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DIRTY BUSINESS

How coal expansion of the Philippines' biggest energy companies are hindering the country's transition to a low carbon future

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Greenpeace is a global, independent campaigning organization that uses peaceful protest and creative communication to expose global environmental problems and promote solutions that are essential to a green and peaceful future.

Greenpeace has been present in the Philippines since 2000, working to safeguard the constitutional rights of Filipinos to a balanced and healthful ecology.

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Introduction

ON DECEMBER 12, 2015, Parties to the United Nations Framework Convention on Climate Change (UNFCCC) adopted the Paris Agreement, which brought all nations into a common cause of undertaking ambitious efforts to keep global temperature rise well below 2 degrees Celsius over pre-industrial levels, and to pursue further efforts to limit the temperature increase to 1.5 degrees Celsius. This long-term goal requires, among others, a rapid decarbonization of the global power sector.

The Philippines, for its part, has committed through its Nationally Determined Contribution (NDC) to a conditional target of 70% emissions reduction below business-as-usual (BAU) levels by 2030. Further, the 2017-2040 Philippine Energy Plan (PEP) highlights the promotion of a low-carbon future as one of its energy sector strategic directions.[1] To achieve these goals, emissions from fossil fuel combustion need to decline rapidly.

At present, however, the country's energy mix still highly favors fossil fuels, with

GN Power Mariveles Coal Plant

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coal taking up the largest share of energy generation. Coal is not clean, not cheap and not sustainable.[2] Investing in coal is investing in the climate crisis that is already impacting the lives and livelihoods of millions of Filipinos, and costing Filipino taxpayers billions every year. Yet, current data on the Philippine energy sector reveals that coal will continue to proliferate in the following years as long as government policies remain favorable to coal facilities, and if proposed private sector-initiated power projects will be permitted to operate.

The country's biggest energy companies (based on the highest total installed capacity of existing and proposed power projects), because of the size and scale of their operations, play a significant role in influencing the shape of the country's current (and future) energy landscape. These companies are: (1) San Miguel Corporation; (2) Aboitiz & Co., Inc.; (3) Lopez Holdings Corporation; (4) Manila Electric Company/Mgen; and (5) DMCI Holdings, Inc.

Philippine Energy Mix

AS OF DECEMBER 2018, coal remains the country's dominant energy source, with a 52.05% share in gross power generation by source in GWh (gigawatt hours). This is followed by renewable energy sources (geothermal, hydro, solar, and wind) with a 22.27% share. In terms of installed capacity, coal also has the highest share, with 39.2%, followed by renewable energy sources with 29.3%. Gross power generation is the total generation of electricity by an electric power plant, while installed capacity is the maximum amount of electricity that the power plant can produce, or the total manufacturer-rated capacity of equipment.[3]

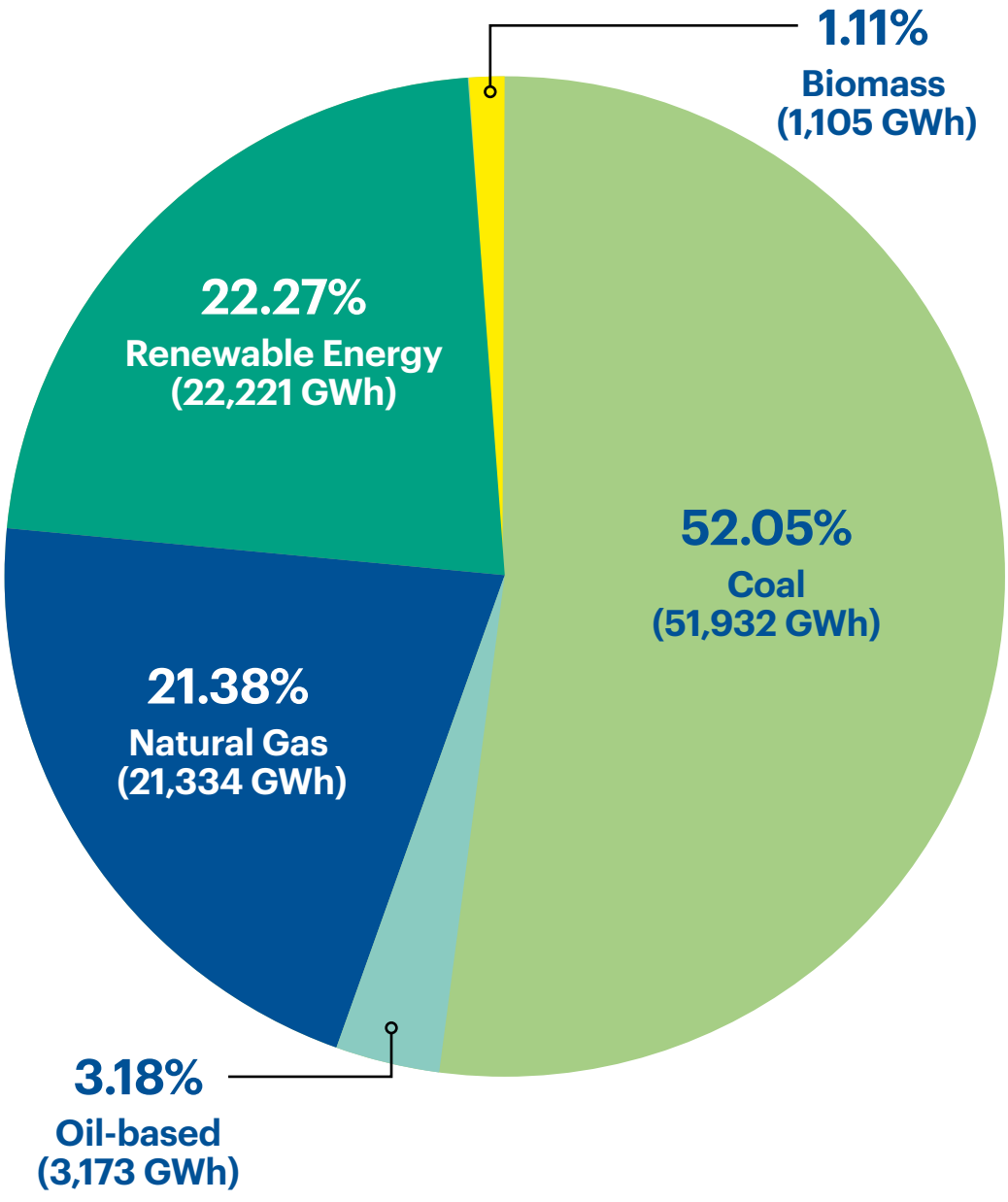

Table 1. Power generation by source in GWh as of December 2018 [4]

Coal Ash Pond in Naga, Cebu

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Coal projects also dominate the list of proposed committed energy projects as of June 30, 2019, with an 80% share in the total installed capacity. On the other hand, proposed indicative energy projects are primarily from renewable energy sources, comprising 48.4% of the total installed capacity. Committed projects are those that have secured project financing, while indicative projects are those that are yet to secure financing, and are still in the initial stages of development.

SOURCE	EXISTING	%	COMMITTED	%	INDICATIVE	%
Coal	**9313.7**	**39.20%**	**4471**	**80%**	**10868**	**25.60%**
Diesel/Oil	**3779**	**15.90%**	**414.6**	**7.40%**	**2004.8**	**4.70%**
Natural Gas	**3452.5**	**14.50%**	**0**	**0%**	**8758**	**20.60%**
Biomass	**258.5**	**1.10%**	**314.2**	**5.60%**	**279.8**	**0.70%**
Renewable Energy	**6955.3**	**29.30%**	**389.5**	**7%**	**20,606**	**48.40%**
Geothermal	*1944*	*8.20%*	*81*	*1.50%*	*416*	*0.90%*
Hydropower	*3688.3*	*15.50%*	*68.5*	*1.20%*	*5081.3*	*11.90%*
Wind	*426.9*	*1.80%*	*0*	*0%*	*3766.4*	*8.90%*
Solar	*896.1*	*3.80%*	*240*	*4.30%*	*11342.9*	*26.70%*

Table 2. Installed capacity of private sector-initiated power projects by source in MW (megawatts) [5]

These numbers show that while the percentage share of RE projects under the indicative stage presents a promising trend, getting these projects through the permitting phase and, eventually, through the grid, remains a challenge.

Top 5 Energy Companies in the Philippines

THE COUNTRY'S BIGGEST ENERGY COMPANIES play a significant role in influencing the shape of the country's current and future energy landscape. These companies, which have the largest shares in the total installed capacity of existing and proposed (committed and indicative) power projects, are: (1) San Miguel Corporation (SMC); (2) Aboitiz & Co., Inc. (Aboitiz); (3) Lopez Holdings Corporation (Lopez Holdings); (4) Meralco PowerGen Corporation (Mgen) and Meralco; and (5) DMCI Holdings, Inc. (DMCI). These companies account for more or less half of the total installed capacity of both existing and proposed power projects as of June 30, 2019.

COMPANY NAME	EXISTING	PROPOSED	TOTAL CAPACITY
SMC	3189	9763	12952
Aboitiz	5874.4	2011.75	7886.15
Lopez Holdings	3702.3	3856.78	7559.08
Meralco	862.86	5504.9	6367.76
DMCI	950	700	1650

Table 3. Top 5 energy companies in terms of existing and proposed (committed and indicative) power projects in megawatts (MW) [6]

Conglomerates SMC, Aboitiz, Lopez Holdings and DMCI own and operate their existing and proposed energy projects as Independent Power Producers (IPPs) or Independent Power Producer Administrators (IPPAs). On the other hand, Manila Electric Company (MERALCO), currently operates through power supply agreements (PSA) with several energy companies. However, it has recently established its own subsidiaries for a number of its proposed energy projects.

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Coal Spill at Holcim Cement Plant in La Union

1 San Miguel Corporation (SMC)

SMC owns a full spectrum of power businesses comprising of IPPA contracts through its holding company, SMC Global Power Holdings. SMC Global Power Holdings was established in 2008, and is now one of the largest power companies in the Philippines, with a diversified portfolio utilizing a mix of coal, natural gas, and hydroelectric power plants. [7]
Its subsidiaries include SMC Consolidated Power Corporation, South Premiere Power Corporation, Angat Hydro Power Corporation, San Roque Power Corporation, and Strategic Power Development Corporation. In 2017, SMC acquired the 630 MW coal-fired power plant in Masinloc, Zambales, from Masinloc Power Partners Co., Ltd. [8]

At present, SMC owns and operates a total of 3,189 MW existing energy projects, accounting for 13.4% of the total existing energy projects in the Philippines. SMC's natural gas plant in Ilijan, Batangas comprises 40% (1,277 MW) of its existing energy portfolio, followed by coal-fired power plants comprising 39.5% (1,259 MW), and hydroelectric plants comprising 20.5% (653 MW). [9]

SMC's proposed energy projects have a total of 9,763 MW of installed capacity – the largest from among all the other energy companies, 50.5% (4,933 MW) of which are sourced from coal, 36.9% (3,600) from natural gas, and 12.6% (1,230 MW) from hydro. Majority of these proposed projects are still in the indicative phase. [10]

2 Aboitiz & Co., Inc. (Aboitiz)

Aboitiz is engaged in power generation, distribution, and retail electricity services through its energy arm, Aboitiz Power Corporation (AboitizPower, AP). Incorporated in 1998, AboitizPower is a publicly listed holding company that, through its subsidiaries and affiliates, is among the biggest players in the Philippine power industry and has interest in a number of privately-owned generation companies and distribution utilities. [11] Its energy portfolio is a mix of coal, diesel, geothermal, hydroelectric, and solar power plants.

As compared to the four other companies, Aboitiz has the broadest network of subsidiaries, which include TeaM Pagbilao Corporation, Pagbilao Energy Corporation, TeaM Sual Corporation, Therma Visayas, Inc., Therma South, Inc., Cebu Private Power Corporation, Therma Marine, Inc., Therma Mobile, Inc., East Asia Utilities Corporation, Davao Light and Power Company, Cotabato Light and Power Company, AP Renewable, Inc., SN Aboitiz Power – Benguet, Inc., SN Aboitiz Power – Magat, Inc., Luzon Hydro Corporation, Hydro Electric Development Corporation, Inc., and Therma Power Visayas, Inc. In 2019, Aboitiz completed its acquisition of GNPower Mariveles Coal Plant Ltd. Co., and GNPower Dinginin Ltd., Co. [12]

Aboitiz is the leading company in terms of capacity share in existing power projects in the Philippines. Of its 5,874.4 MW of total installed capacity, 61.9% (3,638 MW) is coal, making it the company with the largest existing coal portfolio. Interestingly, it also has the largest renewable energy portfolio, with a total of 1,605.1 MW of hydroelectric, geothermal, and solar power. Aboitiz also has a total of 631.3 MW installed capacity of diesel-fired power projects.

Aboitiz's acquisition of the 1,336 MW coal-fired power project of GNPower Dinginin Ltd., Co. adds to its proposed 720.33 MW of hydroelectric and oil/diesel based projects. [13]

3 Lopez Holdings Corporation (Lopez Holdings)

Lopez Holdings, through the First Philippine Holdings Corporation (FPH), is engaged in various industries such as energy development, infrastructure, property development, and green manufacturing.[14] FPH is the parent company of First Gen Corporation, which prides itself as "the leading power generation company in the country with a portfolio consisting only of 100% renewable and clean energy." [15]

Lopez Holdings' subsidiaries include Bukidnon Power Corporation, Prime Meridian Powergen Corporation, First NatGas Power Corporation, First Gas Power Corporation, Bac-Man Geothermal, Inc., Green Core Geothermal, Inc., Energy Development Corporation, EDC Burgos Wind Power Corporation, and First Gen Hydro Power Corporation.

Next to Aboitiz, Lopez Holdings is the second company with the largest share in the existing power projects in the country, with 3,702.3 MW of total installed capacity. True enough, it has no existing and proposed coal-fired power project, as its energy portfolio consists of 2,174.5 MW of natural gas, 1,229.2 MW of geothermal, 150 MW of wind, 134.4 MW of hydroelectric, 7.3 MW of diesel, and 6.9 MW of solar power. From among the four other companies, only Lopez Holdings owns and operates a wind turbine.

Lopez Holdings' proposed energy projects remain dominated by renewable energy, accounting for 55.7% (2,146.78 MW) of its 3,856.78 MW proposed energy projects. The remaining 1,710 MW is sourced from natural gas.

4 Manila Electric Company (MERALCO) and MGen

Meralco is the largest private sector electric distribution utility company in the Philippines, with a franchise area of over 9,675km2. To engage in the power generation business, it established the Meralco Powergen Corporation (MGen) as its wholly-owned subsidiary. Incorporated in 2010, MGen is one of the newest players in power generation. [16]

While Meralco is yet to operate as an IPP or IPPA, it has consistently been a key player in the energy industry through its power supply agreements (PSAs) with various IPPs and IPPAs. Meralco also partners with Repower Energy Development Corporation, a subsidiary of Pure Energy Holdings Corporation, which owns, operates, and develops a number of renewable energy projects in the country.

At present, Meralco is involved in 708.5 MW of existing coal-fired power plants and 153.2 MW of diesel-fired power plants, primarily through its partnership with GBP Corporation. It is also involved in the existing 1.16 MW hydroelectric power plant owned and operated by Pure Energy Hydro Corporation. [17]

For its proposed energy projects, particularly coal, Meralco/Mgen has established Atimonan One Energy (A1E) Corporation, and has partnered with St. Raphael Power Generation Corporation (SRPGC), San Buenaventura Power Ltd., Co. (SBPL), Redondo Peninsula Energy, Inc. (RPEI), SMC Global Power Holdings, and GBP Corporation, bolstering its coal portfolio to a total of 5,470 MW of installed capacity. Meralco/Mgen also has shares in the 34.9 MW proposed hydroelectric power plant of Pure Energy Hydro Corporation, and has recently partnered with PowerSource First Bulacan Solar, Inc. for a 50 MW solar project in San Miguel, Bulacan, through its RE arm, MGen Renewable Energy, Inc. (MGreen).[18] In total, Meralco/Mgen has total proposed energy project of 5,504.9 MW of installed capacity.

5 DMCI Holdings, Inc. (DMCI)

DMCI is a holding company engaged primarily in the business of construction. Recently, it expanded its business organization through its involvement in the energy and mining sectors. The energy arm of DMCI operates through Semirara Mining and Power Corporation (SMPC).

Its subsidiaries include SEM-Calaca Power Corporation and Southwest Luzon Power Generation Corporation, which are both owners, operators, and proponents of coal-fired power projects. DMCI used to own Palm Concepcion Power Corporation, which operates a 135 MW coal-fired power plant in Iloilo, until it was acquired by A. Brown Co. [19]

At present, DMCI has an existing energy portfolio consisting of 94.7% (900 MW) coal and 5.3% (50 MW) diesel. Further, it has a proposed 700 MW coal-fired power project in Calaca, Batangas.

Coal Spill at Holcim Cement Plant in La Union

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Commitments & Pronouncements on Energy Transition

COMPANY	COMMITMENT(S)	SOURCE	CAPACITY	TIMEFRAME
SMC	to expand its renewable energy portfolio	Hydroelectric, wind, battery storage, tidal power, biomass	1,200	By 2024
	to convert its CFB technology into biomass power facilities and to replace coal with energy sourced from biomass	Biomass	NA	NA
Aboitiz	to continue to ramp up its RE portfolio	solar, wind, hydroelectric, biomass	NA	NA
	to further expand its Cleanergy portfolio	Solar	450 to 700	NA
	to have more concrete developments for its overseas expansion in its power business	NA	4000	By 2020
Lopez Holdings	not to invest, build nor develop any coal-fired power plant in the country	NA	NA	NA
MERALCO	to join the shift to renewable energy	Solar, wind, run-off-river hydro	1000	By 2024 to 2026
DMCI	In 2015, DMCI committed to include RE in its energy portfolio	Hydropower, biomass	NA	NA

*sources are cited in the section below.

Table 4. Renewable energy commitments of the 5 companies

FOLLOWING THE SIGNING INTO LAW OF REPUBLIC ACT NO. 9513 or the Renewable Energy Act of 2008, and in recognition of renewable energy as an essential part of the country's low emissions development strategy, the Department of Energy (DOE) launched the National Renewable Energy Program (NREP), which outlines the policy framework enshrined in the said law. According to DOE, the NREP signals the "big leap from fragmented and halting RE initiatives into a focused and sustained drive towards energy security and improved access to clean energy." [20] Further, the Board of Investments (BOI) has urged more businesses to invest in renewable energy as part of its "greening" initiative. [21] More recently, President Rodrigo Duterte, in his 2019 State of the Nation Address (SONA), called for the fast-tracking of RE development to reduce the country's dependence on coal. [22] In line with these pronouncements, key players in the private sector have also vowed to a shift away from fossil fuels and to pursue renewable energy investments.

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Coal Spill at Holcim Cement Plant in La Union

In 2018, SMC confirmed its plans to expand its energy portfolio through an additional 10,000 MW in renewable energy capacity in the next ten years, comprising hydroelectric, wind, battery storage, and tidal power sources. It, however, is not pursuing investment in solar energy due their perception of "low power generation availability." [23] SMC also planned to increase its biomass energy projects through agricultural waste products, such as rice husks, as a replacement for coal energy. According to SMC, it will convert its existing circulating fluidized bed (CFB) technology into biomass power facilities. [24] In 2019, SMC released another pronouncement, targeting to add 1,200 MW of renewable energy to its portfolio in the next five years. It also affirmed its commitment to replace coal with energy sourced from rice husks. [25]

To expand its current portfolio of renewable energy assets, Aboitiz has entered into several key RE projects. In 2018, Aboitiz announced that it will continue to "ramp up" its renewable energy portfolio, consistent with its strategy of "achieving a balanced mix of energy sources for the country." [26] In 2019, Aboitiz pronounced that it is already preparing to expand its Cleanergy portfolio by banking on possible solar developments. It is looking at an opportunity of 450 to 700 MW of solar power. [27] Meanwhile, Aboitiz has not made any commitment as to doing away with coal-fired power projects.

In 2016, Lopez Holdings made a categorical announcement in its Annual Shareholders Meeting that its group of companies would not invest, build, nor develop any coal-fired power plants in the country. [28] On January 2019, Lopez Holdings was named among the world's top 200 biggest and greenest companies, called the Carbon Clean 200, [29] as it remained firm in its commitment to build clean energy projects with the goal of displacing coal-fired power plants in the equation.

Alongside its continuous push for so-called "clean coal" for its array of baseload power plants, Meralco has manifested that it was joining the shift to renewable energy, particularly large-scale RE projects. [30] On June 2019, Meralco said that it will develop 1,000 MW of RE projects in the next five to seven years, through its subsidiary, MGreen. However, on September 2019, Meralco, through its officers, said that a no-coal scenario is not possible right away, further arguing that while the Philippine energy sector is currently transitioning to low carbon, and eventually, to zero carbon, the country's power grid, at present, is not suited to handle RE projects alone. [31] Again, in October of the same year, Meralco said that its RE arm, MGreen, is already looking to develop PHP 10-billion worth of solar projects.

DMCI also planned to pursue renewable energy power projects in off-grid areas in Southern Luzon and Mindanao in 2015. However, two years later, DMCI deferred its plans to venture into renewable energy "until better times." [32] In 2019, DMCI suffered from a 20% drop in net income, primarily because of lower average selling price of coal, among others. DMCI also announced the shutdown of Unit 1 of Sem-Calaca Power Corporation for rehabilitation work, which further increased its replacement power costs. [33] Amidst DMCI's seeming instability, it made no pronouncement as to whether or not it will continue to develop and operate coal-fired power projects.

Analysis

From 2015 (post Paris Agreement) to 2019, existing power projects in the Philippines have followed a business-as-usual (BAU) approach.

The Philippine energy mix since 2015 up to present is still dominated by coal, in terms of installed generating capacity, as well as of actual power generation. Despite an increase in the number of proposed RE projects, very few have made their way into the grid. According to the 2016-2030 Philippine Energy Plan, under the BAU scenario, total coal supply will increase at a faster rate of 6.2% annually, rising by more than twice its 2015 level. On the other hand, coal supply under the clean energy scenario will increase at a slower rate of 2.8%.[34] From 2015 to 2019, there has been an average of more or less 12% increase in installed generating capacity sourced from coal annually.

Clearly, the Philippine energy outlook is far from the clean energy scenario. Based on the NREP, to achieve a low-carbon development scenario for power generation, there has to be an annual capacity addition of at least 1,050 MW of renewable energy from geothermal, hydro, wind, and solar sources from 2016.[35] The current energy scenario of the Philippines falls short of these targets.

SOURCE	2015	2016	2017	2018	2019	% SHARE
Coal	5,963	7,419	8,049	8,844	9313.7	39.20%
Oil-based	3,610	3,616	4,153	4,292	3779	15.90%
Natural Gas	2,862	3,431	3,447	3,453	3452.5	14.50%
Renewable	6,109	6,726	6,855	6,968	6,955	29.30%
Geothermal	*1,917*	*1,916*	*1,916*	*1,944*	*1944*	*8.20%*
Hydroelectric	*3,600*	*3,618*	*3,627*	*3,701*	*3688.3*	*15.50%*
Wind	*427*	*427*	*427*	*427*	*426.9*	*1.80%*
Solar	*165*	*765*	*885*	*896*	*896.1*	*3.80%*
Biomass	221	233	224	258	258.5	1.10%
TOTAL					23,759	

Table 5. Installed Generating Capacity by Source (in MW) 2015-2019 [36]

Climate strike action in front of Limay, Bataan

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Climate strike action in front of Limay, Bataan

© BASILIO SEPE / GREENPEACE

The top five companies will continue to play a dominant role in the Philippine energy landscape.

The existing and proposed energy projects of the top five companies as of June 2019 will most likely keep them in the same position as the country's largest energy producers, at least in the next two to six years, when the proposed projects are targeted to become operational. Because they account for more than half of the current existing and proposed power projects in the country, their behavior in terms of increasing and/or decreasing the shares of energy sources in their portfolios will be crucial in determining whether or not the country can comply with the low-carbon development path.

The proposed power projects of the top five companies, with the exception of Lopez Holdings, still look at coal as the preferred energy source. Meanwhile, RE portfolios have minimally increased.

The 2019 DOE data show that SMC is projected to triple its already existing 1,259 MW installed capacity of coal-fired power plants with the additional 4,933 MW from proposed energy projects sourced from coal, while proposed RE projects will add only 1,230 MW. Aboitiz has twice more proposed coal projects than proposed RE projects. Meralco/Mgen is set to become a major coal proponent, with 5,470 MW of coal projects in the pipeline – the largest among all energy companies – while only proposing 84.9 MW of renewable energy. DMCI proposes 700 MW more coal, and none for RE, except for its off-grid projects. Only Lopez Holdings has a significant installed capacity of proposed RE projects.

COMPANY NAME	PROPOSED COAL PROJECTS	PROPOSED RE PROJECTS
SMC	4,933	1,230
Aboitiz	1,336	675.75
Lopez Group	0	2,146.78
Meralco/MGen	5,470	84.9
DMCI	700	0

Table 6. Proposed coal and RE projects by proponent (in MW) as of June 2019 [37]

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Protest March in Cebu during Global Break Free Global Action

By far, only Lopez Holdings has been compliant with the commitment to significantly expand RE portfolio and not increase coal.
Lopez Holdings has remained firm in keeping a coal-free energy portfolio, and has consistently increased its RE projects, albeit minimally.

For SMC, from its initial ambitious target of 10,000 MW additional renewable energy projects for the next ten years, SMC has re-committed to just an additional 1,200 MW of RE projects in the next five years. While SMC currently has 1,230 MW proposed RE projects, it has not been compliant with its longer-term commitment of replacing coal. SMC's overwhelming proposed coal portfolio renders the achievement of this goal unlikely. For Aboitiz, there has been no significant "ramping up" of its Philippine RE portfolio, as it has focused more on maximizing RE development opportunities abroad, particularly in Vietnam. [38]

As a new player in the power generation sector, Meralco/Mgen's commitment to add 1,000 MW of RE to its portfolio, mostly from solar, wind, and run-off-river hydro sources, over the next five to seven years seems promising, but this will be offset by its massive proposed coal projects. Finally, DMCI has no proposed RE projects other than off-grid ones. The declining net income of its mining and energy businesses may be a huge factor.

Meralco/MGen and SMC are dramatically increasing their coal portfolios.
The rapid and dramatic increase of Meralco/MGen's and SMC's proposed coal projects will have serious implications on the country's ability to keep to low-carbon energy development pathway. If these projects will be permitted to operate, conformity to the clean energy scenario is highly unlikely. Meralco/MGen's 1,200 MW A1E coal-fired power project in Atimonan, Quezon, for example, received certification as an energy project of

national significance (EPNS), notwithstanding legal and social hurdles to the project, such as an on-going Church-led opposition to coal-fired power plants in the province, [39] as well as a call for the cancellation of Meralco/MGen PSAs by different groups. [40] This seems to indicate that applications for coal projects are being fast-tracked, in contrast to RE projects which do not seem to receive the same preferential treatment. Meralco/MGen's and SMC's proposed coal projects, alone, account for more or less 67.8% of the total proposed coal projects as of June 2019.

The partial divestment from coal of another energy company, Ayala Corporation, is setting an interesting course.

Ayala Corporation, through its energy arm, AC Energy, is setting an interesting course with its energy portfolio. Aside from a 25% increase on its existing RE projects from 2015, Ayala Corporation has recently been selling and transferring its coal assets. In 2019, Ayala Corporation transferred its entire interest in the 552 MW coal project of GNPower Kauswagan Ltd., Co. in Lanao del Norte. According to Ayala, the change in the company's energy supply projection comes after it sold some of its thermal assets and bought a company with subsidiaries involved in a range of energy projects using diverse energy sources. [41] AC Energy's divestment from the 552 MW coal project is part of its plan to "rebalance" its generation portfolio, as it aims to grow its renewable energy assets with a target of achieving at least 5 GW of attributable renewable energy capacity by 2025. In 2018, Ayala Corporation also entered into an agreement with Aboitiz on the sell down of the former's thermal assets, which include interests in GNPower Mariveles and GNPower Dinginin, both coal-fired generators. [42] This move from Ayala Corporation, a competitive candidate for the biggest energy producers in the country, can be influential in re-directing the energy portfolios of other big companies into keeping with the clean energy scenario.

Other Renewable Energy Players

AMONG THE PROPOSED ENERGY PROJECTS, other energy players are now more inclined to develop renewable energy sources rather than coal. For proposed solar projects, Barracuda Energy Corporation comes second to Solar Philippines in terms of indicative solar projects, with 649.92 MW. As for wind, Tri-Conti ECC Renewables Corporation has five proposed wind power projects in the Visayas region amounting to a total of 325 MW of installed capacity. Three hydroelectric projects are also being proposed by Olympia Violago Water and Power, Inc. in San Mateo, Antipolo, and Rodriguez, Rizal, totalling 650 MW. Meanwhile, Isabela Power Corporation has six proposed hydro projects amounting to a total of 83 MW. However, these projects are overshadowed by the scale of projected coal expansion in the country.

Coal Spill at Holcim Cement Plant in La Union

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Construction of Climate Defenders Camp

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Conclusion

THE PHILIPPINES IS HEAVILY RELIANT ON COAL and will continue to be more so in the future if the proposed coal projects push through. With the increase in coal capacity, RE projects—already pushed to the sidelines by policies that favor coal power generation--will continue to find it difficult to maximize their supposedly larger share in the grid. This is already happening with the increasing number of coal projects in the pipeline vis a vis scant renewable energy projects. The country is also going against the current global trend that favors RE over coal, and is predicted to have the "highest share of coal in the power mix for Southeast Asia in 2030 at 50%." [43]

Although the DOE states they maintain a "technologically neutral" approach, [44] energy mix data and the pronouncements of energy secretary Alfonso Cusi [45] show a clear pro-coal bias. This is despite the directive of President Rodrigo Duterte, in his 2019 State of the Nation address "to fast-track renewable energy (RE) resources" to reduce the country's dependence on coal.

While it is notable that there are promising signs of expansion and commitments by energy companies for renewable energy, this is overshadowed by the rate of growth of coal energy in the past five years.

Irregardless to their current investments, the top five energy companies can either make or break the future of the country's energy landscape. Current commitments for renewable energy development are not enough. These companies must realize and acknowledge that they are hampering the country's pathway to a low carbon future with their existing energy portfolio and must act on it to stop continued coal expansion in the Philippines.

With the current climate crisis whose impacts are felt more deeply by communities in the Philippines compared to those in other parts of the world, it is unjust and dangerous to allow the expansion of coal energy in the country. Doing so will lead to more global climate impacts resulting in economic, environmental and social losses. As such, any discussion on the energy transition should not be limited to energy generation and electricity costs because coal energy has a big impact on the survival of the Filipino people.

Activists in Manila Launch Global 'Break Free' Protests against Fossil Fuels

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Coal Spill at Holcim Cement Plant in La Union

To stop the country's further entrenchment into a future of dirty coal projects, the Philippine government and the five biggest energy companies must act now to enable the country's just transition to a low carbon future. To do this:

1. The DOE should create an ambitious energy transition plan away from coal

A clean energy transition plan should establish a pathway to retire existing coal plants while also shortening the operational lifespan of all coal projects. This energy transition plan should have clear-cut emission reduction targets that will meet the emission reduction target committed by the Philippines with its Nationally Determined Contribution (NDC) of 70% reduction by 2030, and contribute to the global target of limiting temperature increase to 1.5 degrees Celsius. The main source of emission reduction should come primarily from the drastic reduction of coal energy which constitutes the largest source of energy in the Philippines.

To concretize the energy transition plan, the government should review and recalibrate the existing Philippine Energy Plan (PEP) to prioritize renewable energy as the main energy source for the country. From the current energy mix of 29%, its share should increase to more than 50% in the next five years. Coal energy and other fossil fuels such as diesel, oil and natural gas should be limited and reduced drastically.

2. The DOE should remove financial incentives and other forms of support for coal, and impose stricter regulations and fees for existing coal power plants to discourage its continued use

The coal industry has long benefitted from incentives from the government since the 1970s. Existing laws such as Presidential Decree (PD) 1174 provided an advantage for the coal industry to reduce operational cost compared to other energy sources. Based on PD 1174 or the Amendments for the Coal Mining Development Act of 1976,[46] the government awards additional incentives to coal operators through the reimbursement of all operating expenses not exceeding ninety percent of the gross income after deducting all operating expenses.

To hasten the energy transition for renewable energy and to reflect the true cost of coal, the current administration should review and ultimately remove financial incentives and other forms of support for coal energy, and impose stricter regulations and fees for existing coal power plants to discourage its continued use, and expose the true cost of coal energy.

Limay, Bataan

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To further factor in the externalized costs of coal use, the increase of coal tax from 2018 until 2020 [47] should continue and further increase to regulate the expansion of coal by making the operation of coal power plants more expensive. This will add more pressure for energy companies to shift away from coal and other fossil fuel energy sources.

Moreover, the health impacts caused by operating coal plants should be accounted by the current administration led by the Department of Health (DOH) and rural health units. Energy companies should be accountable for the medical expenses of affected communities and the environmental damages caused by coal power plants.

3. Energy generating companies should remove coal from their portfolios, starting with halting all plans for coal expansion, and then planning a phase out of existing coal capacity and replacing this with RE. At present, the energy transition commitments of the biggest power generation companies in the country are lacking. Bigger investments in renewable energy are necessary and also logical considering the real dangers of coal facilities ending up as stranded assets.

Four out of five of the biggest energy companies in the country are heavily invested in coal energy, exposing them to stranded assets in the coming years particularly because it is expected that coal will become more expensive in the coming years as other sources of energy such as wind and solar will be cheaper. This will potentially cost companies millions of pesos and will burden electric consumers due to higher electricity prices because it is legal for energy companies to pass-through operational cost to electric consumer based on the Electric Power Industry Reform Act of 2001. [48]

To avert these potential costs on energy companies and electric consumers, energy companies should immediately balance their energy portfolio by divesting from existing and proposed coal projects and reinvesting in renewable energy projects. They should allocate and prioritize more funds for renewable energy projects and development. Majority of financial investments should be used for the expansion of clean, safe and affordable renewable energy projects.

4. The Philippine government should immediately order a moratorium on all new coal power plants.

Both the government and energy companies should stop the expansion of coal energy by implementing a moratorium on all new coal power plant projects including all forms of coal technology, and in particular, so-called "clean coal technology." This should cover both indicative and committed coal projects in the pipeline. DOE, DENR including energy companies should lead in review and renegotiation of contracts to settle legal and financial concerns.

This should come in the form of an Executive Order (EO) issued by the President of the Philippines. In the meantime, energy companies should create a no coal policy for new and current energy projects.

For projects that have already started construction and set to operate in the next coming years, stricter regulations should be implemented in terms of health and environmental standards. Air pollution standards for coal power plants should be reviewed and revised based on current global standards set by the World Health Organization (WHO).

Stand-up Paddling Break Free Activity in Cebu

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Annex

Other Relevant Data[49]

Power Generation by Source, 2015-2019

SOURE	2015	2016	2017	2018	2019	% SHARE
Coal	5,963	7,419	8,049	8,844	9313.7	39.20%
Oil-based	3,610	3,616	4,153	4,292	3779	15.90%
Diesel					2326	
Oil Thermal					650	
Gas Turbine					803	
Natural Gas	2,862	3,431	3,447	3,453	3452.5	14.50%
Geothermal	1,917	1,916	1,916	1,944	1944	8.20%
Hydroelectric	3,600	3,618	3,627	3,701	3688.3	15.50%
Wind	427	427	427	427	426.9	1.80%
Solar	165	765	885	896	896.1	3.80%
Biomass	221	233	224	258	258.5	1.10%
TOTAL					23,759	

Committed Energy Projects as of 2019

SOURCE	LUZON	VISAYAS	MINDANAO	TOTAL	% SHARE
Coal	3936	135	400	4471	80%
Diesel/Oil	300	114.6	0	414.6	7.40%
Natural Gas		0	0	0	0%
Geothermal	31	50	0	81	1.50%
Hydropower	20.4	23.1	25	68.5	1.20%
Solar	215	0	25	240	4.30%
Wind	0	0	0	0	0%
Biomass	66.2	226.6	21.4	314.2	5.60%
TOTAL				5589.3	

Indicative Energy Projects as of 2019

SOURCE	LUZON	VISAYAS	MINDANAO	TOTAL	% SHARE
Coal	8935	600	1333	10868	25.60%
Diesel/Oil	1866	132.9	5.9	2004.8	4.70%
Natural Gas	8620	138	0	8758	20.60%
Geothermal	310	76	30	416	0.90%
Hydropower	3499.9	728.2	853.2	5081.3	11.90%
Solar	9829.5	703.4	810	11342.9	26.70%
Wind	2048.4	1718	0	3766.4	8.90%
Biomass	128.4	32	119.4	279.8	0.70%
TOTAL				42517.2	

Top 5 Energy Companies in terms of existing and proposed (committed and indicative) energy projects as of 2019

COMPANY NAME	EXISTING	PROPOSED	TOTAL CAPACITY
SMC	3189	9763	12952
Aboitiz	5874.4	2011.75	7886.15
Lopez Group	3702.3	3856.78	7559.08
Meralco	862.86	5504.9	6367.76
DMCI	950	835	1785

Top 5 Energy Companies in terms of existing energy projects (2019)

COMPANY NAME	TOTAL CAPACITY	%	COAL	DIESEL	NAT GAS	RE	GEO	HYDRO	SOLAR	WIND
Aboitiz	5874.4	24.70%	3638	631.3	0	1605.1	682.8	892.8	29.5	0
Lopez Group	3702.3	15.60%	0	7.3	2174.5	1520.5	1229.2	134.4	6.9	150
SMC	3189	13.40%	1259	0	1277	653	0	653	0	0
DMCI	950	4%	900	50	0	0	0	0	0	0
Ayala	926.8	3.90%	270	326.9	0	329.9	0	0	143	186.9

Total installed capacity: 23,758.9 MW

Comparison between coal share pre- and post-Paris Agreement (2015 and 2019 data)

COMPANY NAME	2015 COAL SHARE	2019 COAL SHARE	% INCREASE	PROPOSED
Aboitiz	2208	3638	64.80%	1336
Lopez Group	0	0	0%	0
SMC	770	1259	63.50%	4933
DMCI	600	900	50%	700
MGen	708.5*	708.5	0%	5470

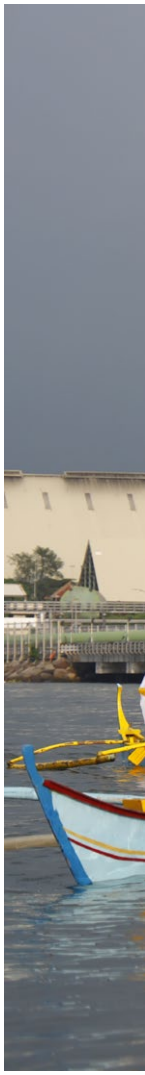
* through Power Supply Agreements and joint-ventures

Comparison between RE share pre- and post-Paris Agreement (2015 and 2019 data)

COMPANY NAME	2015 RE SHARE	2019 RE SHARE	% INCREASE	PROPOSED
Aboitiz	1487.2	1605.1	7.90%	675.75
Lopez Group	1490.8	1520.5	2%	2146.78
SMC	681	653	-4.10%	1230
DMCI	0	0	0.00%	0
MGen	1.16*	1.16	0%	84.9

* through its investments in Global Business Power (GBP) Corporation and Pure Meridia

List of Subsidiaries/ Partners Involved in the Energy Sector



AboitizPower

TeaM Pagbilao Corporation
Pagbilao Energy Corporation
TeaM Sual Corporation
Therma Visayas, Inc.
Therma South, Inc.
Cebu Private Power Corporation
Therma Marine, Inc.
Therma Mobile, Inc.
East Asia Utitilies Corp.
Davao Light and Power Company
Cotabato Light and Power Company
AP Renewable, Inc.
SN Aboitiz Power - Benguet, Inc.
SN Aboitiz Power - Magat, Inc.
Luzon Hydro Corporation
Hydro Electric Development Corporation, Inc.
San Carlos Sun Power, Inc.
Therma Power Visayas, Inc.
GNPower Dinginin Ltd Co. (bought from Ayala in 2019)
GNPower Mariveles (bought from Ayala in 2019)

Lopez Group

Bukidnon Power Corporation
Prime Meridian Powergen Corp.
First NatGas Power Corp.
First Gas Power Corporation
Bac-Man Geothermal, Inc.
Green Core Geothermal, Inc.
Energy Development Corporation
First Gen Bukidnon Power Corporation
EDC Burgos Wind Power Corporation
First Gen Hydro Power Corporation

DMCI Holdings, Inc.

SEM-Calaca Power Corp.
Southwest Luzon Power Generation Corporation
St. Raphael Power Generation Corporation

Climate strike action in front of Limay, Bataan

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Meralco (Subsidiaries, partnerships, and PSAs)

- Redondo Peninsula Energy, Inc.
- Atimonan One Energy
- St. Raphael Power Generation Corporation
- San Buenaventura Power Ltd., Co.
- Global Luzon Energy Development Corporation
- Repower Energy Development through Pure Energy Holdings Corporation
- SMC Global Power Pagbilao
- SMC Global Power Holdings Corp. Mariveles

San Miguel Corporation

- SMC Consolidated Power Corporation
- Petron Corporation
- SMC Consolidated Power Corporation
- South Premiere Power Corp.
- Angat Hydro Power Corporation
- San Roque Power Corporation
- Strategic Power Developmentt Corp
- Masinloc Power Partners (acquired in 2017)

Abbreviations and Glossary

Committed projects
: private sector-initiated power projects which have already secured financial closing

Gross generation
: total generation of electricity by an electrical power plant

Installed capacity
: maximum amount of electricity that the power plant can produce; total manufacturer-rated capacity of equipment

Indicative projects
: private sector-initiated projects which have already applied for Department of Energy (DOE) endorsement of the conduct of the System Impact Study (SIS) but yet to secure financial closing

IPP
Independent Power Producer
: an existing power generating entity not owned by the National Power Corporation (NPC)

IPPA
Independent Power Producer Administrators
: qualified independent entities appointed by Power Sector Assets and Liabilities Management (PSALM) Corporation which shall administer, conserve and manage the contracted energy output of NPC IPP Contracts

NPC
National Power Corporation
: a government corporation created specifically to undertake the development of hydroelectric generation of power and the production of electricity, as well as the transmission of electric power on a nationwide basis

PSA
Power Supply Agreement
: a bilateral agreement between a generation company (GenCo) and a distribution utility (DU) for the purchase and supply of power

PSALM
Power Sector Assets and Liabilities Management Corporation
: a government-owned and controlled corporation created to manage the orderly sale, disposition, and privatization of the (NPC) generation assets, real estate and other disposable assets, and IPP contracts

Main Data Sources

Department of Energy. List of Existing Power Plants. 2019. https://www.doe.gov.ph/list-existing-power-plants (Accessed October 28, 2019).

Department of Energy. Philippine Power Statistics. 2018. https://www.doe.gov.ph/philippine-power-statistics (Accessed October 28, 2019).

Department of Energy. Private Sector Initiated Power Projects. 2019. https://www.doe.gov.ph/private-sector-initiated-power-projects (Accessed October 28, 2019).

References

Asian Development Bank. Pathways to Low-Carbon Development for the Philippines. (Metro Manila: Asian Development Bank, 2017).

Behar, Andrew Heaps, Toby, and Yow, Michael. "2018 Q1 Carbon Clean 200." As You Sow and Corporate Knights. February 15, 2018. https://www.asyousow.org/report/clean200-2018-q1 (Accessed November 8, 2019).

Bugnot, Val. "How a small parish is leading the fight against coal in Quezon," GMA News Online, July 5, 2018. https://www.gmanetwork.com/news/scitech/science/658826/how-a-small-parish-is-leading-the-fight-against-coal-in-quezon/story/ (Accessed November 8, 2019).

Constantino, Fernando K. SMC letter to the Philippine Stock Exchange. July 30, 2018. https://www.sanmiguel.com.ph/files/reports/PSE-SMC_unveils_plan_to_build_10,000_MW_of_renewables_07.30_.18_.pdf (Accessed November 8, 2019).

Department of Energy. Energy Annual Report 2017. 2017. https://www.doe.gov.ph/sites/default/files/pdf/transparency/annual_report_esar_2017.pdf (Accessed October 28, 2019).

Department of Energy. January-June 2016 Power Situation Highlights. 2016. https://www.doe.gov.ph/sites/default/files/pdf/electric_power/2016_power_situation_highlight_jan_to_june.pdf (Accessed October 28, 2019).

Department of Energy. National Renewable Energy Program. https://www.doe.gov.ph/national-renewable-energy-program (Accessed October 28, 2019).

Domingo, Ronnel W. "Ayala unit divests stake in mindanao power project." Philippine Daily Inquirer. July 27, 2019. https://business.inquirer.net/275535/ayala-unit-divests-stake-in-mindanao-power-project#ixzz63b8fekml (Accessed October 28, 2019).

Domingo, Ronnel. "BOI seeks more investments in renewable energy." Philippine Daily Inquirer. March 12, 2016. https://business.inquirer.net/208404/boi-seeks-more-investments-in-renewable-energy (Accessed October 28, 2019).

Duterte, Rodrigo Roa. "Fourth State of the Nation Address." (speech, Quezon City, Philippines, July 22, 2019). Official Gazette. https://www.officialgazette.gov.ph/2019/07/22/rodrigo-roa-duterte-fourth-state-of-the-nation-address-july-22-2019/ (Accessed November 8, 2019).

Greenpeace Southeast Asia - Philippines, True Cost of Coal in the Philippines, 2014, https://www.greenpeace.org/philippines/publication/1259/true-cost-of-coal-in-the-philippines/ (accessed October 28, 2019)

Lectura, Lenie. "No-coal scenario not possible right away." Business Mirror. September 24, 2019. https://businessmirror.com.ph/2019/09/24/no-coal-scenario-not-possible-right-away/ (Accessed October 28, 2019).

Lopez, Federico R. "Keeping the Lights on in the Transition to an All-Renewable Future." (message, October 9, 2019). https://www.lopezgroup.org/index.php/component/content/article/16-csr-initiatives/strategic-philanthropy/288-keeping-the-lights-on-in-the-transition-to-an-all-renewable-future?Itemid=101 (Accessed October 28, 2019).

Rivera, Danessa. "Aboitiz prepares to expand Cleanergy portfolio." The Philippine Star. January 14, 2019. https://www.philstar.com/business/2019/01/14/1884777/aboitiz-prepares-expand-cleanergy-portfolio (Accessed October 28, 2019).

Rivera, Danessa. "Meralco eyes green energy projects." Philippine Daily Inquirer. June 11, 2019. https://business.inquirer.net/272139/meralco-eyes-green-energy-projects (Accessed October 28, 2019).

Rivera, Danessa. "MGen, partners tap SUMEC for Bulacan solar project." The Philippine Star. October 21, 2019. https://www.philstar.com/business/2019/10/21/1961813/mgen-partners-tap-sumec-bulacan-solar-project (Accessed October 28, 2019).

Saulon, Victor V. "Ayala unit advancing plans to build new energy capacity." Business World Online. August 19, 2019. https://www.bworldonline.com/ayala-unit-advancing-plans-to-build-new-energy-capacity/ (Accessed October 28, 2019).

Saulon, Victor V. "DMCI raises capex to over P40B this year." Business World Online. May 16, 2018. https://www.bworldonline.com/dmci-raises-capex-to-over-p40b-this-year/ (Accessed October 28, 2019).

Saulon, Victor V.. "DOE tells budget hearing it is not ruling out nuclear power." BusinessWorld. August 27, 2019. https://www.bworldonline.com/doe-tells-budget-hearing-it-is-not-ruling-out-nuclear-power/ (Accessed October 28, 2019).

Mo, Lingshui, Rawlins, Madeleine, and Zhai, Yongping, "The Impact of Nationally Determined Contributions on the Energy Sector." Asian Development Bank. July 2018. https://www.adb.org/sites/default/files/publication/437896/sdwp-054-nationally-determined-contributions-energy.pdf (Accessed November 8, 2019).

"AboitizPower Corporation Substantial Acquisitions." Philippine Stocks Exchange Edge Portal. 2019. https://edge.pse.com.ph/openDiscViewer.do?edge_no=4aeb4bbb45daba6fefdfc15ec263a54d (Accessed November 8, 2019).

"AboitizPower enters international renewable energy market." AboitizPower. https://aboitizpower.com/article/aboitizpower-enters-international-renewable-energy-market-acquires-wind-power-facility-vietnam/ (Accessed October 28, 2019).

"AboitizPower ramping up renewable energy capacity." Department of Energy. September 10, 2018. https://www.doe.gov.ph/energist/aboitizpower-ramping-renewable-energy-capacity (Accessed November 8, 2019).

"About." Meralco Powergen Corporation. 2019. https://meralcopowergen.com.ph/about/ (Accessed October 28, 2019).

"About Us." A Brown Company. 2013. https://landmatrix.org/media/uploads/abrownphabout-us.pdf (Accessed November 8, 2019).

"About Us." AboitizPower. 2019. https://aboitizpower.com/about-us/a-better-future/ (Accessed October 28, 2019).

"About Us." SMC Global Power. http://www.smcglobalpower.com.ph/the-company.html (Accessed October 28, 2019).

"DMCI Second Quarter Financial Report." DMCI Holdings, 2019. https://www.dmciholdings.com/uploads/disclosures/2019/DMCIHI_058%20Second%20Quarter%20Financial%20Report_Aug%2014.pdf (Accessed November 8, 2019).

"Groups urge energy body to cancel pending PSAs." Philipping Daily Inquirer. February 15, 2019. https://newsinfo.inquirer.net/1086235/groups-urge-energy-body-to-cancel-pending-psas (Accessed November 8, 2019).

"Our Services." First Gen. 2019. https://www.firstgen.com.ph/our-business/our-services/ (Accessed October 28, 2019).

"Power and Energy." Lopez Holdings Corporation. 2015. https://lopez-holdings.ph/portfolio/power-and-energy (Accessed October 28, 2019).

"San Miguel Corporation Substantial Acquisitions." Philippine Stock Exchange Edge Portal. 2018. https://edge.pse.com.ph/openDiscViewer.do?edge_no=26439ca4f4c3e19b43ca035510b6ec2b (Accessed November 7, 2019).

"San Miguel plans power plants' transition to biomass technology." Department of Energy. October 4, 2018. https://www.doe.gov.ph/energist/san-miguel-plans-power-plants%E2%80%99-transition-biomass-technology (Accessed October 28, 2019).

"SMC eyes 1,200 MW power from renewables by 2024." Department of Energy. June 7, 2019. https://www.doe.gov.ph/energist/smc-eyes-1200-mw-power-renewables-2024 (Accessed November 8, 2019).

Endnotes

1 Department of Energy, Energy Annual Report 2017, 2017, https://www.doe.gov.ph/sites/default/files/pdf/transparency/annual_report_esar_2017.pdf (Accessed October 28, 2019)

2 Greenpeace Southeast Asia - Philippines, True Cost of Coal in the Philippines, 2014, https://www.greenpeace.org/philippines/publication/1259/true-cost-of-coal-in-the-philippines/ (accessed October 28, 2019)

3 Department of Energy, January-June 2016 Power Situation Highlights, 2016, https://www.doe.gov.ph/sites/default/files/pdf/electric_power/2016_power_situation_highlight_jan_to_june.pdf (Accessed October 28, 2019)

4 Department of Energy, Philippine Power Statistics, 2019 https://www.doe.gov.ph/philippine-power-statistics (Accessed October 28, 2019)

5 Department of Energy, Private Sector Initiated Power Projects, 2019, https://www.doe.gov.ph/private-sector-initiated-power-projects (Accessed October 28, 2019)

6 Department of Energy, List of Existing Power Plants as of June 30, 2019, https://www.doe.gov.ph/list-existing-power-plants?fbclid=IwAR16io-Ea4vbIey4tuBgMtIe43vVYmFic5adHuo9PlOIk8AqHaXY_VyV7us (Accessed October 28, 2019)

7 "About Us," SMC Global Power, http://www.smcglobalpower.com.ph/the-company.html (Accessed October 28, 2019)

8 "San Miguel Corporation Substantial Acquisitions," Philippine Stock Exchange Edge Portal, 2018, https://edge.pse.com.ph/openDiscViewer.do?edge_no=26439ca4f4c3e19b43ca035510b6ec2b (Accessed November 7, 2019)

9 Department of Energy, List of Existing Power Plants, 2019, https://www.doe.gov.ph/list-existing-power-plants (Accessed October 28, 2019)

10 Department of Energy, Private Sector Initiated Power Projects, 2019

11 "About Us," AboitizPower, 2019, https://aboitizpower.com/about-us/a-better-future/ (Accessed October 28, 2019)

12 "Aboitiz Power Corporation Substantial Acquisitions," Philippine Stock Exchange Edge Portal, 2019, https://edge.pse.com.ph/openDiscViewer.do?edge_no=4aeb4bbb45daba6fefdfc15ec263a54d (Accessed November 8, 2019)

13 "AboitizPower completes purchase in AC Energy's thermal power company," Aboitiz Power, 2019, https://aboitizpower.com/article/aboitizpower-completes-purchase-ac-energys-thermal-power-company/ (Accessed October 28, 2019)

14 "Power and Energy," Lopez Holdings Corporation, 2015, https://lopez-holdings.ph/portfolio/power-and-energy (Accessed October 28, 2019)

15 "Our Services," First Gen, 2019, https://www.firstgen.com.ph/our-business/our-services/ (Accessed October 28, 2019)

16 "About," Meralco Powergen Corporation, 2019, https://meralcopowergen.com.ph/about/ (Accessed October 28, 2019)

17 Department of Energy, List of Existing Power Plants as of June 30, 2019, https://www.doe.gov.ph/list-existing-power-plants?fbclid=IwAR16io-Ea4vbIey4tuBgMtIe43vVYmFic5adHuo9PlOIk8AqHaXY_VyV7us (Accessed October 28, 2019)

18 Danessa Rivera, "MGen, partners tap SUMEC for Bulacan solar project," The Philippine Star, October 21, 2019, https://www.philstar.com/business/2019/10/21/1961813/mgen-partners-tap-sumec-bulacan-solar-project (Accessed October 28, 2019)

19 "About Us," A Brown Company, 2013, https://landmatrix.org/media/uploads/abrownphabout-us.pdf (Accessed November 8, 2019)

20 Department of Energy, National Renewable Energy Program, https://www.doe.gov.ph/national-renewable-energy-program (Accessed October 28, 2019)

21 Ronnel Domingo, "BOI seeks more investments in renewable energy," Philippine Daily Inquirer, March 12, 2016, https://business.inquirer.net/208404/boi-seeks-more-investments-in-renewable-energy (Accessed October 28, 2019)

22 Rodrigo Roa Duterte, "Fourth State of the Nation Address," (speech, Quezon City, Philippines, July 22, 2019), Official Gazette, https://www.officialgazette.gov.ph/2019/07/22/rodrigo-roa-duterte-fourth-state-of-the-nation-address-july-22-2019/ (Accessed November 8, 2019)

23 Ferdinand K. Constantino, SMC letter to the Philippine Stock Exchange, July 30, 2018, https://www.sanmiguel.com.ph/files/reports/PSE-SMC_unveils_plan_to_build_10,000_MW_of_renewables_07.30_.18_.pdf (Accessed November 8, 2019)

24 "San Miguel plans power plants' transition to biomass technology," Department of Energy, October 4, 2018, https://www.doe.gov.ph/energist/san-miguel-plans-power-plants%E2%80%99-transition-biomass-technology (Accessed October 28, 2019)

25 "SMC eyes 1,200 MW power from renewables by 2024," Department of Energy, June 7, 2019, https://www.doe.gov.ph/energist/smc-eyes-1200-mw-power-renewables-2024 (Accessed November 8, 2019)

26 "AboitizPower ramping up renewable energy capacity," Department of Energy, September 10, 2018, https://www.doe.gov.ph/energist/aboitizpower-ramping-renewable-energy-capacity (Accessed November 8, 2019)

27 Danessa Rivera, "Aboitiz prepares to expand Cleanergy portfolio," The Philippine Star, January 14, 2019, https://www.philstar.com/business/2019/01/14/1884777/aboitiz-prepares-expand-cleanergy-portfolio (Accessed October 28, 2019)

28 Federico R. Lopez, "Keeping the Lights on in the Transition to an All-Renewable Future," (message, October 9, 2019), https://www.lopezgroup.org/index.php/component/content/article/16-csr-initiatives/strategic-philanthropy/288-keeping-the-lights-on-in-the-transition-to-an-all-renewable-future?Itemid=101 (Accessed October 28, 2019)

29 Toby Heaps, Michel Yow, Andrew Behar, "2018 Q1 Carbon Clean 200," As You Sow and Corporate Knights, February 15, 2018, https://www.asyousow.org/report/clean200-2018-q1 (Accessed November 8, 2019)

30 Danessa Rivera "Meralco eyes green energy projects," Philippine Daily Inquirer, June 11, 2019, https://business.inquirer.net/272139/meralco-eyes-green-energy-projects (Accessed October 28, 2019)

31 Lenie Lectura, "No-coal scenario not possible right away," Business Mirror, September 24, 2019, https://businessmirror.com.ph/2019/09/24/no-coal-scenario-not-possible-right-away/ (Accessed October 28, 2019)

32 Victor V. Saulon, "DMCI raises capex to over P40B this year," Business World Online, May 16, 2018, https://www.bworldonline.com/dmci-raises-capex-to-over-p40b-this-year/ (Accessed October 28, 2019)

33 "DMCI Second Quarter Financial Report," DMCI Holdings, 2019, https://www.dmciholdings.com/uploads/disclosures/2019/DMCIHI_058%20Second%20Quarter%20Financial%20Report_Aug%2014.pdf (Accessed November 8, 2019)

34 Department of Energy, 2016-2030 Philippine Energy Plan, 2016

35 Asian Development Bank, Pathways to Low-Carbon Development for the Philippines, (Metro Manila: Asian Development Bank, 2017)

36 Department of Energy, List of Existing Power Plants as of June 30, 2019, https://www.doe.gov.ph/list-existing-power-plants?fbclid=IwAR16io-Ea4vbley4tuBgMtIe43vVYmFic5adHuo9PlOIk8AqHaXY_VyV7us (Accessed October 28, 2019)

37 Department of Energy, List of Existing Power Plants as of June 30, 2019, https://www.doe.gov.ph/list-existing-power-plants?fbclid=IwAR16io-Ea4vbley4tuBgMtIe43vVYmFic5adHuo9PlOIk8AqHaXY_VyV7us (Accessed October 28, 2019)

38 "AboitizPower enters international renewable energy market," AboitizPower, https://aboitizpower.com/article/aboitizpower-enters-international-renewable-energy-market-acquires-wind-power-facility-vietnam/ (Accessed October 28, 2019)

39 Val Bugnot, "How a small parish is leading the fight against coal in Quezon," GMA News Online, July 5, 2018, https://www.gmanetwork.com/news/scitech/science/658826/how-a-small-parish-is-leading-the-fight-against-coal-in-quezon/story/ (Accessed November 8, 2019)

40 "Groups urge energy body to cancel pending PSAs," Philipping Daily Inquirer, February 15, 2019, https://newsinfo.inquirer.net/1086235/groups-urge-energy-body-to-cancel-pending-psas (Accessed November 8, 2019)

41 Victor V. Saulon, "Ayala unit advancing plans to build new energy capacity," Business World Online, August 19, 2019, https://www.bworldonline.com/ayala-unit-advancing-plans-to-build-new-energy-capacity/ (Accessed October 28, 2019)

42 Ronnel W. Domingo, "Ayala unit divests stake in mindanao power project," Philippine Daily Inquirer, July 27, 2019, https://business.inquirer.net/275535/ayala-unit-divests-stake-in-mindanao-power-project#ixzz63b8fekmI (Accessed October 28, 2019)

43 Yongping Zhai, Lingshui Mo, Madeleine Rawlins, "The Impact of Nationally Determined Contributions on the Energy Sector," Asian Development Bank, July 2018, https://www.adb.org/sites/default/files/publication/437896/sdwp-054-nationally-determined-contributions-energy.pdf (Accessed November 8, 2019)

44 Victor V. Saulon, "DOE tells budget hearing it is not ruling out nuclear power", BusinessWorld, August 27, 2019, https://www.bworldonline.com/doe-tells-budget-hearing-it-is-not-ruling-out-nuclear-power/ (Accessed October 28, 2019)

45 Danessa Rivera, "DOE: No ban on coal until Philippines attains energy security", The Philippines Star, September 1, 2019, https://www.philstar.com/business/2019/09/01/1947960/doe-no-ban-coal-until-philippines-attains-energy-security (Accessed October 28, 2019)

46 Department of Energy, "coal laws and issuance" https://www.doe.gov.ph/coal-laws-and-issuances (Accessed October 28, 2019)

47 Bureau of Internal Revenue, Excise tax, https://www.bir.gov.ph/index.php/tax-information/excise-tax.html (Accessed October 28, 2019)

48 Department of Energy, Republic act no 9136, https://www.doe.gov.ph/laws-and-issuances/republic-act-no-9136 (Accessed October 28, 2019)

49 Department of Energy. List of Existing Power Plants. 2019. https://www.doe.gov.ph/list-existing-power-plants (Accessed October 28, 2019).
Department of Energy. Philippine Power Statistics. 2018. https://www.doe.gov.ph/philippine-power-statistics (Accessed October 28, 2019).
Department of Energy. Private Sector Initiated Power Projects. 2019. https://www.doe.gov.ph/private-sector-initiated-power-projects (Accessed October 28, 2019).

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