sup>37</sup> Enviva prospectus page 1/9. The same statement was repeated in the IPO filing document (the IPO document is no longer available at the NASDAQ website; it is now posted at http://www.pfpi.net/wp-content/uploads/2015/11/ENVIVA-PARTNERS-LP-EVA-IPO-NASDAQ.pdf).

<sup>&</sup>lt;sup>38</sup> While per MWh stack emissions of natural gas-fired power plants are lower than those of coal-fired power plants, methane emissions associated with gas extraction and transport may significantly increase its greenhouse gas footprint.

<sup>&</sup>lt;sup>39</sup> U.S. Environmental Protection Agency. Docket ID No. EPA-HQ-OAR-2013-0602. Technical Support Document for Carbon Pollution Guidelines for Existing Power Plants. GHG Abatement Measures, June, 2014. Page 6-16.

<sup>&</sup>lt;sup>40</sup> Enviva press release, August 4, 2015. Available at http://www.reuters.com/article/2015/08/04/md-envivaidUSnBw046040a+100+BSW20150804#ZoEcKWYkQswM6oxc.97.

other pollutants... Countries around the world are turning to biomass—increasingly wood pellets — as a renewable, low-carbon source of base load energy and we are pleased that the EPA has opened the door to these coal-to-biomass conversions here in the United States."

As it is a physical fact that burning biomass emits more CO<sub>2</sub> per unit energy than burning fossil fuels, it is misleading to claim that replacing coal with biomass "reduces" emissions without adding appropriate qualifications as discussed previously in this review.

b) A November 2015 presentation for investors<sup>41</sup> from Enviva quotes a document from the Intergovernmental Panel on Climate Change (IPCC), stating "United Nations Climate 2014: Carbon emissions from coal are 4 times greater than from forest wood biomass." Perusal of the actual document they cite<sup>42</sup> reveals that the chart from which Enviva is presumably quoting treats CO<sub>2</sub> emissions from biomass combustion as zero in its assessment for "total" emissions from biomass, whereas combustion emissions *are* included for coal.

c) Enviva's website homepage<sup>43</sup> claims emissions are reduced relative to coal:

"We export our pellets primarily to power plants in the United Kingdom and Europe that previously were fueled by coal, **enabling them to reduce their carbon footprint by about 80 percent**. We make our pellets using sustainable practices that protect Southern forests... At Enviva, our job is more than making pellets. **We work for lower emissions**, healthy forests and strong communities."

d) The Company's "Frequently Asked Questions" webpage<sup>44</sup> states:

*"I have heard that burning wood pellets actually results in more carbon emissions than burning coal. Is that true?* 

No. According to the UK Environment Agency, switching from coal to biomass reduces emissions of carbon dioxide by between 74 and 90% on a lifecycle basis.[1] Enviva consistently exceeds the Greenhouse Gas (GHG) reductions targeted by governments like the UK.[2] We know this because we track, internally audit, and are regularly assessed by stringent 3rd party audits of **all GHG emissions associated with the harvest, transport, processing, and shipping of our products**. We report these **total lifecycle emissions** on a regular basis."

This is a misleading answer to the question, because the statement that "all" emissions from harvest and "total" lifecycle emissions are counted would be interpreted by most people to include carbon in the actual wood that is harvested from the land, which is emitted as  $CO_2$  when the wood is burned. However, as explained above, Enviva's accounting does *not* count the carbon that is contained in the

<sup>&</sup>lt;sup>41</sup> "Business Overview" presentation for investors filed By Enviva Partners LP with Securities and Exchange Commission in Form 8-K (Current Developments). Initially dated October 14, 2015, updated versions have been published November 16, 2015, December 28, 2015; and February 25, 2016. Available at http://www.sec.gov/Arshives/edgar/data/1E020E7/00011046E01E020101/a1E\_22007\_1ev00d1.htm

http://www.sec.gov/Archives/edgar/data/1592057/000110465915079191/a15-23007\_1ex99d1.htm

<sup>&</sup>lt;sup>42</sup> http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc\_wg3\_ar5\_chapter7.pdf; page 539

<sup>&</sup>lt;sup>43</sup> Accessed October 15, 2015

<sup>&</sup>lt;sup>44</sup> http://www.envivabiomass.com/faq-most-frequently-asked/#emissions Accessed October 19, 2015

harvested wood fuel. The 74 to 90% "reduction" in lifecycle emissions that Enviva references is a citation from a report which additionally states that it is "*important to note*" that its analysis is based on estimating emissions "*up to the point the biomass fuel enters the boiler, engine, or power plant,*" and thus excludes combustion emissions.<sup>45</sup> However, Enviva fails to include this important disclaimer when it cites the statistic.

e) A brochure<sup>46</sup> downloadable on Enviva's website discusses "Wood pellets' role in reducing GHG emissions," stating that audits have found a 95% and 83% "greenhouse gas savings" over coal. Enviva's brochure then states, "There are several reasons for these very significant GHG reductions," listing

"<u>Positive Drain/Growth Ratio</u>" (the argument that the Southeast grows more timber than is harvested, which does not relate directly to the calculation of carbon emissions when wood is burned<sup>47</sup>)

"<u>Robust Sustainable Forestry Practices</u>" (there are substantial issues regarding the sustainability of Enviva's practices on the ground, as discussed below)

"<u>Reduced Local Transport</u>," and "<u>Environmentally Friendly Shipping to Europe</u>" (focusing on emissions from land and sea transport).

However, the brochure does not list the principal carbon accounting premise behind the emissions being "lower" than coal –that biomass combustion emissions are not counted.

# 3. Claims that EPA does not regulate bioenergy carbon emissions

Enviva is eager to develop a market for utility-grade wood pellets in the United States, because their customer base is currently limited to relatively few companies overseas.<sup>48</sup> The Company prospectus projects that the US market for pellets will be about 4 million tons per year by 2020, and Enviva's most recent filing to the SEC, the Company states that EPA's Clean Power Plan, which mandates reductions

<sup>&</sup>lt;sup>45</sup> UK Environment Agency, 2009. Minimizing greenhouse gas emission from biomass energy generation. At http://www.globalbioenergy.org/uploads/media/0904\_Environment\_Agency\_-\_Minimising\_greenhouse\_gas\_emissions\_from\_biomass\_energy\_generation.pdf

<sup>&</sup>lt;sup>46</sup> At http://www.envivabiomass.com/wp-content/uploads/ITR-21177-WoodPelletsBrochureResize\_v1a1.pdf

<sup>&</sup>lt;sup>47</sup> Enviva's brochure includes a chart showing increasing forest stocks in the Southeast and the US as a whole. The company states that the Southeast "consistently grows more timber than is harvested." This is a specious argument when used to justify treatment of bioenergy combustion as if it has zero emissions, as shown in the following scenarios. Say a region grows 10 units of wood per year. In the first scenario, 1 unit of wood is harvested and burned for fuel. Emissions are thus 1 unit and net growth is 9 units. In the second scenario, 9 units are harvested and burned. Emissions are thus 9 units and net growth is 1 unit. In both scenarios, the 10 units of growth exceed the amount that was harvested and burned, but emissions differ by 900 percent. In neither case can emissions be considered zero. Further, it is a false argument to claim that emissions from burning wood harvested in one location are offset by forest growth happening in another location unless that offsite mitigation represents additional carbon sequestration that would not have otherwise occurred.

<sup>&</sup>lt;sup>48</sup> Prospectus page 38, In the risk disclosures section, Enviva acknowledge "We derive substantially all of our revenues from customers in Northern Europe. If we fail to diversify our customer base in the future, our results of operations, business and financial position and ability to make cash distributions could be materially adversely affected."

in  $CO_2$  emissions from domestic power plants, could be a "*new enabler for growth in nascent US market*."<sup>49</sup>

EPA's regulation of bioenergy carbon emissions will affect whether the Clean Power Plan encourages growth in a US pellet market. In its risk disclosures, Enviva states *"it is possible that in the future, US EPA or individual states may seek (or be required) to regulate carbon dioxide or other GHG emissions from biomass-fired power plants."*<sup>50</sup>

### Box 1: EPA's regulation of bioenergy CO<sub>2</sub> emissions

EPA issues pollution permits for large new or modified power plants under its Prevention of Significant Deterioration (PSD) permitting program. In 2011, when EPA started regulating carbon dioxide as a pollutant under the PSD program, the agency enacted a three-year moratorium on regulation of carbon dioxide emissions from biomass power plants. The moratorium was challenged in federal court by a coalition of environmental groups (*Center for Biological Diversity v. EPA, 722 F.3d 401;D.C. Cir. 2013*). Although the environmental coalition won the case, the court stayed the effectiveness of its ruling pending resolution of broader challenges to regulation of all greenhouse gases under PSD program. As a result, EPA did not immediately start regulating carbon dioxide from biomass plants.

The Supreme Court subsequently upheld regulation of greenhouse gases in PSD permits at facilities large enough to require permits for their "conventional" pollutants (e.g., nitrogen oxides and particulate matter). The D.C. Circuit also finalized its ruling striking down the three-year biomass carbon dioxide exemption, which expired of its own accord in 2014, contrary to Enviva's statement that the exemption was still in place as of April, 2015. This is known to companies that burn biomass for onsite power, such as International Paper, which acknowledged in its Form 10-K for the year ended December 31, 2014 that EPA established "that BACT (Best Available Control Technology) would be required for any GHG emissions increase above 75,000 tons per year if a new source or Title V review was required for other regulated pollutants."

However, EPA currently regulates carbon dioxide from biomass combustion in boilers that emit over a certain threshold of "conventional" pollutants (Box 1), thus Enviva's statement that EPA might regulate biomass plant carbon dioxide "in the future" is misleading. The Company makes a similar misstatement elsewhere in the prospectus, stating that a temporary exemption EPA granted for bioenergy  $CO_2$  from Prevention of Significant Deterioration permitting is still extant, so that "Until the petition for rehearing in Center for Biological Diversity v. EPA is decided, the exemption for biomass-fired power plants will remain in place." <sup>51</sup>

# B. Failure to Disclose Known Trends and Risks

Although Enviva has disclosed the existence of regulatory risks, including the possibility that EPA or another agency might alter its treatment of bioenergy, the disclosures stop short of disclosing the emerging trend that scientific and policy experts increasingly recognize that wood burning power plants can be a substantial source of carbon emissions. Examples follow.

<sup>&</sup>lt;sup>49</sup> "Business Overview" presentation for investors filed By Enviva Partners LP with Securities and Exchange Commission in Form 8-K (Current Developments). Initially dated October 14, 2015, updated versions have been published November 16, 2015, December 28, 2015; and February 25, 2016. Available at http://www.see.gov/Arabives/edgar/date/1502057/000110465015070101/e15\_22007\_1ev00d1.htm

http://www.sec.gov/Archives/edgar/data/1592057/000110465915079191/a15-23007\_1ex99d1.htm

<sup>&</sup>lt;sup>50</sup> Prospectus page 30/39

<sup>&</sup>lt;sup>51</sup> Prospectus At page 29/38. The date for the prospectus was April 28, 2015, well after EPA started regulating biogenic carbon dioxide under the Clean Air Act.

# 1. EU and UK government scientists recognize carbon impacts of bioenergy

A modeling study from the UK's Department of Energy and Climate Change (DECC) is particularly significant to Enviva and its main customer, Drax. The model compared net emissions under scenarios where trees are cut for pellets that are burned in a power plant, versus scenarios where forests are left to grow or are harvested for other products, and fossil fuels are burned for energy. The model "cuts" and "grows" the forest under the different scenarios, treating losses in forest carbon as an emission of carbon to the atmosphere, and gains in forest carbon as a negative emission where carbon is taken out of the atmosphere. While data from Drax show the facility's 2013 CO<sub>2</sub> emission rate for biomass was 2,128 lb/MWh (Figure 1), this is just what is coming out the stack and does not reflect net emissions over time, which including the loss in forest carbon uptake following harvesting (since reducing a sink for carbon has the same effect on atmospheric CO<sub>2</sub> concentration as increasing a source). The DECC report concluded that for pellets made largely from naturally-regenerated hardwood forests, the net emissions rate remains high for decades, at 2,800 to 8,792 lb CO2e/MWh<sup>52</sup> when analyzed over a time horizon of 40 years, and 1,689 to 11,407 lb CO2e/MWh when analyzed over 100 years.<sup>53</sup> As we show below, naturally regenerated hardwood forests are already a main source of Enviva's pellet feedstock, thus the scenario is directly relevant to Enviva's current harvesting practices.

# 2. Policymakers may reduce subsidies for bioenergy based on carbon emissions

Enviva discusses the importance of renewable energy subsidies for supporting the bioenergy industry in its prospectus, but does not disclose the known trend of increasing vulnerability of subsidies as policymakers come to understand the greenhouse gas emissions impacts of wood-burning.

Enviva's prospectus acknowledges the importance of renewable portfolio standards in the US and the inclusion of wood-burning bioenergy as an eligible technology:

"In addition to federal regulations that limit carbon dioxide emissions, 29 states and Washington, DC have Renewable Portfolio Standards (RPS) that require power generators to meet specified renewable energy targets by certain dates."<sup>54</sup>

Renewable energy receives subsidies, and the loss of subsidies can serve as a disincentive. As discussed below, Washington DC has actually eliminated subsidies for stand-alone biomass electricity plants, but this fact is omitted from Enviva's statement.

The prospectus also notes that bioenergy is promoted by policies and financial incentives in the EU/UK:

Consumers of utility-grade wood pellets currently use our products either as part of a binding obligation to generate a certain percentage of low-carbon energy or because they receive direct or indirect financial support or incentives to do so.<sup>55</sup>

<sup>&</sup>lt;sup>52</sup> The notation "CO2e" expresses the global warming potential of all greenhouse gases in terms of the equivalent forcing effect of CO<sub>2</sub> alone.

<sup>&</sup>lt;sup>53</sup> Stephenson and McKay, 2014. Table 17, page 86.

<sup>&</sup>lt;sup>54</sup> Prospectus page 113/123.

<sup>&</sup>lt;sup>55</sup> Prospectus page 29/38

However, Enviva does not disclose an important trend - that as the environmental impacts of bioenergy come to light, policymakers are increasingly questioning and even curtailing subsidies for biomass power. In the U.S., Washington DC has eliminated subsidies for low-efficiency wood burning power plants under its Renewable Portfolio Standard program,<sup>56</sup> as has Massachusetts;<sup>57</sup> and in Vermont, the Public Utilities Commission denied a Certificate of Public Good to a wood-burning power plant based on its carbon emissions,<sup>58</sup> thus preventing it from being built. In the UK, the government has been cutting subsidies for renewable energy,<sup>59</sup> and in one case specifically identified bioenergy as a carbon-intensive technology that is not a long-term climate solution. In a December 2014 decision to terminate automatic extension of a particular subsidy program for new coal-to-biomass conversions (a subsidy that would have encouraged conversion of an additional Drax unit from coal to biomass),the UK Department of Energy and Climate Change noted that without significant development in carbon capture and storage,

"emissions from such biomass plants are likely to be too high if we are to meet our longer term decarbonisation targets. This is therefore a technology for the short-term to help us meet our 2020 renewables target and to help our transition to a low-carbon power sector."<sup>60</sup>

This statement of UK government policy, which demonstrates a focus on wood pellet burning as a transitional strategy but not as a long-term strategy for renewable energy, is highly relevant and material to Enviva given that Drax is one of its three main purchasers. The intent of the UK subsidy decision appears to be to slow the growth of electricity generation from biomass.

The UK's "Carbon Brief" website also recognized that subsidy cuts were intended to reduce biomass capacity growth:

"The idea behind this is to prevent increases in biomass generating capacity. Today, there are 2.4GW of biomass conversion capacity that will convert if state aid approval is given. Without today's changes, DECC thinks this could increase to 4.6GW in 2020/21. Preventing this from happening will, they say, avoid £500m in costs in 2020/21."<sup>61</sup>

Drax is a publicly traded company in the UK. The threat of cuts to subsidies for biomass made shares of Drax fall significantly in December 2014, as a result of the UK decision to cut subsidy levels. Shares

<sup>&</sup>lt;sup>56</sup> See http://www.pfpi.net/wp-content/uploads/2015/03/DCBiomassLaw2015B20-0418-SignedAct.pdf

<sup>&</sup>lt;sup>57</sup> See http://www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/biomass/renewable-portfolio-standardbiomass-policy.html

<sup>&</sup>lt;sup>58</sup> See http://www.pfpi.net/vermont-biomass-power-plant-denied-approval-on-basis-of-greenhouse-gas-emissions

<sup>&</sup>lt;sup>59</sup> Subsidies were eliminated for new stand-alone biomass power plants after March 2017, though such facilities can still benefit from competitive "contract for difference" pricing for electricity. Stand-alone biomass power plants can compete for a CfD if they achieve a minimum of 35% efficiency and make limited use of heat, and "advanced conversion" bioenergy facilities can benefit regardless of efficiency and heat use.

<sup>&</sup>lt;sup>60</sup> Consultation on changes to grandfathering policy with respect to future biomass co-firing and conversion projects in the Renewables Obligation, December 12, 2014

https://www.gov.uk/government/uploads/system/uploads/attachment\_data/file/386289/biomass\_condoc.pdf

<sup>&</sup>lt;sup>61</sup> http://www.carbonbrief.org/decc-amber-rudd-reduces-subsidies-for-renewable-energy/

fell again by more than a quarter in 2015 after analysts stated that the change in subsidies could significantly reduce the company's earnings in 2016 - 2017<sup>62</sup> (Figure 3).



Figure 3. Drax share price November 18, 2014 – November 18, 2015.

While the Drax facility purchases wood fuel from suppliers in several countries, Enviva reports that the bulk of its wood pellets are sold to Drax and just two other customers, <sup>63</sup> suggesting that Enviva's prospects are presently connected to those of Drax. Enviva's prospectus, which was filed several months after the December 2014 announcement in the UK, makes no mention of policymaker doubts and subsidy cuts for renewable energy that included Drax and other biomass-burning power plants in the UK. The Company does acknowledge in a general way that their business could be impacted "*if*" bioenergy incentives change in the E.U.:

(4) Significant Risks and Uncertainties Including Business and Credit Concentrations The Partnership's business is significantly impacted by greenhouse gas emission and renewable energy legislation and regulations in the European Union (the "E.U."). If the E.U. significantly modifies such legislation and regulations, the Partnership's ability to enter into new contracts as the current contracts expire may be materially affected.<sup>64</sup>

<sup>&</sup>lt;sup>62</sup> Gosden, E. "Budget 2015: Green energy companies hit as Chancellor slashes renewables subsidies." The Telegraph. July 8, 2015. At http://www.telegraph.co.uk/finance/budget/11727378/Budget-2015-Green-energy-companies-hit-as-Chancellor-slashes-renewables-subsidies.html

<sup>&</sup>lt;sup>63</sup> Enviva's June 30, 2015 10Q at page 22/22 states, "The Partnership's primary industrial customers are located in Northern Europe. Three customers accounted for 92% of the Partnership's product sales during the three months ended June 30, 2015 and 96% during the six months ended June 30, 2015. Three customers accounted for 100% of the Partnership's product sales during the three months ended June 30, 2014 and 98% during the six months ended June 30, 2014."

<sup>&</sup>lt;sup>64</sup> From June 30 10Q page 22

However, Enviva's prospectus argues that subsidy losses are *unlikely* to occur, even as they already had:

Northern European countries, in which the primary customers of utility-grade wood pellets are located, all have strong track records in grandfathering biomass energy projects where significant capital investment has been made. Although regulations for new biomass energy projects do sometimes change, there have been no examples to date of Northern European governments implementing retrospective changes or cuts to incentives offered to such biomass energy projects.<sup>65</sup>

More recently, Enviva's November 2015 "Business Overview" presentation for investors, filed with the SEC, claims that the wood pellet market is "Seeing Regulatory Stability and Orderly Growth."<sup>66</sup> As of November 2015, Enviva had so far not engaged in corrective or updated disclosure of the loss of subsidies by its largest customer as a result of change in UK policy.

## C. Claims About Forests and Fuel Harvesting

Harvesting trees for feedstock has proved to be controversial for Enviva.<sup>67</sup> When waste wood or forestry residues are used as feedstock, it is assumed that because materials would eventually decompose and emit carbon dioxide, net carbon emissions from burning these materials don't exceed emissions that would occur anyway (although burning is instantaneous, whereas decomposition takes years to decades). In contrast, harvesting trees that would otherwise continue growing and taking carbon dioxide out of the atmosphere has a greater and longer-lasting net impact on atmospheric carbon concentration. Additionally, intensive forest harvesting for pellet feedstock has proven to be inherently objectionable to environmentalists<sup>68</sup> and the public.

<sup>&</sup>lt;sup>65</sup> Page 109/119 prospectus

<sup>&</sup>lt;sup>66</sup> "Business Overview" presentation for investors filed By Enviva Partners LP with Securities and Exchange Commission in Form 8-K (Current Developments). Initially dated October 14, 2015, updated versions have been published November 16, 2015, December 28, 2015; and February 25, 2016. Available at

http://www.sec.gov/Archives/edgar/data/1592057/000110465915079191/a15-23007\_1ex99d1.htm

<sup>&</sup>lt;sup>67</sup> See, Justin Scheck and Ianthe Dugan. "Europe's Green-Fuel Search Turns to America's Forests." Wall Street Journal, online version May 27 2013. http://www.wsj.com/articles/SB10001424127887324082604578485491298208114; also Joby Warrick. How Europe's climate policies led to more U.S. trees being cut down. Washington Post, June 2, 2015. At https://www.washingtonpost.com/national/health-science/how-europes-climate-policies-have-led-to-more-trees-cut-down-in-the-us/2015/06/01/ab1a2d9e-060e-11e5-bc72-f3e16bf50bb6\_story.html

<sup>&</sup>lt;sup>68</sup> Greenpeace: The organization's report "Fueling a BioMess: Why Burning Trees for Energy Will Harm People, the Climate, and Forests" is a highly critical look at the Canadian bioenergy industry, including the pellet manufacturing industry. (http://www.greenpeace.org/canada/Global/canada/report/2011/10/ForestBiomess\_Eng.pdf)

National Wildlife Federation: With Southern Environmental Law Center, NWF conducted a study that was highly critical of the forest and biodiversity impacts of harvesting wood by Enviva and other pellet companies in the US Southeast. (http://www.nwf.org/news-and-magazines/media-center/reports/archive/2013/12-05-13-forestry-bioenergy-in-the-southeast.aspx)

Natural Resources Defense Council "Our Forests Aren't Fuel" (http://www.nrdc.org/energy/forestsnotfuel/) campaign states

<sup>&</sup>quot;Burning trees to produce electricity is dirty and destructive. It creates more carbon pollution than coal, gas, and oil. It destroys forests and our heritage along with them."

Enviva makes a variety of contradictory and confusing assertions about its wood harvesting practices, some of which may create the impression that the Company primarily uses forestry residues as pellet feedstock, rather than whole trees. These assertions add to the aggregate of misinformation that might cause a shareholder to conclude that Enviva's products are "environmentally friendly." In light of the relevance of forest stock changes to carbon accounting (including both reductions in standing carbon and reduced future carbon sequestration), the confusing information may raise additional questions about the viability of the company's wood pellets as a GHG reduction strategy.

# 1. A significant portion of Enviva's feedstock comes from whole trees, not waste wood

Despite varying descriptions of the categories of wood used as feedstock, it is clear that a large proportion of Enviva's feedstock comes from trees that are cut solely to be used by the Company.

Enviva's process description, as included in the prospectus, demonstrates the facility handles logs:

*Our production process can be divided into four subsystems:* 

- 1. Log Receiving, Storage, Debarking, Chipping, Chip Storage and Chip Transfer:
- Incoming trucks pass over truck scales and are routed to unloading areas and storage piles based on their contents.
- Cranes feed logs into a processing system, where bark is removed.
- Debarked logs are fed into a chipper by a knuckle boom hydraulic loader.
- Chipped wood fiber is transferred via conveyor either directly to the drier or into secondary storage.
- Bark byproduct is fed directly to the furnace fuel bin or to bark storage.
- Purchased green chips are unloaded at a separate hydraulic truck dumper that delivers the chips to a furnace fuel reclaim system, a dryer fuel bin or a chip storage pile.<sup>69</sup>

The Company burns bark and forestry residues (tree branches and tops) to generate heat for the dryer:

*Green Sizing, Dryer Heat Generation, Drying and Air Pollution Control:* 

- Chips fed directly from the primary chipper or reclaimed from secondary storage are fed onto a green hammermill infeed conveyor which feeds the chips to a dryer metering bin.
- Bark, residuals and process waste are fed by front loading mobile equipment or directly from the debarking drum into the furnace fuel bin.
- Furnace fuel is combusted in the wood-fired stoker grate (or suspension burner) system and hot flue gas is drawn through the drier with a furnace induced draft fan.
- Chipped wood fiber is fed via the dryer metering bin through the rotary kiln dryer and conveyed to the dry hammermill island.
- Flue gas is drawn through the cyclones, baghouses, and wet electrostatic precipitators to remove particulates prior to discharge to atmosphere.<sup>70</sup>

Sierra Club: The organization's "biomass guidance" (http://www.sierraclub.org/policy/energy/biomass-guidance) states, "Native Forests are presently the largest source of fuel for projects defined as biomass. In keeping with our forest policy, we oppose all biomass energy generation processes including fuel production which contribute to the destruction of existing forests, including national or native forests as well as remaining old-growth or roadless areas."

<sup>&</sup>lt;sup>69</sup> Prospectus page 132/142

# Enviva

# roundwood pulpwood specifications

#### Species Accepted:

All hardwood species except Hickory and Cypress

#### Top Diameter:

Minimum of 3 inches inside bark

#### **Butt Diameter:**

Maximum of 26 inches outside bark, across butt at widest point or anywhere along the stem. Automatic load rejection for any oversize.

#### Lengths:

Tree Length: Minimum of 25 feet Maximum of 60 feet Wood may be turned both ways provided ample overlap occurs for safe unloading

#### Cut Wood:

Minimum of 10 feet Maximum of 20 feet Lengths fairly uniform for flat stacking on pile

#### Trim:

All limbs and knots should be trimmed flush with main stem Forked stems NOT accepted

#### Crook:

Excessively crooked stems NOT accepted All pulpwood stems must be capable of passing through a 26 inch cylinder

# **Enviva LP** Mid-Atlantic Operating Facilities

#### Wood Pellet Plants

#### **Biomass to Energy Plants**

#### Enviva Pellets Ahoskie Ahoskie, NC Contact: Danry Maness, (252) 676 2590 Startup: Operational as of November 2011 Annual Consumption: 800,000 tors\* 550,000 tons of roundwood (450 Loads/week) 250,000 tons of roundwood (450 Loads/week) Enviva Pellets Northampton Garysburg, NC Contact: Ann Hudomint, (252) 241 7077 Startup: 1st half 2013 Annual Consumption: 1,100,000 tons\* 900,000 tons of roundwood (700 Loads/week) Enviva Pellets Southampton Franklin, VA Contact: Danny Maness, (252) 676 2590 Startup: 2nd half 2013 Annual Consumption: 1,100,000 tons\* 900,000 tons of roundwood (700 loads/week) 200,000 tons of roundwood (700 loads/week) 200,000 tons of roundwood (700 loads/week) \* short tons

Figure 4. Documents from Enviva specifying the types and amounts of wood Enviva can accept as pellet feedstock at its facilities.

<sup>&</sup>lt;sup>70</sup> Prospectus page 132/142

Documents obtained from Enviva outline "roundwood pulpwood specifications"<sup>71</sup> at Enviva's facilities (Figure 4), and specify wood use at three of Enviva's plants, showing that "roundwood," rather than chips and sawdust, constitutes the majority of Enviva's feedstock supply.<sup>72</sup> For instance, the document states that Enviva's Ahoskie plant at that time required 550,000 tons of roundwood per year (450 truckloads per week), and 250,000 tons of chips and sawdust.

Data from Drax, Enviva's main customer, also indicates that a significant proportion of the pellets it imports from the United States are made from whole trees, as opposed to residues. In its fuel sourcing report submitted to the UK government for 2014, Drax states that it bought 2,380,347 tons of pellets from the United States, with more than 80% of these pellets made from categories of wood that include whole trees.

Forestry residues - Branch wood, tops, bark and other residues (collected from forests at harvest, which can include other <u>low grade wood</u>): **942,039 tons** 

Diseased wood and storm salvage - <u>Timber</u> that is diseased or has been damaged during a storm: **164,410 tons** 

- Thinnings <u>Roundwood</u> from a forest or plantation thinning, as long as this practice does not change the land use status of the area: **805,815 tons**
- Long rotation forestry <u>Low quality fibre</u> from broadleaf or conifer tree plantations felled after a growing period of several decades, and then replanted: **12,374 tons**

Categories of wood that can include whole trees are "low grade wood," "timber," "roundwood from a forest," and "low quality fibre from plantations."

According to Enviva's own data, the majority of the wood the Company uses to make pellets is sourced from hardwood forests ("HW" in Figure 5, versus "SW" for softwood, which refers to pines).

species information				
Mill	Species Breakdown (hardwood vs. softwood)			
Ahoskie	HW-78%, SW-22%			
Amory	HW-48%, SW-52%			
Monroe (Third-party supplier)	HW-82%, SW-18%			
Northampton	HW-89%, SW-11%			
Southampton	HW-100%			
Wiggins	HW-43%; SW-57%			

**Species Information** 

Figure 5. The balance of hardwood and softwood used at Eviva's pellet mills. <sup>73</sup>

<sup>&</sup>lt;sup>71</sup> The US Forest Service defines "roundwood products" as "Logs, bolts, or other round timber generated from harvesting trees for industrial or consumer uses. Includes sawlogs; veneer and cooperage logs and bolts; pulpwood; fuelwood; pilings; poles; posts; hewn ties; mine timbers; and various other round, split or hewn products." http://www.nrs.fs.fed.us/fia/data-tools/state-reports/glossary/default.asp

<sup>&</sup>lt;sup>72</sup> Enviva fuel specifications from http://kiucenergy.com/wp-content/uploads/2013/08/Kowakczyk\_Presentation.pptx

<sup>&</sup>lt;sup>73</sup> Enviva factsheet titled "Enviva Data for Trader EUTR Compliance," dated February 2015.

In contrast to the pine plantations that are found so abundantly in the Southeast, where genetically homogenous trees are planted in rows, hardwood forests are naturally regenerated and contain a variety of native species. Unless the hardwood forest is converted to a pine plantation, companies do not typically replant hardwood forests after harvesting, instead relying on natural regeneration of the forest.

## 2. Statements that obscure use of whole trees as pellet feedstock

Enviva's statements about the sources of wood it uses may create the impression that the Company does not substantially rely on whole-tree harvesting for pellet feedstock. The Company *does* state that it uses whole trees as feedstock, but such disclosures are buried among multiple, conflicting statements in its public documents and SEC filings that predominantly describe the Company's feedstocks as coming from sources of forestry residues (tops and branches left over from sawtimber harvesting), mill residues (like sawdust) and other sources of waste wood. In the aggregate, therefore, we consider these statements to be confusing and misleading. For instance:

a) A brochure available to the public on Enviva's website states that most of the feedstock is from "underused" residues, and only mentions "low grade round timber" (i.e., trees) in passing:

## PUTTING UNDERUSED RESOURCES TO GOOD USE

Enviva produces wood pellets from both processed and unprocessed wood residues. Our processed wood raw materials include chips, bark, and sawdust by-products from wood processing facilities. Unprocessed residues include tree tops, branches, stumps, and other forestry debris remaining after the primary biomass (or the tree trunk) has been processed and shipped from the forest. These unprocessed residues would most likely otherwise go unused as a resource. **Additional biomass sources currently include low-grade round timber**.<sup>74</sup>

Reading this description, all but the most meticulous, skeptical reader might imagine that the bulk of materials utilized come from waste materials that would otherwise be cut down and left to decompose. Yet that last sentence regarding "low-grade round timber" may be a reference to a different reality -- that a substantial portion of pellet production comes from cutting down trees like those pictured in Figure 6, a photograph from a logging operation where harvested trees were trucked back to Enviva's pellet plant.

<sup>&</sup>lt;sup>74</sup> At http://www.envivabiomass.com/wp-content/uploads/ITR-21177-WoodPelletsBrochureResize\_v1a1.pdf



Figure 6. Stumps at the Urahaw Swamp in Woodland, NC, which was harvested in May, 2015. The stumps are Bald Cypress Trees that were several decades to more than 100 years old. <sup>75</sup>

b) Similarly, almost none of the statements about materials sourcing in Enviva's prospectus acknowledge that "trees" are cut down for pellet feedstock, though the category may be implied in the phrase "low value wood materials that are generated in a harvest":

Our raw materials are byproducts of traditional timber harvesting, principally the tops and limbs of trees as well as other **low-value wood materials that are generated in a harvest**. We procure wood fiber directly from timber owners, loggers and other suppliers. Industrial residuals (sawdust and shavings) and forest residuals (woodchips and slash) are included opportunistically when they provide a cost advantage.<sup>76</sup>

c) Other parts of the prospectus contain conflicting descriptions. For instance, the following statement acknowledges that Enviva's "primary" source of wood is "traditional pulpwood" and that the Company "*also*" uses industrial and forest residuals. This is the opposite of the above statements where the Company's statement implies that only residues and low-value materials are used.

**Our primary source of wood fiber is traditional pulpwood**, which has historically exhibited less pricing volatility than other sources of wood fiber. To ensure a low-cost raw materials position, we also procure industrial residuals (sawdust and shavings) and forest residuals (wood chips and slash), which have been more volatile historically in terms of price and supply but occasionally represent lower cost alternative inputs.<sup>77</sup>

<sup>&</sup>lt;sup>75</sup> http://www.dogwoodalliance.org/wp-content/uploads/2015/06/Wetlands-Logging-Investigation-Flyer.pdf

<sup>&</sup>lt;sup>76</sup> Prospectus page 134/144

<sup>&</sup>lt;sup>77</sup> Prospectus page 131/141

The statement that the Company uses "traditional pulpwood" is also contradictory of claims, such as that above, that Enviva employs "underused" wood resources. In practice, Enviva competes directly with the pulp and paper industry for pulpwood. The domestic pulp and paper industry is increasingly alarmed at the harvesting pressure on certain areas of the Southeast where pellet plants are being located. Representative concerns, as set out in a presentation<sup>78</sup> given on behalf of the pulp and paper company MeadWestvaco, are that the pellet industry will create damage and dislocation in domestic wood markets, that the forest resources in the region won't sustain the harvesting pressure, and that the vast majority of the fiber is coming from whole trees, not residuals. A recent report commissioned by the American Forest and Paper Association concludes that the UK's new "contracts for difference" scheme, which gives renewable energy generators a guaranteed price for energy that generally exceeds the market price, will allow pellet producers to pay up to \$53 per ton of wood fiber, far greater than the current price of \$11 per green ton.<sup>79</sup>

The domestic pulp and paper industry is concerned that these subsidies are driving up the price of pulpwood. Partly in response to these concerns, the EU has announced an investigation into that the next coal-to-wood conversion of a boiler at the Drax plant, stating that

"the amount of wood pellets required is considerable, as compared to the volume of the global wood pellets market and demand from the Drax conversion project could significantly distort competition in the biomass market. The Commission is therefore also concerned that on balance the measure's negative effects on competition could outweigh its positive effect on achieving EU 2020 targets for renewable energy."<sup>80</sup>

d) The prospectus also provides a list of feedstocks. Here again the role of "trees" is downplayed by using the phrases "Low-grade wood fiber" and "Wood that is unsuitable or rejected." The phrase "commercial thinnings," however, is a strong indication that the company is harvesting whole trees:

Our procured wood fiber consists of:

- Low-grade wood fiber: wood that is unsuitable for or rejected by the sawmilling and lumber industries because of small size, defects (e.g. crooked or knotty), disease or pest infestation;
  - Tops and limbs: the parts of trees that cannot be processed into lumber;
- Commercial thinnings: harvests that promote the growth of higher value timber by removing weaker or deformed trees to reduce competition for water, nutrients and sunlight; and
  - Mill residues: chips, sawdust and other wood industry byproducts.<sup>81</sup>

<sup>&</sup>lt;sup>78</sup> Irene Kowalczyk, Director, Global Sourcing & Policy, MeadWestvaco. "Forest Resource Sustainability – Forest Products Industry Perspective." Presentation given at the Kentucky Industrial Utility Customers conference, March 13, 2014. Available at http://kiucenergy.com/wp-content/uploads/2013/08/Kowakczyk\_Presentation.pptx or http://www.pfpi.net/wp-content/uploads/2015/11/Kowalczyk\_Presentation.pdf

<sup>&</sup>lt;sup>79</sup> RISI, 2015. An analysis of UK biomass power policy, US South pellet production and impacts on wood fiber markets. (Press release at http://afandpa.org/media/news/2015/11/18/new-research-shows-uk-wood-pellet-subsidies-distort-the-usmarket-for-wood-fiber)

<sup>&</sup>lt;sup>80</sup> European Commission - Press release: "State aid: Commission opens in-depth investigation into UK public support for Drax power plant." Brussels, 5 January 2016. At http://europa.eu/rapid/press-release\_IP-16-2\_en.htm. The term "biomass" here refers to both fuelwood and feedstock for pulp and paper manufacturing.

<sup>&</sup>lt;sup>81</sup> Prospectus page 136/146



Figure 7. A wood truck leaving a harvest site; another truck entering the pellet plant.<sup>82</sup>

e) When Enviva does acknowledge in the prospectus that it cuts trees, it states they are "non-merchantable" or otherwise defective. However, these are the same materials that provide feedstock for the pulp and paper industry:

Demand for the non-merchantable trees, waste products or byproducts that we use is generally low because they have few competing uses, and such raw materials represent approximately 10% to 30% of the value paid to a landowner for any given harvest. The tops, limbs and other low-grade wood fiber that wood pellet producers take would otherwise generally be left on the forest floor, impeding reforestation, or burned.<sup>83</sup>

f) On the website, the admission of whole tree use is found on the Frequently Asked Questions page: *"Does Enviva use whole trees?* 

<sup>&</sup>lt;sup>82</sup> Dogwood Alliance's investigation is documented at http://www.dogwoodalliance.org/wpcontent/uploads/2015/05/InvestigationFlyer-12.18.14.pdf.

<sup>&</sup>lt;sup>83</sup> Prospectus page 136/146

The only whole trees that Enviva uses are either young commercial softwood thinnings, which are cut to ensure healthy growth of high-value timber, or in some cases small, diseased or deformed trees that do not meet specifications for sawlogs. In many places, there is no other market for this wood. Often, what may appear to be a whole tree is actually the top of a tree, which cannot be used to make the high-value wood products for which the trunks have been harvested."<sup>84</sup>

The statement that Enviva only uses "small, diseased or deformed trees that do not meet specifications for sawlogs" may mislead investors. Many people might not consider the high volume sales of timber harvested and sold to Enviva to be "small" (e.g., see Figures 6 and 7). The existing disclosures downplay the harvesting of whole trees to such an extent that an investor could be led to believe that largely only "waste" is being purchased and consumed by the Company's operations.

# 3. Claims that wood comes from certified or "responsible" sources

Enviva makes confusing claims about how much of the wood they use is from certified sources. The "Forest Credo" page of their website<sup>85</sup> and their downloadable sustainability policy state,

"We believe that landowner certification of forestland is a good thing, and we pay more for fiber from certified forests. We engage in ongoing landowner outreach and make direct investments to support certifications of forestlands. **But as we continue working to improve the total percentage of lands certified, we also ensure that non-certified fiber comes from responsible sources.** Enviva is certified to the stringent standards of the world's foremost forestry organizations, such as the Forest Stewardship Council<sup>™</sup> (FSC<sup>®</sup>) (Chain of Custody Standard requirements Program for the Endorsement of Forest Certification (PEFC) (Chain of Custody Standard requirements), and the Sustainable Forestry Initiative<sup>®</sup> (SFI<sup>®</sup>) (Chain of Custody Standard requirements as well as SFI Certified Sourcing standard requirements)."

While the statement above says the Company is "working to improve the total percentage of lands certified," the "Frequently Asked Questions" page might be construed to imply that *all* lands from which Enviva obtains wood are certified:

"How do you know that the forests you source from are sustainably managed?

All of our forestry operations are certified on an ongoing basis for sustainability by the top international forestry organizations, which require no-less-than-annual 3rd party audits of our supply chain, on top of our own rigorous quarterly audits of our supplier operations. Sustainability is an essential, non-negotiable part of our business."

These statements may be misleading because the claim that "forestry operations are certified on an ongoing basis for sustainability" may create the impression that forests are protected in the course of Enviva's harvesting. In fact, Enviva does not appear to disclose what percentage of the wood it uses is from lands where the harvesting has been certified as sustainably harvested, and the "chain of

<sup>&</sup>lt;sup>84</sup> http://www.envivabiomass.com/faq-most-frequently-asked/#whole, accessed October 20, 2015.

<sup>&</sup>lt;sup>85</sup> http://www.envivabiomass.com/sustainability/enviva-forest-credo/ Accessed October 19, 2015

custody" certifications that Enviva is actually talking about are not related to forest management, but to protocols for *tracking* sustainably harvested wood.<sup>86</sup>



Figure 8. Photo from a Washington Post article,<sup>87</sup> showing an area where trees were harvested and sold to Enviva. The paper's caption reads, "Little remains but stumps and puddles in what was once a bottomland hardwood forest on the banks of the Roanoke River in northeastern North Carolina. Many of the trees were turned into wood pellets for burning in power plants in Europe. Others were sold for high-value uses such as furniture." (Joby Warrick/The Washington Post)

Enviva's references to certification and sustainable forestry may be misleading to the Company's investors when in fact, clearcutting and complete elimination of all standing trees is a common practice by the Company. As shown in Figure 8, while some of the higher value wood may have been sold as sawtimber, the pellet industry can take all of what is left, leaving nothing standing.

Enviva's November 2015 "Business Overview," <sup>88</sup> filed with the SEC, claims that the Company's activities benefit forests. The statement about Enviva sustaining "thriving, healthy forests" (Figure 9) stands in contrast to the practice of clearcutting forests for wood, some of which, if not the majority,<sup>89</sup> is used as pellet feedstock.

<sup>&</sup>lt;sup>86</sup> See, e.g., the Forest Stewardship Council chain of custody webpage at https://ic.fsc.org/chain-of-custodycertification.39.htm

<sup>&</sup>lt;sup>87</sup> https://www.washingtonpost.com/national/health-science/how-europes-climate-policies-have-led-to-more-trees-cutdown-in-the-us/2015/06/01/ab1a2d9e-060e-11e5-bc72-f3e16bf50bb6\_story.html

<sup>&</sup>lt;sup>88</sup> Excerpt from "Business Overview" presentation for investors filed By Enviva Partners LP with Securities and Exchange Commission in Form 8-K (Current Developments). Initially dated October 14, 2015, updated versions have been published November 16, 2015, December 28, 2015; and February 25, 2016. Available at http://www.sec.gov/Archives/edgar/data/1592057/000110465915079191/a15-23007\_1ex99d1.htm

<sup>&</sup>lt;sup>89</sup> David Rose. "The UK's £1billion carbon-belcher raping US forests...that YOU pay for: How world's biggest green power plant is actually INCREASING greenhouse gas emissions and Britain's energy bill". The Mail on Sunday, June 6, 2015. At

The graphic in Figure 9 is also misleading because it includes an out-of-context quote from a university research paper that used a computer simulation model – not an actual study - to determine how forest area would change if EU sustainability criteria were introduced and implemented so as to prohibit forest harvesting for pellets in high-sensitivity forests. The study cited in the graphic modeled a "sustainability sourcing restrictions" scenario that prohibits harvesting in protected areas, areas of high biodiversity and conservation value, and undrained peatlands or wetlands – areas from which Enviva currently obtains wood. (Enviva states on their

Our Activities Sustain Thriving, Healthy Forests

"We show a *substantial increase in the area of all forest types* in the presence of increased pellet demand."

- Duke University & NC State University<sup>1</sup>

Figure 9. Excerpt from Enviva's November 2015 "Business Overview."

website that they harvest in wetlands,<sup>90</sup> and the only areas they identify as off-limits for harvesting are sites "undergoing conversion to a non-forest use, or from any area that is protected by law such as a national park or preserve,"<sup>91</sup> a smaller scope of area than that considered off-limits in modeling study).

By quoting the study's conclusion only in part, Enviva may create the impression that the existence of a pellet industry increases the area of forest. In context, the actual quote from the paper states:

Comparing restricted baseline and pellet scenarios indicates the relative change attributable to additional pellet demand **under sustainability sourcing restrictions**. We show a substantial increase in the area of all forest types in the presence of increased pellet demand, with the change dominated by an increase in planted pine.<sup>92</sup>

In other words, the researchers found that *restricting* forest harvesting for pellet feedstock on much of the land from which Enviva now gets their wood (hardwood forests and wetland forests) would, in this simulation model, drive landowners to establish more pine plantations that could then provide wood

http://www.dailymail.co.uk/news/article-3113908/How-world-s-biggest-green-power-plant-actually-INCREASING-greenhouse-gas-emissions-Britain-s-energy-bill.html

The Mail on Sunday spoke to a senior forester at a North Carolina wood firm which has frequently worked for Enviva, clear-cutting areas from 20 to 80 acres. The forester, who asked us to protect his identity, said: 'Most of this wood is no good for sawmills. You might get the odd log or two, but very few in the swamps I've cut. You might not get any that are any use for that. It's very possible they will all just go for pellets or chips.'

<sup>90</sup> From http://www.envivabiomass.com/faq-forests-fiber-sourcing/#wetlands: "Does Enviva source wood from wetlands?" "In regions where forests are located in wet areas for one or more seasons of the year, including permanent wetlands, Enviva suppliers take extra care by using specialized harvesting equipment and techniques that minimize environmental impacts and protect soil and water quality. We are unconditionally committed to ensuring that our activities do not negatively impact water quality or sensitive habitats. "

<sup>91</sup> http://www.envivabiomass.com/faq-forests-fiber-sourcing/#limits

<sup>&</sup>lt;sup>92</sup> Galik, C. and Apt, R. 2015. Sustainability guidelines and forest market response: an assessment of European Union pellet demand in the southeastern United States. GBC Bioenergy (2015), doi: 10.1111/gcbb.12273 (at http://onlinelibrary.wiley.com/doi/10.1111/gcbb.12273/full)

for the pellet industry. Enviva took the quote out of context, and it is our opinion that by presenting it as if it applies to their current operations, its inclusion is quite misleading.

# V. Request to Regulators

The preceding discussion raises a number of issues that merit attention of securities and consumer protection regulators. We request that regulators examine, in particular, statements from the Company that its products "reduce" carbon emissions to ensure that such disclosures are accompanied by the clarification, where applicable, that such "reductions" are based on a carbon accounting protocol that, among other assumptions, does not include emissions from actually burning the wood.

## Assessing Materiality

There seems little question that issues related to the environmental benefits and regulatory risks associated with Enviva's wood pellet production should be of concern to its investors, because the asserted environmental benefit and demands created by regulation are key to the Company's promotional selling points. Inaccurate and outdated portrayal of regulatory risks, subsidy trends, regulatory requirements, facility emissions and climate benefits all seem to relate to the "inferences a 'reasonable shareholder' would draw from a given set of facts and the significance of those inferences to him," Basic Inc. v. Levinson, 485 U. S. 224, 236 (1988). In addition, the information presented by the Company on some of these complex issues dramatically alters the "mix" of available information. Although a technically advanced shareholder or analyst could theoretically wade through EPA regulations, and research UK subsidy policies and developments, the securities laws are generally understood to allow a shareholder to presume that a company is providing reasonably accurate, up-to-date and complete disclosures, including any statements made regarding EPA rules or the status of subsidies for its largest purchaser.

## Duty to Update or Correct

On an ongoing basis, a company may have a duty to update or correct previous disclosures. The inaccurate information in the IPO regarding the status of European subsidies, the status of EPA regulation of carbon emissions from biomass, and other elements highlighted in document each could have triggered a duty to update or correct.

These obligations may in some instances depend on whether the company was aware of the correct information at the time of the original disclosure. In addition, the SEC's Form 8-K Current Developments disclosure form generally only requires immediate disclosure of certain specified developments. However, one would expect that a subsequent quarterly report would have made corrections on some of these noted issues. To our knowledge, no such corrections have yet been made.

In addition to SEC rules, as a firm traded on the New York Stock Exchange, Enviva is subject to NYSE disclosure rules that impose additional update and correction disclosure obligations. Section 401(a) of NYSE MKT Company Guide states that a "listed company is required to make immediate public disclosure of all material information concerning its affairs, except in unusual circumstances."

## Disclosure of Trends and Developments

Examples of trends and developments that seem especially notable include the December 2014 decision of UK regulators to treat wood pellet burning as a transitional rather than long-term climate carbon solution, and to reduce subsidies for construction of additional operational capacity to the Company's leading customer.

## Carbon Accounting Guidelines Needed

This company review is indicative of a larger issue that, after the 2015 United Nations Climate Change Conference, should now be a higher priority for the SEC. The SEC urgently needs establish clear guidelines regarding the degree to which companies can claim climate benefits based on undisclosed and long-term carbon accounting assumptions. The climate disclosure guidance should be updated to include requirements to disclose carbon accounting contingencies and assumptions when necessary to ensure that disclosures are not misleading.

We ask that securities regulators and the New York State Attorney General examine existing disclosures by Enviva and take appropriate action.

Investors should proceed with caution in investing in the biomass sector, and in our opinion, should recognize that claims of environmental benefits from bioenergy are likely to be based on a number of assumptions.

# VI. Appendix 1: Disclosure and Transparency Requirements of the SEC and FTC

SEC rules on the registration statement (Form S-1) prescribe some requirements for company disclosures in an IPO.

... there must be set forth under an appropriate caption, a carefully organized series of short, concise paragraphs, summarizing the most significant factors that make the offering speculative or substantially risky. Issuers should avoid generalized statements and include only factors that are specific to the issuer...

(2) The issuer must also describe those distinctive or special characteristics of the issuer's operation or industry that are reasonably likely to have a material impact upon the issuer's future financial performance. Examples of factors that might be discussed include dependence on one or a few major customers or suppliers (including suppliers of raw materials or financing), effect of existing or probable governmental regulation (including environmental regulation), material terms of and/or expiration of material labor contracts or patents, trademarks, licenses, franchises, concessions or royalty agreements, unusual competitive conditions in the industry, cyclicality of the industry and anticipated raw material or energy shortages to the extent management may not be able to secure a continuing source of supply.

The Prospectus should include a Management Discussion and Analysis which includes among other things:

(d) Trend information. The issuer must identify the most significant recent trends in production, sales and inventory, the state of the order book and costs and selling prices since the latest financial year. The issuer also must discuss, for at least the current financial year, any known trends, uncertainties, demands, commitments or events that are reasonably likely to have a material effect on the issuer's net sales or revenues, income from continuing operations, profitability, liquidity or capital resources, or that would cause reported financial information not necessarily to be indicative of future operating results or financial condition.

All of these disclosures are subject to the additional requirements of disclosure of sufficient information and context to ensure that shareholders are not significantly misled. Rule 10b-5 provides:

240.10b-5 Employment of manipulative and deceptive devices.

It shall be unlawful for any person, directly or indirectly, by the use of any means or instrumentality of interstate commerce, or of the mails or of any facility of any national securities exchange...

(b) To make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading.

New York Stock Exchange Rules

In addition to SEC rules, New York Stock Exchange (Section 401(a) of NYSE MKT Company Guide) states that a "listed company is required to make immediate public disclosure of all material information concerning its affairs, except in unusual circumstances."

## VII. Appendix 2: Letter From Investors

March 14, 2016

The Honorable Mary Jo White Chair Securities and Exchange Commission 100 F Street, NE Washington, DC 20549

Re: Carbon emissions disclosure by the bioenergy sector

Dear Chair White,

Today, many publicly traded companies are promoting the climate change benefits of their operations. As investors, we are concerned that the lack of effective enforcement of the Commission's climate disclosure guidelines may lead to disclosures which exaggerate climate benefits of companies' products and services, and therefore lead to misguided investment decision-making. Particular vigilance is needed in the renewable energy sector, where technologies intended to reduce greenhouse gas emissions are experiencing explosive growth. The biomass energy sector is especially in need of scrutiny, as this industry is prone to distorted disclosures that may lead investors to conclude that wood burning power plants, which in fact have substantial greenhouse gas emissions, provide equivalent climate benefits as far less polluting technologies like solar and wind power.

The enclosed case study of the single largest producer of wood pellets as fuel for electricity generators, Enviva Partners LP (NYSE: EVA. IPO: April 2015; market cap \$350 million, October 2015) illustrates how companies can mislead investors on the environmental and climate benefits of their products, and demonstrates the need for the Commission to be more proactive.

In order to ensure that investors have the necessary and accurate information, we request that the SEC more closely monitor companies' climate benefit claims, and establish and *enforce* clear guidelines applicable to companies that may be claiming climate benefits. Instead of simply declaring that their carbon emitting products or services are beneficial for the climate, companies should also be required to disclose the assumptions and contingencies that underlie such claims. To support such scrutiny, we also request that the climate disclosure guidance be updated to (a) include requirements to disclose carbon accounting contingencies where they underlie statements in SEC filings and (b) include all assumptions going into such accounting that are necessary to ensure that such disclosures are not misleading.

We urge you to examine the enclosed report, and protect investors by revising and enforcing the climate guidance.

Sincerely,

Natasha Lamb, Director of Research & Shareholder Engagement, Arjuna Capital

Danielle Fugere, President, As You Sow Foundation

Steven Heim, Director of ESG Research/Shareowner Engagement, **Boston Common Asset** Management

Stu Dalheim, Vice President, Shareholder Advocacy, Calvert Investments

Steven Viederman, Chair, Finance Committee, Christopher Reynolds Foundation

Shelley Alpern, Director of Social Research & Advocacy, Clean Yield Asset Management

Sally Ann Brickner, OSF. Justice, Peace, and Integrity of Creation Coordinator, Congregation of Sisters of St. Agnes

Duane Roberts, Director of Equities, Dana Investment Advisors

Mark Regier, Vice President of Stewardship Investing, Everence Asset Management

Holly A. Testa, Director, Shareowner Engagement, First Affirmative Financial Network

Jeffrey W. Perkins, Executive Director, Friends Fiduciary Corporation

Leslie Samuelrich, President, Green Century Capital Management

John Harrington, President and CEO, Harrington Investments

Christine Jantz, President, Jantz Management

Peter Krull, President, Krull and Company

Mary Minette, Director of Shareholder Advocacy, Mercy Investment Services

Barbara Jennings, CSJ. Coordinator, Midwest Coalition For Responsible Investment

Luan Steinhilber, Director of Operations and Shareholder Advocacy, Miller/Howard Investments, Inc.

Julie N.W. Goodridge, CEO, NorthStar Asset Management, Inc.

Judy Byron, OP, Director, Northwest Coalition for Responsible Investment

Julie Gorte, PhD., Senior Vice President for Sustainable Investing, Pax World Management Corp.

Rob Fohr, Committee on Mission Responsibility Through Investment, Presbyterian Church U.S.A.

Michael H. Crosby, OFMCap. Corporate Responsibility Office, **Province of St. Joseph of the Capuchin Order** 

Jo Marie Chrosniak, HM, Coordinator, Region VI Coalition for Responsible Investment

Ethel Howley, Social Responsibility Resource Person, **School Sisters of Notre Dame Cooperative** Investment Fund

Michael Crosby, Executive Director, Seventh Generation Coalition for Responsible Investment

Joy Peterson, PBVM, Sinsinawa Shareholder Committee, Sinsinawa Dominican Shareholder Action Committee, Sinsinawa Dominican Sisters

Nora. M. Nash, OSF, Director, Corporate Social Responsibility, Sisters of St. Francis of Philadelphia

Anna Falkenberg, PhD, Executive Director, Socially Responsible Investment Coalition

Allan Pearce, Shareholder Advocate, Trillium Asset Management

Patricia A. Daly, Executive Director, Tri-State Coalition for Responsible Investment

Timothy Brennan, Treasurer & CFO, Unitarian Universalist Association

Katie McCloskey, Director, Social Responsibility, United Church Funds

Sonia Kowal, President, Zevin Asset Management, LLC