

# Vattenfall's wood bioenergy investments and plans

## Who is Vattenfall?

Energy company Vattenfall is fully owned by the Swedish state. For many years, until 2015, Vattenfall counted as one of the EU's top three fossil fuel CO<sub>2</sub> emitters.<sup>1</sup> In 2018, the company rebranded itself and adopted the motto "fossil free living within one generation".<sup>2</sup> In 2016, Vattenfall sold its lignite mines and power plants in Germany. Since 2017, Vattenfall has closed four of its six coal power plants and decided to stop burning coal entirely in 2030 (later than the coal phaseout date of many European countries),<sup>3</sup> and the company has

scaled up its investment in wind energy. However, Vattenfall retains a large fossil fuel capacity (4.8 GW electricity and 14.2 MW heat). Most of this is fossil gas<sup>4</sup> Furthermore, it has been investing in burning more wood for energy, mainly for heat, an energy source the company plans to expand significantly in future. This is the focus of this briefing.

## Vattenfall's current investments in wood bioenergy

Vattenfall currently burns biomass in 16 heat and combined heat and power plants, two of them in Berlin, one in the Netherlands, and the remainder in Sweden.<sup>5</sup> In addition to burning wood, they also trade wood pellets and a small amount of woodchips, selling them to be burned by other energy companies.

In response to questions by the German NGO *Urgewald* in 2021, Vattenfall stated that the company had sourced a total of 750,000 tonnes of woodchips and pellets in 2020. Of this wood, 215,000 tonnes were recycled waste wood and the rest

virgin wood. Since then, Vattenfall has commissioned a new biomass plant, in Uppsala, their second biggest wood-fired facilities to date, and it has increased biomass firing in Berlin by just over 8,000 tonnes a year.<sup>6</sup>

According to Vattenfall's 2023 Annual Report,<sup>7</sup> 72% of the wood that they burned that year came from Sweden, 16% from Germany, 8% from Latvia, and 3% from "the rest of Europe".

Wood sold to other energy companies was imported from different EU member states.

## Vattenfall's plans to scale up wood burning:

Vattenfall continues to invest in new wood biomass capacity. In Sweden, it is building a new wood-pellet burning plant.<sup>8</sup> It recently submitted a scoping application for a large new wood-burning plant in Berlin,<sup>9</sup> despite having agreed to sell its assets there to the city in 2024.



Protest against biomass plant proposed in Diemen, Photo: Comite Schone Lucht

In **Sweden**, it joined an EU-funded project aimed at developing alternatives to using coal in iron and steel production, called HYBRIT.<sup>10</sup> Part of this project involves hydrogen produced from renewable electricity. The other part, however, involves testing the use of pyrolysis oil made from wood – likely stemwood<sup>11</sup> – to replace coal as a heating fuel. The amounts of wood required in the pilot project itself will be quite small. However, if this technology proved economically successful, it could create a very significant new market for wood bioenergy. Vattenfall is a founding member of the First Movers Coalition, which promotes Bioenergy with Carbon Capture and Storage (BECCS) in so-called hard to debate sectors.<sup>12</sup> And it is evaluating the potential for installing carbon capture equipment at two of its Swedish biomass plants.<sup>13</sup> Carbon capture, if successful, would require significantly more wood to be burned for the same energy output.

In Diemen in the **Netherlands**, Vattenfall has so far refused to

withdraw its plans for a new 120 MW biomass heat plant which would burn 200,000 tonnes of imported wood pellets a year. The plant has been strongly opposed by environmental campaign group Comite Schone Lucht (CSL), which has been actively campaigning against biomass since 2018 and works with large group of nature organisations and scientists in the Netherlands, as well as MOB, which is leading the legal campaign against Vattenfall.

Vattenfall has had to put construction plans on hold after the environmental permit for the plant was revoked by the country's highest court, the Council of State.<sup>14</sup> The decision also took away the eligibility conditions for 395 million Euro in future subsidies. Nonetheless, Vattenfall has so far refused to rule out a new permit



Moabit power and heat plant, Photo: Wikimedia

application, despite strong opposition.

Furthermore, even after the Dutch Climate Minister announced an end to new biomass subsidies for power and heat plants,<sup>15</sup> Vattenfall successfully lobbied for 400m Euros in new biomass subsidies for the proposed Diemen plant, approved in secret by the Climate Minister. The decision is being appealed by the Clean Air Committee.<sup>16</sup>

In **Berlin**, Vattenfall published a “Decarbonisation Strategy” in June 2023, according to which it seeks to increase the amount of wood it burns 17-fold by 2030.<sup>17</sup> This would require burning around 1.6 million tonnes of wood, compared to a current 96,000 tonnes.<sup>18</sup> Already, more than two-thirds of wood burned by Vattenfall in Berlin comes directly from the forest.<sup>19</sup>

At the end of 2023, Vattenfall formally agreed the sale of its Berlin assets to the city, which will be finalised during 2024. Climate and environmental

campaign groups have called on the Senate to ditch Vattenfall’s “Decarbonisation Strategy” and to rapidly develop an alternative plan, with citizen participation, one that draws on a study about clean heat potentials in Berlin by the Fraunhofer Institut.<sup>20</sup> However, this now being undermined by the fact that Vattenfall, despite selling its Berlin assets, has submitted a scoping application for a 90 MW wood-burning plant.<sup>21</sup>

## Impacts of Vattenfall’s burning and trading of woodchips and pellets

### *Climate impacts:*

Vattenfall’s biomass burning emitted 1.3 million tonnes of CO<sub>2</sub> in 2023.<sup>22</sup> Under UNFCCC greenhouse gas accounting rules, such emissions are not accounted for as greenhouse gas emissions from energy sector.<sup>23</sup> Therefore, Vattenfall gets away with treating biomass as “carbon neutral” and any replacement of fossil fuels with bioenergy as ‘emissions savings’.

In fact, burning wood emits at least as much and generally more CO<sub>2</sub> than burning coal per unit of energy at the point of combustion. Bioenergy proponents argue that these emissions can be ignored because new trees will grow back in lieu of those felled and sequester all of that CO<sub>2</sub> again in future. It is an argument that ignores two key facts: Firstly, it takes decades for a new tree to grow large enough to store as much carbon as was emitted by burning a previous one for energy, and even longer for a regrowing forest to recover all the carbon lost during logging. In the meantime, the extra carbon dioxide remains in the atmosphere and fuels further global warming. In 2018, the IPCC warned that we had just 12 years left to drastically reduce greenhouse gas emissions if we

wanted to have a realistic chance of avoiding warming greater than 1.5 degrees (the goal of the Paris Climate Agreement), which would have catastrophic impacts. Since then, global greenhouse gas emissions have reached a new record high,<sup>24</sup> and a



Forest clearcut in Sweden,  
Photo: Marcus Westberg

recent global temperature spike has left leading climate scientist worry that we may be in “unchartered territory”.<sup>25</sup>

And secondly, as climate change escalates and as logging pressures and practices continue to intensify, there is no guarantee that forests will be able to recover and re-absorb the emitted carbon dioxide in future. In February 2021, an open letter by 500 scientists called on world leaders to

*“end subsidies and other incentives that today exist for the burning of wood whether from their forests or others”, warning: “as numerous studies have shown, this burning of wood will increase warming for decades to centuries. That is true even when the wood replaces coal, oil or natural gas.”<sup>26</sup>*

#### *Impacts on forests:*

At present, most of the wood burned by Vattenfall comes from **Sweden**, a country where the prevalent ‘forest management’ practice consists of clearcutting forests. Sweden is subject to ongoing infringement proceedings notified by the European Commission on the grounds that “Sweden’s Natura 2000 network is insufficient both as regards habitat types and species under the Habitats Directive as well as birds and sites under the Birds Directive”<sup>27</sup> According to Sweden’s own reporting under the EU Habitats Directive,<sup>28</sup> 14 out of 15 forest biotopes to be protected under the directive have a status classed as ‘bad’ or ‘inadequate’ in some or all of the regions where they are found. Furthermore, the conservation status of 10 out of 11 woodland-living priority species of invertebrates is ‘bad’, with the remaining one ‘inadequate’. More than 97% of logging is done by way of clearcuts<sup>29</sup>—even in old-growth natural forest.<sup>30</sup> Sweden’s forest industry is very carbon intensive, and logging has

reduced the amount of carbon absorbed by forests every year.<sup>31</sup>

Forest wood currently burned in Berlin is sourced from **Germany**. German forests are under increasing pressure from a combination of increased wood demand, accompanied by an intensification of logging, climate change, and environmental pollution.<sup>32</sup> According to figures published by German state governments and the federation of forest owners, some 600,000 hectares of forest have died entirely due to repeat droughts since 2018, while many more are damaged.<sup>33</sup> Around half of Germany’s entire annual wood harvest is burned for energy.<sup>34</sup> Logging, including for biomass industry, is even happening inside Natura 2000 sites.<sup>35</sup>

In the Baltic States, logging volumes and areas of clearcut forest have been rising steadily in recent years, and especially in Estonia, that increase correlates neatly with rising demand for wood biomass, including for export.<sup>36</sup> Estonia’s forests have recently become a net source of carbon emissions,<sup>37</sup> due largely to intensive logging. Also in Estonia, as logging intensifies the number of forest birds is declining by 50,000 breeding pairs a year.

### **Vattenfall’s wider role in the expansion and greenwashing of wood-bioenergy and the international wood pellet trade**

The company has for many years played a pivotal role in bringing about the recent expansion of the wood pellet trade. In 2019, the International Renewable Energy Association (IRENA) published a report called “Bioenergy from boreal forests – Swedish approach to sustainable wood use”.<sup>38</sup> According to the authors: “Sweden has conducted

*in-depth research of related sustainability issues. It started with the Vattenfall project, which was carried out by the Swedish University of Agricultural Sciences (SLU) from 1990 through 1998.”* This suggests that Vattenfall has been involved from early on in developing the so-called “Swedish Forestry Model” and its framing as ‘sustainable forest

management'. This model has been denounced by environmental groups for the serious harm it causes to forest ecosystems, including old growth forests.<sup>39</sup>

In 2010, Vattenfall was one of six European energy companies that set up the Initiative of Wood Pellet Buyers (IWPB).<sup>40</sup> The IWPB's stated aim was to "enable the trading of industrial wood pellets among the partnering companies", and their first task was to develop a reference system for technical specifications for wood pellets, which became the EN plus labelling scheme.<sup>41</sup>



Typical clearcut in Estonia,  
Photo: Martin Luiga

In practice, this meant setting up the first international quality standard without which there could have been no global market in wood pellets. IWPB members also started to draw up their own sustainability standards, however, in 2013, they decided to join up with wood pellet companies to continue those efforts through a new body, the Sustainable Biomass Partnership, later renamed Sustainable Biomass Program (SBP).<sup>42</sup> SBP is now the single biggest wood

pellet certification scheme, recognised across the EU. It has been denounced by environmental NGOs, most recently in a report by five environmental organisations that show how the SBP fails to ensure that the, albeit weak, Dutch biomass sustainability standards are fully met.<sup>43</sup> The SBP does not even require certifiers to visit any of the forest or tree plantations supplying wood for pellets; it leaves such 'oversight' to the pellet producers themselves!

Even before the SBP was set up, in 2011, Vattenfall succeeded in agreeing the very first 'sustainable biomass' agreement anywhere in Europe, namely with the State of Berlin. It explicitly allows the sourcing of large stemwood for energy.<sup>44</sup> And, what is more, it gave the green light to a disastrous biomass sourcing project involving wood from Liberian rubber plantations. Vattenfall terminated that sourcing contract in 2012. However, according to a report by the NGO Swedwatch in 2018, "*the project and its shutdown led to several human rights challenges for local communities, particularly for female charcoal producers, local rubber farmers and BRF [the wood supplier] employees.*" Those included loss of livelihoods and sexual exploitation and abuse of women. Furthermore, the project competed with other charcoal users and pushed charcoal production into highly biodiverse forest ecosystems, thus accelerating deforestation.<sup>45</sup> The same 'sustainability agreement' under which this project was deemed acceptable was extended for another ten years in 2021. It fed into the development of SBP certification.

## What Vattenfall needs to do

Vattenfall must immediately cancel all plans for new biomass-burning plants (including in Berlin) or for an increase in the amount of wood burned in existing plants and abandon its wood biomass trading activities. It must stop promoting additional use of wood

in industry and for so-called carbon removals. A rapid and comprehensive phaseout of Vattenfall's current fossil fuel and biomass burning portfolio is required, as part of a wider energy shift reliant on energy conservation and low-carbon renewable energy.

- <sup>1</sup> For example [old.allforpower.cz/clanek/rwe-e-on-and-vattenfall-top-the-list-of-european-co2-emitters-in-2008/](https://old.allforpower.cz/clanek/rwe-e-on-and-vattenfall-top-the-list-of-european-co2-emitters-in-2008/), [bobsguide.com/2015/06/18/carbon-market-data-publishes-the-eu-ets-company-rankings-2014/](https://bobsguide.com/2015/06/18/carbon-market-data-publishes-the-eu-ets-company-rankings-2014/)
- <sup>2</sup> [group.vattenfall.com/siteassets/corporate/who-we-are/corporategovernance/agm/2018/document\\_9\\_180424\\_ceo\\_agm\\_statement.pdf](https://group.vattenfall.com/siteassets/corporate/who-we-are/corporategovernance/agm/2018/document_9_180424_ceo_agm_statement.pdf)
- <sup>3</sup> [beyond-coal.eu/database/](https://beyond-coal.eu/database/)
- <sup>4</sup> [group.vattenfall.com/globalassets/corporate/who-we-are/sustainability/vattenfall-annual-and-sustainability-report-2023.pdf](https://group.vattenfall.com/globalassets/corporate/who-we-are/sustainability/vattenfall-annual-and-sustainability-report-2023.pdf)
- <sup>5</sup> [powerplants.vattenfall.com/#/types=Biomass/view=list/sort=name](https://powerplants.vattenfall.com/#/types=Biomass/view=list/sort=name), plus co-firing in the coal plant Moabit in Berlin
- <sup>6</sup> Response to a written question by elected member of the state government in Berlin, Ferat Koçak, 19<sup>th</sup> May 2022, <https://pardok.parlament-berlin.de/starweb/adis/citat/VT/19/SchrAnfr/S19-15421.pdf>
- <sup>7</sup> [group.vattenfall.com/siteassets/corporate/investors/annual-reports/2022/vattenfall-annual-and-sustainability-report-2022.pdf](https://group.vattenfall.com/siteassets/corporate/investors/annual-reports/2022/vattenfall-annual-and-sustainability-report-2022.pdf)
- <sup>8</sup> <https://group.vattenfall.com/se/nyheter-och-press/nyheter/2023/vattenfall-bygger-ny-anlaggning-for-biobransle-i-vanersborg>
- <sup>9</sup> <https://group.vattenfall.com/se/nyheter-och-press/nyheter/2023/vattenfall-bygger-ny-anlaggning-for-biobransle-i-vanersborg>
- <sup>10</sup> [hybritdevelopment.se/en/](https://hybritdevelopment.se/en/)
- <sup>11</sup> [mdpi.com/1996-1073/13/20/5386/pdf](https://mdpi.com/1996-1073/13/20/5386/pdf)
- <sup>12</sup> <https://initiatives.weforum.org/first-movers-coalition/commitments>
- <sup>13</sup> <https://group.vattenfall.com/what-we-do/roadmap-to-fossil-freedom/carbon-capture>
- <sup>14</sup> <https://www.dutchnews.nl/2023/08/biomass-plant-plan-scrapped-after-court-rules-eco-report-needed/>
- <sup>15</sup> <https://www.rijksoverheid.nl/actueel/nieuws/2022/04/22/onmiddellijke-subsidiestop-voor-laaqwaardige-warmte-uit-biogrondstoffen>. Note that this decision does not apply to high-temperature heat used in some industrial processes – but it does apply to heat plants such as the one proposed by Vattenfall in Diemen.
- <sup>16</sup> <https://comiteschonelucht.nl/en/ministry-officials-secretly-helped-with-new-biomass-subsidy-vattenfall/>
- <sup>17</sup> [waerme.vattenfall.de/binaries/content/assets/waermehaus/startseite/allgemein/dekarbonisierungsfahrplan---vattenfall-warme-berlin-ag.pdf](https://www.waerme.vattenfall.de/binaries/content/assets/waermehaus/startseite/allgemein/dekarbonisierungsfahrplan---vattenfall-warme-berlin-ag.pdf)
- <sup>18</sup> <https://pardok.parlament-berlin.de/starweb/adis/citat/VT/19/SchrAnfr/S19-15421.pdf>
- <sup>19</sup> <https://pardok.parlament-berlin.de/starweb/adis/citat/VT/19/SchrAnfr/S19-15421.pdf>
- <sup>20</sup> <https://www.biofuelwatch.org.uk/wp-content/uploads/Berlin-Biomasse-Informationspapier.pdf>
- <sup>21</sup> <https://drive.google.com/file/d/1-jsQJPCqshhNqpZaLHV3PEie2ueFOzT/view>
- <sup>22</sup> <https://group.vattenfall.com/globalassets/corporate/who-we-are/sustainability/vattenfall-annual-and-sustainability-report-2023.pdf>, p.190
- <sup>23</sup> [environmentalpaper.org/2022/06/how-a-carbon-accounting-problem-is-driving-the-biomass-delusion/](https://environmentalpaper.org/2022/06/how-a-carbon-accounting-problem-is-driving-the-biomass-delusion/)
- <sup>24</sup> <https://www.unep.org/resources/emissions-gap-report-2023>
- <sup>25</sup> <https://www.nature.com/articles/d41586-024-00816-z>
- <sup>26</sup> [woodwellclimate.org/letter-regarding-use-of-forests-for-bioenergy/](https://woodwellclimate.org/letter-regarding-use-of-forests-for-bioenergy/)
- <sup>27</sup> [https://ec.europa.eu/commission/presscorner/detail/EN/INF\\_20\\_859](https://ec.europa.eu/commission/presscorner/detail/EN/INF_20_859)
- <sup>28</sup> [naturvardsverket.se/contentassets/5781ebad94e34a478aa95b7163234b4a/bilaga-1-paf-en-sweden-2021-09-23.pdf](https://naturvardsverket.se/contentassets/5781ebad94e34a478aa95b7163234b4a/bilaga-1-paf-en-sweden-2021-09-23.pdf)
- <sup>29</sup> [https://www.fern.org/fileadmin/uploads/fern/Documents/Presentations/Insights\\_into\\_Sweden\\_Forests\\_Masterslide.pdf](https://www.fern.org/fileadmin/uploads/fern/Documents/Presentations/Insights_into_Sweden_Forests_Masterslide.pdf)
- <sup>30</sup> <https://www.lunduniversity.lu.se/article/study-uncovers-widespread-and-ongoing-clearcutting-swedish-old-forests>
- <sup>31</sup> <https://www.naturvardsverket.se/om-oss/aktuellt/nyheter-och-pressmeddelanden/nettoinlagringen-av-koldioxid-i-vaxande-trad-minskar-kraftigt/>
- <sup>32</sup> [naturwald-akademie.org/forschung/positionen/neue-satellitendaten-zeigen-deutliche-waldverluste-in-deutschland/](https://naturwald-akademie.org/forschung/positionen/neue-satellitendaten-zeigen-deutliche-waldverluste-in-deutschland/)
- <sup>33</sup> <https://www.robinwood.de/sites/default/files/D-160-16-21-waldgesetz-3.pdf>
- <sup>34</sup> [https://www.dbfz.de/fileadmin/user\\_upload/Referenzen/Statements/Discussion\\_paper\\_sustainable\\_forest\\_bioenergy.pdf](https://www.dbfz.de/fileadmin/user_upload/Referenzen/Statements/Discussion_paper_sustainable_forest_bioenergy.pdf), p. 7
- <sup>35</sup> <https://www.greenpeace.de/biodiversitaet/waelder/waelder-deutschland/scheiterhaufen-energiekrise>
- <sup>36</sup> [media.voog.com/0000/0037/1265/files/Biomass\\_report\\_ENG%20\\_2020.pdf](https://media.voog.com/0000/0037/1265/files/Biomass_report_ENG%20_2020.pdf)
- <sup>37</sup> <https://elfond.ee/lulucf>
- <sup>38</sup> [irena.org/-/media/Files/IRENA/Agency/Publication/2019/Mar/IRENA\\_Swedish\\_forest\\_bioenergy\\_2019.pdf](https://irena.org/-/media/Files/IRENA/Agency/Publication/2019/Mar/IRENA_Swedish_forest_bioenergy_2019.pdf)
- <sup>39</sup> [moreofeverything.org/](https://moreofeverything.org/)
- <sup>40</sup> [somo.nl/from-whence-the-wood/](https://somo.nl/from-whence-the-wood/)
- <sup>41</sup> [bpa-intl.com/images/stories/present-1/PELLCERT%20-%20Industrial%20Wood%20Pellets%20Report%20\(2012\).pdf](https://bpa-intl.com/images/stories/present-1/PELLCERT%20-%20Industrial%20Wood%20Pellets%20Report%20(2012).pdf)
- <sup>42</sup> [sbp-cert.org/](https://sbp-cert.org/)
- <sup>43</sup> <https://www.biofuelwatch.org.uk/2023/sbp-report/>
- <sup>44</sup> [waerme.vattenfall.de/binaries/content/assets/waermehaus/downloads\\_fern/waerme/nachhaltigkeitsvereinbarung\\_biomasse\\_berlin\\_2021.pdf](https://www.waerme.vattenfall.de/binaries/content/assets/waermehaus/downloads_fern/waerme/nachhaltigkeitsvereinbarung_biomasse_berlin_2021.pdf)
- <sup>45</sup> [swedwatch.org/wp-content/uploads/2021/01/liberiaupdate180524slutversion.pdf](https://swedwatch.org/wp-content/uploads/2021/01/liberiaupdate180524slutversion.pdf)