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DENR

IN THE NEWS

Strategic Communication and Initiative Service



DENR to Pinoys: Reduce, reuse, recycle this holiday season

By **RHODINA VILLANUEVA**

The Department of Environment and Natural Resources (DENR) is urging Filipinos to help lessen the impact of the holiday season on the environment by returning to the basics of solid waste management: reduce, reuse and recycle.

Environment Secretary Roy Cimatu said that while many consider Christmas as the most wonderful time of the year, it is not so for the environment as the holidays are expected to produce more waste from all the celebrations.

"The Christmas season produces the biggest volume of garbage in the country, especially in Metro Manila, where the waste generation baseline target for 2019 had already been surpassed as early as June," Cimatu said.

"Because of this, we really need to cut back on our consumption and waste, and get back to basics to make life easier and to help the environment in the process," he added.

Cimatu recently revealed that the waste generated in Metro Manila in the first half of 2019 – pegged at over 66,000 cubic meters – had already surpassed the annual target of 58,112.31 cubic meters.

In this season of giving, Cimatu recommended the use of eco-friendly wrapping papers and gift bags, such as those made of bamboo, rattan, abaca and buri leaves, as these can be reused.

"The best way to reduce wrapping waste is to wrap a gift in something that's part of the gift, like a reusable tote bag," Cimatu said.

Since many gifts end up lost, broken or forgotten, Cimatu suggested giving the gift of memory or experience, such as going to nature parks or visiting an orphanage, home for the elderly or hospice.

"Well-thought presents, such as those that a family member actually needs or has always wanted, are also more meaningful and don't go to waste," he said.

In hosting gatherings and parties, Cimatu advised people to use washable dinnerware and cutlery instead of paper plates and plastic cups, spoons and forks.

To avoid food wastage, the environment chief urged the public not to buy extra, cook just enough for everyone and make sure to have more vegetables than meat.

Cimatu noted that meat products have larger carbon footprints per calorie than grain or vegetable products.

He added that studies have shown that animal agriculture puts a heavy strain on the Earth's finite resources such as land, water and energy, thus causing deforestation, biodiversity loss, and water and air pollution.

Meanwhile, the group EcoWaste Coalition reiterated the DENR's appeal and reminded the public to find ways to reduce the volume of "holitrash" (holiday + trash) from the festive observance of Christmas and New Year.

"We urge everyone to be mindful of what we consume and dispose of during this most joyful time of the year to reduce the negative impact of the festivities on public health and the environment," EcoWaste Coalition Zero Waste campaigner Jove Benosa said.

"The celebrations need not make the garbage situation worse. By consuming sustainably and by willfully segregating, reusing, recycling or composting discarded materials, we can be part of the solution, not the problem," Benosa added.



5 good news na nagbigay pag-asa sa Pinoy

**Ni Dennis
Christian Hilanga**

AFRICAN swine flu, polio, dengvaxia, bakuna, gera. Samahan pa ng mga balita tungkol sa "narcolist", "narco cops", mass transport crisis, lindol, bagyo, water shortage, palay, common restroom at fake news.

Ang gulo 'di ba?

Kotang-kota ang 2019 sa kanegahan. Pero sabi nga, kung may bad news, mayroon din namang good news.

Hindi matatapos ang taon na walang something to look back to.

Ito ang limang positive stories na nagbigay sigla at pag-asa sa Pilipinas ngayong taon.

panya sa paglilinis ng Manila Bay matapos ang isinagawang Boracay Island rehabilitation. Nagbunga ang adbokasiya dahil naipasara ang ilang gusaling malapit dito na nahuling nagtatapon ng dumi sa tubig at lumalabag sa patakaran ng Department of Environment and Natural Resources (DENR).

2. WE WIN AS ONE

Nagtalutalo sa una dahil sa kontrobersyal na "kaldero", pinag-isa ng 30th Southeast Asian Games ang buong Pilipinas sa loob ng 12 araw.

Umindak sa "Manila" ng "Hotdog" sa opening ceremonies kasunod ng reklamo sa "kikiam", nakita ang suporta ng mga Pinoy hanggang sa



TULONG-tulong sa paglilinis ng Manila Bay. INQUIRER

1. MANILA BAY CLEANUP

Umabot sa 3,810 tonelada ng basura, water hyacinth at putik ang nahakot ng Metropolitan Manila Development Authority mula pa lamang iyan Jan.7 hanggang Aug.31.

Ang nasabing paglilinis sa coastline ay rehabilitation program ng MMDA kung saan mahigit 18,000 volunteers na binubuo ng mga estudyante, manggagawa, environmental activists at maging simpleng mamamayan ang naging katuwang ng ahensya upang muling ibalik ang ganda ng tanawin sa look.

Dumami ang mga namamasyal habang ang iba'y nag-swimming pa nga na animo'y talagang nasa beach. Perfect for sunset watching na rin ang lugar magmula ng nawala ang mabahong amoy at inaalong basura.

Nag-ugat ang kam-

closing festivities para sa mga pambansang atleta na ibinuhos ang lahat ng makakaya upang muling tanghalin ang bansa bilang overall champion sa 11-nation regional biennial sports meet.

Hindi ipinahiya ng mga bayani ng palakasan ang sambayanan sa hinakot na 149 gold, 118 silver at 120 bronze medals para sa kabuuang 389 medals. Ito ang pinakamaraming medalyang nasungkit ng Pilipinas sa kasaysayan ng palaro.

Makasaysayan ang ikaapat na hosting ng "Perlas ng Silangan" kasunod ng mga record-breaking feats isama pa ang daan-daang kuwento ng pagpupursigi tungo sa tagumpay.

Maraming beses na tinugtug ang Lupang Hinirang kasabay nang pagtataas ng bandilang may tatlong bituin at isang araw sa iba't ibang venues sa New Clark City, Subic, Manila at ibang pang lugar sa northern



From waste to resource

We are drowning in plastic. Unless we change our behavior, there will be more plastic by weight than fish in the ocean by 2050. Solving this crisis requires us to do more than just banning plastic straws. We must adopt structural changes to our production and consumption patterns in order to move away from the extractive model of “take, make, use and dispose” toward a circular economy.

The Philippines is one of the world’s top plastic polluters. It produces 2.7 million metric tons of plastic waste annually, of which 20 percent ends up in rivers and coastal waters. In our joint report with Ecga (Environmental Camps for Conservation Awareness) Family Trust released this month, we identified the main challenges as lack of infrastructure and financing, poor public awareness, poor execution of recycling policies, and illegal dumping.

The good news is that the government is stepping up. In 2000, it passed landmark legislation for managing solid waste, though to date implementation has been weak. The Department of Environment and Natural Resources is now training over 300 individuals to help local governments comply with the law, and providing financial assistance to convert open dumps into sanitary landfills. At the city level, the municipal governments of Donsol, Sorsogon; San Isidro, Davao Oriental; and Samal have signed up for the WWF Plastic Smart Cities initiative launching in February. These efforts are laudable, but we cannot rely on government alone.

Consumer-goods companies have been struggling to rethink their plastic packaging,

COMMENTARY

NAINA SUBBERWAL BATRA

but an investment fund in Singapore may drive change. Two weeks ago, investment management firm Circulate Capital closed its debut Circulate Capital Ocean Fund with a total commitment of \$106 million from PepsiCo, Danone, Unilever and The Coca-Cola Company (among others). The fund will make debt and equity investments across the entire plastics value chain—from alternative materials to waste management infrastructure to recycling technologies. It seeks to demonstrate that investments in turning plastic from waste to resource can provide attractive financial returns.

Among local communities and entrepreneurs, closed-loop circular economy initiatives are emerging. In the Philippines, for example, the Mother Earth Foundation has launched zero waste programs in four cities. It works in partnership with local governments to build material recovery facilities and runs training and education programs. The use of Ecobricks is also gaining ground, thanks to the efforts of Circle Hostel and The Plastic Solution. Ecobricks are reusable building blocks created by packing clean used plastic into plastic bottles. These bottles have been used to build schools, homes and churches across the country. These examples represent tangible solutions that, when scaled and connected,

could move the needle on plastic waste.

These questions of scale and coordination are important. And it is where networks like AVPN demonstrate their value. We help to remove barriers by providing platforms and mechanisms that connect investors and capacity-builders with social enterprises and nonprofits that require both financial and nonfinancial resources. The Asian Philanthropic Network Southeast Asia Summit, taking place in Bali, Indonesia in February, is one such platform.

I believe there are sizeable and valuable opportunities to create a circular economy within the plastics value chain. But at present, efforts are too fragmented and uncoordinated to have sufficient impact. The Ellen MacArthur Foundation estimates that 95 percent of the material value of plastic packaging—valued at between \$80 billion and \$120 billion annually—is lost after a brief initial use. If we—investors, businesses, governments and consumers—can move the plastics industry into a positive spiral of value capture, we will do an enormous service to both our oceans and our economy. A world in which plastic never becomes waste is not beyond the realm of possibility. But for it to become a reality, we need to work together.

Naina Subberwal Batra is chair and CEO of AVPN, a unique funders’ network with over 600 members from 34 markets, headquartered in Singapore, and committed to building a vibrant and high-impact social investment community across Asia.



YEAR-END REPORT

DENR: From Boracay rehab success to 'Battle for Manila Bay' cleanup

By ELLALYN DE VERA-RUIZ

Bolstered by the success of the Boracay Island rehabilitation in 2018, the Department of Environment and Natural Resources (DENR) took on a bigger challenge in 2019 – to bring Manila Bay back to life.

"The year 2019 was a good one for the DENR," Secretary Roy Cimatu said.

Since the launch of the Battle for Manila Bay in January, "we have been working non-stop to clean all waterways around the Manila Bay area," which includes the coastal waters of Metro Manila, Bataan, Bulacan, Cavite, and Pampanga.

A total of 69,534 volunteers from Central Luzon, Region 4A, and National Capital Region (NCR) have collected 2,337,455.35 kilograms of wastes through cleanups, trash boats, and trash traps.

In addition, a total of 70 stations were monitored in the Manila Bay region, which include 31 bathing beaches, 18 river outfalls/mouths, 5 rivers, and 16 drainage outfalls.

"Our efforts include not only the removal of solid wastes from rivers and esteros through our hardworking volunteers, estero rangers and partner-government and private agencies but also the resettlement of illegal settler families along the rivers and creeks, and the closure of erring establishments around the Manila Bay area," Cimatu said.

So far, 9,708 commercial establishments surrounding the Manila Bay were inspected and as a result, 2,478

were issued notices of violations and 107 were issued cease-and-desist orders.

A total of 44,125 informal settler families were recorded in the Manila Bay region. Of these, 51 families specifically situated in Estero de San Antonio de Abad were relocated in Tala, Caloocan City.

In line with this, 547.059 kilometers of easements have been delineated in NCR and Central Luzon, while delineation in Region 4A has just started.

"We filed a case at the Office of the Ombudsman against a local official of Limay, Bataan for the continued operation of an open dumpsite in violation of Republic Act 9003 or the Ecological Solid Waste Management Act of 2000," Cimatu pointed out.

"Beyond Manila Bay, we filed a similar case also against a local official in Tabaco City in Albay. Cease and desist orders were also issued against the city of San Fernando and the municipalities of Bacolor and Porac in Pampanga," he added. "These only mean that we are serious in running after violators of the said law."

Boracay rehabilitation

According to Cimatu, the Boracay rehabilitation is now more than 80 percent complete. The Boracay Inter-Agency Task Force (BIATF) has until May 2020 to finish the rehabilitation.

After one and a half years of rehabilitation, Cimatu announced that the water quality in Boracay's world-famous White Beach has greatly improved with coliform count now in the range of less than 1 most probable

number per 100 milliliters (mpn/100ml) to 11.9 mpn/100ml which is way below the standard quality of 100 mpn/100ml for recreational waters.

"Prior to the closure of the island, coliform level readings in our outfalls reached millions," Cimatu noted.

The DENR chief said the rehabilitation efforts moved into high gear this year, focusing on strict implementation of environmental laws and regulations.

The task force, he pointed out, is about to complete the demolition of all structures violating the 25+5-meter beach easement rule after tearing down the 10 remaining illegal structures along Bulabog Beach on November 10.

Likewise, almost 80 percent of all commercial and residential establishments have already complied with the 12-meter road easement rule along the Circumferential Road.

The BIATF also noted that Phase 1 of the rehabilitation of five out of nine wetlands on the island is 100 percent complete. These wetlands were adopted by private firms.

At an allowable 6,405 persons per day, the tourist arrival in Boracay remains within the allowable carrying capacity of 19,215 a day.

So far, 1.74 million tourists have arrived in Boracay this year. This number is 152 percent higher than last year, with Chinese, Koreans and Taiwanese as the top three foreign tourists.

The creation of a Boracay Island Development Authority (BIDA) under the DENR to permanently manage the island is being proposed in Congress,

he said.

Cimatu also pointed out that other tourist destinations are being continuously rehabilitated like Puerto Galera in Oriental Mindoro and Coron in Palawan.

Intensified forest protection

Through the implementation of Lawin Forest and Biodiversity Protection System, a total of 121,607.44 kilometers have been patrolled.

A total of 1,321 forest protection officers (FPOs) were hired to protect the country's natural forests and resources from the observed threats.

To intensify the enforcement of environmental laws, a total of 89 Community Environment and Natural Resources Office lawyers have been hired to specifically speed up the resolutions of lower level cases to prosecute violators of environmental standards. This only represents 57 percent of the annual target of 154.

"On the other hand, we mourned the killing of four of our DENR colleagues – our forest rangers and informants – who have bravely put their lives on the line to protect our forests. Despite these we remain steadfast in our campaign against illegal logging," Cimatu said.

"We will continue to pursue the creation of an Enforcement Bureau that will protect them, whom we call our environmental heroes. In addition, we have already asked the Congress to come up with a legislation authorizing forest rangers to carry firearms to protect themselves against illegal logging syndicates and other environmental criminals," he also said.



A MONTH AFTER ASSUMING POST

SLAIN POLICE CHIEF 'ANGERED SMUGGLERS, ILLEGAL LOGGERS'

By Divina M. Suson
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ILIGAN CITY—The chief of Binidayan town police, who was killed in an ambush with his driver on Monday night, had been getting threats to his life, according to his former superior, Col. Madzgani Mukaram, Lanao del Sur police provincial director, said

Amen Lucman Macalangan, who took over his post barely a month ago, must have angered smuggling and illegal logging operators whose contraband had been seized by the Binidayan police in a series of operations two weeks ago.

As police executive master sergeant, Macalangan had volunteered to take the job as police chief after its former head was relieved from office.

Personal driver

Macalangan served as personal driver of Mukaram for 10 months. "He said, 'Sir, just put me on the job.' I asked, 'Can you do it?' He said, 'I won't embarrass you, I know your style,'" Mukaram recalled.

Days after he became chief of the 21-member Binidayan police, Macalangan was able to seize smuggled cigarettes and illegally cut logs in a se-

ries of operations.

Because of this, Macalangan, who spent 21 years in service, started getting death threats, Mukaram said.

Night patrol

Upon assuming the top post at Binidayan police, Macalangan activated the barangay peacekeeping action team (BPAT) in the town and made sure that its members did roving patrol at night.

"I asked him why he still had to join the patrol. And he said, 'So that I would immediately know the problems in the barangay,'" Mukaram said.

'Persons of interest'

On Dec. 23, Macalangan was on his way back to Binidayan when the police mobile car he and three companions were riding in was ambushed along the national highway in Pagayawan town.

His driver, Ramel Pangcatan, a BPAT member, was also killed while their two other companions, Asliah Adiong and Pat. Nasser Arafat, escaped unhurt.

Mukaram said the police were looking at the owners of the confiscated smuggled cigarettes as "persons of interest" in the ambush. INQ



PH nickel miner obtains first international award

By MADELAINE B. MIRAFLOR

Agata Mining Ventures, Inc., which is majority owned by TVI Resource Development Philippines, Inc., landed its first international recognition at the ASEAN Mineral Awards, which recognizes best practices and being an exemplary model of environmentally and socially-sustainable mining.

Agata Mining was named the first runner-up in the Mineral Distribution Category of this year's ASEAN Mineral Awards and came next to Indonesia's state-owned PT Antam, the region's largest nickel producer to date.

Philippine entries were chosen and screened by the Philippine ASEAN Mineral Awards Committee composed of technical experts from the Mines and Geosciences Bureau (MGB).

Agata Mining General Manager Emilio T. Figueroa III explained that the organization's philosophy led the company towards growth

and securing its place among the country's major nickel producers.

"Agata may pale in size compared to bigger, more seasoned mining companies. But despite this, Agata strove to be among the best - proving to the mining industry that it [responsible mining] can be done," he said.

Right now, Agata Mining holds a Mineral Processing Sharing Agreement (MPSA) with the government covering 4,995 hectares of mine site.

Its operation is located in the adjacent municipalities of Tubay, Jabonga and Santiago in Agusan del Norte province.

Moving forward, Agata envisions to be the first Agroforestry and Ecotourism Hub in the region.

In November, Agata Mining also won the Presidential Awards during the Philippines' Annual National Mine Safety and Environment Conference.



MWSS nilinaw ang 'concession agreements'

Nagpalabas ng paha-yag si Metropolitan Waterworks and Sewerage System (MWSS) Administrator Emmanuel B. Salamat upang linawin ang impormasyon tungkol sa "concession agreement" sa Maynilad Water Services, Inc. (MWSI) at Manila Water Services, Inc. (MWCI) sa mga di-wastong ispekulasyon sa isyu.

Anyang, nitong nakaraang Linggo, may mga ginawang aksiyon ang MWSS sa pamamagitan ng kanilang Board of Trustees, kaugnay sa mga naging anunsyo ng Pangulong Rodrigo Duterte at iba

pang ahensiya ng pamahalaan tungkol sa Concession Agreements ng Maynilad at Manila Water.

Sa simula pa lamang aniya ay nilinaw na nila na ang "subsisting contract" na 25 taon ng Concession Agreements na nagsimula noong 1997 sa Maynilad at MWCI ay umiiral pa rin at sa taong 2022 pa magtatapos.

Ang MWSS Board Resolution No. 2019-201-CO na may petsang December 9, 2019, ay pinapawalang bisa lamang ang dating Board Resolution No. 2009-72 na may petsang April 16, 2009

para sa 'extension period' mula 2022 hanggang 2037 ng Manila Water Company and Board Resolution No. 2009-180 na may petsa namang September 10, 2009 para rin sa 'extension of concession period' mula 2022 hanggang 2037 ng Maynilad Water Services, Inc.

Dahil sa mga naging deklarasyon ukol dito ng pamahalaan ay inatasan ng MWSS ang muling pagnenegosasyon ng Concession Agreements sa Manila Water at Maynilad upang alisin ang 'illegal and onerous provisions' at madetermina.



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NOV 26 2019

**DENR ADMINISTRATIVE ORDER
NO. 2019 - 21**

SUBJECT: GUIDELINES GOVERNING WASTE-TO-ENERGY (WTE) FACILITIES FOR THE INTEGRATED MANAGEMENT OF MUNICIPAL SOLID WASTES

Pursuant to Section 8 (f) of Republic Act (RA) 9003, otherwise known as the Ecological Solid Waste Management Act of 2000, NSWMC Resolution No. 669, Series of 2016, Adopting the Guidelines Governing the Establishment and Operation of Waste to Energy Technologies for Municipal Solid Wastes (MSW), Executive Order 192 (Providing the Reorganization of the Department of Environment, Energy and Natural Resources; Renaming it as the Department of Environment and Natural Resources) dated 10 June 1987, the Department of Environment and Natural Resources (DENR) hereby adopts and promulgates these guidelines on the establishment and operation of Waste-to-Energy (WTE) facilities for municipal solid wastes.

These guidelines also adhere to the policy of the government to promote compliance with Presidential Decree (PD) 1586 (Establishing an Environmental Impact Statement System), RA 6969 (Toxic Substances and Hazardous and Nuclear Wastes Act of 1990), RA 8749 (Philippine Clean Air Act of 1999), and RA 9275 (Philippine Clean Water Act of 2004).

SECTION 1. DECLARATION OF POLICY

It is hereby declared the policy of the State to adopt a systematic, comprehensive and ecological solid waste management program which shall ensure the protection of public health and environment and set guidelines and targets for solid waste avoidance and volume reduction through source reduction and waste minimization measures, including composting, recycling, re-use, recovery, green charcoal process, and other schemes, before collection, treatment and disposal in appropriate and environmentally-sound solid waste management facilities in accordance with ecologically sustainable development practices.

SECTION 2. OBJECTIVE

This Order is issued to provide guidelines on the evaluation, establishment, operation and de-commissioning of waste-to-energy (WTE) facilities for the integrated management of municipal solid wastes.

SECTION 3. SCOPE AND COVERAGE

These guidelines cover the requirements, and procedures on the establishment and operation of WTE facilities utilizing municipal solid wastes.

SECTION 4. DEFINITION OF TERMS

- Biodegradable Waste** shall refer to solid wastes that can be decomposed by microorganism into humus-like product.
- Bottom Ash** shall refer to the agglomerate ash formed that are too large to be carried in the flue gases and fall through open grates to an ash hopper at the bottom of the furnace.
- Bureau** shall refer to the Environmental Management Bureau.
- Clustering** is a strategy of pooling available resources of neighboring cities, municipalities or barangays for the establishment of a common solid waste management facility or service.
- Continuous Emissions Monitoring System (CEMS)** shall refer to the total equipment used to sample, analyze and provide a permanent record of emissions or process parameters.
- Decommissioning** is a process in which the WTE facility is placed in a safe and environmentally acceptable condition prior to cessation of operation.
- Department** shall refer to the Department of Environment and Natural Resources.
- Environmental Permits and Clearances** shall refer to the Environmental Compliance Certificate (ECC), Permit to Operate (PTO) and other legal requirements that must be secured prior to construction, set-up and operation of a WTE facility.
- Dioxins and Furans** shall refer to the polychlorinated organic compounds namely polychlorinated dibenzo p-dioxins (PCDDs) and polychlorinated dibenzo-furans (PCDFs) that are generated unintentionally from waste incinerators and other industrial processes, and 17 of which are toxic in nature. The 17 toxic congeners include seven (7) 2,3,7,8 - substituted PCDDs and ten (10) 2,3,7,8 - substituted PCDFs.
- Effluent Standard** shall refer to any legal restriction on quantities, rates, and/or concentrations or any combination thereof, of physical, chemical or biological parameters of effluent which a person or point source is allowed to discharge into a body of water or land.
- Emission** shall refer to any air contaminant, pollutant, gas stream or unwanted sound from a known source which is passed into the atmosphere.
- Fly Ash** shall refer to the ash formed that are too small and light and are carried in the flue gases.
- Feedstock** refers to the segregated biodegradable or residual waste materials supplied to the WTE facility to generate heat or electricity.
- Hazardous wastes** shall refer to by-products, side-products, process residues, spent reaction media, contaminated plant or equipment or other substances from manufacturing operations and as consumer discards of manufactured products which present unreasonable risk and/or injury to health and safety and to the environment.
- Host LGU** shall refer to the LGU (province, city, municipality or barangay) where the waste to energy facility is located.
- Materials Recovery Facility (MRF)** shall include solid waste transfer station or sorting station, drop off center, a composting facility and a recycling facility (DAO 2001-34).

- Municipal Solid Waste (MSW) or Municipal Wastes** shall refer to wastes produced from activities within local government units which include a combination of domestic wastes from residential, commercial, institutional and industrial wastes and street litters (DAO 2001-34).
- Recyclable Materials** shall refer to any waste material retrieved from the waste stream and free from contamination that can still be converted into suitable beneficial use or for other purposes.
- Residual Waste** shall refer to any material generated after the implementation of 3Rs (Reduce, Reuse, Recycle) with fuel value.
- Residuals Containment Area (RCA)** shall refer to the temporary storage for segregated residual wastes.
- Sanitary Landfill** shall refer to a waste disposal site designed, constructed, operated and maintained in a manner that exerts engineering control over significant potential environmental impacts arising from the development and operation of the facility.
- Segregation** shall refer to a solid waste management practice of separating different materials found in solid waste in order to promote recycling and re-use of resources and to reduce the volume of waste for collection and disposal.
- Source Segregated Waste** shall refer to solid waste segregated at the point of origin/generation.
- Toxic Equivalents (TEQ)** shall refer to the overall toxicity of a sample as if it was comprised completely of 2,3,7,8 - tetrachlorodibenzo-p-dioxin. This is obtained by multiplying the individual congener concentrations by their respective TEQ value and summing the results.
- Toxic Equivalency Factors (TEFs)** shall refer to the relative degree of toxicity of PCDD/PCDF congeners in relation to the most toxic dioxin congener 2,3,7,8 - tetrachlorodibenzo-p-dioxin which is assigned a nominal value of 1.
- Waste-to-Energy (WTE)** shall refer to the process of converting wastes with various technologies, usually the conversion of non-recyclable waste materials into useable heat, electricity, or fuel through a variety of processes.
- WTE Facility** shall refer to the structure/appurtenant facility where the waste-to-energy operations are housed.

SECTION 5. REQUIREMENTS

The following conditions must be met prior to the establishment of a WTE facility:

- All WTE facilities shall undergo Environmental Impact Statement System and secure all applicable environmental permits, clearances and other legal requirements from concerned agencies prior to construction, set-up and operation of a WTE facility.
- Documentation for compliance with the requirements of PD 1586 shall include an environmental and health risk assessment.
- The host LGU including the LGUs where the source of the feedstock will originate from shall ensure that the plan to establish and/or utilize WTE facility is integrated in their approved 10-year solid waste management plan consistent with the provisions of RA 9003.
- The host LGU are allowed to implement clustering and/or form partnerships with the private sector in the establishment, construction and operation of WTE facility.
- The proponent shall submit an Environmental Technology Verification (ETV) Statement and Report following the DOST ETV Protocol as per DENR-DOST Joint Administrative Order 2006-001.
- The WTE facility owner shall:
 - Develop a manual of operation and quality assurance and control to be submitted to EMB for monitoring purposes.
 - Maintain, at the highest possible standards, a quality control/assurance system to demonstrate its ability to consistently provide products and services that meet applicable statutory and regulatory requirements.
 - Implement and communicate a detailed emergency response plan to ensure effective and rapid containment and clean-up in the event of an emergency incident. The facility must be equipped with adequate fire-fighting devices certified by the Bureau of Fire Protection.
 - Provide appropriate personal protective equipment and medical care in compliance with existing laws, rules and regulations to all personnel of the facility directly handling or exposed to waste materials, in-process materials and finished products.
 - Ensure implementation of resource efficient and cleaner production program that follows the waste management hierarchy of source reduction, recycling, treatment and safe disposal.
 - Provide appropriate, recent and state of the art pollution control and abatement facilities to ensure that all emissions and effluents comply with relevant environmental standards.
 - Avail services of EMB registered transporters and treatment, storage and disposal facilities for any hazardous waste resulting from the operations of the WTE facility.

SECTION 6. OPERATIONAL GUIDELINES FOR WTE FACILITY

6.1 Waste Delivery Control

Acceptable Municipal Solid Waste for WTE Facility

The facility shall only accept source segregated biodegradables or residual wastes collected from households, MRFs, Residual Containment Areas (RCAs), Sanitary Landfills and other disposal facilities.

For unsegregated wastes resulting from calamities, flooding and clean up, the waste must undergo pre-processing to achieve the quality and suitability as feedstock.

The WTE facility shall document and maintain records indicating the quantity in weight, source and type of source-segregated wastes to be processed including the date and time received. (Annex A)

6.2 Storage Facility

Appropriate storage facilities should be provided for source segregated wastes, in-process materials and any by-product from the WTE facility operation. Such storage shall institute measures to address the risks of potential explosion, combustion, corrosion, contamination, infection

and odor emission that could pose potential hazard to human health and the environment.

6.3 Environmental Monitoring

- The WTE facility operator shall submit to EMB Regional Offices quarterly Self-Monitoring Report and semi-annual Compliance Monitoring Report in accordance with DAO 2003-27 and/or new relevant issuances thereof.
- The WTE facility operator shall install CEMS, linked with the EMB, measuring PM, NO_x, CO, HCl, Temperature and other parameters as determined by Bureau.
- In coordination with EMB, WTE facilities utilizing thermal process (whether burn or non-burn) must conduct sampling and analysis for dioxins and furans based on EMB Memorandum Circular No. 2007-003 (Policy on Compliance and Permitting for Industrial Facilities Relating to Air Quality) following the prescribed methodology; all average values of dioxins and furans measured over the sampling period of a minimum of six (6) hours and a maximum of eight (8) hours must not exceed the limit value of 0.1 nanogram toxic equivalents per normal cubic meter (ng-TEQ/NCM). (For this guideline, TEQ values to be used for calculation of Toxic Equivalents (TEQs) of a particular sample is based on the 1989 update of the United States Environmental Protection Agency (US EPA) adopting the 1989 international NATO/CCMS TEQ values, otherwise represented as I-TEF).
- Effluents from WTE facilities must conform with DENR Administrative Order No. 2016-08 (Water Quality Guidelines and General Effluent Standards) and/or the latest relevant issuance thereof.

6.4 Documentation and Data Management

All aspects of WTE facility operations must be well documented. As such, documents and records as listed below shall be maintained at least five (5) years and be made available for inspection:

- Delivery record of each waste material received in the facility
- Daily processing operation log sheet showing or attaching the following information:
 - Quantity of waste materials processed
 - CEMS data online submission to EMB
 - Laboratory analysis of effluent, source emission, fly ash and bottom ash.

6.5 Social Accountability

The facility owner shall endeavor to establish partnership with stakeholders through education and training, infrastructure improvements, disaster risk reduction and management and such other social development activities.

The WTE facility shall maintain a Light-Emitting Diode (LED) or similar system/device display board, in front of its site and within view of the general public, containing updated information on its air emissions and effluent.

6.6 Interim Cease and Desist Order by the Secretary

Whenever there is an exceedance of the emission standards set by the Department or if there is imminent threat to life, public health, safety or general welfare, or to plant or animal life, an interim order for the closure, suspension, or cessation of operations of the WTE facility may be immediately issued by the DENR Secretary or his authorized representative, without the need for a prior public hearing (Sec 45, RA 8749).

The interim cease and desist order shall be immediately executory and shall remain in force and effect until the WTE operator has reduced the limit value of the dioxin and furans to 0.1 nanogram toxic equivalent per normal cubic meter (ng-TEQ/NCM), or until a temporary lifting order is issued by the Pollution Adjudication Board (PAB) or an injunctive writ is issued by a Court of Law. (Sec 1, Rule X, of PAB Resolution No. 1, Series of 2010)

SECTION 7. DECOMMISSIONING OR ABANDONMENT

A detailed Decommissioning/Abandonment Plan shall be submitted to the Bureau for approval at least one (1) year prior to the decommissioning or abandonment of the facility. The Plan shall include rehabilitation measures, clean-up activities, remediation of areas affected by the WTE facility and proposed alternative post land use of the area.

SECTION 8. FINES AND PENALTIES

Fines and penalties for violating these guidelines shall be governed by pertinent provisions in Presidential Decree 1586 (Establishing an Environmental Impact Statement System), RA 6969 (Toxic Substances and Hazardous and Nuclear Wastes Act of 1990), RA 8749 (Philippine Clean Air Act of 1999), RA 9003 (Ecological Solid Waste Management Act of 2000), and RA 9275 (Philippine Clean Water Act of 2004).

Violation of any provision of these guidelines by WTE facility may result to the suspension or cancellation of relevant permits and clearances and/or the filing of appropriate charges, pursuant to relevant environmental laws and policies as determined by the Department.

SECTION 9. TRANSITORY CLAUSE

Any establishment operating a WTE facility using MSW as feedstock prior to the effectivity of this DAO shall be given one (1) year to comply with all permitting requirements set forth provided, that such facility does not cause or pose imminent threat to property, public health and environment as determined by DENR-EMB or other government agencies concerned.

SECTION 10. EFFECTIVITY

This guideline shall take effect fifteen (15) days after its publication in two (2) newspapers of general circulation and upon submission of a copy thereof to the Office of the National Administrative Registry (ONAR) at the University of the Philippines Law Center.

ROYA. CIMATU
Secretary





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NOV 26 2019

**DENR ADMINISTRATIVE ORDER
NO. 2019 - 21**

SUBJECT: GUIDELINES GOVERNING WASTE-TO-ENERGY (WTE) FACILITIES FOR THE INTEGRATED MANAGEMENT OF MUNICIPAL SOLID WASTES

Pursuant to Section 8 (f) of Republic Act (RA) 9003, otherwise known as the Ecological Solid Waste Management Act of 2000, NSWMC Resolution No. 669, Series of 2016, Adopting the Guidelines Governing the Establishment and Operation of Waste to Energy Technologies for Municipal Solid Wastes (MSW), Executive Order 192 (Providing the Reorganization of the Department of Environment, Energy and Natural Resources; Renaming it as the Department of Environment and Natural Resources) dated 10 June 1987, the Department of Environment and Natural Resources (DENR) hereby adopts and promulgates these guidelines on the establishment and operation of Waste-to-Energy (WTE) facilities for municipal solid wastes.

These guidelines also adhere to the policy of the government to promote compliance with Presidential Decree (PD) 1586 (Establishing an Environmental Impact Statement System), RA 6969 (Toxic Substances and Hazardous and Nuclear Wastes Act of 1990), RA 8749 (Philippine Clean Air Act of 1999); and RA 9275 (Philippine Clean Water Act of 2004).

SECTION 1. DECLARATION OF POLICY

It is hereby declared the policy of the State to adopt a systematic, comprehensive and ecological solid waste management program which shall ensure the protection of public health and environment and set guidelines and targets for solid waste avoidance and volume reduction through source reduction and waste minimization measures, including composting, recycling, re-use, recovery, green charcoal process, and other schemes, before collection, treatment and disposal in appropriate and environmentally-sound solid waste management facilities in accordance with ecologically sustainable development practices.

SECTION 2. OBJECTIVE

This Order is issued to provide guidelines on the evaluation, establishment, operation and de-commissioning of waste-to-energy (WTE) facilities for the integrated management of municipal solid wastes.

SECTION 3. SCOPE AND COVERAGE

These guidelines cover the requirements, and procedures on the establishment and operation of WTE facilities utilizing municipal solid wastes.

SECTION 4. DEFINITION OF TERMS

- a) **Biodegradable Waste** shall refer to solid wastes that can be decomposed by microorganism into humus-like product.
- b) **Bottom Ash** shall refer to the agglomerate ash formed that are too large to be carried in the flue gases and fall through open grates to an ash hopper at the bottom of the furnace.
- c) **Bureau** shall refer to the Environmental Management Bureau.
- d) **Clustering** is a strategy of pooling available resources of neighboring cities, municipalities or barangays for the establishment of a common solid waste management facility or service.
- e) **Continuous Emissions Monitoring System (CEMS)** shall refer to the total equipment used to sample, analyze and provide a permanent record of emissions or process parameters.
- f) **Decommissioning** is a process in which the WTE facility is placed in a safe and environmentally acceptable condition prior to cessation of operation.
- g) **Department** shall refer to the Department of Environment and Natural Resources.
- h) **Environmental Permits and Clearances** shall refer to the Environmental Compliance Certificate (ECC), Permit to Operate (PTO) and other legal requirements that must be secured prior to construction, set-up and operation of a WTE facility.
- i) **Dioxins and Furans** shall refer to the polychlorinated organic compounds namely polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzo-furans (PCDFs) that are generated unintentionally from waste incinerators and other industrial processes, and 17 of which are toxic in nature. The 17 toxic congeners include seven (7) 2,3,7,8 - substituted PCDDs and ten (10) 2,3,7,8 - substituted PCDFs.
- j) **Effluent Standard** shall refer to any legal restriction on quantities, rates, and/or concentrations or any combination thereof, of physical, chemical or biological parameters of effluent which a person or point source is allowed to discharge into a body of water or land.
- k) **Emission** shall refer to any air contaminant, pollutant, gas stream or unwanted sound from a known source which is passed into the atmosphere.
- l) **Fly Ash** shall refer to the ash formed that are too small and light and are carried in the flue gases.
- m) **Feedstock** refers to the segregated biodegradable or residual waste materials supplied to the WTE facility to generate heat or electricity.
- n) **Hazardous wastes** shall refer to by-products, side-products, process residues, spent reaction media, contaminated plant or equipment or other substances from manufacturing operations and as consumer discards of manufactured products which present unreasonable risk and/or injury to health and safety and to the environment.
- o) **Host LGU** shall refer to the LGU (province, city, municipality or barangay) where the waste to energy facility is located.
- p) **Materials Recovery Facility (MRF)** shall include solid waste transfer station or sorting station, drop off center, a composting facility and a recycling facility (DAO 2001-34).

- q) **Municipal Solid Waste (MSW) or Municipal Wastes** shall refer to wastes produced from activities within local government units which include a combination of domestic wastes from residential, commercial, institutional and industrial wastes and street litter (DAO 2001-34).
- r) **Recyclable Materials** shall refer to any waste material retrieved from the waste stream and free from contamination that can still be converted into suitable beneficial use or for other purposes.
- s) **Residual Waste** shall refer to any material generated after the implementation of 3Rs (Reduce, Reuse, Recycle) with fuel value.
- t) **Residuals Containment Area (RCA)** shall refer to the temporary storage for segregated residual wastes.
- u) **Sanitary Landfill** shall refer to a waste disposal site designed, constructed, operated and maintained in a manner that averts engineering control over significant potential environmental impacts arising from the development and operation of the facility.
- v) **Segregation** shall refer to a solid waste management practice of separating different materials found in solid waste in order to promote recycling and re-use of resources and to reduce the volume of waste for collection and disposal.
- w) **Source Segregated Waste** shall refer to solid waste segregated at the point of origin/generation.
- x) **Toxic Equivalents (TEQ)** shall refer to the overall toxicity of a sample as if it was comprised completely of 2,3,7,8 - tetrachlorodibenzo-p-dioxin. This is obtained by multiplying the individual congener concentrations by their respective TEQ value and summing the results.
- y) **Toxic Equivalency Factors (TEFs)** shall refer to the relative degree of toxicity of PCDD/PCDF congeners in relation to the most toxic dioxin congener 2,3,7,8 - tetrachlorodibenzo-p-dioxin which is assigned a nominal value of 1.
- z) **Waste-to-Energy (WTE)** shall refer to the process of converting wastes with various technologies, usually the conversion of non-recyclable waste materials into useable heat, electricity, or fuel through a variety of processes.
- aa) **WTE Facility** shall refer to the structure/appurtenant facility where the waste-to-energy operations are housed.

SECTION 5. REQUIREMENTS

The following conditions must be met prior to the establishment of a WTE facility:

- a) All WTE facilities shall undergo Environmental Impact Statement System and secure all applicable environmental permits, clearances and other legal requirements from concerned agencies prior to construction, set-up and operation of a WTE facility.
- b) Documentation for compliance with the requirements of PD 1586 shall include an environmental and health risk assessment.
- c) The host LGU including the LGUs where the source of the feedstock will originate from shall ensure that the plan to establish and/or utilize WTE facility is integrated in their approved 10-year solid waste management plan consistent with the provisions of RA 9003.
- d) The host LGU are allowed to implement clustering and/or form partnerships with the private sector in the establishment, construction and operation of WTE facility.
- e) The proponent shall submit an Environmental Technology Verification (ETV) Statement and Report following the DOST ETV Protocol as per DENR-DOST Joint Administrative Order 2006-001.
- f) The WTE facility owner shall:
 - i. Develop a manual of operation and quality assurance and control to be submitted to EMB for monitoring purposes.
 - ii. Maintain, at the highest possible standards, a quality control/assurance system to demonstrate its ability to consistently provide products and services that meet applicable statutory and regulatory requirements.
 - iii. Implement and communicate a detailed emergency response plan to ensure effective and rapid containment and clean-up in the event of an emergency incident. The facility must be equipped with adequate fire-fighting devices certified by the Bureau of Fire Protection.
 - iv. Provide appropriate personal protective equipment and medical care in compliance with existing laws, rules and regulations to all personnel of the facility directly handling or exposed to waste materials, in-process materials and finished products.
 - v. Ensure implementation of resource efficient and cleaner production program that follows the waste management hierarchy of source reduction, recycling, treatment and safe disposal.
 - vi. Provide appropriate, recent and state of the art pollution control and abatement facilities to ensure that all emissions and effluents comply with relevant environmental standards.
 - vii. Avail services of EMB registered transporters and treatment, storage and disposal facilities for any hazardous waste resulting from the operations of the WTE facility.

SECTION 6. OPERATIONAL GUIDELINES FOR WTE FACILITY

6.1 Waste Delivery Control

Acceptable Municipal Solid Waste for WTE Facility

The facility shall only accept source segregated biodegradable or residual wastes collected from households, MRFs, Residual Containment Areas (RCAs), Sanitary Landfills and other disposal facilities.

For unsegregated wastes resulting from calamities, flooding and clean up, the waste must undergo pre-processing to achieve the quality and suitability as feedstock.

The WTE facility shall document and maintain records indicating the quantity in weight, source and type of source-segregated wastes to be processed including the date and time received. (Annex A)

6.2 Storage Facility

Appropriate storage facilities should be provided for source segregated wastes, in-process materials and any by-product from the WTE facility operation. Such storage shall institute measures to address the risks of potential explosion, combustion, corrosion, contamination, infection

and odor emission that could pose potential hazard to human health and the environment.

6.3 Environmental Monitoring

- a) The WTE facility operator shall submit to EMB Regional Offices quarterly Self-Monitoring Report and semi-annual Compliance Monitoring Report in accordance with DAO 2003-27 and/or new relevant issuances thereof.
- b) The WTE facility operator shall install CEMS, linked with the EMB, measuring PM, NO_x, CO, HCl, Temperature and other parameters as determined by Bureau.
- c) In coordination with EMB, WTE facilities utilizing thermal process (whether burn or non-burn) must conduct sampling and analysis for dioxins and furans based on EMB Memorandum Circular No. 2007-003 (Policy on Compliance and Permitting for Industrial Facilities Relating to Air Quality) following the prescribed methodology; all average values of dioxins and furans measured over the sampling period of a minimum of six (6) hours and a maximum of eight (8) hours must not exceed the limit value of 0.1 nanogram toxic equivalents per normal cubic meter (ng-TEQ/NCM). (For this guideline, TEQ values to be used for calculation of Toxic Equivalents (TEQs) of a particular sample is based on the 1989 update of the United States Environmental Protection Agency (US EPA) adopting the 1989 International NATO/CMS TEQ values, otherwise represented as I-TEQ).
- d) Effluents from WTE facilities must conform with DENR Administrative Order No. 2016-08 (Water Quality Guidelines and General Effluent Standards) and/or the latest relevant issuance thereof.

6.4 Documentation and Data Management

All aspects of WTE facility operations must be well documented. As such, documents and records as listed below shall be maintained at least five (5) years and be made available for inspection:

- a) Delivery record of each waste material received in the facility
- b) Daily processing operation log sheet showing or attaching the following information:
 - i. Quantity of waste materials processed
 - ii. CEMS data online submission to EMB
- c) Laboratory analysis of effluent, source emission, fly ash and bottom ash.

6.5 Social Accountability

The facility owner shall endeavor to establish partnership with stakeholders through education and training, infrastructure improvements, disaster risk reduction and management and such other social development activities.

The WTE facility shall maintain a Light-Emitting Diode (LED) or similar system/device display board, in front of its site and within view of the general public, containing updated information on its air emissions and effluent.

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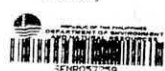
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ROY A. CIMATU
Secretary



Republic of the Philippines
Department of Environment and Natural Resources
ENVIRONMENTAL MANAGEMENT BUREAU
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Website: <http://www.emb.gov.ph>

NOTICE OF PUBLIC HEARING

On the ENVIRONMENTAL IMPACT STATEMENT (EIS) of the proposed **DANA O MINING PROJECT** of the **CITADEL MINING CORPORATION** located in **BARANGAYS CABUNGAHAN, MANLAYAG, STA. ROSA AND GUINACOT, DANA O CITY, CEBU**.

Notice is hereby given to all parties who wish to give their opinion regarding the implementation of the proposed **DANA O MINING PROJECT** to attend a Public Hearing on **17 JANUARY 2020 (FRIDAY)** at **9:00 AM (registration starts at 8:30 AM)** to be held in the **DANA O COCO PALMS RESORT, KM 31, NORTH NATIONAL HIGHWAY, BARANGAY SABANG, DANA O CITY, CEBU**.

The Public Hearing is being conducted in connection with Citadel Mining Corporation's application for its Environmental Compliance Certificate (ECC). The EIS of the aforementioned project is being reviewed by the Environmental Management Bureau (EMB) of the Department of Environment and Natural Resources (DENR).

The following is the project information:

Proponent	Citadel Mining Corporation
Project Name	Danao Mining Project
Project Location	Barangays Cabungahan, Manlayag, Sta. Rosa and Guinacot, Danao City, Cebu
Project Area	179.13 hectares out of the total 336.3782 hectares covered by the MPSA
Proposed Extraction Rate	350,000 MTPY

All interested parties who wish to attend or participate in this Public Hearing should preferably confirm their attendance/participation and may give their opinion(s) in a concise position paper to the ENVIRONMENTAL IMPACT ASSESSMENT AND MANAGEMENT DIVISION (EIAMD) of this Office through mail or through email at eiamd.emb.co@gmail.com, three (3) days before the Public Hearing schedule. Those who will not be able to register or submit written positions may be given the opportunity to share their issues on the day of the hearing itself.

The project's EIS and Executive Summary for the Public are downloadable at our website: www.eia.emb.gov.ph (kindly access the Notice of Public Hearing/ Consultation link found in our website) while copies will be available in this Office and in the following offices:

- 1) **EMB Region VII**
Address: DENR Compound, Greenplains Subd., Banilad, Mandaue City
(032) 260 9777
- 2) **City Planning and Development Officer**
Danao City Hall, F. Ralota Street, Poblacion, 6004, Danao City, Cebu
(+63 32) 411 0100 loc 1511, 1512, 2301

For more details, please contact the EIAMD Division at this Office at telephone number (02) 920- 2240 to 41 and look for the project case handlers Engr. Carlo Vic Arida, EnP and Engr. George Silverderio.

Protect the environment... Protect life...