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## **GAIA Submission on the Asian Development Bank's Draft Energy Policy 2021**

*Submitted to ADB on 30 June 2021*

### **1. Introduction**

The ADB plays a critical role in this historic period of greater need for development finance in the transition to a green, just and resilient future for the region. As ADB and governments are pursuing COVID-19-related stimulus and recovery initiatives, it is increasingly important to factor in economic and social costs so solutions that are beneficial to human health, the environment, and the economy are prioritized.

To do this, ADB has to prioritize its investments to economic activities that respond to climate, environmental, and social challenges of our times. Unfortunately, its development projects have received much criticism from civil society groups for financing development projects that aggravate environmental deterioration, widen health inequities, reinforce community displacement, harm local jobs, and infringe on human rights objectives.

Among these harmful projects are waste-to-energy (WTE) incinerators. In the decade since ADB last revised its Energy Policy, the bank has been a major development financier, industry aggregator, knowledge broker, and policy architect for waste-to-energy.<sup>1</sup> First, ADB's support for WTE delivered in the form of loans, grants, and technical assistance goes against its stated mandate, and hinders the bank's efforts under its Strategy 2030 to "eradicate extreme poverty" and achieve a "prosperous, inclusive, resilient, and sustainable Asia and the Pacific." Second, it runs in conflict with commitments to contribute significantly to Sustainable Development Goals (SDGs) and the Paris Agreement. Third, the bank's continued support for WTE violates international agreements aimed at promoting health and well-being, generating livelihoods, and protecting the environment and human rights.<sup>2</sup>

It is reckless for ADB to maintain investments in expensive and harmful WTE projects in the next decade in a region: 1) that has safer and cheaper waste management solutions in place, 2) that has significant presence of the informal waste sector in waste management, 3) where air pollution from fossil fuels is causing premature deaths and billions of economic losses,<sup>3</sup> 4) where waste trade is an intensifying transboundary problem which Thailand, Vietnam,

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<sup>1</sup> The terms waste-to-energy (WTE) and waste incineration here refer to thermal technologies, unless stated as non-thermal WTE (Example: anaerobic digestion).

<sup>2</sup> The UN OCHR has listed international standards and on hazardous substances and wastes due to the growing concern around hazardous impacts of wastes.

<https://www.ohchr.org/EN/Issues/Environment/SRToxicsandhumanrights/Pages/Standards.aspx>

<sup>3</sup> Air pollution from fossil fuels has contributed to a combined estimated 153,600 premature deaths and USD 82.4 billion in economic loss up in 2020 in 11 major Asian cities.

<https://www.greenpeace.org/southeastasia/publication/3603/toxic-air-the-price-of-fossil-fuels-full-report/>

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**GAIA ASIA PACIFIC**

Unit 330, Eagle Court Condominium | 26 Matalino Street, Barangay Central

Quezon City | Philippines 1100

Telefax: +632 436 4733

Malaysia,<sup>4</sup> Philippines,<sup>5</sup> and China<sup>6</sup> are curbing, 5) small island developing states where any infrastructure producing hazardous byproducts put at greater risk due to climate vulnerabilities such as sea level rise, and 6) with highly indebted countries struggling from a pandemic.

The Global Alliance on Incinerator Alternatives (GAIA) sends our submission to ADB's draft Energy Policy. The scope of this review is on WTE – which our global alliance of 800 organizations worldwide (in partnership with grassroots organizations, scientific communities, and local governments) have been pushing to be phased out in order to reduce plastic pollution and establish Zero Waste systems.

## 2. Consultations

ADB has not published a consultation plan for the Energy Policy review process, in accordance to Annex 1 of its Access to Information Operations Manual<sup>7</sup> to ensure an inclusive dialogue with stakeholders. As a result, it was unclear to Civil Society Organizations (CSOs) on how to formally engage in the review process. Nonetheless, CSOs, through the NGO Forum on ADB, have initiated meetings, but only resulted in an hour-long dialogue between the former and the ADB management following the release of the draft Energy Policy in May 2021. The dialogue covered policy gaps raised by CSOs but there were no follow-up meetings about WTE, which has not been dropped in the latest draft Energy Policy. Moreover, WTE has also figured in numerous sessions during the Asia Clean Energy Forum 2021 (ACEF 2021).

During ACEF 2021, GAIA and several CSOs have decided to skip CSO consultation sessions, due to an inadequate two-way communication platform to establish meaningful consultations, as part of the review process for the draft Energy Policy. Soon after, ADB and GAIA planned to hold a post-ACEF meeting on WTE, with the bank insisting on the following conditions: limiting the discussion to the proposed guidance note and excluding policy questions about WTE. To date, ADB has yet to accommodate WTE-specific consultation with CSOs.

From the perspective of transparency, accountability, and public reliability, ADB must expand the commenting process to CSOs in different sectors. As a set standard in public consultations with International Financial Institutions, ADB should have a consultation plan, a portal for submitting comments from the public, and a published matrix of comments. Currently, ADB's conduct of the policy review process falls below set requirements for meaningful consultations with CSOs to discuss policy issues and alternatives. These risks having a new Energy Policy with ambitions that are weak and dangerous.

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<sup>4</sup><https://www.straitstimes.com/asia/se-asia/not-just-developed-countries-even-bangladesh-sending-unnwanted-plastic-waste-to-malaysia>

<sup>5</sup> <https://www.bbc.com/news/world-asia-48455440>

<sup>6</sup><https://www.scmp.com/week-asia/health-environment/article/3113665/southeast-asia-prepares-get-umped-china-enacts-waste>

<sup>7</sup> ADB Operations Manual, Section 1.3 Appendix, page 14.

<https://www.adb.org/sites/default/files/institutional-document/31483/om-l3.pdf>

### 3. Overarching Concerns

Before going to the details of the policy, the general assessment is that the ADB is offering an energy policy, which is weak in ambition and risks maintaining a status quo for the following reasons:

1. To be ambitious, ADB's decarbonization plan needs to go beyond the energy sector. Without an examination of the overall energy requirements in implementing the regional and country partnership strategies and the potential carbon footprint of ADB's Strategy 2030, the draft Energy Policy remains as a set of aspirational targets rather than a real roadmap towards keeping global temperature rise below 1.5 degrees Celsius. An Energy Policy pursuing sustainability and climate resiliency must, in the first place, recognize that unsustainable energy use is intertwined with unsustainable production systems fueled by unsustainable extraction of resources. WTE has no place in any decarbonization plans. WTE facilities, for instance, are expected to operate for about 25 years, and during this life span, emit between 250 and 600 kg fossil-CO<sub>2</sub> per tonne of incinerated waste, which is comparable to the carbon intensity of emissions from coal combustion—making it a significant source of GHG emissions.<sup>8</sup> This cycle encourages more extraction of resources, since discarded materials have been destroyed rather than recovered, thus indirectly contributing to more emissions.
2. ADB is heavily predicated on one goal, SDGs—particularly goals number 7, 12, and 13—and decarbonization which does not capture the essence of the interrelated goals of the SDGs and the IPCC directives that efforts toward achieving the GHG emissions target is most efficient when pursued alongside achieving social and environmental objectives. In this period where developing member countries continue to combat COVID-19 and begin the period of recovery, ADB has the role to map a decarbonization agenda for developing member countries that require the use of public resources devoted to achieving economic recovery and avoid widening existing inequities from health, environmental, and climate crises. WTE facilities are known not only for their climate impacts but also for their social and environmental impacts. For these reasons, it is banned in some developing countries including the Philippines,<sup>9</sup> Canberra in Australia,<sup>10</sup> and Guam.<sup>11</sup> In Indonesia, a presidential decree which supported WTE was canceled by the Supreme Court because of various legal and scientific reasons.<sup>12</sup> To this date, communities continue to raise objections in courts and different levels of government.

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<sup>8</sup> Waste To Energy: Considerations for Informed Decision-Making. UNEP.  
<https://wedocs.unep.org/handle/20.500.11822/28413>

<sup>9</sup> Under section 20, The Philippine Clean Air Act of 1999 (Republic Act No. 8749) bans incineration of municipal, bio-medical and hazardous wastes.

<https://emb.gov.ph/wp-content/uploads/2015/09/RA-8749.pdf>

<sup>10</sup> In Australian Capital Territory (ACT) Waste-to-Energy Policy 2020-25, new thermal treatment facilities such as incineration, gasification, pyrolysis or variations of these for energy recovery, chemical transformation, volume reduction or destruction will not be permitted.

<https://www.canberratimes.com.au/story/6773715/burning-waste-off-the-cards-under-new-act-govt-energy-plan/>

<sup>11</sup>[https://www.postguam.com/news/local/ag-incinerator-ban-remains/article\\_022cbb12-9476-11e8-9a32-cf63432a26c1.html](https://www.postguam.com/news/local/ag-incinerator-ban-remains/article_022cbb12-9476-11e8-9a32-cf63432a26c1.html)

<sup>12</sup> <https://nasional.tempco/read/836410/ma-batalkan-perpres-pembangkit-listrik-berbasis-sampah>

3. ADB has not taken the necessary steps in reforming its taxonomy of economic activities which defines when an energy source is indeed renewable and clean along IPCC guidelines on renewable energy.<sup>13</sup> A taxonomy instructs policymakers, businesses, investors, and society which economic activities contribute to sustainability and decarbonization. It recommends which economic activities should receive subsidies, because they are considered sustainable. The European Union (EU) has made headways defining which economic activities its development finance should be used effectively for the achievement of the multiple objectives of the SDGs and the Paris Agreement: climate change mitigation and adaptation, sustainability, resources conservation and protection, transition to a circular economy, pollution prevention and control, and the protection and restoration of biodiversity and ecosystems. EU have made waste incineration not eligible for any funding in all the latest definitions of granting measures (example: Just Transition Funds,<sup>14</sup> Regional Development and Cohesion Fund,<sup>15</sup> EU Taxonomy of Sustainable Finance<sup>16</sup>). ADB leads in the formation of major climate financing mechanisms through its various technical assistance and policy-setting roles in key development financing policy platforms in the region. The rules and standards inevitably set the norms by independent sustainable and climate financing both regionally and nationally. ADB's strategic leadership in the region should be leveraged to develop upward harmonization of policies and weed out economic activities that have little contribution to reaching its climate, environmental, and social objectives.
4. ADB falsely categorized waste as a source of renewable energy. Waste is neither truly renewable nor a low-carbon energy source. Waste is material lost from our economic activities that needs to be re-mined and re-grown. Burning waste is an activity with high carbon intensity which releases both biogenic and fossil carbon. It is critical to count biogenic carbon in the GHG emission calculation for all activities. Once material is burnt, it emits carbon almost instantaneously, yet it takes years to decades to re-capture the equivalent carbon through plant growth. Ignoring biogenic carbon assumes biogenic waste was obtained sustainably yet most paper, wood, and agricultural waste were not derived sustainably, will not be renewed, and will lead to long-term declines in carbon storage. Burning mixed waste for energy as Refuse-Derived Fuel (RDF) in cement kilns or in waste incinerators, has the highest global warming potential per unit of energy generated compared to other fossil fuels such as coal, oil, and natural gas.<sup>17</sup> The same cautiousness

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<sup>13</sup> In ADB's list of activities eligible for classification as climate mitigation finance, WTE falls in the following categories 1) **renewable energy** particularly on "thermal applications of sustainably produced bioenergy in all sectors"; 2) **lower carbon and efficient energy generation** particularly on "conversion of existing fossil-fuel-based power plant to co-generation technologies that generate electricity in addition to providing heating or cooling"; 3) **energy efficiency** particularly on "reduction of heat loss in utilities and/or increased recovery of waste heat"; and 4) **waste and wastewater** particularly on "Waste-to-energy projects" and "Waste collection, recycling and management projects that recover or reuse materials and waste as inputs into new products or as a resource (only if net emission reductions can be demonstrated)". Full list of activities can be seen on page 39 Table A.C.1 in this report: <https://www.adb.org/news/mdbs-climate-finance-hit-66-billion-2020-joint-report-shows>. ADB also supports WTE in its urban development and waste subsectors.

<sup>14</sup> <https://data.consilium.europa.eu/doc/document/ST-13719-2020-INIT/en/pdf>

<sup>15</sup> [https://ec.europa.eu/regional\\_policy/en/funding/erdf/](https://ec.europa.eu/regional_policy/en/funding/erdf/)

<sup>16</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R0852>

<sup>17</sup> <https://ipen.org/sites/default/files/documents/ipen-plastic-waste-management-hazards-en.pdf>

should apply to the usage of biomass as an energy source. The IPCC states that only the organic component of municipal solid waste is considered as a renewable energy source.<sup>18</sup> The EU excludes fossil-based materials (such as plastic) from their definition of renewable energy sources.<sup>19</sup> In the Philippines, the Renewable Energy Act of 2008 (Republic Act No. 9513) only includes recovery energy from waste as a renewable energy source as long as it is biomass-based feedstock that comes from agricultural and organic fractions of municipal waste.<sup>20</sup>

5. ADB is heavily leaning toward highly centralized, costly, and private sector-led energy systems. An energy policy without changes in energy systems will not have any headway in providing access to energy for the last mile communities and urban populations already burdened with high costs of dirty and private-led energy sources. Energy recovered from WTE, if they ever produce electricity, has minimal contributions to grids. WTE is not contributing to decentralized, off-grid, and accessible sources of energy both for urban and rural populations and has not demonstrated its cost-efficiency compared with other waste management solutions that are more environmentally and socially acceptable. In the last decade, wind and solar have demonstrated to be cheaper, reliable off-grid sources of energy which eliminates the basis for capital-intensive and harmful options such as WTE for fueling the region's decarbonization plan.
6. ADB is framing WTE as a solution to two problems, namely a source of clean renewable energy and a solution to waste problems. Both of which have been negated by new policies and scientific findings which we will explain further in the next sections of this submission.

In the absence of meaningful consultations, a reexamination of these overarching concerns may not be addressed by the policy review process and therefore risks having an outcome policy document which is lacking in ambition, outdated and conflicting with current policy directions, and inefficient in addressing the region's current multiple and complex challenges.

#### **4. Specific policy concerns and recommendations for improvement**

The following section is an overview outlining specific paragraphs in the draft Energy Policy. These comments are preliminary in nature and will be further elaborated during the next round of consultations in August. Likewise, the ADB is advised to extend meaningful consultations with CSOs involved in the Energy Policy review in the next few weeks.

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<sup>18</sup> [https://www.ipcc.ch/site/assets/uploads/2018/03/SRREN\\_FD\\_SPM\\_final-1.pdf](https://www.ipcc.ch/site/assets/uploads/2018/03/SRREN_FD_SPM_final-1.pdf)

<sup>19</sup> [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L\\_.2018.328.01.0082.01.ENG&toc=OJ:L:2018:328:TOC](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2018.328.01.0082.01.ENG&toc=OJ:L:2018:328:TOC)

<sup>20</sup> <https://www.officialgazette.gov.ph/2008/12/16/republic-act-no-9513/>

## 4.1 Recommendations on the use of WTE as a renewable source of energy and a solution to waste problems

References: Paragraphs 56, 74, 82, and 90

### 4.1.1 Context

Waste incineration with an energy recovery objective for electricity, fuel, and heat is defined by regulatory regimes as “waste-to-energy”. In practice however, WTEs are deployed primarily for its waste management function and secondary as an energy source because of its poor capacity to generate electricity.

There are many other types of technologies for recovering energy from waste, depending on the type of feedstock (or waste) that are not using thermal processes and are least harmful. The risks associated with WTE highly depend on the local environmental, social and institutional context including existing policies and capacities, climate conditions, the type of technology, the waste type or feedstock used in WTE, and the existing capacities to control emissions, and byproducts considered toxic and hazardous.

The IPCC special report on renewable energy sources and climate change mitigation only identifies biomass—the organic component of municipal solid waste and other organic waste streams—as a source of renewable energy.<sup>21</sup> Yet, ADB has continued supporting WTE investment while ignoring the fact that a significant fraction of waste feedstock are made from fossil fuels, such as single-use plastic.

Types of thermal WTE (or simply waste incineration) include mass-burn combustion, plasma arc, co-firing Refuse-Derived Fuel (RDF) in industrial boilers or cement kilns, and staged incineration techniques, which include gasification, pyrolysis, and chemical recycling.

ADB classifies mass-burn combustion, plasma arc, co-firing Refuse-Derived Fuel (RDF) in industrial boilers or cement kilns, and staged incineration techniques (e.g. gasification, pyrolysis, and chemical recycling) as either thermal or thermochemical-chemical WTE<sup>22</sup>. It further advises that “planners need to consider how to feed the beast,” referring to WTE facilities that need a fixed amount of waste feedstock to operate efficiently. Efficient operations, however, are likely to undermine any government measure on waste prevention, reuse, and recycling. Biochemical conversion technology is an exception, as this treats organic waste that often comprise half of municipal waste streams in cities and communities. Such facilities, moreover, should be set up in clusters close to waste generators and not centralized.

However, in the draft Energy Policy, ADB's continued support for WTE is framed in paragraph 82, as follows:

*“ADB will support waste-to-energy investments provided that the feedstock for combustion prudently follows the waste management's order of priority, which considers first reducing waste generation, then opportunities for materials reuse and recycling, then using waste to generate energy or basic material (such as in civil construction), followed*

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<sup>21</sup> [https://www.ipcc.ch/site/assets/uploads/2018/03/SRREN\\_FD\\_SPM\\_final-1.pdf](https://www.ipcc.ch/site/assets/uploads/2018/03/SRREN_FD_SPM_final-1.pdf)

<sup>22</sup> <https://www.adb.org/publications/waste-to-energy-age-circular-economy-handbook>

*by landfilling as the last option. Support for waste-to-energy investments and waste value chains, as they provide an opportunity for integrated cross-sectoral projects that can create sustainable livelihoods for the poorest-of-the-poor working in the waste value chain and at landfills. Waste-to-energy investments also improve local environments and health in cities and rural areas, by removing the environmental hazards caused by open waste dumping. Potential environmental and social impacts of waste-to-energy investment can be managed through appropriate design and operation using international best available technologies. A detailed guidance note will be issued to staff in processing waste-to-energy projects."*

In conflict with recent international and national regulatory regimes and evidence, ADB has categorized it as a source of a stable supply and a source of renewable energy in paragraph 90:

*"Liquid and gaseous fuels and energy carriers represent another important avenue for providing a stable supply and storing energy from various renewable energy sources, including sustainably sourced biomass, waste, and variable renewable electricity"*

Additionally, ADB also commits to WTE for agricultural waste as seen in paragraph 56;

*"ADB acknowledges that sustainably sourced bioenergy can spur rural economies and provide a low-carbon alternative for a wide variety of energy end uses. Therefore, ADB will help DMCs develop policies to support use of agricultural wastes for energy, including uses such as for direct combustion in boilers and briquettes (to replace charcoal), bio compressed natural gas for households and industries, biogas digestion, and ethanol and biodiesel production. One avenue for this will be encouraging national biogas programs that deploy digesters using livestock manure and other agriculture waste as feedstock. ADB will also support efforts to scale up the technology through development of larger centralized biogas units providing methane for power generation, transport, or to be fed into the natural gas network."*

Lastly, also considered as an option for district heating in paragraph 74:

*"...Waste-to-energy plants can contribute to improved waste collection and sorting and is one supply-side option for centralized heat production."*

It is imperative that ADB reexamine its stated support for WTE for the reasons being forwarded by the international development community, the scientific community, and communities affected by WTE projects:

1. **WTE is a carbon intensive, toxic, and hazardous source of energy.** In a study made by Eurostat in 28 European countries, CO<sub>2</sub> emissions from WTE have doubled from 2006 to 2016. In 2017 alone, over 40Mt of fossil CO<sub>2</sub> was released by WTE in terms of fossil CO<sub>2</sub> (e.g. from burning plastics) and biogenic CO<sub>2</sub> (e.g. from burning wood, paper and food).<sup>23</sup> Current claims at GHG reductions from WTE are misleading. There is no standard reporting for GHG reductions as international methodologies are based on waste inputs used for feedstock. This means current data is outdated as capacities to conduct waste

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<sup>23</sup> <https://zerowasteurope.eu/2020/03/understanding-the-carbon-impacts-of-waste-to-energy/>

audits including GHG emissions from flue gas at the national levels are weak<sup>24</sup>; it is conclusive that claims about WTE's GHG reduction capacities are not based on strong data. Recovery for reuse and recycling save more energy compared to waste incineration.<sup>25</sup>

Moreover, WTE feeds on plastics which is 99% fossil fuels<sup>26</sup>. Using a lifecycle approach to the extraction of the production and incineration of plastic, burning of plastics as feedstock will add more than 850 million metric tons of greenhouse gases to the atmosphere—equal to the pollution from 189 new 500-megawatt coal-fired power plants.<sup>27</sup> In addition, to its high-intensity carbon releases, WTE also yield various toxic emissions like toxic ash<sup>28</sup> and mercurial emissions<sup>29</sup>. By supporting WTE, ADB is replacing fossil fuel with another fossil fuel. The phaseout of coal should not enable WTE to become the next most polluting source of energy.

- 2. WTE is not a renewable source of energy.** Waste as feedstock is based on the extraction of finite resources, such as minerals and fossil fuels, unlike wind, solar or wave energy. The IPCC report on Renewable Energy states that the organic fractions from municipal waste and biomass are classified as sources of renewable energy,<sup>30</sup> and not other waste streams. Heeding to the climate and other risks associated with waste incineration, the revised EU Renewable Energy Directive says that member states shall not grant support for renewable energy produced from the incineration of waste if waste segregation obligations are not properly in place.<sup>31</sup>
- 3. WTE does not contribute to the ADB's objective of providing the least cost-stable supply of energy.** WTE is the most expensive way to produce energy. Its long-term stability is highly dependent on highly combustible and continuous supply of waste. Many countries are now adopting waste reduction strategies, including plastic use regulations and source-separation programs. These strategies may likely impact the constant supply of waste feedstock, which WTE facilities need to operate efficiently. WTEs are costly and capital intensive. It is estimated to cost as much as USD 1.2 billion to build an incinerator with a capacity of processing 1 million tonnes of waste per year. Both capital expenditure and operational expenditure are among the highest for WTE incineration compared to other waste management options such as composting, anaerobic digestion, and landfills. The negative externalities including cost to public health, joblessness, environmental quality are not often factored in when choosing WTE as part of waste management options or energy sources.<sup>32</sup>

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<sup>24</sup> [https://www.ipcc.ch/site/assets/uploads/2018/03/5\\_Waste-1.pdf](https://www.ipcc.ch/site/assets/uploads/2018/03/5_Waste-1.pdf)

<sup>25</sup> <https://www.no-burn.org/wp-content/uploads/GAIA-Facts-about-WTE-incinerators-Jan2018-1.pdf>

<sup>26</sup> <https://www.ciel.org/issue/fossil-fuels-plastic/>

<sup>27</sup> <https://www.ciel.org/plasticandclimate/>

<sup>28</sup> <https://ipen.org/sites/default/files/documents/ipen-plastic-waste-management-hazards-en.pdf>

<sup>29</sup> <https://www.tandfonline.com/doi/pdf/10.1080/10962247.2012.659329>

<sup>30</sup> [https://www.ipcc.ch/site/assets/uploads/2018/03/SRREN\\_FD\\_SPM\\_final-1.pdf](https://www.ipcc.ch/site/assets/uploads/2018/03/SRREN_FD_SPM_final-1.pdf)

<sup>31</sup> The new directive sets out restrictions such as obligation to fulfill collection requirements before waste incinerations can operate e.g. for biowaste (by 2024) and textile (by 2025). [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L\\_.2018.328.01.0082.01.ENG&toc=OJ:L:2018:328:TOC](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2018.328.01.0082.01.ENG&toc=OJ:L:2018:328:TOC)

<sup>32</sup> <https://zerowasteworld.org/wp-content/uploads/The-High-Cost-of-Waste-Incineration-March-30.pdf>

4. **WTE does not improve waste collection and sorting.** Improved waste collection and sorting happen because of the combination of these factors: 1) supportive waste governance systems; 2) enabling policies on full-coverage waste collection service and at-source segregation; 3) adequate funding allocation for segregated waste collection service; and 4) education program on at-source segregation. Other waste processing technologies such as composting and recycling, especially centralized systems, also require high quality feedstock from segregated waste collection systems. Hence, the statement that WTE enhances waste collection and sorting is not a justification for supporting these facilities.
5. **WTE is an end-of-pipe disposal option that should not be part of any developing countries' waste management options.** In order to achieve the most environmental and socially-acceptable options for waste management, WTE shouldn't be counted as an option. It sits at the bottom of the waste hierarchy, alongside landfilling. Instead of solving the problem of waste production, WTE just converts it into a bigger problem—that is, from domestic waste problems into hazardous and toxic waste problems. It produces multiple residue streams—particularly in the ash and air emissions—which are often more hazardous and more difficult to handle than the original waste that was burned.<sup>33</sup>
6. **WTE destroys existing jobs among the poor dependent on recycling activities.** The job creation potential of waste incineration is consistently low, according to nine (9) data points.<sup>34</sup> Waste incineration only supports an average of 2 jobs / 10,000 TPY (tonnes per year), compared to repair (404 jobs / 10,000 TPY), recycling (115 jobs / 10,000 TPY), remanufacturing (55 jobs / 10,000 TPY), and composting (7 jobs/ 10,000 TPY). Under recycling, 321 people / 10,000 TPY are involved in semi-mechanized recycling, or those that collect, hand sort, and prepare recyclables for remanufacturing. When formally integrated into the economy, the quality of life of informal waste workers improves with better access to higher wages, safety equipment, and legitimacy in the form of official identity cards. A just transition to carbon neutrality should therefore eliminate WTE.
7. **WTE deteriorates local environments and health in cities and rural areas.** Emissions and by-products from WTE are known to be climate-inducing, toxic, and hazardous. Different regulatory regimes both internationally and nationally are in place to control the emissions and byproducts from WTE. These are:
  - Flue gas emissions contain the greenhouse gases and pollutants from the waste requiring further treatment before emission to the atmosphere. It includes carbon dioxide, nitrogen oxides, ammonia, nitrous oxide carbon monoxide, volatile organic compounds, and persistent organic pollutants. These are considered toxic pollutants under the Stockholm Convention because of their lasting negative effects to human health and the environment.
  - Bottom ash is the residual material which contains the non-combustible fraction of waste feedstock, including stones, glass, ceramic, and metals. Some WTE get

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<sup>33</sup> <https://ipen.org/documents/after-incineration-toxic-ash-problem>

<sup>34</sup> <https://zerowasteworld.org/wp-content/uploads/Jobs-Report-ENGLISH-2.pdf>

secondary income from using bottom ash for construction purposes after metals are sorted out for recycling, a harmful practice that uses hazardous content from bottom ash including mercury and various heavy metals as material for other products. ADB also supports such kinds of activities. Mercury is internationally regulated by the Minamata Convention.

- Fly ash is the fine particulate ash from incineration, which is considered hazardous waste in many countries despite enforcing guidelines on treatment and disposal even in developing countries.<sup>35</sup>

These emissions and byproducts are considered as climate inducing, toxic and hazardous waste. They have adverse, cumulative and transboundary impacts, and are even banned to some extent by the SPS Annex 5. Developed countries include regulations to avoid WTE-related impacts on community, landscape, visual impact, traffic and road safety, pollution such as noise, dust and odor. In developing countries, public health equity issues and land use become prominent particularly as these facilities are placed near poor communities and when displacements of residents are required for the WTE facility or its ancillary facilities such as trucking and landfill.<sup>36</sup>

8. **There is no available technology that can safely treat hazardous by-products from WTE.** Some environmental impacts cannot be managed solely by depending on "appropriate design and operation using international Best Available Techniques." One major issue of WtE is emission monitoring frequency and enforcement which depend on country safeguard policies. Several DMCs have signed and ratified the Stockholm Convention, which recommends the international dioxin/furan emission standard (0.01 – 0.1 ng TEQ/Nm<sup>3</sup>), under its BAT/BEP Guidelines. Under these guidelines, WTE operators are advised to adopt a Continuous Emission Monitoring System, to ensure compliance. Country-level safeguard policies, however, only require periodic tests (1-2 times a year) which fail to capture fluctuations that go beyond the emission standards. Even developed countries that adopt the "best" WTE technologies (e.g. Japan, US, China) are experiencing a range of operational problems, from tests exceeding pollution standards to fire incidents.

#### 4.1.2 Recommendations for improvement

**Paragraph 82.** ADB should support biological waste-to-energy investments provided that the only feedstock utilized is organic waste, using bio-chemical conversion technologies such as anaerobic digestion and fermentation. In addition, ADB's assistance should prioritize the development of comprehensive waste management roadmaps aimed at reducing waste generation, improving collection targets, incentivizing materials reuse and recycling, and overseeing safe management of hazardous waste, in accordance with Stockholm, Basel, Rotterdam and Minamata Conventions.

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<sup>35</sup> For example, China considers fly ash as hazardous under its Solid Waste Incineration Pollution Control Standard (GB18485-2014) and issued guidance on treatment and disposal Technical Code for Projects of Municipal Waste Incineration (CJJ90-2009). However, various literature remain to document issues on fly ash and note that no existing technology can completely solve the issue.

<sup>36</sup> In 2011, ADB withdrew from a WTE project in India due to protests on grounds of community health and ecological issues. <https://www.downtoearth.org.in/news/wastetoenergy-plant-loses-aid-32966>

ADB should exclude thermal WTE from its renewable and clean energy portfolio and should undertake a plan accompanied by targets to phase out existing thermal WTE.

## 4.2 Recommendations on engaging institutions, framing policies, and sector governance

References: paragraphs 44, 70, and 100

### 4.2.1 Context

ADB has created an enabling investment environment for WTE companies, through its range of technical assistance, grants, loans, and platforming services. Technical assistance involves facilitating pre-project and implementation activities with the private sector and providing policy recommendations to lift restrictions on WTE, in some cases, against national regulations as observed in the Philippines. In addition, ADB has used knowledge-sharing platforms like the annual Asia Clean Energy Forum to promote WTE as a clean source of energy, despite trends on reduced subsidies, legislation banning WTE, and growing support towards a circular economy. This WTE-friendly environment poses a threat to government efforts to reduce GHG emissions, improve collection and recycling programs, and curb unregulated waste trade, among others.

ADB must be at the forefront of pushing for upward harmonization with international and national regulations, whichever provides the higher standard, aligning with other regulatory regimes. It should also enforce private sector compliance on binding requirements instead of pursuing voluntary ones. The following proposals from the draft Energy Policy on energy governance can complicate ADB's decarbonization plan:

1. **Results-based Lending (RBL).** The employment of results-based lending (RBL) to improve outcomes for climate goals must be reassessed, as using this in WTE has ramifications. First, ADB must distinguish binding requirements from project performance targets. To illustrate, developing emission standards for air pollution or counting the number of stakeholders consulted in a WTE project should not be considered as performance indicators. They should not be incentivized through disbursements because these are legal requirements in many countries in so far as laws are concerned and a binding requirement in the SPS. ADB risks diluting legal and SPS requirements and replacing it with performance targets.

Second, RBLs require healthy democratic environments to ensure that meeting societal needs are the stated performance results instead of a private sector's business needs. In the context of RBL, WTE operators can define performance targets based on their business needs<sup>37</sup> (Example: tonnes of waste sent to the WTE facility) instead of societal needs. The EU Waste Framework Directive 2018/851, for instance, uses residual waste per capita and recycling rate as waste management indicators in the regional bloc.

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<sup>37</sup> Analysis from World Bank lessons in applying RBL in municipal solid waste management. <https://documents1.worldbank.org/curated/en/237191468330923040/pdf/918610v20WP0FM0BE0CATALOGED0BY0WED0.pdf>

Third, it is critical to note that WTE undermines various international and national development goals and interferes with existing laws and regulations and therefore reported achievements from WTE projects should not be part of a scheme that stimulates societies to perform on results that are against them in return for payments. In 2019, ADB heeded the advice from the Independent Evaluation Department (IED) to apply exceptions on RBL in the formulation of its policy:

*"All activities are eligible under the RBL program unless they are assessed to be likely to have significant adverse impacts that are sensitive, diverse, or unprecedented on the environment and/or affected people." ADB, 2019<sup>38</sup>*

WTEs pose complex, long-term, and irreparable damage to the environment and societies that are sensitive, diverse, and unprecedented. ADB's definition of "unprecedented" significant adverse impacts include "disposal of hazardous wastes or contaminated land in close proximity to affected people", a risk inherent to all WTE projects.<sup>39</sup> Additional adverse impacts are the influx of legal and illegal waste imports in developing countries due to poor domestic feedstock, and ecological disasters from typhoons or rising sea levels in small island states, to name a few, that exempt WTE from any performance-based lending or development lending, in general.

- 2. Shadow carbon price and carbon prices.** These are welcome reforms to push institutions away from carbon-intensive projects. The recommended carbon price, however, is significantly low to overcome other built-in subsidies and preferences.<sup>40</sup> Companies may prefer paying the low carbon tax instead of transitioning to more environment-friendly practices.<sup>41</sup> Most economic models suggest prices in the \$40-80 range while other empirical studies recommend carbon taxes that are 10 times higher. Second, shadow carbon prices should also apply to all projects and sectors to avoid an unbalanced playing field, particularly if it is applied to landfills or power stations but not incinerators. Third, ADB should also count biogenic emissions because not doing so could incentivize burning biomass, including in incinerators. Fourth, it should not be used as a screen but must be built into the loan. Finally, it is favorable that ADB looks at social carbon but it raises more fundamental questions about whether financializing all these harms is the appropriate way of addressing them. For instance, toxic and hazardous materials require banning as agreed in international agreements, and not a shadow price that allows them to continue as long as they are economically efficient.

#### 4.2.2 Suggestions for improvement

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<sup>38</sup><https://www.adb.org/sites/default/files/institutional-document/526346/mainstreaming-rbl-programs.pdf>

<sup>39</sup><https://www.adb.org/sites/default/files/institutional-document/526346/mainstreaming-rbl-programs.pdf>

<sup>40</sup> There is general consensus that carbon prices are low – and too low to meet Paris Agreement objectives – and it has been widely discussed in academia that a new generation of climate models are required in order to better establish a suitable level, Farmer et al. 2015.

<sup>41</sup> <https://www.lse.ac.uk/lacc/publications/PDFs/Cesar-Espinosa-Garcia-WP2-GR.pdf>

**Paragraph 44. Policy principle 3: Engaging with Institutions and Framing Policy Reforms.**

This principle contributes directly to the OP 6 mandate to strengthen governance and institutional capacity. Climate goals and technological innovations are accelerating a change in power generating fleets. ADB will support energy sector reforms, including strengthened regulatory frameworks and introduction of competitive markets, as well as market-based instruments, in particular carbon pricing. Strengthening DMCs' institutions will allow them to efficiently manage the sector and introduce progressive and enabling energy policies, attract private sector investment, and ensure the long-term financial viability of energy entities. This principle also recognizes that good governance includes environmental and social aspects; energy generation, transmission, and distribution with respect to international and national laws, policies and regulations. When engaging with institutions and framing policy reforms, ADB shall follow paragraph 47 of the SPS, "ADB will not finance projects that do not comply with its safeguard policy statement, nor will it finance projects that do not comply with the host country's social and environmental laws and regulations, including those laws implementing host country obligations under international law. In addition, ADB will not finance activities on the prohibited investment activities list (Appendix 5)." ADB and borrowers shall ensure that companies comply with existing international and national laws, regulations and policies including SPS requirements, whichever is more stringent.

**Paragraph 100.** ADB should help DMCs create an enabling governance environment for sustainable growth by strengthening the quality and capacity of energy sector institutions to undertake policy reforms that are coherent with other international and national regulatory regimes on environment, social protection, waste management, and health. In cases where international regulations set a higher standard than the country standards, ADB shall apply the more stringent regulation.

**Paragraph 118.** Carbon price signals can be achieved through carbon taxes, emissions-trading systems (ETS—cap and trade), and international offset mechanisms. Carbon pricing can be effective in raising domestic revenues (carbon tax or ETS), as well as mobilizing international carbon finance to incentivize investments in advanced low-carbon technologies (international offset mechanisms). If designed and implemented appropriately, robust carbon pricing instruments can be effective in achieving energy transition by accelerating diffusion of advanced low carbon technologies, enhancing deployment of renewable energy technologies, e-mobility, incentivizing fuel switching and use of different forms of non-fossil fuel energy. In the application of carbon pricing or social cost of carbon, ADB shall avoid financializing activities that are emitting toxic and hazardous emissions and byproducts with respect to international and national laws, policies and regulations aiming at its elimination. Carbon pricing and the social cost of carbon will be embedded in the loan.

### 4.3. Adherence to the Precautionary Principle as Part of the Vision of the Energy Policy

References: Section on Principles; paragraphs 37, 40, 67, 83, and 108

#### 4.3.1 Context

The precautionary principle is based on the “do no harm” rule in development cooperation. It is integrated in development interventions to ensure that negative environmental and social impacts are minimized. ADB has a stand-alone policy, the Safeguards Policy Statement (SPS), aimed at avoiding, mitigating, and compensating for environmental and social risks. This applies to all ADB-led assistance. Although the draft Energy Policy mentions the application of SPS in different paragraphs, it is not treated as a principle applied to all the sectors, instruments, and areas of intervention. For example, while application of safeguards is mentioned for large hydro power plants in paragraph 80, it is not mentioned as a requirement for WTE in paragraph 82. WTE has known toxic and hazardous impacts to health and the environment. It also displaces waste pickers’ jobs because recyclables are no longer destined for waste markets but rather for WTE facilities in order to meet fixed feedstock quotas. When situated in small island developing states, WTEs pose hazards to populations and marine life due to the impacts of sea level rise on hazardous landfills. In highly urban areas, location selection for the plant and the landfill as an associated facility of WTE is competing with other land uses. Moreover, pollutants can penetrate into the soil and surface water, eroding environmental quality and increasing health inequities.

The application of safeguards is not also mentioned as a requirement for engaging institutions and framing policy reforms. Policy advice from ADB, for example, may be seen as primarily beneficial for DMCs. In the Philippines, the bank has recommended to utilize WTE, even though the government already has regulations banning incineration and requiring source separation. Without meaningful consultations and inclusive processes in the project cycle participated especially by civil society and project-affected communities, WTE as it is already known to bear adverse impacts could even intensify existing development challenges. In the energy sector, not only has ADB’s assistance conflicts with international and national efforts,<sup>42</sup> it has also contributed to soaring prices of electricity, and in the case of WTE, costly waste management payments by local governments. Thus, the robust application must be placed as a core principle for ADB’s energy program.

#### 4.3.2 Suggestions for improvement

**Add a provision on Precautionary Principle.** *ADB shall take precautionary measures to anticipate, prevent, or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost.<sup>43</sup> Environmental damage should, as a priority, be rectified and that the polluter*

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<sup>42</sup> The Philippines has a standing ban on incinerators established by the Ecological Solid Waste Management Act and Clean Air Act. The Renewable Energy Act also defines only the organic waste stream as part of energy sources coming from waste. ADB WTE-facilitated projects through its technical assistance in Cebu, Davao and Quezon City are not in compliance with these laws.

<sup>43</sup> Precautionary principle as stated in the Rio Declaration on Environment and Development 1992 and the United Nations Framework Convention on Climate Change.

should pay. To this end, ADB shall ensure the robust application of the SPS requirements in compliance with international and national laws, policies, regulations, whichever is stringent, to all development assistance including technical assistance, loans, grants, equities, and other modalities.

**Paragraph 40.** ADB's private sector operations will work with its public sector operations to provide integrated solutions to DMCs in the energy sector. Public sector operations (both project lending and policy-based lending) can promote much-needed energy sector reforms and a regulatory framework for the private sector to prosper, with the goal of achieving international laws, regulations, and policies, and with respect to national regulations. In cases where national regulatory frameworks have lower standards, ADB shall focus on capacitating DMCs to meet the requirements of international regulations. In doing so, ADB shall promote commercial sustainability of the energy sector companies in DMCs by ensuring private sector compliance with international and national laws, policies, and regulations; meeting integrity, transparency, social, and environmental safeguards; and addressing failures without distorting those markets.

**Paragraph 67.** All energy sector investments in the form of technical assistance, grants, loans, equities, and other modalities should comply with ADB safeguards policies regarding the environment, involuntary resettlement, and indigenous peoples to ensure that affected persons are protected from impoverishment risks, and that development programs for such vulnerable groups are incorporated and implemented. In particular, executing and implementing agencies of energy sector projects shall uphold safeguards to avoid, minimize, mitigate, and offset the adverse environmental and social impacts that may be direct, indirect, cumulative, associated, and transboundary in nature.

**Paragraph 83.** ADB's safeguard policies shall help DMCs address environmental and social risks in energy projects, as well as minimize and mitigate adverse project impacts on people and the environment. The low-carbon transition will increase the amount of solar and wind energy in use. It will also expand electricity transmission networks and set new requirements for mitigating projects' environmental and biodiversity impacts and sensitivities, which differ from those of past fuel-based or hydropower projects. Solar, wind, and transmission projects, for example, have little effect on inland waters, but they cover more expansive areas of land and sea and have an impact on birdlife. Most risks can be mitigated and avoided through effective early planning, ensuring developments will be sited at areas or zones of low biodiversity and other sensitivities. Unprecedented risks and economic displacement from ADB projects that create hazardous conditions, or pollute or otherwise impede the use of resources depended upon by affected persons for their livelihoods and sustenance, whether voluntary or involuntary, shall be avoided, mitigated, and compensated. Safeguards measures apply in full to associated facilities that are directly and significantly related to the Bank-assisted project; necessary to achieve the project's objectives; and carried out reasonably contemporaneously with the project. ADB shall ensure meaningful consultations and information disclosure requirements in all phases of the project cycle. It shall ensure that safeguards application shall apply in all of its financing modalities.

## 5. Further Recommendations

**On the policy review process.** It is highly recommended to conduct wider consultations to discuss the full complexities of each of the energy sectors, including WTE. To date, there has been no thorough consultations with civil society and project-affected communities to gather lessons and improve the policy.

In addition, the public has to understand and partake in developing the guidance notes that will classify technologies that are renewable and clean. The guidance notes should also cover parameters for risk assessments, financial analysis and evaluation, including costs of decommissioning and phaseout of incompatible energy sources, and implementation arrangements. We recommend that ADB should publish the guidance notes by July 2021 and subject it for public consultations.

**On the proposed guidance note.** It should exclude provisions that will continue the proliferation of WTE in the next decade. That means ADB should only prioritize investments in the higher levels of the waste hierarchy, where recovery of discarded materials are maximized through redesign, reduction, and reuse measures, rather than investing in WTE systems. Respect for the waste hierarchy should be observed, where WTE is classified as an unacceptable disposal option.

**On the draft Energy Policy.** WTE incineration undermines a green recovery.<sup>44</sup> A "carbon-neutral" economy excludes WTE as a socially-acceptable and environmentally-just energy source in the path to decarbonization. We reiterate our demand to exclude WTE incineration and other thermal-based technology from ADB Energy Policy. The only WTE technology that may be permitted is biochemical, particularly anaerobic digestion. By investing in anaerobic digestion, ADB can help DMCs address the organic fractions of municipal waste, thus offsetting potential GHG emissions when landfilled. Aside from downstream-focused interventions, the Bank should also look into upstream strategies, particularly in the higher tiers of the waste hierarchy, to reduce government costs in handling disposal-bound waste.

We call on the ADB to ensure that its Energy Policy is complemented by a set of guidance notes requiring a complete assessment of social, technological, and environmental risks, as well as risks to climate and governance. Compliance with these safeguards means having multi-sector public consultations and respecting national laws, and capacitating governments to align with international standards. Moreover, ADB is urged to advise DMCs to prioritize investments in waste reduction measures instead of considering expensive disposal options like WTE.

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<sup>44</sup> <https://zerowasteworld.org/wp-content/uploads/The-High-Cost-of-Waste-Incineration-March-30.pdf>

Scientific evidence has shown that WTE hinders our collective effort in achieving the Paris Agreement goal of 1.5 degrees Celsius. Communities around the world reject WTE due to its toxic emissions, such as dioxins and furans, and its enormous financial burden on public funding. There is no reason for adopting WTE systems in the ADB Energy Policy.

Time is running out. Most of Asia is still battling the COVID-19 pandemic and vital financing is running out. On behalf of the Zero Waste movement and communities affected by WTE projects of the Bank, we call on ADB to divest from WTE immediately. ###

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### **About GAIA**

The **Global Alliance for Incinerator Alternatives** is a worldwide alliance of more than 800 grassroots groups, non-governmental organizations, and individuals whose ultimate vision is a just, toxic-free world without incineration.