

**GREENPEACE**

# **True Cost of Coal in the Philippines**

(Volume 1)

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Southeast Asia**

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## **Preface**

### **Much ado about coal**

Coal burning has existed for centuries. It powered the Industrial Revolution, changing the course of the world. At present it provides 29.9% of global primary energy needs and generates 41% of the world's electricity. It is also used in the production of 70% of the world's steel. Total world coal production reached a record level of 7831 metric tons in 2012. This represents an annual growth of 2.9%. Since 2000, global coal consumption has grown faster than any other fuel. The five largest coal users - China, USA, India, Russia and Japan - account for 76% of total global coal use. Indonesia, which is a major source of coal for the Philippines, is the top coal exporter and ranks among the top coal producers in the world.<sup>1</sup>

However, coal, like other fossil fuel sources, has a number of environmental impacts, from both coal mining and coal use. Coal mining raises a number of environmental challenges, including soil erosion, dust, noise and water pollution, and impacts on local biodiversity.<sup>2</sup>

In the Philippines, 13 plants currently burn coal to produce electricity, emitting millions of tons of pollution every year, releasing toxic substances like mercury, lead, arsenic, cadmium and tiny sulfate and nitrate particles that end up deep in people's lungs, operating as silent killers.

Rather than embracing renewable energy, the Philippine government plans to bring in another 45 coal-fired power plants, giving the coal industry a license to kill for decades.

Greenpeace, along with other civil society organizations and grassroots communities, is fighting these newly- proposed power plants, but more needs to be done.

The solution is within our reach: energy efficiency alongside clean, renewable energy that's good for the climate and for public health, and which creates thousands of green jobs and economic opportunities for the Philippines.

The True Cost of Coal (Volume 1) is part of a three-series comprehensive research on the external costs of coal in the Philippines. Greenpeace hopes that it will be a valuable tool to ensure a broader debate and to guide policy makers and researchers in their decision making framework for the country's energy plans.

It is time for us to phase out coal, heal the planet and transition to clean energy and clean air for all. We only have one Planet and we cannot afford to lose it.

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## Cheap but expensive: The staggering human and environmental cost of coal

Statistics alone should tell us all how bad coal is. Coal is sold cheaply; however, the impact of this fossil fuel on our health and our atmosphere is one dirty, expensive proposition. Coal emits more carbon per unit of energy than oil, and 80% more than natural gas. It accounts for 43% of global emissions (2.7 billion tons of it every year).<sup>3</sup>

The Philippines is blessed with bountiful resources that could catapult it towards a position of renewable energy leadership in Southeast Asia, yet while some branches of the government show leadership, others are greenwashing: publicly talking the green talk while quietly walking down a path of coal.

According to a June 2013 World Wide Fund for Nature (WWF) report, “The Philippines risks losing “over USD 2.5 billion in potential renewable energy investments” due to delays in the crafting of rules and mechanisms that were causing investor uncertainty.”

“In 2011, at least 384 renewable energy service contracts were awaiting approval from the Department of Energy (DOE), equaling to 6,046-MW of generation capacity,” according to the 2013 WWF report titled “Meeting Renewable Energy Targets: Global lessons from the road to implementation.”

“While the feed-in tariffs has been approved, unfortunately, many of these projects are still in limbo pending the approval of other renewable energy mechanisms...because of administrative bottlenecks,” it said.<sup>4</sup>

Today, more than 34% of the Philippine’s power generation comes from coal. Greenpeace estimates that coal has disadvantaged the Philippines in terms of environmental and health impacts, damages to agriculture and marine life and more. To make matters worse, the current administration has 45 new coal projects in the pipeline. The Philippine government is forging ahead without truly evaluating the true cost of coal, and the industry is not paying for the damages it causes.

Who pays then? The Filipino people. Those who bear responsibility for the well-being of the nation have a duty to refuse all future coal projects and embrace green clean prosperity through renewable energy.

Greenpeace’s effort to establish the cost of damage from coal use in the country in this first installment may be considered conservative because it is impossible to account for all the devastation brought about by coal. However, we can estimate the costs of annual damages caused by some of its more conspicuous impacts such as additional and premature morbidity and mortality, water shortages, water contamination, and agricultural and marine yield losses.

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Some of coal's other external costs will be explored in True Cost of Coal (Volumes 2 & 3). These external costs refer to losses of homeowners and farmers, whose properties or crops have lost value because these were polluted by the nearby power plants. It also refers to the social impacts of coal use such as community displacement, loss of cultural heritage, and human rights violations.

This first installment examines the costs of coal's impacts only, without calculating the percentage of the Philippines' global Gross Domestic Product (GDP), which will be needed each year to combat climate change, the most serious impact of historical coal use worldwide. Clearly, there is a bigger negative scenario out there.

Climate change is the greatest environmental threat and humanitarian and economic challenge the world has ever faced. The Philippines, a country that is one of the most vulnerable to climate change, is already in a precarious state.

We persist in abetting global warming by continuing to burn more coal, worsening the impacts from which we already suffer.

## **Renewable energy is a real solution**

The good news is that the solution – renewable energy (RE) – is real, it is affordable, and it is already deployed in the Philippines, creating clean jobs and green growth. RE provided over 26% of the country's electricity generation in 2010<sup>5</sup>. An RE future holds bright promise. Worldwide, RE power generation is growing, providing “one-fifth of the world's electricity and has added about half of the world's new generating capacity each year since 2008.”<sup>6</sup>

Today, we are faced with a critical choice: Will we stay mired in the dirty energy sources of the past, or will we reach for a sustainable, green future? Will the Philippines build 45 new power plants or consolidate its position as a renewable energy leader in Asia? The choice is ours. Make it right.

## **Methodology**

This first installment of the True Cost of Coal shows estimates of carbon emissions from the country's coal-fired power plants based on the average emission levels calculated from official statistics and power company reports. Greenpeace compiled the data on the location of the power plants.

While every effort has been made to estimate the air quality and health impacts of power plants as accurately as possible, there are always potential sources of error. Not all authorities make all plant-level emission data available. Some

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companies may also conceal data or produce misleading data. Individual power plants' emission control performance can vary.

For this report, Greenpeace visited several power plants in the Philippines and interviewed individuals living in the area, working in various sectors including agriculture and fishing. More than 30 individual and focus group interviews were conducted. We also interviewed doctors, nurses, toxicologists and other experts and obtained documentation from Rural Health Units and other local government offices to establish data near the power plants included in this report.

### Coal in the Philippines today

Currently, there are 13 operational coal-fired power plants with a combined installed capacity of 4937-MW. Rather than expanding the country's RE uptake, the government plans to bring in another 45 coal-fired power plants. While the government boasts of efforts to expand new RE capacity, it has been rationalizing and oiling the works for more coal-based energy sources.

**Map 1. Coal plants in operation in the Philippines as of 2014**



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Trends indicate that coal's role in the country's energy mix is growing, not receding. A National Renewable Energy Board (NREB) data indicates that in 2008, the total percentage for power generation for coal was 25.89%, while in 2011 it had increased to 36.63%.<sup>7</sup> In the meantime, the share of renewable fell from 33.92% in 2008 to 28.69% in 2011. The DOE estimated "that in 2011 coal-fired power plants accounted for 25.34 terawatt hours (TWh) of the electricity generated in the country."<sup>8</sup>

In addition to electricity generation, the cement sector accounted for approximately 20% of the country's coal consumption.<sup>9</sup><sup>10</sup> Other industries play smaller roles in coal use, "in 2005, 1% went to other industries such as alcohol, sinter, rubber boots, paper and chemical manufacturing, fertilizer production and smelting process."<sup>11</sup>

According to the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, "Carbon emissions from power generation in the Philippines produced around 81.15<sup>12</sup> million metric tons in 2011,"<sup>13</sup>

And it has been getting steadily worse over time. In 1998, the country discharged 75,988 thousand metric tons of CO<sub>2</sub> into the atmosphere from fossil fuel combustion alone;" and this 1998 level represented "a 72% increase relative to 1990 levels (WRI 2003)."<sup>14</sup>

Operating 45 new coal-fired power plants could increase the Philippines' CO<sub>2</sub> emissions to 64.4-79.8 MtCO<sub>2</sub> a year. Moreover, building new coal-fired power plants would undermine the Philippines' role in any international agreements to tackle climate change. By embracing coal, the Philippines loses its credibility in fighting for a good climate change treaty. (See Table 1 for the list of proposed coal-fired power plants in the country.)

#### Inset box

Worldwide, coal-fired power plants are the biggest source of man-made CO<sub>2</sub> emissions. From mining to combustion, coal is the most polluting of all fossil fuels. A third of all carbon dioxide emissions come from burning coal, which makes coal energy the single greatest threat facing our climate. In 2013, "Coal [was] responsible for 44% of carbon emissions from fuel globally—more than oil (35%) and natural gas (20%). Coal releases more carbon dioxide than any other fossil fuel and coal mining is responsible for 8-10% of human-made methane emissions globally."<sup>15</sup>

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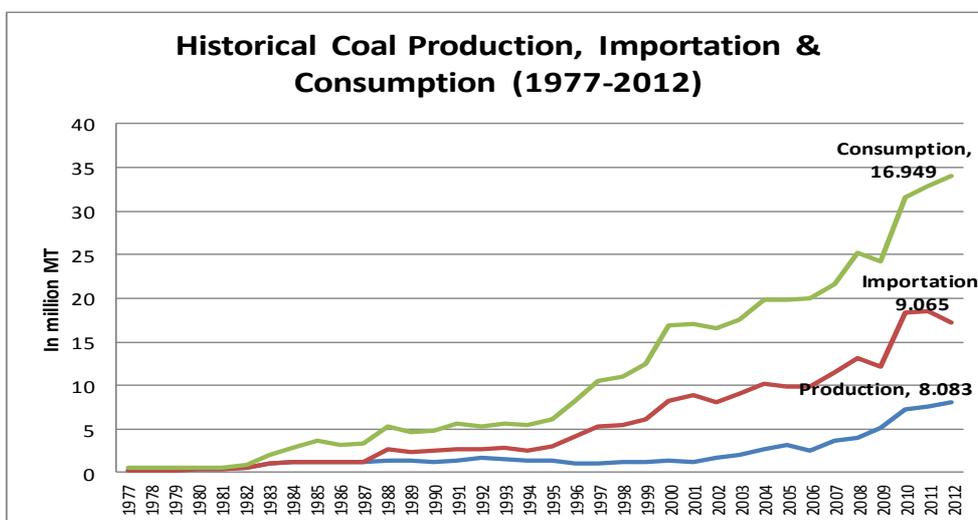
**Table 1. Summary of proposed coal-fired power plants in the Philippines**

Area	Capacity, MW	Projects, Total	Status	CO2 emissions tonnes/year
Luzon	6,990	23	Under construction – 2	2,279,233
			Planning/Indicative -- 21	27,199,605
Visayas	1,022	9	Under construction – 1	742,227
			Planning/Indicative – 8	3,481,467
Mindanao	3,043	13	Under construction – 1	907,128
			Planning/Indicative – 12	11,712,418

## Coal Imports

Nearly all the coal consumed by the Philippines is imported from China, Indonesia and Australia. Whereas “the Philippine Department of Energy estimated that in 2005 approximately 7.28 million tons of coal was [sic] imported,”<sup>16</sup> “more recently in 2010, demand for coal from the power sector was 12.5 million tons and could yet increase to 16 – 20 million tons by 2015, and 30 – 40 million tons by 2030, which means that imports could increase from the current 11 million tpa [tons per annum] to 41.5 million tpa.”<sup>17</sup>

## Graph 1. Over-all Coal Statistics in the Philippines



(Source: DOE)

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## Coal mining – a looming threat

The Philippines has a relatively poor capability to mine coal, thus imports most of its requirements. However, some coal mining exists in the Philippines and the government has been considering expanding future mining of the nation's coal reserves, even though they are of poor quality. If the Philippines were to engage in widespread use of domestic coal for power plants, this would cause a greater ecological disaster because low-quality coal has lower energy value which means that more coal needs to be burned to generate a specific amount of energy.

Recent estimates indicate that the 6.5 million tons per annum (tpa) of domestic coal production “is concentrated in Semirara where 96% of the country's coal production occurs. Estimates for coal reserves from several studies are wide-ranging and contradictory, with estimates of 316 million tons to as much as 19 billion tons.”<sup>18</sup> Some companies stand to profit, “The Philippine Department of Energy reports that the largest coal producer in 2005 was the Semirara Mining Corporation (SMC) which produced approximately 92% of the total. Smaller mining operations were based on deposits in Cebu, Zamboanga, Sibugay, Albay, Surigao and Negros Provinces.”<sup>19</sup>

Despite being a minor coal producer the Philippines also has a number of coal-fired power stations relying on domestic coal production. In order for DOE to encourage investors to explore potential coal fields around the country, the government is set to launch the 5<sup>th</sup> Philippine Energy Contracting Round (PECR) that auctions off coal exploration contracts within the second quarter of 2014.

While the coal blocks considered for auction during the PECR5 are still being verified by DOE, the 4<sup>th</sup> PECR in 2011 saw 38 coal blocks being offered. The following maps indicate the locations of these coal blocks in Luzon, Visayas and Mindanao.

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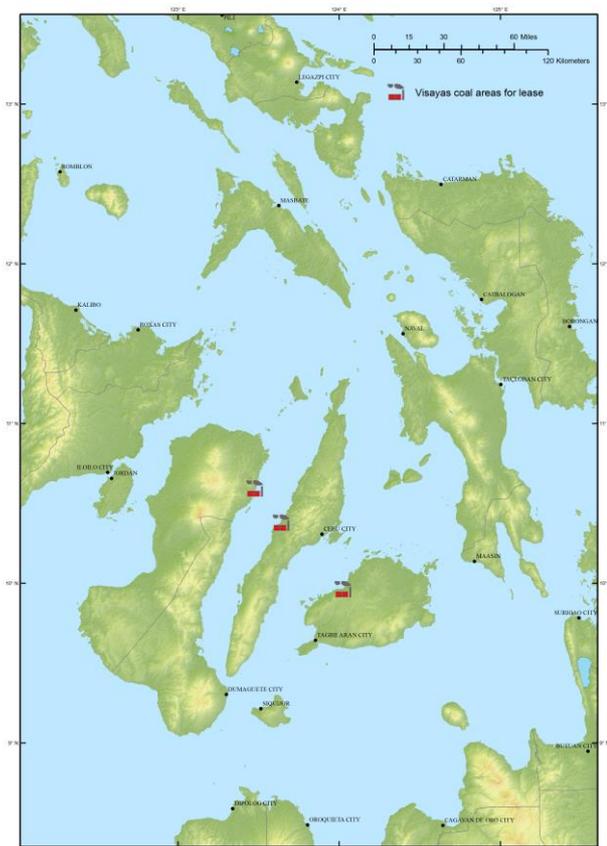
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Map 2. Coal block areas in Luzon



Map 3. Coal block areas in Visayas

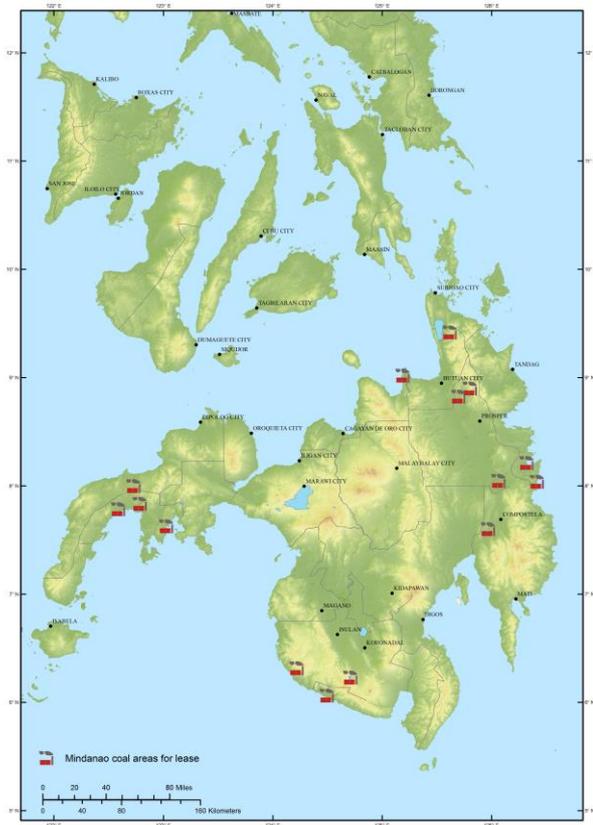


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## Map 4. Coal block areas in Mindanao



Based on the coal exploration contracts offered by the DOE, these areas include Quezon, Camarines Norte, Albay, Sorsogon, Masbate, Occidental Mindoro, Negros Occidental, Cebu City, Agusan del Norte, Agusan del Sur, Surigao del Sur, Compostela Valley, Davao Oriental, Lanao del Sur, Lanao del Norte, Zamboanga Sibugay, among others.

From this auction, the DOE received 69 bids from interested parties for 28 of the 38 coal areas offered by the department. The contracts were awarded to Altura Mining for Area 3-Catanduanes; Semirara Mining Corp for Area 9-Oriental Mindoro and Area 25B-Sarangani; Empire Asia for Area 18B-Surigao del Sur and SKI Mining for Area 19A-Agusan del Sur and Surigao del Sur.<sup>20</sup>

Areas that have failed to receive bids during the 4<sup>th</sup> contracting round are assumed to be re-offered in the next auction.

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## **The Biggest Coal Myths**

While some individuals and entities in the government have genuinely promoted clean energy and fought coal, there are government officials who continue to have a myopic view on coal saying it is cheap and will contribute to the country's development. At the same time, they ignore the dramatic decrease in RE prices and the changing economics of the energy industry worldwide.

Coal promoters seem to overlook the increasingly urgent need to curtail fossil fuels use due to climate change, as well as the added evidence of risks posed by coal plant operations, for example on health, water scarcity, environmental degradation, etc., which have both drastically changed the global energy landscape.

One popular coal myth is that coal-fired plants represent close to a third of energy resources “simply because electricity generated from these plants is still cheaper compared to some of the indigenously fueled power plants in the country.”<sup>21</sup> This statement is simply not correct since hydro, geothermal and biomass are already cheaper than fossil fuel-fired power. A typical new 600-MW coal plant has price tag of roughly USD 2 billion. Furthermore, the Philippines is hostage to international fossil fuel markets for the cost of fuel which can be up to 70% of the total generation cost to the consumers and government. Beyond that, coal hurts our agriculture, fisheries and our environment. We also pay for coal with our own health.

An illustration of a pro-coal attitude embraced by some government representatives can be seen in the (DOE) website, which states that “...Worldwide, coal is a sought-after energy source. It has the largest reserve and is often the cheapest of the fuel options... The *Philippines has a vast potential for coal resources just awaiting full exploration* and development... It is but [sic] *very timely to invest in coal facilities* as the price of oil continues to rise, coal being still *the cheapest option with abundant supply worldwide.*”<sup>22</sup>

For decades, the DOE has been promoting coal, claiming it is cheap and allocating considerable resources into developing coal. Aside from promoting coal, some officials in the DOE malign RE publicly making statements reliant on bias rather than facts and figures.

Indeed, Energy Secretary Carlos Jericho L. Petilla declared that “renewable energy is the ideal form of energy but the cost of putting up plants for this type of energy is very high to the point that power consumers could pay double the monthly rate they are paying now, [whereas] *coal is the only answer to the nation's current extreme power shortages.*”<sup>23</sup> President Benigno Aquino III defended the construction of more coal-fired power plants in his 2013 State of the Nation Address, citing his perceptions of the alleged limitations of renewable energy. Aquino stated, “Let me be clear: I believe in renewable energy and we support its use, but there should also be baseload plants that can ensure a steady supply of electricity for our homes and industries... The plant in Redondo, Zambales is a good example. A TRO

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was issued against the plant because of the argument that renewable energy is better. Did they happen to mention that renewable energy is also more expensive—from the cost of building the plants to the eventual price of energy?... Did they mention that it cannot provide the baseload—the capacity required to make sure brownouts do not occur? If you put up a wind-powered plant, what do you do when there is no wind? If you put up a solar plant, what do you do when the sky is cloudy?”<sup>24</sup>

Baseload refers to the practice that there must be a minimum, uninterrupted supply of power to the grid at all times, traditionally provided by coal or nuclear power. Greenpeace challenges this paradigm because it blocks the entry of renewable energy. Currently, baseload is part of the business model for coal power plants, where the operator can produce electricity at maximum capacity regardless of how much electricity consumers actually need. So when demand is low the power is wasted. When demand is high, additional gas is needed as back-up.

However, coal cannot be turned down on sunny or windy days so solar photovoltaics (PVs) and wind turbines are not allowed to be dispatched to prevent overloading the grid system. Current electricity generation relies heavily on harmful fossil fuels such as coal, is largely centralized and allows for very little flexibility. Coal proponents would have us believe that only coal can be baseload. In reality, they choose to ignore that in 2012, more than half of Visayas’ and Mindanao’s baseload energy was provided by renewable sources.<sup>25</sup>

#### INSET: BASELOAD vs. FLEXIBLE GRID

Power from renewable plants, such as wind and solar, varies during the day and week. Some see this as an insurmountable problem because up until very recently we have relied on coal to provide a fixed amount of power at all times. In current policy-making there is a struggle to determine which type of infrastructure or management to choose from and which energy mix to favor as we move away from a polluting, carbon-intensive energy system.

In the coming decades, traditional power plants will have less and less space to run in baseload mode. With increasing penetration of variable generation from wind and solar PV in the electricity grid, the remaining part of the system will have to run in more “load following” mode, filling the immediate gap between demand and production. This means the economics of baseload plants like coal will change fundamentally as more variable generation is introduced in the electricity grid.

Moving away from the concept of baseload power towards a mix of variable and dispatch-able renewable power plants can be done by integrating renewable energy using a flexible grid. In a flexible grid, a portfolio of renewable energy providers can follow the load during both day and night – for example with solar and wind, geothermal, gas and demand management – without blackouts.

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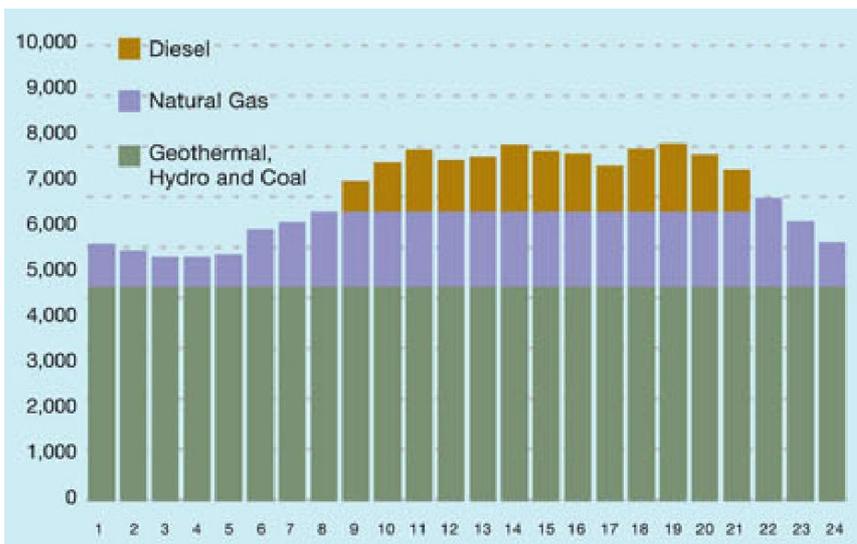
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**Inset:**

Hydro, wind and solar power are variable power sources but they can and must be combined in a national energy mix, together with other renewable energy sources such as biomass and geothermal, which can provide baseload. The emerging power-generation model of the future does not lie in last century’s trend of massive centralized baseload coal plants. Centralized baseload power generation has proven inefficient in its reliance on long distance transmission and use of environmentally destructive technologies. In contrast, when intermittent RE sources are combined, a well-thought-out distributed energy mix of renewables can produce reliable energy similar to baseload. Moreover, energy storage facilities and smart grids – which have yet to be fully developed in the Philippines – can help promote reliability. Studies show that the Philippines is well-suited to wean itself away from fossil fuel energy generation and to adopt renewable energy as its main source of power. Greenpeace’s “Philippine Energy Revolution Roadmap to 2020” predicted that RE can generate more than 50% of the nation’s energy needs as early as 2020.

The following graphs show the country’s current electricity generation patterns (Graph 2) and the energy generation pattern with renewables (Graph 3).

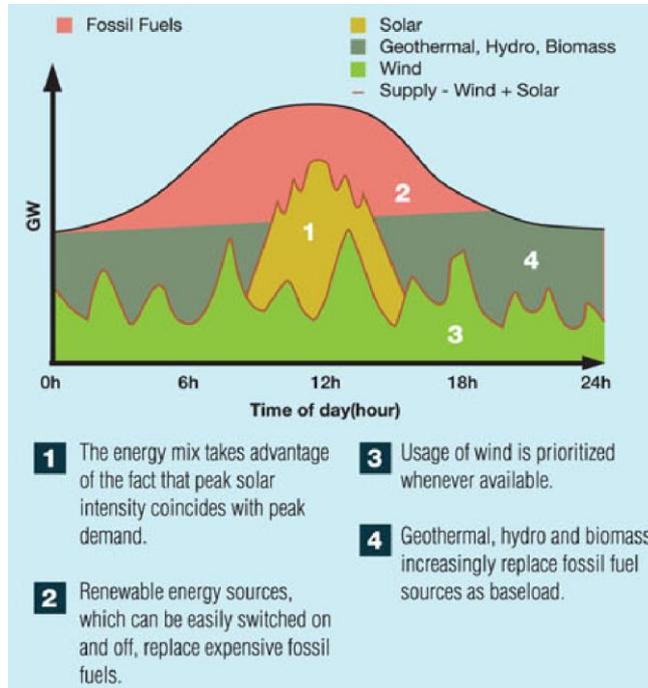
**Graph 2. Typical 24-Hour Generation and Operation Reserve Dispatch (in MW)**



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**Graph 3. Possible Load Curve Scenarios with RE**



Source: 50% RE by 2020: A Philippine Energy [R]evolution Roadmap, Greenpeace (June 2011)

The current Philippine Development Plan 2011-2016 prioritizes coal-fired power plants in the coming several years, reaffirming the President’s pro-coal State of the Nation Address pronouncements.<sup>26</sup>

Like the President, the DOE embraces coal. Energy Secretary Carlos Jericho Petilla has made supportive remarks about renewables and yet under his leadership, the Energy Department endorsed the construction of a 600-megawatt coal-fired power plant at the Subic Bay Freeport, Redondo Peninsula Energy Inc.<sup>27</sup>

President Aquino “commended a Philippine-Korean joint venture for ‘considering the environment’ in building its 200-megawatt coal-fired power plants, which he inaugurated..., a week after launching the National Renewable Energy Program (NREP)...

The President told reporters his administration has to balance environmental protection with the need for a sustainable power supply to support economic growth. [He stated,] ‘while the power plant we are inaugurating today does not necessarily produce renewable energy, it does comply with the Clean Air Act and is very friendly to the environment,’ ... in a speech at the Naga power plant complex of the Korean Electric Power Corp. and Salcon Power Corp. (Kepco-SPC). Coal ash

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disposal and other problems can be solved to minimize harm to the environment, he said.”<sup>28</sup>

It is hard to see how a coal-fired power plant can be praised for “considering the environment” or being “very friendly to the environment.” Greenpeace’s investigations around Kepco revealed that the Philippines-Korean joint venture had dumped coal ash just meters away from houses, places where children play, near rivers where residents bathe and wash clothes, all of which Greenpeace has documented in its investigation. Several Kepco coal ash dump sites Greenpeace filmed failed to conform to international safety standards.

**Image 1. Kepco’s coal ash pond in Naga, Cebu**



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**Image 2. Fisher folks near the Kepco power plant in Naga, Cebu**



The indiscriminate dumping of coal ash near rivers is a violation of Republic Act 9275 or the Philippine Clean Water Act of 2004. This law aims to protect the country's water bodies from pollution from land-based sources from industries and commercial establishments, agriculture and community or household activities.

President Aquino showed his full support to the building of another plant in April 2011, when he inaugurated the commercial operation of “the first coal power plant built and operated under the Aquino administration...a 164-megawatt coal-fired power plant in Barangay Incore in La Paz District, Iloilo City. The facility is owned by Panay Energy Development Corp. (PEDC) and its mother company, the Global Business Power Corp. (GBPC).<sup>29</sup>

The President's appointments to certain key positions have also created doubts about his commitments to environmental protection and clean energy and triggered allegations of bias towards the coal industry. Aquino appointed Ramon Paje as secretary of the Department of Environment and Natural Resources (DENR). Paje is a former executive director of the Mining Development Council (MDC) who became a presidential adviser on mining, embracing a pro-mining stance in his governmental role. These powerful positions made him one of the top architects of the liberalization of the mining industry under the previous Arroyo administration.<sup>30</sup>

The President's actions undermine the National Renewable Energy Program's (NREP) goal of achieving a significant increase of RE-based capacity by 2030.

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## Quick Facts and Figures of the National Renewable Energy Program (2011-2030)

The NREP aims to increase the country's RE-based capacity from 5,438-MW in 2010 to 15,304-MW by 2030. On a per technology basis, the NREP aims to:

- Increase geothermal capacity by 75%
- Increase hydropower capacity by 160%
- Deliver additional 277-MW of biomass power capacities
- Attain win power grid parity with the commissioning of 2,345-MW of additional capacities
- Mainstream an additional 284-MW of solar power capacities and pursue the achievement of the 1,528-MW aspirational target
- Develop the first ocean energy facility for the country

**Table 2. RE-based Capacity Installation Targets in the Philippines**

Sector	Installed Capacity as of 2010 (MW)	Target Capacity Addition by				Total Capacity Addition 2011-2030 (MW)	Total Installed Capacity by 2030 (MW)
		2015	2020	2025	2030		
Geothermal	1,996.0	220.0	1,100.0	95.0	80.0	1,495.0	3,461.0
Hydropower	3,400.0	341.3	3,161.0	1,891.8	0.0	5,394.1	8,742.1
Biomass	39.0	276.7	0.0	0.0	0.0	276.7	315.7
Wind	33.0	1,048.0	855.0	442.0	0.0	2,345.0	2378.0
Solar	1.0	269.0	5.0	5.0	5.0	284.0	285.0
Ocean	0.0	0.0	35.0	35.0	0.0	70.5	70.5
<b>TOTAL</b>	<b>5,438.0</b>	<b>2,155.0</b>	<b>5,156.5</b>	<b>2,468.8</b>	<b>85.0</b>	<b>9,865.3</b>	<b>15,304.3</b>

One dangerous narrative peddled by the DOE and other government representatives is that the Philippines can achieve energy self-sufficiency through the use of domestic coal (as opposed to pursuing true energy self-sufficiency and energy security through renewables). A DOE official's position outlined on the government agency's website is that "The Philippines has a vast potential for coal resources just awaiting full exploration and development to contribute to the attainment of the country's energy self-sufficiency program. As of 31 September 2005, our in-situ coal reserves amount to 458 million metric tons or 18 % of the country's total coal resource potential of 2.53 billion metric tons."<sup>31</sup>

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The fact is that coal in the Philippines is of very low quality. This means burning it would be even more environmentally destructive than burning higher-grade coal from Indonesia or elsewhere.

Beyond spinning narratives around energy self-sufficiency through domestic coal exploration, the DOE and government actors have also warmly endorsed the notion of clean coal. The truth is, there is no such thing as clean coal. It simply does not exist.

## UNMASKING CLEAN COAL:

### ***What is (so-called) "clean coal"?***

Coal is a highly polluting energy source. It emits much more carbon per unit of energy than oil and natural gas. Carbon dioxide (CO<sub>2</sub>) represents the major portion of greenhouse gases. It is, therefore, one of the leading contributors to climate change. From mine to sky, from extraction to combustion, coal pollutes every step of the way. The huge environmental and social costs associated with coal usage make it an expensive option for developing countries. From acid drainage coming from coal mines, polluting rivers and streams, to the release of mercury and other toxins when it is burned, as well as climate-destroying gases and fine particulates that wreak havoc on human health, COAL is unquestionably, DIRTY.

Coal is a major contributor to climate change - the biggest environmental threat that we are currently facing. It is the most carbon-intensive fossil fuel, emitting 29% more than oil and 80% more carbon dioxide (the main driver of climate change) per unit of energy than gas.

Mercury is a particular problem. According to the United Nations Environment Programme (UNEP), mercury and its compounds are highly toxic and pose a 'global environmental threat to humans and wildlife.' Coal-fired power and heat production are the largest single source of atmospheric mercury emissions. There are no commercially available technologies to prevent mercury emissions from coal-fired power plants.

"Clean coal" is the industry's attempt to "clean up" its dirty image - the industry's greenwash buzzword. It is not a new type of coal.

"Clean coal" technology (CCT) refers to technologies intended to reduce pollution, but no coal-fired power plants are truly 'clean'.

"Clean coal" methods only move pollutants from one waste stream to another which are then still released into the environment. Any time coal is burnt, contaminants are released and they have to go somewhere. They can be released via the fly ash, the

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gaseous air emissions, water outflow or the ash left at the bottom after burning. Ultimately, they still end up polluting the environment.

Communities after communities have lamented the hosting of coal-fired plants. They are often ignored due to governments' preference for power plant projects, yet they often bear the burden of adversely altered lives.

Despite over 10 years of research and USD 5.2 billion of investment in the US alone, scientists are still unable to make coal clean. The Australian government spends AUS \$0.5 million annually to promote Australia's 'clean coal' to the Asia Pacific region. "Clean coal" technologies are expensive and do nothing to mitigate the environmental effects of coal mining or the devastating effects of global warming. Furthermore, clean coal research risks diverting investment away from renewable energy, which is available to reduce greenhouse gas emissions now.

The first CCT programs were set up in the late 1980s in response to concerns over acid rain. The programs focused on reducing emissions of sulphur dioxide (SO<sub>2</sub>) and oxides of nitrogen (NO<sub>x</sub>), the primary causes of acid rain. Now the elusive promise of "clean coal" technology is being used to promote coal as an energy source.

### ***A price worth paying?***

Many of the "clean coal" technologies being promoted by the coal industry are still in the development stage and will take hundreds of millions, if not billions, of dollars and many more years before they are commercially available. "Clean coal" technologies are also extremely expensive in terms of day to day running costs.

The US Energy Information Administration (EIA) estimates the capital costs of a typical IGCC plant (an experimental low-emission coal power station) to be USD 1,383 per kW, USD 2,088 per kW with carbon sequestration. This compares with USD 1,015 per kW for a typical wind farm.

### ***Summary***

"Clean coal" is an attempt by the coal industry to try and make itself relevant in the age of renewables. Existing CCTs do nothing to mitigate the environmental effects of coal mining or the devastating effects of global warming. Coal is the dirtiest fuel there is and belongs in the past. Much higher emission cuts can be made using currently available natural gas, wind and modern biomass that are already in widespread use. Clean and inexpensive-this is where investments should be directed, rather than squandering valuable resources on a dirty dinosaur.

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Some branches of the government remain shockingly slow or even inactive in the face of one of the greatest challenges of our time: quitting coal, protecting our citizens and averting catastrophic climate change.

Meanwhile, other branches and individuals in the government have been fighting to shift policy, move away from coal and embrace RE. Responsible environmental leadership is emerging and hard work is being done by Senators, House Representatives and key players in the Department of Energy itself, the Department of Environment and Natural Resources (DENR), the Climate Change Commission (CCC) and even at the local government level. What we need now is to all move together in the right direction towards a green and clean future.

### **Building coal-fired plants is expensive**

It costs about USD 3,500per kW to build a new coal plant and if you add on financing costs, a typical new 600-MW coal plant has a price tag of roughly USD 2 billion.<sup>32</sup> Indeed, Alsons Consolidated Resources Chief Finance Officer Luis Ymson Jr. said, ‘The average cost per MW of a coal-fired plant using circulating fluidized bed technology (CFB) is now about USD 2.5 million.’<sup>33</sup>

Coal companies in the Philippines collectively plan to spend billions of dollars to promote new, coal-fired power generation over the next years. Investments in coal power plant construction and operations drain finance away from RE investments. Here are some examples of the costly coal-fired power plants slated to come in the next few years:

Therma South Inc. 300-MW plant in Binugao, Toril, Davao City.<sup>34</sup>

USD 720 million<sup>35</sup>

Expansion of the Pagbilao 400MW plant in Quezon

USD 600 to USD 700-million

Aboitiz Power 300MW coal-fired power plant in Toledo City, Cebu,

USD 750-million facility

Redondo Peninsula Energy, Inc. plant in the Subic Freeport zone in

Zambales

USD 1.28 billion<sup>36</sup>

GNPower 600MW plant in Mariveles, Bataan,

USD 26.5 million<sup>37</sup>

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Palm Concepcion Power Corp. and Panay Consolidated Land Holdings Corp  
135MW plant in Iloilo<sup>38</sup>

USD 281 million<sup>39</sup>

SMC Global 600MW in Bataan in northern Luzon

USD 1 billion<sup>40</sup>

SMC Global 300 MW plant in Davao

USD 500 million<sup>41</sup>

Global Business Power Corp. 300 MW plant for the Mindanao grid

USD 730 million<sup>42</sup>

These are representative projects and contrary to what the coal industry may say, they are not cheap.

### **Green is Gold: How Renewable Energy can save us money and generate jobs (Greenpeace, January 2013)**

The Green is Gold report by Greenpeace already noted high costs of several coal projects for the Philippines:

In 2010, “President Aquino reported USD 3.7 billion investments in the power sector, the bulk of which came from Marubeni Corporation which promised to invest in coal power projects. The Japanese company committed to rehabilitate and expand the 1,200-MW (MW) Sual and 735-MW Pagbilao coal-fired power facilities in Quezon province... [In April 2011] President Aquino condoned the PHP 4 billion (USD 92.4 million) debt of the Pagbilao Power plant which Marubeni owns.”<sup>43</sup>

There is also publicly available information about the cost of the Masinloc Thermal Power Project (MTTP) in Zambales: “The USD 441-million project was jointly financed by the Asian Development Bank (ADB), Export-Import Bank of Japan and the local executing agency, the National Power Corporation (NPC).”<sup>44</sup>

Public information indicates that “In Sarangani, a PHP 19billion (USD 428 million) 200-MW coal-fed plant is also rising...owned by partnerships led by the Alcantara family,” and that “Ayala-led AC Energy Holdings Inc. and A. Brown Inc. are spending PHP 12.5 billion (USD 281 million) to put up a 135-MW coal-fired power plant in Iloilo.”<sup>45</sup>

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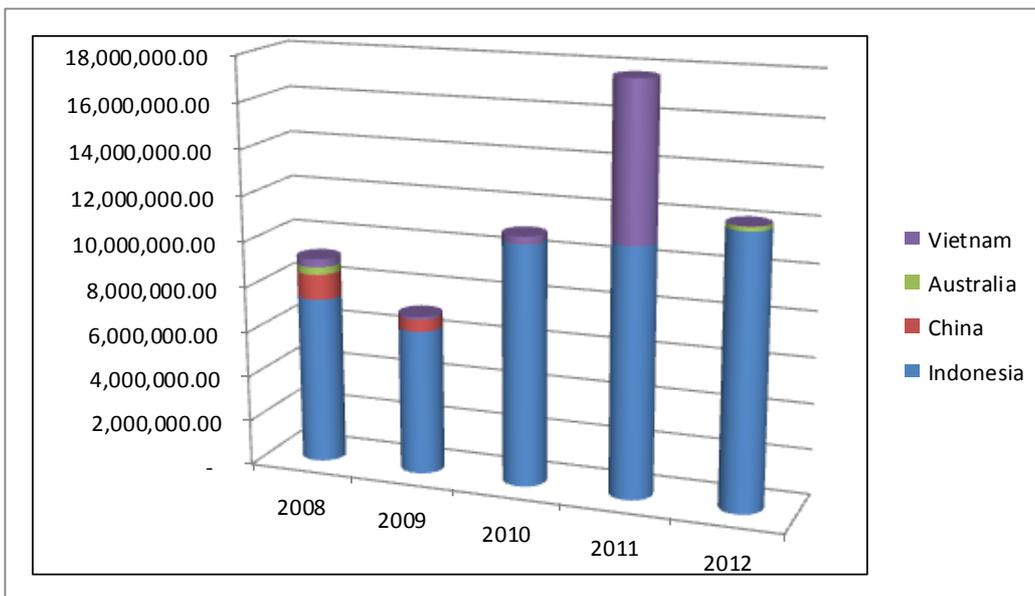
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## Importing coal means money is leaving the country, not strengthening our domestic economy.

Our demand for coal locks the country into a problematic paradigm, where it relies on a resource (coal) that it cannot produce domestically and must therefore import—primarily from Indonesia.

By constantly spending money to acquire foreign coal, the Philippines is unnecessarily squandering its foreign currency, sending it abroad, which negatively affects its balance of trade, as well as its energy independence. Coal's negative impact on the Philippines' balance of trade and on its foreign-exchange reserves (or official international reserves) limits the government's ability to stabilize the value of the domestic currency to provide a favorable economic environment, defend the currency from speculative attacks if need be, influence exchange rates, implement monetary policy and build reserves.

**Graph 4. The Philippines' coal importation by country as of 2012**



Despite the country's rising coal production in 2012 of 8.153 million metric tons, coal imports at 12.090 million metric tons are much higher than domestic production, of which more than 98% come from Indonesia.<sup>46</sup>

In contrast to coal, RE use can enrich the Philippines. For instance, geothermal energy has already had a massive impact on foreign exchange over time, through displacement of imported fuels. The Philippines has saved over USD 7 billion since 1977: USD 7,074,870,000 billion, to be precise.<sup>47</sup>

## The price of coal is rising

The price of coal rises almost every year, as Chinese and Indian demand keep increasing. The economics are thus shifting in favor of clean energy, especially since the price of wind and sun doesn't change. It is always free.

“When the PHP 7.40 (USD 0.17) per kwh rate was approved for Panay Energy Development in June 2011, the price of coal at that time was USD 53 per metric ton. As of January 2012, the Newcastle coal price index reached USD 116 per metric ton. The Pass-Through Cost Provision in the Power Purchase or Electricity Supply Agreement [lays out] the rule-of-thumb... that every USD 10 per metric ton increase in coal price would result in a PHP 0.21 (USD 0.005) per kwh increase in power rate. The increase in coal prices of USD 63 would translate to the new adjusted rate of PHP 8.70 (USD 0.20) per kWh.”<sup>48</sup>

### More fuel costs, more expensive electricity:

Fossil fuels such as coal are finite resources and increasing global demand continues to drive up their prices. Due to political tensions, fossil fuels hold us and the rest of the world hostage to volatile price hikes.

However which way you look at it, coal is not cheap. Aside from the costs of its impacts on people and the environment, there are additional costs such as transport. Coal is generally carried out by conveyor or truck over short distances; trains or barges for longer distances within domestic markets. For international transportation, ships are commonly used. Transportation costs account for a large share of the total delivered price of coal.<sup>49</sup>

## Moving away from coal and into RE drives down energy prices

Much of RE is domestic content and can become more so. Extractives on the other hand are inherently abroad for the most part. Instead of having a balance of trade/trade deficit characterized by millions of dollars flowing out from Philippines to oil producing countries and coal producers, billions of dollars can be invested at home. This has the potential to shift the balance of trade, contribute to foreign exchange savings, boost domestic investments, minimize fossil fuel-driven price inflation, stabilize the economy and protect it from fluctuations in fossil fuel prices, increase wealth from an uptick in jobs – all the while improving domestic energy supply and security.

Most importantly, we must address the question of the price of electricity for consumers. The fact is that the system is failing right now, with or without renewables, due to decades of poor policies and planning. Energy rates in the Philippines are the highest now in all of Asia, placing a tremendous burden on the average Filipino family. Right now, the high cost of electricity has a lot to do with

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the spot market, which allows for predatory pricing during the middle of the day when demand is peaking. Solar kicks right then, when the grid is struggling hardest to meet demand and when the spot market sends prices for energy shooting up as companies engage in opportunistic bidding, taking advantage of higher demand to charge more. In the spot market, peak plants' price can go up to PHP 50 (USD 1.13) per hour. Because solar is usually there when people typically need energy the most, solar can keep expensive reserve plants offline, and therefore drives energy prices down in the long run by impacting the spot market, saving customers' money. All responsible parties must stop peddling untruths to this problem and work constructively to find solutions to the high cost of energy rather than blaming renewables. The net-metering rules which were finalized in July 2013 could dramatically lower the cost of energy in the long run, paving the way for a new energy democracy and helping homeowners achieve energy independence, relieving pressure off the grid, creating more energy nationwide, lowering aggregate demand and thereby driving down prices.

### **Laws that should uphold the Filipino's right to a healthy, balanced and coal-free ecology**

Some of the most fundamental laws in the Philippines, which are routinely violated by coal companies, and which could form the basis for legal actions against these polluters include:

- The Philippine Constitution of **1987**<sup>50</sup>
- The Administrative Code of **1987** (Executive Order No. 292)
- The Local Government Code of **1991** (Republic Act No. 7160)
- The Fisheries Code of **1998** (Republic Act No. 8550)<sup>51</sup>
- The Clean Air Act of **1999** (Republic Act No. 8749)<sup>52</sup>
- National Emission Standards for Particulate Matter for Stationary Sources (DENR Administrative Order No. 2000 - 81, 7 Nov **2000**)
- National Emission Standards for Sulphur Oxides for Stationary Sources (DENR Administrative Order No. 2000 - 81, 7 Nov **2000**)
- The Ecological Solid Waste Management Act of **2000** or the Republic Act No 9003 (RA 9003)<sup>53</sup>
- The Clean Water Act of **2004** (Republic Act No. 9275)<sup>54</sup>
- The Climate Change Act of **2009** (Republic Act No. 9729)<sup>55</sup>

The Philippines has an inflation of laws, many of which comprise excellent protections<sup>56</sup>, unfortunately our own government lacks the political will and leadership to implement and enforce these laws that are meant to protect Filipinos from the damaging effects of coal pollution.

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One well-respected evaluation of the foundations of environmental governance by The Access Initiative – a global network that promotes access to information, participation and justice in environmental decision making – says that:

“Institutionalizing public access to information, participation and justice in environmental decision-making has been progressive in the Philippines. The country is well regarded for having assertive civil society groups that actively participate in government decision-making to improve the law and practice on access rights to achieve sustainable development. These rights are incorporated in various legal instruments such as policies and regulatory mechanisms that address public health and safety, food security and environmental protection. Environmental degradation stems not from a lack of stringent laws and regulations but from lack of political will to enforce these laws, preferring environmental costs and economic gains.”<sup>57</sup>

Another loophole that coal companies take advantage of is policy incoherence and the clash of conflicting laws.

For instance, the letter and the spirit of the Climate Change Act of 2009 (CCA) contradicts or runs contrary to a number of other government laws, policies and development projects. On the one hand, we have the CCA’s intent to put a stop to deforestation and the destruction of ecosystems, while on the other, there is government’s promotion of large-scale mining under RA 7942 or the Philippine Mining Act of 1995.

Other laws, many of whose provisions run counter to protections enshrined in pro-environmental legislation, include (but are not limited to<sup>58</sup>) the Electric Power Industry Reform Act of 2001 (RA 9136), the Philippine Mining Act of 1995 (RA 7942)<sup>59</sup> and the approval of contracts and Environment Compliance Certificate (ECC) of controversial projects.

Moreover, the lack of a Freedom of Information Act, or a Right to Information (RTI) law,<sup>60</sup> limits transparency about pollution from coal fired power plants or coal mines. Likewise, at this stage, transparency in reporting pollution (including coal-related pollution) is stifled because a Toxic Release Inventory program remains a pipedream and public officials who become whistleblowers face lawsuits.

However, legislative, jurisprudential and administrative problems aside, there is real potential for hard-hitting litigation. Given the proliferation of excellent laws and self-executory and actionable rights to a sound and healthy ecology as prescribed in the Constitution of the Philippines, it is hoped that more lawsuits will emerge to protect people from coal pollution. Lawsuits filed by citizens and non-governmental organizations could and should be brought more frequently against polluting coal-fired power plants.

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The following comprises a preliminary review of some elements for possible future litigation against coal companies.

**Table 4. A review of Philippine Laws and Policies for potential claims against coal companies**

Negative Impacts	Factual Basis for Claims	Legal Basis
<b>Health Impacts</b>	<ul style="list-style-type: none"> <li>Respiratory, skin, cardiac, neurological and cancer-related ailments</li> </ul>	1987 Philippine Constitution, Article II Sections 15 & 16 <sup>61</sup>  Clean Air Act  Ecological Solid Waste Management Act  Clean Water Act
<b>Socio-Economic Impacts</b>	<ul style="list-style-type: none"> <li>Displacement of farmers/fisherfolk (e.g. fishing and seaweed industries destroyed)</li> </ul>	1987 Philippine Constitution Article XIII
<b>Environmental Impacts</b>	<ul style="list-style-type: none"> <li>The Department of Energy's (DOE) failure to implement its mandate to promote RE, promote indigenous energy and ensure the use of reliable and ecologically friendly technologies</li> </ul>	RA 7638 (DOE Act of 1992) and RA 9513 (RE Act of 2008)
	<ul style="list-style-type: none"> <li>The Climate Change Commission's (CCC) failure to implement the climate change action plan, specifically on RE</li> <li>The CCC's failure to ensure that the targets of government agencies are in line with the climate change action plan, specifically on renewable energy</li> </ul>	RA 9729 (Climate Change Act of 2009) and RA 10121 (Philippine Disaster Risk Reduction and Management Act of 2010).
	<ul style="list-style-type: none"> <li>The DOE's preferential bias to coal over RE (for instance in allocation of financial resources/budget)</li> </ul>	National Climate Change Action Plan;  Framework on Climate Change Adaptation;  Philippine Development

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		Plan Circular # 2013-05-0009
	<ul style="list-style-type: none"> <li>The National Economic Development Authority's (NEDA) omission of environmental economics for proper valuation of ecosystem services in investments relating to fossil fuels</li> <li>The failure of all agencies to integrate environmental economics in all their development plans and programs</li> </ul>	Philippine Economic-Environmental and Natural Resources Accounting System (PEENRA System) -- EO 406 series of 1997
	<ul style="list-style-type: none"> <li>The Department of Environment and Natural Resources' (DENR) continued violation of the Clean Air Act</li> <li>The DENR's failure to regulate carbon dioxide emissions and other GHG emissions</li> </ul>	RA 8749 (Clean Air Act of 1999)
	<ul style="list-style-type: none"> <li>The Philippine Council for Sustainable Development's (PCSD) failure to integrate all pertinent policies relating to climate change and biodiversity conservation</li> </ul>	Executive Order No. 15, s. 1992 (Creation of the PCSD)  PA 21 (Philippine Agenda 21)
	<ul style="list-style-type: none"> <li>The PCSD's failure to integrate principles of sustainable development and climate change impacts and response and disaster risk reduction and management (DRRM)</li> </ul>	RA 9729 (Climate Change Act of 2009); RA 10121 (DRRM Law); PA 21; Executive Order No. 15, s. 1992
	<ul style="list-style-type: none"> <li>The Department of Interior and Local Government's (DILG) failure to exercise oversight over LGUs in the implementation of Clean Air Act and Solid Waste Management (action plan on air quality management)</li> </ul>	RA 7160 (Local Government Code of the Philippines)  Executive Order 292, s. 1987 (Administrative Code of 1987)
	<ul style="list-style-type: none"> <li>The DENR's failure to constitute</li> </ul>	RA 8749 (Clean Air Act)

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	air shed board as policy-making body for air quality management	
	<ul style="list-style-type: none"> <li>Impacts on marine ecosystem, biodiversity and protected areas</li> </ul>	<p>RA 8550 (Fisheries Code of the Philippines); RA 9275 (Clean Water Act of 2004);</p> <p>RA 7586 (National Integrated Protected Areas Act of 1992 – NIPAS);</p> <p>RA 9147 (Wildlife Resources Conservation and Protection Act);</p> <p>Presidential Proclamation No. 756, s. 1996 declaring Sarangani Bay and portions of the municipal waters of Maitum, Kiamba and Maasim, Sarangani Province as protected seascape</p>
	<ul style="list-style-type: none"> <li>Impacts on freshwater</li> </ul>	<p>RA 9275 (Clean Water Act);</p> <p>RA 8550 (Fisheries Code)</p>
	<ul style="list-style-type: none"> <li>Impact on clean air (carbon dioxide, mercury, arsenic, chromium, cadmium, lead, SO<sub>x</sub>, NO<sub>x</sub>)</li> </ul>	RA 8749 (Clean Air Act)
	<ul style="list-style-type: none"> <li>The DENR's failure to monitor emissions of coal-fired power plants (CFPP)</li> </ul>	RA 8749 (Clean Air Act)
	<ul style="list-style-type: none"> <li>Impacts on land and agriculture</li> </ul>	<p>1987 Philippine Constitution Article XIII;</p> <p>RA 9003 (Ecological Solid Waste Management Act of 2000);</p> <p>RA 6657</p>

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		(Comprehensive Agrarian Reform Program) amended by RA 7881 (An Act Amending Certain Provisions in RA 6657
	<ul style="list-style-type: none"> <li>The DENR EMB’s failure to release an Environmental Impact Statement (EIS) system</li> </ul>	<p>RA 8749 (Clean Air Act);</p> <p>RA 9275 (Clean Water Act);</p> <p>RA 1586 (EIS Law) ;</p> <p>1987 Philippine Constitution, Article III, Section 7 (Right to information on matters of public concern; access to official records, documents and papers pertaining to official acts, transactions or decisions as well as to government research data used as basis for policy development)</p>
	<ul style="list-style-type: none"> <li>Failure of the Office of the Exec Secretary to implement the laws, control and supervision over cabinet secretaries</li> </ul>	Executive Order 292, s. 1997 (Administrative Code); RA 9729 (Climate Change Act)

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The Philippine Clean Air Act of 1999 (Republic Act No. 8749) and the Ecological Solid Waste Management Act of 2000 (Republic Act No. 9003) state that any citizen may file an appropriate civil, criminal or administrative action in the proper court against:

“(a) any person who violates or fails to comply with the provisions of the Act or its implementing rules and regulations,

(b) the DENR or other implementing agencies with respect to orders, rules, and regulations issued that are inconsistent with the Act, or

(c) any public officer who willfully or grossly neglects the performance of an act specifically enjoined as a duty by the Act or its implementing rules and regulations, abuses his authority in the performance of his duty, or in any manner improperly performs his duties.”

Moreover, the courts must exempt such actions from payment of filing fees.

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**ANNEX 1. PH Coal-Fired Power Plants, TOTAL**

Power plant name	Capacity, MW	Number of units	Status	Province	City & District
PAGBILAO	735	2	in operation	Quezon (CALABAR ZON)	Pagbilao
SUAL	1294	2	in operation	Pangasinan (Ilocos)	Sual
CALACA	600	2	in operation	Batangas (CALABAR ZON)	Calaca
MASINLOC	660	2	in operation	Zambales (C Luzon)	Masinloc City
NAGA CITY-1	105	2	in operation	Cebu (C Visayas)	Barrio Colon (Naga)
QUEZON	511	1	in operation	Quezon (CALABAR ZON)	Mauban
PANIAN MINE	15	2	in operation	Cebu (C Visayas)	Semirara Island
TOLEDO SANGI	339.25	7	in operation	Cebu (C Visayas)	Brgy Daanlungsod - Toledo City
MABALACAT MILL	52	1	in operation	Pampanga (C Luzon)	Mabalacat
MINDANAO STEAG	232	2	in operation	Misamis Oriental (NMindinao)	Balacanas Villanueva
CALUMPIT MILL	24	1	in operation	Bulacan (Central Luzon)	Calumpit
NAGA CITY-2	206	2	in operation	Cebu (C Visayas)	Barrio Colon (Naga)
ILOILO CITY PEDC	164	2	in operation	Iloilo (W Visayas)	Ingore Lapaz - Iloilo City
DAVAO THERMA	300	2	under construction	Davao del Sur (Davao)	Brgy Inawayan -

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					Sta Cruz
TOLEDO SANGI	82	1	under construction	Cebu (C Visayas)	Brgy Daanlungsod - Toledo City
BATAAN REFINERY	70	2	under construction	Bataan (Central Luzon)	Limay
MARIVELES	600	2	under construction	Bataan (Central Luzon)	Bgy Alasasin
PAGBILAO	400	1	Planning	Quezon (CALABAR ZON)	Pagbilao
SUAL	600	1	Planning	Pangasinan (Ilocos)	Sual
BATANGAS BAY	300	1	Planning	Batangas (CALABAR ZON)	Pinamucan
CALACA	600	4	Planning	Batangas (CALABAR ZON)	Calaca
MASINLOC	600	2	Planning	Zambales (C Luzon)	Masinloc City
QUEZON	500	1	Planning	Quezon (CALABAR ZON)	Mauban
ISABEL COPPER PLANT	60	1	Planning	Leyte (E Visayas)	Isabel
RIO TUBA MINE	8	1	Planning	Palawan (Mimaropa)	Balaraza
EDONDO PENINSULA	600	2	Planning	Zambales (C Luzon)	Subic - Olonganpo
PANAY COAL	100	2	Planning	Iloilo (W Visayas)	Barotac Viejo
TAGALUAN COAL	68	1	Planning	Misamis Oriental	Tagaloan

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				(NMindinao)	
PULUPANDAN	50	1	Planning	Negros Occidental (W Visayas)	Pulupandan
BATAAN REFINERY	70	2	Planning	Bataan (Central Luzon)	Limay
MABALACAT MILL	52	1	Planning	Pampanga (C Luzon)	Mabalacat
MINDANAO STEAG	150	1	Planning	Misamis Oriental (NMindinao)	Balacanas Villanueva
ISABELA COAL	50	1	Planning	Isabela (Cagayan Valley)	Cauayan
CONCEPCION SEMIARA	90	3	Planning	Iloilo (W Visayas)	Concepcion
SULTAN KUDARAT	200	1	Planning	Sultan Kudarat (SOCCSK SARGEN)	
KAMANAGA	200	2	Planning	Sarangani (SOCCSK SARGEN)	Massim
GENERAL SANTOS SMEC	300	1	Planning	South Cotabato (SOCCSK SARGEN)	Barangay Calumpang
PALAWAN SINAR MAS	400	2	Planning	Palawan (Mimaropa)	
CALACA SLTEC	270	2	Planning	Batangas (CALABAR ZON)	Calaca
SAN RAMON ZAMBOANGA	100	1	Planning	Zamboanga City (Zamboanga)	San Ramon
MANILA NORTH	600	1	Planning	Metro Manila (NCR)	

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SUBIC FREEPORT-2	200	1	Planning	Zambales (C Luzon)	Subic - Olonganpo
LUMBOG	100	1	Planning	Zamboanga Sibugay (Zamboanga)	Imelda
CAUAYAN	100	1	Planning	Isabela (Cagayan Valley)	Cauayan
CADIZ CITY PORT	50	1	Planning	Negros Occidental (W Visayas)	Cadiz City
ILOILO COAL	270	2	Planning	Iloilo (W Visayas)	
NARRA COAL	30	2	Planning	Palawan (Mimaropa)	Brgy Panacan - Narra
Davao del Norte 20 MW Circulating Fluidized Bed Biomass-Coal Fired Thermal Power Plant	20		Planning /indicative		Maco, Davao del Norte
3 X 135 MW FDC-Misamis Circulating Fluidized Bed (CFB) Coal-Fired Power Plant Project	405		Planning /indicative		Phividec Industrial Estate, Villanueva, Misamis Oriental
300 MW SMC Davao Power Plant Project Phase I	300	1	Planning /indicative		Brgy. Culaman, Malita, Davao del Sur
300 MW SMC Davao Power Plant Project Phase II	300	1	planning/indicative		Brgy. Culaman, Malita, Davao del Sur
600 MW SMC Davao Power Plant Project	600	1	Planning /indicative		Brgy. Culaman, Malita, Davao

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Phase III					del Sur
2 X 20 MW FDC Camarines CFB Coal Power Plant	40	2	planning/ indicative		Camarines Sur
300 MW Limay Power Plant Project Phase I	300	1	planning/ indicative		Brgy. Lamao, Limay, Bataan
300 MW Limay Power Plant Project Phase II	300	1	planning/ indicative		Brgy. Lamao, Limay, Bataan
300 MW Limay Power Plant Project Phase III	300	1	planning/ indicative		Brgy. Lamao, Limay, Bataan
1 X 20 MW FDC Danao CFB Coal Power Plant	20	1	planning/ indicative		Danao City, Cebu
300 MW Therma Visayas Energy Project	300	1	planning/ind icative		Brgy. Bato, Toledo City, Cebu

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## Endnotes

<sup>1</sup> <http://www.worldcoal.org/resources/coal-statistics/>

<sup>2</sup> <http://www.worldcoal.org/coal-the-environment/>

<sup>3</sup> <http://www.greenenergyhelpfiles.com/articles/3.htm>

<sup>4</sup> <http://technology.inquirer.net/26733/ph-warned-of-losing-2-5b-in-potential-renewable-energy-investments>

<sup>5</sup> [https://www.doe.gov.ph/doe\\_files/pdf/01\\_Energy\\_Situationer/2010%20Power%20Situationer.pdf](https://www.doe.gov.ph/doe_files/pdf/01_Energy_Situationer/2010%20Power%20Situationer.pdf)

<sup>6</sup> Amory B. Lovins, Cofounder, Chairman and Chief Scientist, "Asia's Accelerating Energy Revolution," Rocky Mountain Institute, RMI Outlet. March 26, 2013. Available at [http://blog.rmi.org/blog\\_2013\\_03\\_26\\_2013\\_Aσίας\\_Accelerating\\_Energy\\_Revolution](http://blog.rmi.org/blog_2013_03_26_2013_Aσίας_Accelerating_Energy_Revolution)

<sup>7</sup> This data on the increased use of coal is borne out by other sources as well. See e.g.: "According to the World Bank in 2010, 34.4 percent of the country's electricity was coal-sourced." Source: "Philippine climate change group defends indefensible," 7 August 2013, CleanBiz.Asia. Available at: [www.cleanbiz.asia/news/philippine-climate-change-group-defends-indefensible#.Uo8Lpxb\\_eZY](http://www.cleanbiz.asia/news/philippine-climate-change-group-defends-indefensible#.Uo8Lpxb_eZY)

<sup>8</sup> Department of Energy website, Frequently Asked Questions page, May 2010. Available at: <http://www.doe.gov.ph/FAQ%27S/coal.htm>

<sup>9</sup> "Energy resources: Coal", Philippine Department of Energy website. Available at: <http://www.doe.gov.ph/ER/Coal.htm>

<sup>10</sup> John Kessels and Paul Baruya, "Coal in the Philippines," Energy Global website, 26 March 2013. (John Kessels is a senior analyst and Paul Baruya is a coal market analyst at the IEA Clean Coal Centre. Their full report is available from the IEA Clean Coal Centre Bookshop). Available at: [http://www.energyglobal.com/news/coal/articles/Coal\\_in\\_the\\_Philippines\\_IEA\\_Clean\\_Coal\\_Centre.aspx](http://www.energyglobal.com/news/coal/articles/Coal_in_the_Philippines_IEA_Clean_Coal_Centre.aspx) [hereinafter Kessels and Baruya, "Coal in the Philippines."]

<sup>11</sup> Department of Energy of the Philippines website. Available at: <http://www.doe.gov.ph/fossil-fuels/coal>

<sup>12</sup> "In terms of overall greenhouse gas (GHGs) emissions, the Philippines is ranked 39th in the world in 2005 with about 142 million tons of carbon dioxide equivalent (MtCO<sub>2</sub>e), excluding emissions due to land use change.1 Principal GHG emissions sources are the power and transport sectors (Figure 5)..." Source: Department of Energy of the Philippines website. Available at: <http://www2.doe.gov.ph/popup/CTF%20Investment%20Plan%20Philippines%20final.pdf>

<sup>13</sup> Desk Study, "Renewable energy in the Philippines: Costly or competitive? Facts and explanations on the price of renewable energies for electricity production" 2013 Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

<sup>14</sup> Erwin L. Corong, "Tariff Reduction, Carbon Emissions and Poverty: An Economy-Wide Assessment for the Philippines," Economy and Environment Program for Southeast Asia (EEPSEA), EEPSEA Research Report 01/2008; DOI:10.1355/AE25-1C

<sup>15</sup> Mongabay, "Mining the Heart of Borneo: coal production in Indonesia," Commentary by Wendy Miles, Rut Dini Prasti H., and Kussaritano. 20 November 2013. Available at: <http://news.mongabay.com/2013/1120-miles-oped-indonesian-coal.html#ywI4Ogka9S92hJkl.99>

<sup>16</sup> Kessels and Baruya, "Coal in the Philippines."

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<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

<sup>19</sup> Sourcewatch, "Philippines and coal," online article. Available at:  
[http://www.sourcewatch.org/index.php/Philippines\\_and\\_coal](http://www.sourcewatch.org/index.php/Philippines_and_coal)

<sup>20</sup> <http://business.inquirer.net/107111/doe-awarding-8-coal-exploration-contracts>

<sup>21</sup> "Coal-Fired Power Plants in the Philippines," JCMiras (Energy, electrical engineering, tech, internet, personal finance, investing, worldwide in one website). 2/1/2009. Available at:  
[www.jcmiras.net/surge/p160.htm](http://www.jcmiras.net/surge/p160.htm)

<sup>22</sup> Official website of the Philippines Department of Energy. Available at  
<http://www.doe.gov.ph/ER/coal.htm>.

<sup>23</sup> Mike Wootton, "Renewable Energy in the Philippine," Energy Biz, For Leaders in the Global Power Industry. June 19, 2013. Available at: <http://www.energybiz.com/article/13/06/renewable-energy-philippines>

<sup>24</sup> "Energy backs Subic coal power project," By Alena Mae S. Flores | Aug. 05, 2013. Available at:  
<http://manilastandardtoday.com/2013/08/05/energy-backs-subic-coal-power-project/>

<sup>25</sup> [https://www.doe.gov.ph/doe\\_files/pdf/01\\_Energy\\_Situationer/2010%20Power%20Situationer.pdf](https://www.doe.gov.ph/doe_files/pdf/01_Energy_Situationer/2010%20Power%20Situationer.pdf)

<sup>26</sup> DJ Yap, "Aquino urged to stop pushing coal power plants," Philippine Daily Inquirer. 22 October 2013. Available at: <http://newsinfo.inquirer.net/512053/aquino-urged-to-stop-pushing-coal-power-plants#ixzz2le32kJY>. See also "Coal plant foes: Aquino misinformed," Philippine Daily Inquirer, July 23rd, 2013. Available at: <http://newsinfo.inquirer.net/451395/coal-plant-foes-aquino-misinformed>

<sup>27</sup> Alena Mae S. Flores, "Energy backs Subic coal power project," Manila Standard Today, 5 August 2013. Available at: <http://manilastandardtoday.com/2013/08/05/energy-backs-subic-coal-power-project/>

<sup>28</sup> "Must use coal, for now: Aquino," Sun Star, 28 June 2011. Available at:  
[www.sunstar.com.ph/cebu/local-news/2011/06/28/must-use-coal-now-aquino-163613](http://www.sunstar.com.ph/cebu/local-news/2011/06/28/must-use-coal-now-aquino-163613)

<sup>29</sup> "President Aquino inaugurates coal fired power plant in La Paz, Iloilo City," 1 April 2011. Available at: [balita.ph/2011/04/01/president-aquino-inaugurates-coal-fired-power-plant-in-la-paz-iloilo-city/](http://balita.ph/2011/04/01/president-aquino-inaugurates-coal-fired-power-plant-in-la-paz-iloilo-city/). See also, Ina Alleco R. Silverio, "Philippines: Environmentalists Step up Protests vs Coal-fired Plants as President Aquino Inaugurates One in Iloilo," *Bulatlat*. 5 April 2011. Available at: [www.ecologicalinternet.org/shared/reader/welcome.aspx?linkid=216382&keybold=carbon%20AND%2020neutral%20AND%2020city](http://www.ecologicalinternet.org/shared/reader/welcome.aspx?linkid=216382&keybold=carbon%20AND%2020neutral%20AND%2020city) or <http://bulatlat.com/main/2011/04/05/environmentalists-step-up-protests-vs-coal-fired-plants-as-president-aquino-inaugurates-one-in-iloilo/>

<sup>30</sup> Anne Marxze D. Umil, "Environmental Destruction, Effects of Climate Change to Worsen in Philippines," Climate Connections, Global Justice Ecology Project Website, (Cross-posted from <http://bulatlat.com/main/2011/01/06/environmental-destruction-effects-of-climate-change-to-worsen-further/>). 6 January 2011. Available at: <http://climate-connections.org/2011/01/06/environmental-destruction-effects-of-climate-change-to-worsen-in-philippines/>

<sup>31</sup> Department of Energy website. Available at: <http://www.doe.gov.ph/fossil-fuels/coal>

<sup>32</sup> David Schlissel, Allison Smith and Rachel Wilson, "Coal-Fired Power Plant Construction Costs," Synapse Energy Economics, 2008. Available at <http://www.synapse-energy.com/Downloads/SynapsePaper.2008-07.0.Coal-Plant-Construction-Costs.A0021.pdf>. See also, HeffaSchücking, Lydia Kroll, YannLouvel and

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Regine Richter, "Bankrolling Climate Change: A Look into the Portfolios of the World's Largest Banks," December, 2011. Urgewald (Urgewald, groundWork, Earthlife Africa Johannesburg and BankTrack).

Available at

[http://www.banktrack.org/download/bankrolling\\_climate\\_change/climatekillerbanks\\_final\\_0.pdf](http://www.banktrack.org/download/bankrolling_climate_change/climatekillerbanks_final_0.pdf)

<sup>33</sup> Neil Jerome C. Morales, "Alsons to secure \$290-million financing for coal-fired power plant," The Philippine Star. 10 September 2012. Available at: [www.investphilippines.info/arangkada/alsons-to-secure-290-million-financing-for-coal-fired-power-plant/](http://www.investphilippines.info/arangkada/alsons-to-secure-290-million-financing-for-coal-fired-power-plant/)

<sup>34</sup> By Amy R. Remo, "Aboitiz's Therma South to build coal-fired power plant in Davao City," Philippine Daily Inquirer, 26 May 2011. Available at: <http://business.inquirer.net/2556/abotiz%e2%80%99s-therma-south-to-build-coal-fired-power-plant-in-davao-city#ixzz2lvpm2Vl>

<sup>35</sup> Amy R. Remo, "Aboitiz Power tapping loans for 2 coal-fired power projects: Agreements expected to be signed in early 2013," Philippine Daily Inquirer, 23 July 2012. Available at: <http://business.inquirer.net/72725/abotiz-power-tapping-loans-for-2-coal-fired-power-projects#ixzz2m1PsZTxu>

<sup>36</sup> "Aboitiz Power to build new Philippine power plants," Asian Power, 15 Feb 13. Available at: <http://asian-power.com/project/news/abotiz-power-build-new-philippine-power-plants#sthash.8jzxUpuA.dpuf> Some estimates are a bit lower. See e.g., "According to Aboitiz, the total budgeted capital expenditure for the Subic power project was \$1.1 billion, of which 75 percent will be funded through non-recourse financing while the remaining 25 percent will be funded through equity infusion. Co-lead arrangers for the planned financing are First Metro, BDO Capital and PNB Capital." in the article by Amy R. Remo, "Aboitiz Power tapping loans for 2 coal-fired power projects: Agreements expected to be signed in early 2013," Philippine Daily Inquirer, 23 July 2012. Available at: <http://business.inquirer.net/72725/abotiz-power-tapping-loans-for-2-coal-fired-power-projects#ixzz2m1PsZTxu>

<sup>37</sup> <http://business.inquirer.net/98523/ayala-corp-acquires-stake-in-mariveles-coal-fired-power-plant>

<sup>38</sup> For original investment, see Cesar Tordesillas, "Philippines' Ayala Corp. pursues 135MW clean-coal power project," 21 September 2012. Available at: [asian-power.com/project/more-news/philippines-ayala-corp-pursues-135mw-clean-coal-power-project](http://asian-power.com/project/more-news/philippines-ayala-corp-pursues-135mw-clean-coal-power-project). For pull out, see Krista Angela M. Montealegre, "Ayala group pulls out of Iloilo coal-fired power plant project," InterAksyon, 14 May 2013. Available at: [www.interaksyon.com/business/61712/ayala-group-pulls-out-of-iloilo-coal-fired-power-plant-project](http://www.interaksyon.com/business/61712/ayala-group-pulls-out-of-iloilo-coal-fired-power-plant-project): ACEHI "sold its interest in Palm Concepcion Power Corp (PCPC) and Panay Consolidated Land Holdings Corp (PCLHC) to Palm Thermal Consolidated Holdings Corp, a wholly owned unit of A Brown"

<sup>39</sup> Krista Angela M. Montealegre, "Ayala group pulls out of Iloilo coal-fired power plant project," InterAksyon, 14 May 2013. Available at: [www.interaksyon.com/business/61712/ayala-group-pulls-out-of-iloilo-coal-fired-power-plant-project](http://www.interaksyon.com/business/61712/ayala-group-pulls-out-of-iloilo-coal-fired-power-plant-project)

<sup>40</sup> "SMC unit allots \$1.5 B for 2 power plants," The Philippines Star, 22 May 2013. Available at: <http://www.philstar.com/business/2013/05/22/944750/smc-unit-allots-1.5-b-2-power-plants>. Exchange rate of USD1=PHP44.3876.

<sup>41</sup> Ibid.

<sup>42</sup> "Factbox: Power projects in the Philippines," Reuters. 17 June 2013. Available at: <http://www.reuters.com/article/2013/06/17/us-philippines-power-factbox-idUSBRE95G15B20130617>

<sup>43</sup> Ina Alleco R. Silverio "Environmentalists Step up Protests vs Coal-fired Plants as President Aquino Inaugurates One in Iloilo," Bulatlat, 5 April 2011. Available at:

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<http://bulatlat.com/main/2011/04/05/environmentalists-step-up-protests-vs-coal-fired-plants-as-president-aquino-inaugurates-one-in-iloilo/>

<sup>44</sup> “The Hazardous Masinloc Coal-Fired Power Plant: ADB Development Debacles,” 2 February 2008, Blog by NGO Forum on the ADB. Available at

<http://developmentdebacles.blogspot.com/2008/02/hazardous-masinloc-coal-fired-power.html> [hereinafter NGO Forum on the ADB, “The Hazardous Masinloc Coal-Fired Power Plant”]

<sup>45</sup> “Cooling on coal,” Philippine Daily Inquirer, 29 October 2012. Available at <http://opinion.inquirer.net/39740/cooling-on-coal> Exchange rate of USD1=PHP44.3876.

<sup>46</sup> <https://www.doe.gov.ph/exploration-development/coal-statistics/404-historical-coal-importation>

<sup>47</sup> DoEportal: Official website of the Philippine Department of Energy, “Geothermal Statistics,” available at [http://www.doe.gov.ph/ER/GeoStat-geoenergy\\_performance.htm](http://www.doe.gov.ph/ER/GeoStat-geoenergy_performance.htm) or <http://www.doe.gov.ph/renewable-energy-statistics/geothermal-statistics/412-phil-geothermal-energy>

<sup>48</sup> Posadas & Maniego 2012. Exchange rate of USD1=PHP44.3876

<sup>49</sup> <http://www.worldcoal.org/coal/market-amp-transportation/>

<sup>50</sup><sup>50</sup> Article 2 on Declaration of Principles and State Policies, Section 16 stipulates that the State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature, [http://www.unescap.org/drpad/vc/orientation/legal/constit\\_phl.htm](http://www.unescap.org/drpad/vc/orientation/legal/constit_phl.htm). See <http://www.thecorpusjuris.com/laws/constitutions/item/1897-biac-na-bato-constitution.html> ; see also Wikipedia, [en.wikipedia.org/wiki/Constitution\\_of\\_the\\_Philippines](http://en.wikipedia.org/wiki/Constitution_of_the_Philippines); see also The Official Gazette, <http://www.gov.ph/the-philippine-constitutions/the-1987-constitution-of-the-republic-of-the-philippines/>

<sup>51</sup> <http://www.da.gov.ph/images/PDFFiles/LawsIssuances/RA/fishcode.pdf>

<sup>52</sup> [http://www.iea-coal.org.uk/documents/82556/7846/Philippines: “The Philippines Clean Air Act of 1999 \(Republic Act No. 8749\) outlines the government’s measures to reduce air pollution and incorporate environmental protection into its development plans. It relies heavily on the polluter pays principle and other market-based instruments to promote self-regulation among the population. It sets emission standards for all motor vehicles and issues pollutant limitations for industry. Emission limit values are laid down by The Department of Environment and Natural Resources, Philippines as ‘Implementing Rules and Regulations for Philippine Clean Air Act of 1999’. These rules and regulations shall apply to all industrial emissions and other establishments which are potential sources of air pollution.”](http://www.iea-coal.org.uk/documents/82556/7846/Philippines%3A+The+Philippines+Clean+Air+Act+of+1999+(Republic+Act+No.+8749)+outlines+the+government%27s+measures+to+reduce+air+pollution+and+incorporate+environmental+protection+into+its+development+plans.+It+relies+heavily+on+the+polluter+pays+principle+and+other+market-based+instruments+to+promote+self-regulation+among+the+population.+It+sets+emission+standards+for+all+motor+vehicles+and+issues+pollutant+limitations+for+industry.+Emission+limit+values+are+laid+down+by+The+Department+of+Environment+and+Natural+Resources,+Philippines+as+%27Implementing+Rules+and+Regulations+for+Philippine+Clean+Air+Act+of+1999%27.+These+rules+and+regulations+shall+apply+to+all+industrial+emissions+and+other+establishments+which+are+potential+sources+of+air+pollution.) The law makes the Environmental Management Bureau of the DENR responsible for managing air quality, and adjudicating cases of air pollution. The Clean Air Act requires the DENR to make available to the public on a regular basis reports on air quality and the results of air quality monitoring. It also directs the department to set up an information network for data storage, retrieval and exchange.

<sup>53</sup> The LawPhil project, Arrelano Law Foundation, Philippines Laws and Jurisprudence Databank: [http://www.lawphil.net/statutes/repacts/ra2001/ra\\_9003\\_2001.html](http://www.lawphil.net/statutes/repacts/ra2001/ra_9003_2001.html)

<sup>54</sup> [http://www.lawphil.net/statutes/repacts/ra2004/ra\\_9275\\_2004.html](http://www.lawphil.net/statutes/repacts/ra2004/ra_9275_2004.html) The Clean Water Act states it will “promote public information and education and to encourage the participation of an informed and active public in water quality management and monitoring,” but never specifies how this information should be provided.

<sup>55</sup> [http://www.unhabitat.org/downloads/docs/12687\\_1\\_595438.pdf](http://www.unhabitat.org/downloads/docs/12687_1_595438.pdf)

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<sup>56</sup> Michael Lim Ubac, "UN lauds Philippines' climate change laws 'world's best,'" *Philippine Daily Inquirer*, May 4th, 2012. <http://globalnation.inquirer.net/35695/un-lauds-philippines%E2%80%99-climate-change-laws-%E2%80%98world%E2%80%99s-best%E2%80%99#ixzz2ljd1aDCI>

<sup>57</sup> "Bridging The Access Gap: Evaluating the Foundations of Environmental Governance Report on the Case Studies on Access to Information, Participation, and Justice on Environmental Decision-making." (Consolidated Report: Case Studies on Access to Information, Participation, and Justice on Environmental Decision-making) By The Access Initiative – Philippines. With the support of the World Resources Institute, Foundation for the Philippine Environment, and Peace and Equity Foundation. Manila, December 2007.

<sup>58</sup> A raft of other laws exist whose spirit runs counter to the goal of environmental protection, such as the Downstream Oil Industry Deregulation Act of 1996 (RA 8180); or the Biofuels Act of 2006 (RA 9367)

<sup>59</sup> Anne Marxze D. Umil, "Environmental Destruction, Effects of Climate Change to Worsen in Philippines," By Global Justice Ecology Project. January 6, 2011. Cross-posted from Bulatlat.com and <http://climate-connections.org/2011/01/06/environmental-destruction-effects-of-climate-change-to-worsen-in-philippines/>

<sup>60</sup> Center for Law and Democracy, "Philippines: OGP Asked to Act on RTI Law Failure," February 11, 2013. [www.law-democracy.org/live/philippines-ogp-asked-to-act-on-rti-law-failure/](http://www.law-democracy.org/live/philippines-ogp-asked-to-act-on-rti-law-failure/); see also Philippine based Institute for Freedom of Information, "Open Letter To the OGP Steering Committee," 8 February 2013. [www.law-democracy.org/live/wp-content/uploads/2013/02/13.02.08.Phil\\_.FOI-and-OPG.pdf](http://www.law-democracy.org/live/wp-content/uploads/2013/02/13.02.08.Phil_.FOI-and-OPG.pdf)

<sup>61</sup> Dr Jona Razzaque, "Human Rights and the Environment: the national experience in South Asia and Africa," Joint UNEP-OHCHR Expert Seminar on Human Rights and the Environment 14-16 January 2002, Geneva: Background Paper No. 4 [www2.ohchr.org/english/issues/environment/environ/bp4.htm](http://www2.ohchr.org/english/issues/environment/environ/bp4.htm). "Section 16, Article II of the 1987 Constitution states: 'The State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature'. This right along with Right to Health (section 15) ascertains a balanced and healthful ecology. *Minors Oposa v. Sec. of the Department of Environment*, 33 ILM 173 (1994) See also, Antonio G.M. La Vina, 'The Right to a Sound Environment in the Philippines: The Significance of the *Minors Oposa Case*' (1994) *RECIEL* Vol 3, No.4, pg.246-252."