



ALIGNING THE PHILIPPINE ENERGY NDC TARGETS WITH THE 1.5°C PATHWAY

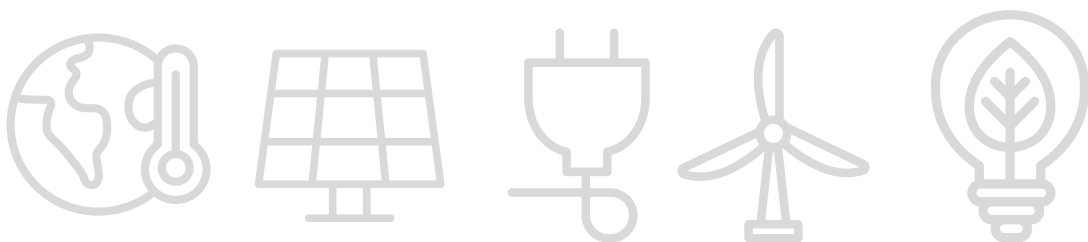


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ABSTRACT

It has been more than five years since the Philippines' Intended Nationally Determined Contributions (INDC) was communicated to the United Nations Framework Convention on Climate Change (UNFCCC). Albeit taking the roundabout way to get to this point, the first official Philippine NDC has been submitted on April 15, 2021.

The NDC text is fundamentally a narrative to convey the country's affirmation to help attenuate the effects of climate change. From a strategic viewpoint, this affords the Philippine Government flexibility to further assess the economy-wide impacts of the NDC and optimize mitigation scenarios which closely simulates its national agenda. Nevertheless, country parties to the UNFCCC and the Paris Agreement need to have their nationally-determined contribution fair and ambitious.¹

As it is, the Philippine NDC stopped short of establishing some of the foundational information that would have further facilitated clarity and transparency of the country's mitigation targets.

While the much-anticipated submission is reflective of the country's resolve to remain steadfast in its commitment to support the time-critical battle against climate change, it is imperative that we go beyond the minimalistic NDC text and break down its content in finer detail. There is promise and potential in the country's long list of climate-related policy and planning frameworks, but these have so far been just that—paper-based instruments awaiting the realization of their full potential. Hence, the country's submission must be viewed with guarded optimism as we persistently strive to embody our collective aspiration towards sustainable development, inclusive growth, poverty eradication, energy security, and social and climate justice.



This paper intends to dissect the energy component of the Philippine NDC and further substantiate the scant details included in the text. The succeeding analysis draws from publicly available information and those provided by relevant government agencies. Further, some of the datasets used in the following sections are derived from the series of stakeholder consultations carried out by the Climate Change Commission (CCC).

This paper aims not to undermine the work of our partner institutions in the Government. Rather, it seeks to offer broader insights into the planning and decision-making processes towards meaningful implementation of the energy sector targets and the NDC at large.

¹ United Nations Framework Convention on Climate Change (2016), Decision 1/CP.21: Adoption of the Paris Agreement. Accessed 30 May 2021. <https://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf>

I. THE PHILIPPINE NDC AND THE REMAINING CARBON BUDGET

The Philippine NDC expresses, albeit in cautious language, that the country intends to reach peak emissions by 2030 and presents an overall reduction and avoidance target of 75% for the period 2020 to 2030. Of which, 2.71% shall be “undertaken using nationally mobilized resources,” while 72.29% is contingent on external support in the form of climate finance.

The mitigation commitment covers five (5) out of the six (6) nationally modified² emitting sectors: agriculture, waste, industry, transport, and energy (AWIT-E). The reference frame is premised on a projected business-as-usual scenario with a cumulative, economy-wide emission estimated at 3,340.3 million metric tons of carbon dioxide equivalent (MtCO₂e). This can be represented in terms of an absolute cumulative emissions avoidance/reduction of 2,505 MtCO₂e.

Hence, in the context of the NDC, it follows that the proverbial climate space afforded by the Government to the country stands at 835 MtCO₂e. For context, the country emitted 144.38 MtCO₂e³ in 2010 from sources in the AWIT-E sectors. Of this, 53.1 MtCO₂e, or 36.8% came from the energy sector. These figures are only expected to grow as the Philippines aims for bold GDP growth rate targets for 2025 (8%) and 2030 (8.4%).

Estimates from the latest Philippine Energy Plan (PEP)⁴ of the Department of Energy show that the energy sector accounted for 109.89 MtCO₂e of emissions in 2020 while projecting energy emissions at 192.26 MtCO₂e in 2030. The CCC estimates total emissions (non-LUCF) under the

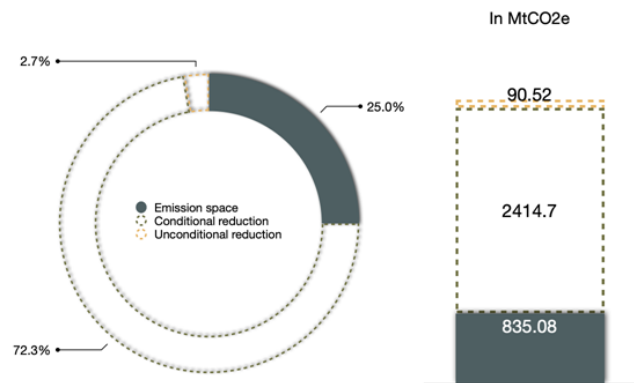


Figure 1. Philippines' Carbon Budget based on the PH NDC, 2020-2030

reference scenario for 2020 at 215.8 MtCO₂e, while the authors estimate⁵ about 387.4 MtCO₂e for 2030. These emissions exclude sources and sinks from the forestry sector. This would roughly translate to ~50% energy sector contribution to overall emissions, in average, from 2020 to 2030.

Interestingly, the country's emission space inferred from the Philippine NDC is less than three times the GHG emitted in 2020 alone or less than half of the projected business-as-usual emissions in 2030. Note that the aforementioned emission space (835 MtCO₂e) is the theoretically allowable emissions for 11 years (2020-2030). And while further recalibration is needed to factor in the effects of the pandemic on the country's GHG emissions in 2020, current estimates suggest that 25.9% of the carbon budget has already been subscribed to in the base year (2020) alone, leaving merely 619 MtCO₂e-allocation for 10 years.

A rough illustration would further indicate that based solely on historical data and forward estimates⁶, the energy sector has a 10-year carbon budget (309.6 MtCO₂e, 2021-2030), with more than half already earmarked for a single year (2030, 192.6 MtCO₂e) under the BAU scenario.

² The 2006 IPCC Guidelines for National Greenhouse Gas (GHG) Inventories classifies the sectors as follows: Energy, Waste, Industrial Processes and Products Use (IPPU), and Agriculture, Forestry, and Land Use (AFOLU).

The Government has further disaggregated these GHG sectors into Agriculture, Waste, Industry, Transport, Forestry, and Energy (AWIT-FE).

³ Estimates from the CCC. Data obtained from <https://niccdies.climate.gov.ph/ghg-inventory/national> on 11 April 2021.

⁴ Philippine Energy Plan 2018-2040, Philippine Department of Energy, Page 183

⁵ The projected non-LUCF emission was based on the actual calculations by the authors.

⁶ Author estimates

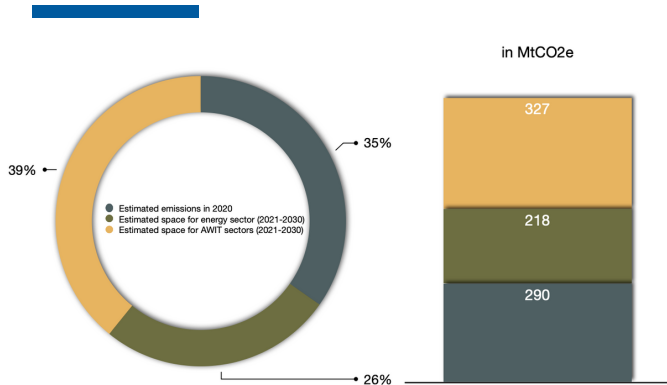


Figure 2. PH emission space for 2020-2030 (breakdown of the 835 MtCO₂e)

The target put forward in the NDC, hence, depicts an ambitious mitigation goal for the Philippines notwithstanding its immensely conditional nature. However, as pointed out in the joint statement issued by civil society organizations and networks on 15 February 2021, transparency on the technical aspects of the NDC remains a primary concern. Most especially, the notable increase in the NDC’s mitigation target (75%), as opposed to the one (30%) presented by CCC and concerned government agencies during the first multistakeholder consultation in December 2020, raises important questions on the modalities by which the targets were quantified.

II. ENERGY COMPONENT⁷ OF THE PHILIPPINE NDC

The DOE took an interesting approach in setting up its BAU scenario. The inclusion of existing policies and measures in the baseline makes sense from a technical standpoint. After all, these are based on the provisions of existing laws and policy instruments that were promulgated preceding DOE’s 2018 base year. These include, among others, current policies on (a) biofuels (maintain 2% biodiesel and 10% bioethanol) until 2040; and (b) additional renewable energy capacity of 15,000 MW by 2040.

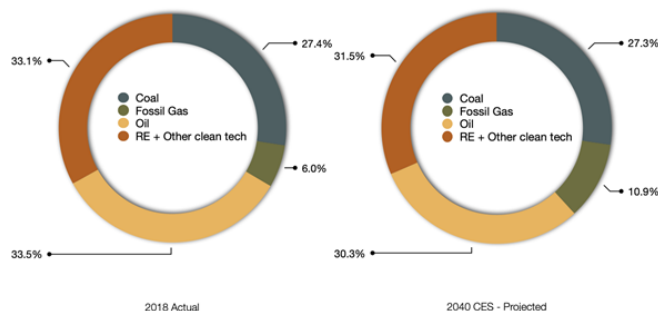


Figure 3. Actual (2018) and CES-projected (2040) TPES

The inclusion of the latter in the reference scenario puts the DOE in a rather compromised position considering that the additional 15,000-MW RE capacity has yet to be fully realized. This means that the country must first operationalize the said RE capacity, and only then can the DOE commence counting mitigation contributions coming from the RE sub-sector. Another 10,000 MW of RE capacity under the clean energy scenario (CES) sits atop the said BAU target. A similar timeline (2040) for both the BAU and CES RE targets further creates a convoluted scenario. Based on the established NDC timeframe, the 15,000-MW RE capacity must be installed sooner rather than later for the CES RE target to align with the 2030 NDC target year.

Other mitigation measures presented by the DOE as part of the NDC include: (a) 10% electric vehicle (EV) penetration in road transport by 2040; (b) 3% increase in natural gas consumption between 2018 and 2040; (c) 5% aggregate energy savings from oil and electricity by 2040 (energy efficiency); and (d) additional 1,200MW from other emerging technologies by 2035. The energy efficiency target represents the only unconditional component of the DOE’s mitigation scenario.

Under the CES⁸ projections, energy self-sufficiency is estimated to increase by 13.3 percentage points from 50.2% in 2018 to 63.5% in 2040.

⁷Based on information derived from CCC’s multistakeholder consultations.

⁸Philippine Energy Plan 2018-2040, Philippine Department of Energy, Page 75

Figure 4. Committed power projects, 2021-2028

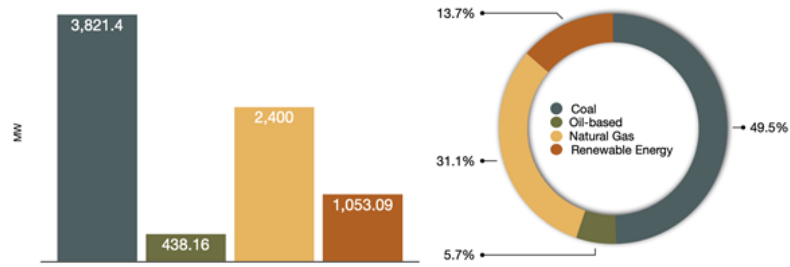
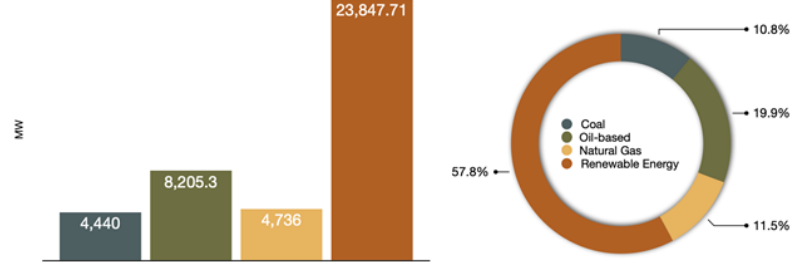


Figure 5. Indicative power projects starting 2021



The energy mix in the total primary energy supply, however, does not exhibit significant movement between 2018 and 2040 CES, as the relative share of fossil fuels and RE⁹ tracks along a largely linear pathway, as shown in Figure 3.

Forward estimates of the 2040 Total Primary Energy Supply (TPES), however, is expected to shift upon integration of the effects of the recently issued moratorium on new coal. Still, uncertainties surround the said policy shift as the latest data of the DOE shows 3.8 GW of committed coal projects until 2028 and an additional 4.4 GW of indicative coal projects in the pipeline¹⁰.

In terms of quantified contributions to the NDC, the 2020-2040 CES shows a long-term cumulative reduction/avoidance of 12.3% below the baseline (4,277.59 MtCO₂e cumulative BAU emissions), or 525.59 MtCO₂e of avoided emissions for the said period.

An even bleaker scenario in the medium term (2020-2030) presents a 2.8% cumulative emissions reduction/avoidance for the energy sector.

As a theoretical exercise, the most straightforward approach to allocating sectoral contributions to the NDC is rendering the same relative emissions reduction across the board (given the data limitations due to undisclosed information on the NDC baseline and sectoral mitigation scenarios). Simply put, all sectors identified in the NDC need to cut down their respective sectoral emissions by 75% for the period 2020-2030 to attain the NDC target. Current reduction/avoidance estimates for the energy sector at 2.8% falls way short of the goal.

Considering its current and anticipated share to the country's GHG emissions, its vast potential to shift to more sustainable patterns of development, and the associated co-benefits of potential measures to health, economic development, and innovation and technology advancement, the energy sector is presented with clear and viable opportunities to sustainably transform the industry.

⁹ The 2018 share only covers RE while the 2040 target includes RE and other clean technologies.

¹⁰ Department of Energy, https://www.doe.gov.ph/sites/default/files/pdf/electric_power/summary-of-committed-power-projects_31_march_2021.pdf

III. FAIR SHARE TO THE 1.5 °C-PATHWAY

A. Global Context

Chapter 2 (Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development¹¹) of the IPCC Special Report on Global Warming of 1.5°C published in 2019 presents a structurally complex assessment of climate change mitigation scenarios consistent with delimiting global temperature increase to 1.5°C above pre-industrial levels. Nevertheless, the findings presented in the text offer insights into the various emission pathways, and while it does not specifically enumerate measures to achieve the relatively ideal scenario, it does set precise requisites in terms of carbon budget approaches that would follow along the 1.5°C-consistent trajectory.

Key findings denote pledges embodied in the NDCs (as of the publication year), according to the report, are insufficient to stabilize GHG concentrations in the atmosphere. The report also highlights 2030 as a critical target year for climate action, citing "pathways that aim for no or limited (less than 0.1°C) overshoot of 1.5°C keep GHG emissions in 2030 to 25–30 GtCO₂e yr⁻¹." Similar pathways representative of the 1.5°C trajectory entail emissions reduction of 45% from 2010 levels in 2030. Further, the IPCC report propositioned that net-zero CO₂ global emissions be achieved to limit the temperature anomaly consistent with the Paris Agreement.

Carbon neutrality suggests a remaining carbon budget¹² range between 420 GtCO₂ and 580 GtCO₂, which accounts for varying probabilities of achieving the temperature target.

To recall, the Philippines is expected to emit 387.4 MtCO₂e in 2030 under the reference scenario. This is equivalent to 1.6% (using the lower limit of 25 GtCO₂e) of the prescribed carbon budget in 2030 to keep in pace with the PA goal. Going by the parallel scenario of 45% absolute emissions reduction in 2030 from 2010 levels (144.35 MtCO₂e, non-LUCF) would yield a carbon budget of 79.39 MtCO₂e for the country in 2030.

It should be noted that these calculations apply the absolute reduction equally across the board (all countries implement the 45% absolute reduction without prejudice to other factors such as historical responsibility) for simplicity and illustration purposes. This in no way constitutes equity and fair share and is not reflective of our demand for climate justice.

Looking at the emission space pivoted to projected population growth would give a relatively more normalized approach to carbon budget allocation. The UN projects the world population to grow to 8,548,487,371 in 2030¹³. This would put the global emission space in 2030 at 2.92 tCO₂e¹⁴ per capita. For consistency, the UN population projection of 123,697,926 for the Philippines can be used.

¹¹ Intergovernmental panel on Climate Change, <https://www.ipcc.ch/sr15/download/>.

¹² As per the IPCC Special Report, "the remaining carbon budget is defined here as cumulative CO₂ emissions from the start of 2018 until the time of net zero global emissions for global warming defined as a change in global near-surface air temperatures."

¹³ United Nations, Department of Economic and Social Affairs, Population Division (2019). Probabilistic Population Projections Rev. 1 based on the World Population Prospects 2019 Rev. 1: <http://population.un.org/wpp/>

¹⁴ For context and as pointed out in the NDC text, "the Philippines emits an average of 1.98 metric tons of carbon dioxide equivalent per capita in 2020, or way below the global average of four (4) metric tons per capita."

This implies a carbon budget of 361.2 MtCO₂e¹⁵ for the country in 2030. Setting this against the projected 2030 BAU emissions of 387.4 MtCO₂e would suggest a single-year 7% avoidance/reduction target to align with the Paris Agreement. This roughly puts into perspective the level of ambition corresponding to the NDC's 75% mitigation target.¹⁶

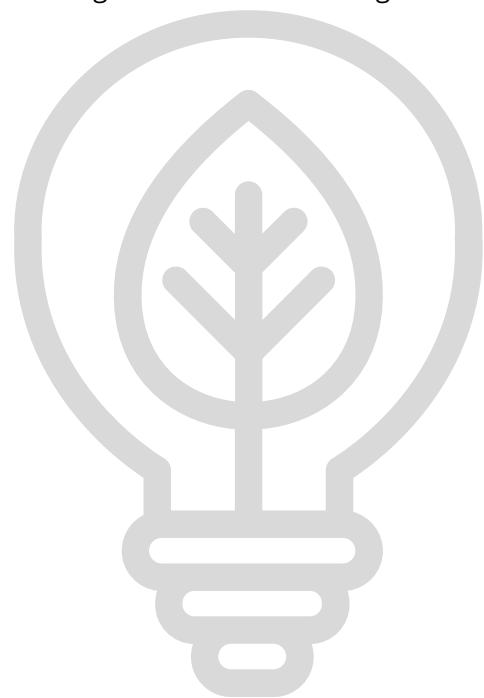
While there is no singular, internationally agreed framework and set of guidelines that would define equitable and fair share to reducing greenhouse gas emissions, there exist some methodologies and tools to measure these, as parameters and perception vary on what can be considered as a fair level of contribution.

At the minimum, the alignment of the NDCs with the 1.5°C temperature goal must be premised within the following considerations: historical responsibility, capacity to act (technology, finance, and technical capability) and socioeconomic metrics such as population, economic development targets, and industrialization potential.

As of writing, the Climate Action Tracker (CAT)¹⁷ has yet to issue a revised analysis of the Philippines' mitigation targets. However, it does provide an assessment of the Philippines' INDC. While there are variations in the baseline, overall reduction/avoidance target, and underlying assumptions between the country's INDC and NDC, the CAT analysis serves as a good starting point to gauge the latter in terms of its fair share to global efforts and compatibility with the Paris Agreement.

Since it uses its own BAU estimates and reflects updates on policy projections as of November 2020, CAT's analysis on the official NDC is not expected to deviate significantly from that of the INDC.

The online NDC tracker classifies the Philippines' INDC targets under the 2°C-compatible pathway but are "within the range of what is considered to be a fair share of global effort." The below-target mark arises from the conditional nature of the INDC, which would otherwise be consistent with the Paris Agreement had it been entirely unconditional. While the NDC offers a five (5) percentage point-increase in mitigation targets, an overwhelming majority of the commitments are still contingent on support. A similar assessment is therefore expected for the NDC, but without prejudice to target conditionality, the mitigation target put forward by the Government would be considered congruent with the Paris Agreement.



¹⁵ Note that this still does not account for the economic development space needed by the developing world to achieve their respective national development agenda and other critical indicators that would constitute equity and fair share. Factoring in the required development space may fetch the country an even higher share of the carbon budget.

¹⁶ Although expressed in terms of cumulative reduction, the gap between the calculation and the NDC target could still reasonably infer the relatively high ambition of the Philippine NDC.

¹⁷ Climate Action Tracker, <https://climateactiontracker.org/countries/philippines/fair-share/>.

B. NDC Energy Component in the Context of Fair Share and 1.5° C Alignment

Based on the figures embodied in the PEP¹⁸, further expansion of DOE's climate change mitigation measures is needed to align with the 75% NDC reduction/avoidance target. The energy sector's 2.8% reduction/avoidance for the period 2020-2030 contrasts the ambitious NDC target. Stretching this over the period 2020-2040, the DOE's 12.3% reduction/avoidance goal is still arguably way off target. Note that this reduction/avoidance is relative to the energy sector's baseline emissions alone. Referencing this against the cumulative national emissions for the

period 2020-2040, this figure pales further into relative insignificance at around 6% (based on the cumulative emissions from 2020-2040 of 8,791.6 MtCO_{2e}).

This is especially concerning given that the cumulative contribution of the energy sector in national BAU emissions for the period 2020-2030 is projected at 1,679.1 MtCO_{2e}.¹⁹ The 2.8% reduction/avoidance target (relative to energy BAU emissions) corresponds only to 47.0 MtCO_{2e} of avoided emissions spread over 11 years.

Table 1. Energy sector contribution to emissions and emissions reduction/avoidance

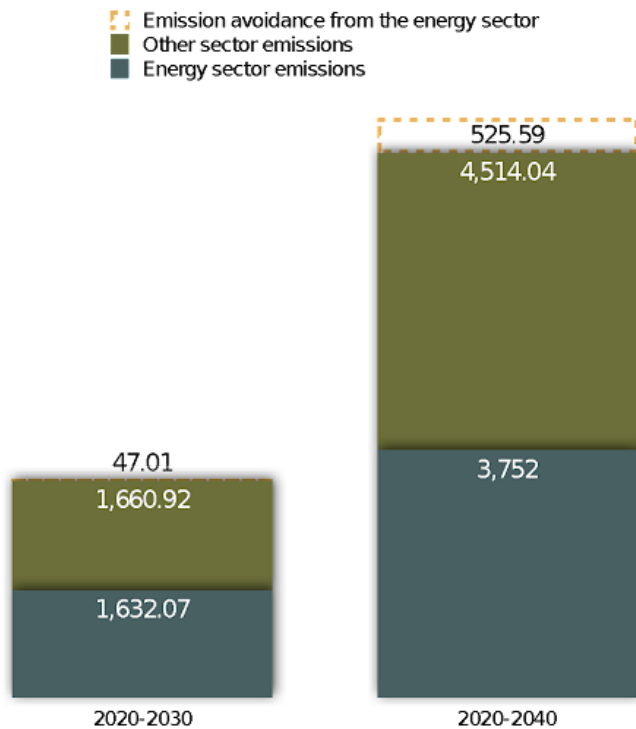
	2020-2030	2020-2040
1 Total national emissions (MtCO_{2e})	3,340^a	8,791.6^d
2 Energy sector emissions (MtCO_{2e})	1,679.1^b	4,278^c
3 Reduction/avoidance from the energy sector relative to energy BAU emissions (MtCO_{2e})	47.0b (2.8%^c)	525.6c (12.3%^c)
4 Reduction/avoidance from the energy sector relative to the overall cumulative BAU emission	1.4%	6.0%

^aBased on the official PH NDC; ^bBased on authors' estimates; ^cBased on DOE's February 2021 presentation, ^dBased on CCC's December 2020 presentation.

¹⁸ Philippine Energy Plan 2018-2040 Chapter 9: Environmental Management. Philippine Department of Energy.

¹⁹ Authors estimates.

Figure 6. Energy sector contribution to emissions and emissions reduction/avoidance



Estimates from CAT show that the moratorium on new coal issued by the DOE last year would single-handedly curb emissions by as much as 60 MtCO₂e in 2030 alone, halting emissions growth in the sector by 33% in the same year. This would indicate a decrease of coal shares in the energy mix to 16% in 2030, with shares of solar and wind reaching 43.8% that could open up the country to USD 30-billion worth of potential domestic and foreign investments over a 10-year timeframe.²⁰

The DOE, on the other hand, estimates the build cost of its 2020-2030 CES at USD 58.7 billion.

Citing the IPCC Special Report on Global Warming of 1.5 °C, a climate pathway consistent with the Paris Agreement involves, among other things, a renewable energy share of 29.08% in TPES by 2030.

Now, this pertains to a global scale, but for simplicity, the basic assumption would be that all countries need to scale down their emissions at an equal rate (and, hence, at different proportions). According to the Clean Energy Scenario of the PEP, the RE share in TPES is 30% by 2030, which indicates compatibility with the Paris temperature goal.

This is a crude assessment at best and only provides a general idea of where the Philippines' energy sector is in terms of its contribution to the global efforts to curb emissions. Estimating countries' individual contributions at a global scale is already challenging as it is, let alone scaling it down to national, sectoral, and sub-sectoral levels. It requires sophisticated economy-wide, integrated assessment models, quantifying not just socio-economic variables but also behavioral patterns en masse over an extended planning horizon.

Depending on how we look at it, part and parcel of DOE's targets exhibit partial congruence with the Paris Agreement while some datasets indicate off-target goals. At the end day, however, full disclosure of the fundamental and technical aspects of the DOE's mitigation model and of the NDC at large must be put forward for a more holistic assessment. This does not necessarily entail a renouncement of our Paris Agreement-afforded flexibility where we could recalibrate which sectors and economic sub-activities shall be contributory to our targets. The Philippines' NDC itself, as the official documentary reference to our commitments, ensures just that.

²⁰Ahmed, S. J. & Brown, M. Philippines Moratorium on Greenfield Coal Projects Will Attract USD 30 Billion in Renewable Energy Investment Policymakers and Industry Leaders Ready to Embrace More Cost-Effective Clean Energy. https://ieefa.org/wp-content/uploads/2020/10/Philippines-Greenfield-Coal-Project-Moratorium-Will-Attract-Billions-in-RE-Investment_November-2020.pdf (2020).

In terms of the overall pace of the country in achieving its NDC target, the calculations presented earlier show that the remaining 619 MtCO₂e carbon budget (based on the NDC) for 2021-2030 would mean drastic and immediate transformation across all economic sectors in a relatively short period. This does not paint the most realistic scenario. Hence, there needs to be a more viable plan on how the Government intends to operationalize the NDC. The Philippines must further leverage the flexibility afforded to it as a developing country by the Paris Agreement in terms of acquiring climate finance to accelerate its adaptation and mitigation efforts.

The full implementation of the Renewable Energy Law and its mechanisms will also ramp up the deployment of renewable energy industry. The draft²¹ 2020-2040 National Renewable Energy Plan (NREP) puts forward a target of more than 30,000-MW installed RE capacity by 2040. As of 2020, only 25.4% of the target, or 7,617 MW²², has been operationalized. Meaning, about 25,000 MW RE capacity is still needed to reach the goal. Of which, referring back to the DOE's BAU scenario, 15,000 MW of installed capacity must first be fulfilled just to lay the foundation of the NDC baseline.

Implementation of the Philippine Energy Efficiency and Conservation Law will reduce GHG emissions of electricity end-users. Estimates from the Philippine Energy Efficiency Alliance, however, indicate that with enough investments, EE could potentially help curb emissions by as much as 1,700 MtCO₂e²³ for the period 2017-2040. Albeit with slightly shifted timeframes, this could potentially account for 15-20% of cumulative avoided emissions between 2020 and 2040.

IV. ENERGY-SECTOR NDC FROM THE ASEAN PERSPECTIVE

ASEAN Targets. The Association of Southeast Asian Nations (ASEAN) has put forward its own regional energy sector targets as enshrined in the ASEAN Plan of Action for Energy Cooperation (APAEC).²⁴ Initially in 2015, member states agreed to source out 23% of TPES from renewable sources. Phase II of APAEC (2021-2025) maintained the target and added 35% RE share in the ASEAN installed power capacity by 2025.

In terms of energy efficiency, the original target (set in 2015) was 30% reduction in energy intensity²⁵ by 2025 based on 2005 levels. The target was proposed by the ASEAN Working Group on the Development of Long-term Energy Intensity Target. Under APAEC Phase II (2021-2025), however, the target was increased to 32%.

Overall, RE accounted for only 14% of the ASEAN TPES in 2017, and energy intensity has been reduced to 21% in 2018. While the ASEAN at large "has attained a 21% energy intensity level in 2018, surpassing the aspirational target of 20% set for 2020", the 6th ASEAN Energy Outlook 2017-2040 estimates that the economic union would fall short of meeting the aforementioned targets.²⁶

As the APAEC Phase II incorporates "cross-cutting issues such as climate change and decarbonisation", it is only fitting to view the country's share in achieving the ASEAN target from the perspective of the Paris Agreement and the NDC.

²¹ Philippine Energy Plan (2018-2040) https://www.doe.gov.ph/sites/default/files/pdf/pep/pep-2018-2040_20210323.pdf

²² DOE 2020 Power Statistics. Obtained from <https://www.doe.gov.ph/energy-statistics?q=energy-statistics%2Fphilippine-power-statistics>

²³ <https://www.pe2.org/sites/default/files/infographics/PE2-Infographic-2018-04-FINAL.pdf>

²⁴ ASEAN Plan of Action for Energy Cooperation (APAEC): Phase I and Phase II

²⁵ Measured as the ratio of TPES to GDP, in constant 2011 international dollars

²⁶ 6th ASEAN Energy Outlook 2017-2040

While these are ASEAN-wide targets, a siloed approach would show that the country has achieved 33% share of renewables in the total primary energy supply in 2018.²⁷ Further, according to the 2017 Key Energy Statistics²⁸ published by the DOE, RE accounted for 31.1% of the installed capacity in 2017.

In 2018 and 2019, the percent share of RE in the total installed capacity consistently shrunk to 30.3% and 29%, respectively²⁹ due to increase reliance on fossil energy.

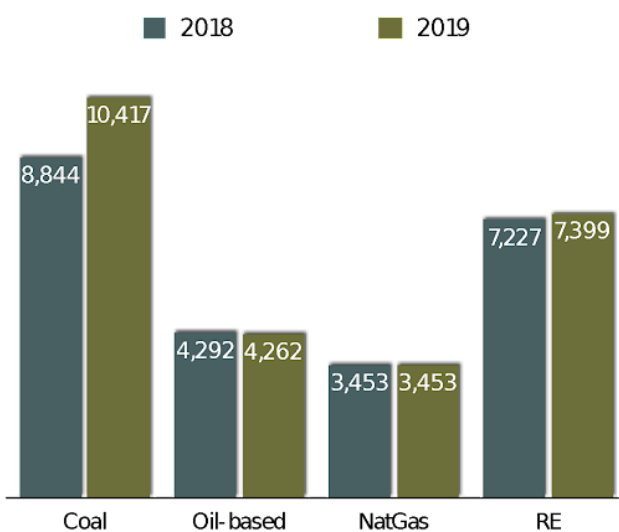


Figure 7. Installed power capacity in 2018 and 2019 based on the DOE's Power Situation Report

While there is a downward trend in the overall RE share in the country's installed power capacity over the period 2017-2019, RE capacity increased by 4.5% over the same timeframe. In contrast, coal capacity increased by 29.4%.

Nonetheless, the DOE has set an ambitious target of 51.77% RE share in installed power capacity by 2030, but an interim target, i.e., 2025, must be set to give a clearer picture of alignment with the ASEAN goal.

This further highlights the urgency for clarity and transparency on how the moratorium on new coal would affect this outlook. Additionally, while the target of 51.77% RE share looks good, it should be noted that only about one-fourth of this target has been operationalized as of 2020.

In terms of energy efficiency, DOE reported ~25% energy intensity reduction in 2018 based on 2005 level, while targeting a 41% reduction by 2025. This clearly indicates congruence with the targets set out in the APAEC.

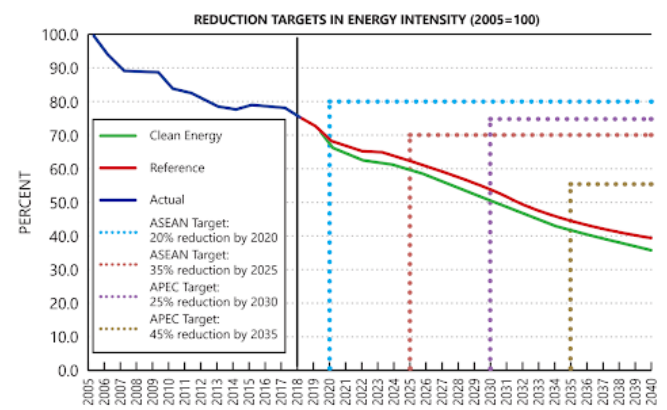


Figure 8. Energy intensity reduction targets from the PEP 2018-2040

NDC Comparison. In relative terms, the PH NDC arguably indicates greater ambition as majority of its ASEAN counterparts have unconditional targets of 20% or more with the exception of Cambodia and Vietnam. However, the unconditional targets of the Philippine NDC pales in direct comparison with that of its neighbors.

It should be noted that a comparative analysis between countries poses challenges on the technical front as certain elements such as the base year, scope, target-setting approaches, and overall parametric considerations present variations across the board. For the Philippines alone, much has yet to be disclosed by the Government regarding the modalities through which the NDC target has been generated.

²⁷ Philippine Energy Plan (2018-2040)

²⁸ Department of Energy, https://www.doe.gov.ph/sites/default/files/pdf/energy_statistics/2017_key_energy_statistics.pdf

²⁹ Philippine Energy Plan (2018-2040)

Table 2. ASEAN NDCs³⁰

Country	NDC Timeframe	NDC Target Type	Description of Mitigation Targets	Sectors included
Brunei Darussalam	2021-2030	Relative to BAU scenario, base year 2015	20% unconditional reduction from projected BAU by 2030. BAU: 11.6 MtCO ₂ e in 2015; 29.5 MtCO ₂ e in 2030	Economy-wide
Cambodia	2020-2030	Relative to BAU scenario, base year 2010	Targets are mostly conditional upon international support. NDC Scenario 1 - reduction of 329.2 MtCO ₂ e/year (212.4%) NDC Scenario 2 - reduction of 64.6 MtCO ₂ e/year (41.7%) NDC Scenario 3 - reduction of 30.2 MtCO ₂ e/year (19.7%)	Economy-wide
Indonesia	2020-2030	Relative to BAU scenario, base year 2010	29% unconditional reduction from projected BAU by 2030; ~834 MtCO ₂ e in absolute reduction by 2030. Target could increase up to 41% subject to support; ~1,081 MtCO ₂ e in absolute reduction by 2030.	Economy-wide
Lao PDR	2020-2030	Relative to BAU scenario, base year 2000	Unconditional: 60% emission reductions compared to BAU; ~62 MtCO ₂ e in absolute cumulative reduction Conditional: varying per mitigation action. No estimate for aggregate conditional target.	Economy-wide
Malaysia	2021-2030	Emissions intensity by GDP, base year 2005	45% reduction in emissions intensity of GDP by 2030 relative to 2005. 35% is unconditional and 10% conditional. BAU: 0.531 tCO ₂ e per thousand RM in 2005	Economy-wide
Myanmar	Varying per mitigation action	No estimate for aggregate target.	All conditional. No estimate for aggregate target.	Forestry and energy
Philippines	2020-2030	Relative to BAU scenario, cumulative emissions	2.71% unconditional and 72.29% conditional reduction against BAU cumulative emissions from 2020 to 2030 (3,340.3 MtCO ₂ e)	Economy-wide except LULUCF ³¹
Singapore	2021-2030	Emissions intensity reduction, base year 2005	Unconditional 36% reduction in emissions intensity from 2005 levels by 2030. Peak emissions at 65 MtCO ₂ e by 2030	Economy-wide
Thailand	2021-2030	Relative to BAU scenario, base year 2005	20% unconditional reduction from projected BAU by 2030; Could increase up to 25% subject to support BAU: 555 MtCO ₂ e in 2030	Economy-wide except LULUCF
Vietnam	2021-2030	Relative to BAU scenario, base year 2014	9% unconditional reduction from projected BAU by 2030; Could increase up to 27% subject to support BAU: 528.4 MtCO ₂ e in 2020, 927.9 MtCO ₂ e in 2030	Economy-wide

³⁰NDC Interim Registry, <https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx>.

³¹LULUCF means Land-use, Land-use change and Forestry

V. CONCLUSION

The optics of the first Philippine NDC give an encouraging picture of what lies ahead in the country's climate change agenda. However, it should be viewed with guarded optimism as we navigate through the implementation phase of climate policies and measures put forward by Government. At face value, the 75% reduction/avoidance target is in congruence with the temperature goal set out in the Paris Agreement. The context within which its realization is premised, however, leaves the NDC adrift in a convoluted gray area as uncertainty lies on both ends of the spectrum. Should the Government be unable to raise the required investments and support from the developed nations, would it render the entire NDC, or at least its conditional elements invalid? What if we do receive adequate means in terms of climate financing and technological support to implement the NDC? Will it guarantee achieving our target? How much would it cost? It took almost six years to reconfigure the INDC into the NDC, which, to a certain extent, is understandable given the highly technical nature of the NDC coupled with its social and political dimensions. Still, the same questions that hang over the INDC have been left unanswered with the submission of the NDC.

Crafting the NDC is just the starting point that dragged on for longer than we anticipated. Now, here come the more grueling phases: implementation, monitoring and evaluation, and updating— and we fundamentally have as much time. Further, we might have used up a third of our 11-year carbon budget in the last year alone. We would need immediate and drastic reforms and the effects of the ongoing pandemic only complicated matters further as we regroup and rethink our priorities.

The NDC should go beyond just a well-engineered narrative and focus on the tangibles—a progressive but practical and effective action plan that would help us realize our national agenda while adhering to our international commitments. We have been stretching the limits of our PA-afforded latitude and getting around its ambiguities for far too long. With this, listed below are practical interventions that could be undertaken by the Government. While most of which appear obvious, these have been a large part of the constant struggle in the NDC development process.

- 1. Menu of mitigation measures.** This has been done before— crafting a long list of potential mitigation actions and creating an integrated model. The Government could round up all its programs both under implementation and in the pipeline that have mitigation potential. The focus should be on building a modular system that would serve as the technical foundation of the NDC regardless of political externalities. Should something be deemed economically, financially, or technologically nonviable later on, the modular approach should easily help us recalibrate our integrated model instead of overhauling the entire engine time and time again. There are highly skilled professionals not just in the government but in the academe, private sector, non-profit and civil society organizations who are eager to share their knowledge and expertise. Given its nature, however, building and sustaining such a system should be associated with long-term climate finance.

- 2.** With this, a technical team dedicated to the NDC process should be instituted, maintained, and sustained over the entire implementation and monitoring period. This should be a well-coordinated group, as a fragmented approach would be detrimental to attaining our goals. The composition should include representatives from the academe, private sector, and civil society, and

should be coupled with a highly competent management team with strong political will. We have climate champions both in the executive and legislative branches of the Government which makes this chiefly a matter of cooperative pursuit. A lot of time and effort could have been saved if this were the case to begin with.

3. Convergence approach. We have been working largely in silo which is made evident by our sectoral targets (in contrast to having an economy-wide target). The first two items outlined here would relatively simplify convergence. The cross-cutting and critical nature of climate change warrants a nexus of efforts among all stakeholders.

4. Strengthening the MRV system. The National Integrated Climate Change Database and Information Exchange System (NICCDIES) has been largely left in the periphery of our climate action. Such a system should be at the core of our climate agenda and developed to its full potential.

5. Full engagement of the academe, private sector, and civil society should be front and center of our policy direction. We should shift away from regarding our stakeholders as if they are an afterthought. Direct and meaningful involvement both in the technical and political processes should be the essence of stakeholder engagement. As for the energy sector, the power subsector exhibits consistency with the PA goals, while the energy sector at large, based on the presented targets of the DOE vis-à-vis the NDC, indicates an off-target scenario (relative to the 75% NDC goal). This might appear counterintuitive, but this could be attributed to the framing of the energy sector's mitigation measures and the ambitious goal of the PH NDC.

Parallels can be drawn between the PEP and the Paris Agreement in terms of their respective targets.

The recently published data on the committed and indicative coal projects from the DOE, while technically in line with the moratorium on new coal, offers further uncertainty than it does clarity on DOE's policy direction. Meaningful translation and interpretation of the said moratorium into quantifiable information is also a much-needed initiative to foster confidence among stakeholders and provide firm direction in navigating this policy shift. Further, while there are indications that the Government is set to increase its RE targets, this has yet to be reflected in official policy documents such as the PEP and NREP.

Until the 75% NDC target is substantiated, and guesswork is taken out of the equation, this would be the case not just for the energy sector but for the entire NDC.

ABOUT THE AUTHORS

Jan Ralph Eborá and Alex Alonzo were both part of the technical team of the Climate Change Commission – Climate Change Office assigned to facilitate and monitor the implementation of the organization's flagship programs which include (1) the development of the country's Nationally Determined Contributions; (2) the implementation of Executive Order 174 s. 2014 which institutionalized the Philippines' GHG Inventory Management and Reporting System; and (3) the establishment of the National Integrated Climate Change Database and Information System (NICCDIES).

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