

# Greening the Philippine pandemic response - A Labor Agenda on Recovery Through Green Employment in Rebuilding (LARGER) Programs

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### **Abstract**

Despite having significant policies on climate and public employment, the Philippine pandemic response and recovery programs remain wanting in terms of the green agenda. The Bayanihan programs to heal and recover, as well as the 2021 National Expenditure Program, bear no substantial package which can be considered as part of a green recovery agenda. This is in stark contrast with other countries which have elevated it into a strategy to weather the impact of the COVID-19 pandemic and ensure sustainable development.

Embarking into a massive public employment program, including the creation of green and climate jobs amid the lingering health and job crises, is regarded by organized labor as a crucial strategy to arrest the current surge in unemployment. At the same time, this approach also addresses the serious danger posed by the climate crisis. Besides, 'green jobs' is no longer a lifeless concept, with millions of people around the globe performing work by now in this mounting social task. Recent green jobs projections are very promising as the level of investments continue to grow and enabling policies are set in place both at the global as well as national level.

This LARGER proposal is labor's contribution to green recovery advocacy as Filipino workers find the country's recovery programs less responsive not only to the health and climate emergencies, but the present jobs crisis as well.

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## I. Introduction

In his first ever address before the High-Level General Debate of the 75th Session of the United Nations (UN) General Assembly, President Rodrigo Roa Duterte asserted that the urgency needed to fight COVID-19 “is the same urgency needed to address the climate crisis.”<sup>1</sup>

Climate change, he said, has worsened the impact of the pandemic, with people in developing countries like the Philippines suffering the most. “The Philippines joined the Paris Agreement to fight climate change. We call on all parties, especially those who have not made good of their commitment to fight climate change, to honor the same,” appealed the President, as he challenged the UN Assembly that “to be ready for the new global normal, it cannot be business as usual.”<sup>2</sup>

Finally, a clear diplomatic message from a leader known for his acerbic diatribes against the UN bodies! But whether President Duterte has walked his climate talk is another matter, especially when compared to how other leaders placed equal attention to the COVID-19 pandemic and climate change.

### Covid-19 and the Climate Crisis

Early this May, leaders of the European Union (EU) have laid down an ambitious 750 billion recovery and sustainability plan for 2021-2027<sup>3</sup>. Here in Asia, the South Korean government had launched in July its own version of a Korean New Deal<sup>4</sup>, allotting 114.1 trillion won (98.4B USD) from its treasury to projects intended for the development of its digital and green economy that would eventually create new jobs (at least 600,000). All this while at the same time meeting its net zero emission target. Most recently, the victory of Joe Biden and the democrats in the US elections has given life to the USD2 trillion green recovery agenda that they adopted during the presidential campaign.

Likewise, the term ‘Building Back Better’, the United Nation’s 2015 framework on disaster response has found common use in today’s pandemic responses due to the need to equally address

the combined health, economic, and climate crisis. While the world acknowledges that the pandemic has caused significant reduction in carbon emission due to major interruption in economic activities, its impact will reverse once major drivers of CO2 emission restart their engines.

“Building back better” in the context of COVID-19 tries to link the on-going task of reversing the climate crisis with today’s global efforts at fighting the pandemic. This is largely because the connection between physical disasters due to the climate crisis and the onset of new pandemics is increasingly becoming evident.

The world prior to COVID-19 is, in many ways, not the ideal place that people would excitingly want to redeem. Its physical habitat, threatened by rising temperatures, has made life more difficult for every living organism. This includes the majority of humans whose limited capacity to adapt and survive both natural and manmade destruction, chronic poverty, and climate devastation, demand both immediate as well as strategic policy responses from all governments<sup>5</sup>.

The world of work, just the same, is not the idyllic workplace workers would dream of winning back, as decent work deficits<sup>6</sup> abound in the global north and south. Hence, prior to COVID-19, a framework for a just transition along with sustainable development goals (SDGs) were adopted by the labor movement and the international community to address age-old problems, promising sustainable development and decent work for all.

In other words, a scientific consensus on the inseparable link between the climate crisis and the rise of climate-related diseases, increases in mortality rate, and the onset of new viruses, has long been established prior to the COVID-19 outbreak. Taken into account in this consensus is the impact of the climate crisis on employment, with an estimated 80 million full time jobs expected to be lost by 2030 due to increasing global temperatures, according to a report published by the International Labor Organization (ILO) in 2019.<sup>7</sup>

A staggering USD320 billion in economic losses from climate-related hazards globally was also reported in 2017.<sup>8</sup> In the Philippines, some Php374B in total damages from major natural extreme events and disasters had been accounted for from 2006-2015.<sup>9</sup> Another report showed Php571.1B<sup>10</sup> in total damages from typhoon “Yolanda” (Hyan) alone. The ILO said some 6 million jobs were affected, when super typhoon “Yolanda” hit the eastern part of the country in 2013<sup>12</sup>, while another 800,000 were destroyed by typhoon Hagupit (Ruby) a year later.<sup>13</sup> The most recent typhoon ‘Rolly’ left the country with Php 11 billion in the total cost of damages.<sup>14</sup>

The COVID-19 virus has essentially compounded these crises, with the health emergency just taking over other priorities that many countries have barely addressed for decades, if not for centuries.

For example, chronic unemployment and the informalization of labor continue to hover around even in a middle-income country like the Philippines. The country’s NEET (Not in Education, Employment, or Training) unemployment rate remained high during the last few decades.<sup>15</sup> Women’s participation in the total labor force has also declined from 49.7 percent in 2010 to 47.6 percent in 2019<sup>16</sup>. This is expected to fall further since the service sector - which employs a large number of women - is hit hardest by the pandemic.

The average unemployment rate from 2005-2019 meanwhile is 6.7 percent, indicating the chronic nature of this problem. Underemployment on the other hand is higher, at an average of 18.7 percent during the same period. The reason why unemployment is low, especially among the poor, is because these vulnerable sectors cannot afford either to be fully or partly unemployed.<sup>17</sup> The combination of the substandard quality of employment with low wages explains the high underemployment rate.

### The Jobs Crisis

**One of the biggest issues faced today is the massive job loss caused or compounded by the present pandemic.** An estimated 5.4 percent of global working hours equivalent to 155 million full time equivalent (FTE) jobs were lost in the first quarter of 2020, according to the updated version of the ILO Monitor<sup>18</sup>. The Eastern Asian subregion, according to this report, contributed 11.6 percent of losses in working hours or equivalent to 95 million FTE jobs. The second quarter estimate was worse, with losses rising to 14 percent (equivalent to 400 million full time jobs) worldwide.

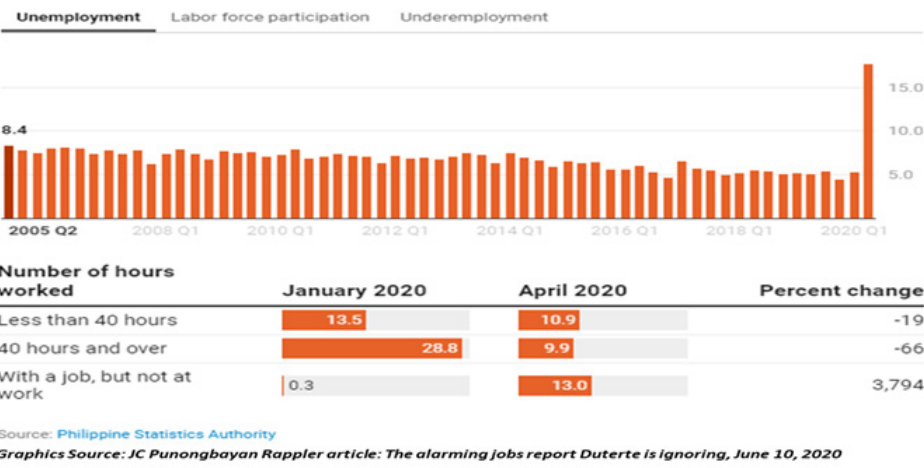
In Asia and the Pacific, working hour losses are estimated at 13.5 percent or 235 million FTE jobs. The report also cited heavier job losses for women and informal workers as the service sector, which employs more women and own account workers, is hit hardest by the pandemic.

Job losses were attributed mainly to lockdown policies implemented in many countries. Hard to mild quarantine measures led to workplace closures, particularly for non-essential firms. Workers in the informal economy were also eventually forced to unemployment. A baseline scenario sets working hour losses declining to 4.9 percent or 140 million FTE jobs for the rest of the year. A pessimistic scenario, however, estimates losses in working hours to be around 11.9 percent or 340 million FTE jobs.<sup>19</sup>

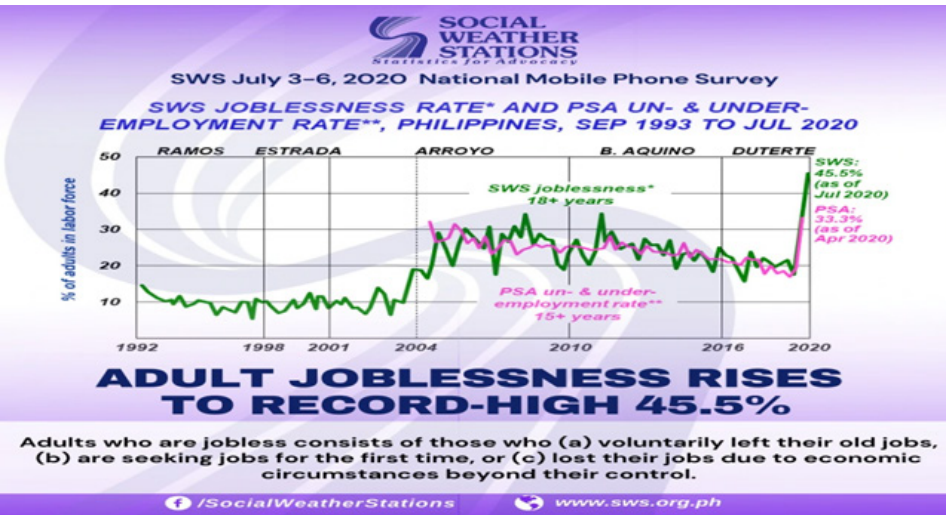
The Duterte administration planned to create 1.3 to 1.5 million jobs every year as envisioned under the Philippine Development Plan 2017-2022 and AmBisyon 2040.<sup>20</sup> But the administration’s hard, and widely considered the longest lockdown in the world has caused massive job destruction. The economic disruption has resulted in net job creation of -7.234 million in April 2020 and 308,000 in July.

In April 2020, the country’s unemployment rate, according to the Philippine Statistics Authority (PSA), hit 17.7 percent or equivalent to 7.3 million lost jobs<sup>21</sup>. Underemployment also rose to 18.9 percent, while the greatest number of jobless workers, a total of 13 million, fell under the “with a job, but not at work”<sup>22</sup> category. The labor force participation rate also fell to 55.6 percent from 61.3 percent in April 2019 (see graphs below).





Another survey conducted by the Social Weather Stations (SWS) showed a higher level of unemployment, 45.5 percent among adults. This, according to SWS, was the highest in its survey history. The PSA and SWS survey differ in several ways, but one can only agree consensus can be established on to the fact that the current unemployment numbers are the harshest since the Second World War.



The unemployment rate has since gone down to 10 percent (PSA) and 39.5 percent (SWS) by July. But despite this drop in the second quarter as a result of the partial opening up of the economy, 69 percent of the labor force remains underutilized, while full time jobs are still 5.9 million less of the January 2020 pre-pandemic level, according to a study prepared by Joseph Lim, an economics professor from the Ateneo de Manila University.<sup>23</sup>

These unemployment figures do not include the more than 200,000 OFWs who have already been repatriated back to the country, and those who failed to report back to their jobs overseas. A DOLE report said that more than 600,000 OFWs had applied for assistance at the height of the pandemic.<sup>24</sup>

Amelioration programs

The government’s pandemic response, as far as the job crisis is concerned, was limited to existing programs. Much of them were social amelioration programs,<sup>25</sup> all meant to cover income losses rather than preserving jobs or generating new employment. These programs were themselves mired by administrative issues, notwithstanding the little amount of subsidy reaching the hands of targeted beneficiaries during the last six months.

Surviving the last six months without work and income is terribly hard to imagine. Yet, after seeing how PUV drivers outlast a grueling semester by pleading for help from their fellow road users, the more it becomes apparent that rolling out a viable public employment program is better than waiting for the vaccine to become available or for the free market forces to bring back lost jobs.

The Labor Agenda

Bothered by the slow and inadequate pandemic response by the government, the labor coalition Nagkaisa<sup>26</sup> has formulated its own Labor Agenda. This contains demands and proposals ranging from labor rights protection during the pandemic, income and employment guarantees, to financing the necessary economic stimuli. An overview of Nagkaisa’s State of Labor and its Agenda on Recovery (SOLAR) - Stimulating the

Economy by Protecting (STEP) Workers, would find preservation and creation of safe jobs at the center of its agenda.

One of the more elaborate agendas under SOLAR is Nagkaisa’s proposal for income and employment guarantees through public employment programs (PEPs). PEPs, according to ILO, are commonly used to increase aggregate demand for labor “in contexts where markets do not create productive employment on the required scale or where sufficient formal sector jobs are just not available.”<sup>28</sup>

For Nagkaisa, climate action should also be a major goal for new employment programs, as aside from ensuring jobs and income for the unemployed, programs also have to perform new social tasks in the face of combined health, economic, and climate crises. Creating green and climate jobs is an agenda that Philippine labor groups want included in the government’s recovery programs.

Objectives of the study

The main objective of this study is to find out whether government responses to the pandemic include a green and climate agenda. Specifically, it is to inquire on the status of the green jobs program as provided under the Green Jobs Act of 2016, and whether actions defined under the law have found a space for convergence with the COVID-19 recovery and sustainability programs of the government.

While it focuses on green and climate jobs as a way to determine if the Philippine recovery programs contain a climate agenda in its pandemic response, some aspects in the country’s compliance with SDGs, specifically SDG-7, 8, and 13<sup>29</sup>, and ILO’s Just Transition<sup>30</sup> framework will also be discussed.

The study will also explore the literature from other fields through secondary data to get an informed view of how other governments have integrated green and climate programs in their post-COVID-19 recovery agenda. Comparisons will be made as to why other countries, including the Philippines, lag behind these initiatives despite their international commitments and policy instruments in place to carry out these objectives even before the pandemic.

At the end of the study, the paper elaborates on the workers’ agenda on employment. This includes the demand for green and climate jobs that Nagkaisa wants included in the recovery agenda of the government. A labor campaign for climate jobs will consequently be proposed.

II. Spotting the ‘green’ in the pandemic response

A simple measure to account for a green agenda in the government’s pandemic response is to scrutinize the emergency measures that have been implemented since March, the recovery programs approved and set to be rolled out until the end of 2020 and beyond, as well as their respective budget allocations. At the policy level, it is also useful to analyze pending legislative proposals for economic stimulus and other related measures filed in Congress, to see whether these proposals contain an agenda for sustainability.

Another way is to compare our national strategy with that of other countries to find out how other jurisdictions were able to carry out their green agenda along with COVID-19 recovery programs while others did not. This one presents a little challenge as countries are not similarly situated or as prepared for the pandemic in terms of the magnitude of the health crisis, political condition, and fiscal space. A small but wealthy country like Singapore, for instance, can have a stimulus program equivalent to 19.2 percent of its GDP, Japan with 40 percent, while China and India have theirs at 8 and 10 percent, respectively, according to an ING report for the Asia-Pacific.<sup>31</sup> Hence, it is often conceded that low income countries are more likely to carry out poor pandemic responses compared with high income countries. Nevertheless, a good policy balance is badly really needed in in consideration of each country’s particular conditions (see Appendix A on the amount of COVID-19 response in ratio to GDP in ASEAN countries).

The ING report was able to track national strategies in fighting COVID-19. The report rated each country’s response and recovery programs, identifying projects considered as green. It scored the Philippines, together with Thailand and Indonesia in the ASEAN, zero in terms of the green agenda in their pandemic response.<sup>32</sup>

The Asian Development Bank’s (ADB) Greening the Post-COVID-19 Recovery infographics meanwhile identified the USD50 million Green, Green, Green Program as part of the Philippines’ green pandemic response.<sup>33</sup> However, online fact checking showed that this Php2.5B program by the Department of Budget and Management (DBM)<sup>34</sup> to make 145 cities more livable and sustainable was launched in 2018, two years before the COVID-19 pandemic. Perhaps this is the reason why this program did not land in ING’s green assessment for the COVID-19 response in the ASEAN.

Red lines in the Philippines’ Bayanihan

Overall, the Philippine government’s legislative framework for pandemic response is less a comprehensive green agenda and more of red lines that are clearly visible given the country’s situation. A red line is generally defined as ‘a point beyond which a person or group is not prepared to negotiate.’<sup>35</sup> A more suitable definition defines the red line as a ‘statement by government of acts it considers unacceptable.’<sup>36</sup>

If the COVID-19 stimulus packages and recovery agenda are negotiating platforms, this is also where governments draw the line for what is a permissible package and what is not. In a not purely financial transaction, this could mean the denial of services for a particular person or group of persons based on discrimination. Denial can also be based on pre-existing parochial priorities among policymakers. In essence, it is not just the fiscal space that matters most in recovery negotiations, but also the presence/ lack of guiding principles or a clear framework. And this scarcity of a green framework is happening not only in the Philippines but elsewhere.

In the United States, for instance, the fear of resorting back to corporate bailouts that dominated the stimulus programs during the 2008 global financial crisis has prompted many organizations to push for Just COVID-19 Relief Stimulus. This has taken the form of campaigns before Congress for the enactment of a at least USD2 trillion green stimulus<sup>37</sup> to rebuild the economy. The proposal is aligned with the 5 Principles<sup>38</sup> put forward by more than 300 environmental, justice, and labor movement organizations.

Surprisingly, the need for a green framework in addressing the multiple crises has found an unlikely ally in the elites of Davos, who warned of five other crises that could worsen under the pandemic.<sup>39</sup> One of these is climate change which, the World Economic Forum (WEF) fears, comes in second as officials focus on fighting the coronavirus.

Back home, the Philippine government’s immediate package responding to the COVID-19 pandemic was contained under the Bayanihan to Heal as One (Bayanihan I). The concept of ‘Bayanihan’ refers to a sense of communal spirit among Filipinos. In the old tradition, it is manifested in rural folks helping their neighbors move or carry whole houses to other locations. In the context of the COVID-19 pandemic response, the bayanihan spirit is approximated in the ‘whole of nation approach’ under the Duterte administration’s Philippine Development Plan (PDP).

The Bayanihan I provided a medical response: cash aid to poor households, displaced workers and OFWs, and the granting of emergency powers to the President to mobilize resources and impose quarantine restrictions. A total of Php275B was allocated by Congress for this act. A volunteer group which created the COVID-19 PH Citizen’s Budget Tracker<sup>40</sup> puts the total budget of Bayanihan I close to Php350B, divided into:

BAYANIHAN I PROGRAMS	BUDGET IN BILLION PHP
Social Amelioration	270
Health Response	40
Grants to LGUs	37

There could be more for Bayanihan I, as the President was empowered to move budget allocations that he wishes to realign from the 2020 general appropriations. A not-for-profit public finance think tank, the Institute for Leadership, Empowerment, and Democracy (i-LEAD), placed the total allocated budget to Bayanihan I at Php 389.2B.<sup>41</sup> However, in both presentations, no green initiative can be found under the first Bayanihan as medical emergency and social amelioration were the top government priorities at that moment.

Similarly, even the Bayanihan to Recover as One (Bayanihan II), aside from getting a reduced allocation of Php165.5B, is also green-blind. Only the Plant, Plant, Plant (PPP) project of the Department of Agriculture falls naturally under the green category. Not even the DOTr’s project for pop-up bike lanes can be considered green, according to the ING report, as they are more of a response to the lack of public transportation and not as part of the sustainability agenda. The same is true with the planned aggressive roll out of build, build, build (BBB) projects since they were designed and bid out before the pandemic (see Table 1).

Table 1: Bayanihan II programs and budget

BAYANIHAN II PROGRAMS	BUDGET IN BILLION PHP
Health-related responses	13.50
Procurement of PPEs and others for local health workers, barangay officials and other indigent persons	3.00
Construction of temporary medical isolation and quarantine facilities, etc.	4.50
Cash-for-work and involuntary separation	13.00
GFI	39.50
DA cash or loan interest subsidies	24.00
DOTr Programs	9.50
Trainings and subsidies for tourist guides	0.10
SUCs	3.00
Subsidies and allowances to qualified students	0.60
Subsidies and allowances of displaced teaching and non-teaching personnel	0.30
TESDA scholarship	1.00
DSWD Programs	6.00
DepEd New Normal	4.00
LGSF	1.50
National Athletes and Coaches	0.180
DFA Assistance to Nationals Funds	0.82
Tourism Industry	4.0
Construction and maintenance of isolation facilities including billing of hotels, food, and transportation	4.5
Hiring of contact traces c/o DILG	5.0
PRCs computer-based licensure exam	0.025
Payment of interest on new and existing loans secured by the LGUs	2.0
HTAC research fund	0.001
UP computational research laboratory	0.015
Stand-by Fund	25.53
Total	165.5

The ARISE and CURES Stimulus Packages

An even more ambitious set of stimulus measures have been filed before the Philippine Congress even prior to the passage of the Bayanihan II. One is the Accelerated Recovery and Investments Stimulus for the Economy (ARISE) sponsored by Reps. Stella Quimbo and Joey Salceda, and



the other is the COVID-19 Unemployment Reduction Economic Stimulus (CURES) sponsored by former House Speaker Alan Peter Cayetano. ARISE is seeking a Php1.3 trillion funding for three years to stimulate the economy, preserve jobs and generate new employment, as well as enhance the health response to COVID-19. A summary of the ARISE budget was prepared by Joseph Lim in his ARISE, not CREATE! article in the Business Mirror<sup>42</sup> (see Table 2).

Table 2: Summary of ARISE’s Proposal for Appropriation

ARISE PROGRAMS	BUDGET IN BILLION PHP
Infrastructure (beyond “Build, Build, Build”)	650.0
Economic relief for MSMEs.	150.0
Wage subsidies.	110.0
Assistance to transportation industry.	70.0
Assistance to agri-fishery sector.	66.0
Assistance to tourism industry.	58.0
Loans for agrarian reform beneficiaries.	50.0
Assistance to industry and services sectors	44.0
Subsidy for students	42.0
Assistance to displaced, vocational workers	25.0
COVID-19 Response	10.0
TESDA	5.0
<b>Total</b>	<b>1.28 trillion</b>

Notably on the green agenda, the enhanced BBB projects under ARISE (Chapter VI Structural Interventions) contain allocations for climate smart technologies in building facilities for universal healthcare, social housing, schools, and flexible smart power grids, among others. On the other hand, a lump sum appropriation of Php1.5 trillion for CURES aims to create jobs in health, education, agriculture, as well as local roads infrastructure and livelihood (HEAL) based on communities’ actual needs.

Unfortunately, despite having been approved swiftly at the plenary of the House of Representatives on the third reading, both proposals got no support from the Executive branch. President Duterte’s economic managers stonewalled with their bottom line position of keeping the budget deficit at a manageable level and maintaining the country’s good credit rating. Thus, other measures that demand appropriations higher than the amount (Php140B) declared as bottom line by the Executive were effectively ‘redlined’ in favor of the Palace-backed Bayanihan II.

The 2021 National Budget

The 2021 National Expenditure Program, which carries a “reset, rebound, and recover” theme, does not hold much promise for this study as much of the allocations land in regular and new programs that have very little to do with green jobs and the sustainability agenda, despite the significance of combining them with the pandemic response.

The DOE’s proposed Php117.892 million budget for the Renewable Energy Development Program for 2021 got a measly increase of Php5.435 million from the 2020 allocation, mainly for salary adjustment and for the requirements of additional Affiliated Renewable Energy Centers (AREC). Just the same, the Conventional Energy Development Program got an increase of Php7.541 million, while budgets for the Biofuels Program and National Energy Efficiency and Conservation Program (NEECP) will shrink by 11.61 percent and 67.74 percent, respectively.<sup>43</sup>

Tables 3 and 4 show allocated budgets for employment-related programs like that of the DOLE, DTI, and DOT as compared with other programs that received increases or new allocations in the 2021 proposed budget.

Table 3

DOLE OSec Budget, 2020 vs. 2021 Proposed (million PhP)

DOLE Office of the Secretary	2020 GAA	2021 NEP	Difference	% Change
<b>TOTAL NEW APPROPRIATIONS</b>	<b>12,057.3</b>	<b>15,581.6</b>	<b>3,524.3</b>	<b>29.2%</b>
<b>o.w. Livelihood and Emergency Employment</b>	<b>7,930.6</b>	<b>11,139.6</b>	<b>3,209.1</b>	<b>40.5%</b>
<b>o.w. Welfare Services</b>	<b>1,513.4</b>	<b>1,516.3</b>	<b>2.9</b>	<b>0.2%</b>
<b>o.w. Job Search Assistance</b>	<b>127.3</b>	<b>112.3</b>	<b>(15.0)</b>	<b>(11.8%)</b>
<b>o.w. Reintegration Services for Overseas Filipino Workers</b>	<b>21.5</b>	<b>4.2</b>	<b>(17.2)</b>	<b>(80.3%)</b>
<b>Philippine Overseas Employment Administration</b>	<b>2020 GAA</b>	<b>2021 NEP</b>	<b>Difference</b>	<b>% Change</b>
<b>TOTAL NEW APPROPRIATIONS</b>	<b>218.8</b>	<b>187.3</b>	<b>(31.5)</b>	<b>(14.4%)</b>
<b>o.w. Overseas Employment Facilitation Services</b>	<b>120.8</b>	<b>123.5</b>	<b>2.7</b>	<b>2.2%</b>
<b>o.w. Worker's Welfare and Government Placement Services</b>	<b>98.0</b>	<b>63.8</b>	<b>(34.2)</b>	<b>(34.9%)</b>
<b>Overseas Workers Welfare Administration</b>	<b>2020 GAA</b>	<b>2021 NEP</b>	<b>Difference</b>	<b>% Change</b>
<b>TOTAL NEW APPROPRIATIONS</b>	<b>1,588.8</b>	<b>7,399.1</b>	<b>5,810.3</b>	<b>365.7%</b>
<b>o.w. Welfare Services</b>	<b>795.6</b>	<b>6,750.2</b>	<b>5,954.6</b>	<b>748.5%</b>

i-LEAD

Table 4

Job generation (except construction) vs. physical infrastructure and MUPs

(in Million PhP)	2020 GAA	Bayanihan 1	Bayanihan 2	2021 NEP
<b>Department of Labor and Employment</b>	<b>12,057.4</b>	<b>12,565.4</b>	<b>13,000</b>	<b>27,010.7</b>
<b>Department of Trade and Industry</b>	<b>20,995.1</b>			<b>20,162.4</b>
<b>Small Business Corporation</b>	<b>1,500</b>		<b>10,000</b>	<b>1,500</b>
<b>Department of Tourism</b>	<b>3,572.0</b>		<b>4,100</b>	<b>3,478.4</b>
<b>Department of Public Works and Highways</b>	<b>581,674.9</b>	<b>(142,700.0)</b>		<b>667,324.2</b>
<b>Department of Transportation</b>	<b>83,280.8</b>		<b>9,500.0</b>	<b>129,027.4</b>
<b>Philippine National Police</b>	<b>187,620.2</b>			<b>190,846.2</b>
<b>Philippine Army</b>	<b>92,545.8</b>			<b>96,869.9</b>
<b>Philippine Air Force</b>	<b>26,472.0</b>			<b>29,841.4</b>
<b>Philippine Navy</b>	<b>29,083.0</b>			<b>31,182.7</b>
<b>GHQ</b>	<b>38,090.9</b>	<b>150.7</b>		<b>45,578.7</b>
<b>o.w. AFP Modernization Program</b>	<b>25,000.0</b>			<b>33,000.0</b>
<b>Support to the Barangay Development Program of the National Task Force to End Local Communist Armed Conflict (NTF-ELCAC)</b>				<b>16,440.0</b>
<b>Pension and Gratuity Fund</b>	<b>116,194.8</b>			<b>172,893.7</b>
<b>Office of the President - Confidential and Intelligence Expenses</b>	<b>4,500.0</b>			<b>4,500.0</b>

i-LEAD

All tables were lifted from i-LEAD’s budget presentation to Nagkaisa last October 15, 2020

It can be observed from this presentation that much of the 2021 budget will go to the DPWH (Php667.324B). Huge lump sum allocations for local projects such as multipurpose halls, were even flagged by Sen. Panfilo Lacson.<sup>44</sup> Other items that showed increases and new funding allocations are for the security sector.

As a matter of fact, a new program for ending the communist insurgency at the barangay level was allocated a lump sum that is 23 percent higher than DOLE’s Php11.1B budget for livelihood and emergency employment, and far higher than the National Electrification Administration’s (NEA) Php1.6B<sup>45</sup> budget for rural electrification projects. This Php16.44B Support to the Barangay Development Program of the National Task Force to End Local Communist Armed Conflict (NTF-ELCAC) is also higher than the total allocation of Php13B for DOH’s COVID-19 response, which sets aside a measly Php2.5B for the much-awaited vaccine.<sup>46</sup> Support for MSMEs has also been reduced for 2021. In total, the NTF-ELCAC will have a budget of Php19B for 2021.

These facts beg the question: is the Executive banking on the assumption that recovery and the implementation of its SDG commitments will move without much stimulation and adequate financing? Has the President exempted himself from his own UN challenge?

The same question bothers Mark Elder, Director of Research and Publications at the Strategic Management Office at the Institute for Global Environmental Strategies (IGES) in Japan, who prepared the Assessment of ASEAN Countries’ Concrete SDG Implementation.<sup>47</sup> According to his report, while the Philippines is making progress in six (6) SDGs, “its voluntary national review (VNR) did not mention any specific budget allocations, but it may be assumed (emphasis mine) that many or most of the listed policies had existing budget lines.”<sup>48</sup>

Well, that assumption can be the subject of further research, in the same manner that the Citizen’s COVID-19 Budget Tracker and i-LEAD have been tracking down the details of Bayanihan I, Bayanihan II, and the 2021 budget. It is worth mentioning though, that based on IGES’ assessment, the Philippines can always catch up with timely policies to address its SDG targets. But gaps, fragmentation, bureaucratic gridlock, and the lack of funding continue to saddle the implementation of these programs. Again, priorities, fiscal, and administrative constraints need se-

rious recalibration. As the country is continuously confronted by multiple crises in the age of climate change and pandemics, universal healthcare, basic income, employment guarantees, resilient and sustainable communities, among others, are mounting social tasks that present and future governments cannot simply ignore.

III. Why green? Why climate jobs?

It can no longer be argued that the Philippines is either an ambiguous or a reluctant actor in pursuing the sustainable development goals. As discussed above, the country, even prior to the adoption of the 2030 Sustainable Development Agenda<sup>49</sup> and the Paris Agreement<sup>50</sup>, has been relatively productive in enacting policies that promote sustainability. Our own vulnerabilities to climate change and the huge deficit in decent work only makes the demand for green and climate jobs in the recovery agenda more urgent.

The 2011-2028 National Climate Change Action Plan (NCCAP), formulated as early as 2010 based on the National Framework Strategy on Climate Change (NFSCC), contains 14 clearly stated principles that would guide the country’s climate change actions. Foremost in NCCAP’s framework is the vision of creating “a climate risk-resilient Philippines with healthy, safe, prosperous, and self-reliant communities, and thriving and productive ecosystems.”<sup>51</sup>

Moreover, on energy production, a comprehensive law on renewable energy (RE), the Renewable Energy Act of 2008 has been in place for more than 10 years now. The act is supported by approved rules on feed-in tariff, net metering, green energy option, and the creation of the RE market, among others, to incentivize investments in RE.

On Decent Work<sup>52</sup> (SDG 8), the Philippines, together with three other countries have been designated by the ILO as pilot areas for the implementation of this framework as early as 2009. By 2015, the Decent Work Agenda was integrated into the SDG. In the same year, a Just Transition framework which defines work to be environmentally sustainable and decent was adopted by the governing body of the ILO.<sup>53</sup> In the Philippines, the enactment of the Green Jobs Act of 2016 became the just transition’s main policy instrument.

However, implementation of decent work policies in the country also needs interrogation. The IGES’ assessment of ASEAN countries’ SDG implementation is very instructive on how the Philippines is faring at the policy level. In combating climate change (SDG 13), policies have been put in place successively over the last decade, connoting compliance to international frameworks (see Appendix B).

The COVID-19 pandemic has only made the objectives defined in those policies more desirable, as the right to universal healthcare does not compete with our right to decent work and a sustainable future. In fact, it is only through a healthy environment and decent work conditions that people and future generations are able to enjoy a life of dignity and become more resilient.

Besides, green and climate jobs are no longer lifeless concepts but are actual, dynamic fields involving millions of people in many parts of the world.

In the energy sector alone, the International Renewable Energy Agency (IRENA) reported that in 2018, the global renewable energy (RE) sector employed 11 million people, 32 percent of these jobs are held by women.<sup>54</sup> This recent figure is a dramatic seven-fold jump from the previous estimate of 1.3 million in 2004<sup>55</sup> (see Table 5).

Table 5: Global jobs in renewable energy

Technology	China	Brazil	United States	India	European Union (28 countries)
Solar PV	2,194,000	15,600	225,000	115,000	96,000
Biofuel	51,000	832,000	311,000	35,000	208,000
Hydropower	308,000	203,000	66,500	347,000	74,000
Wind	510,000	34,000	114,000	58,000	314,000
Solar heating and cooling	670,000	41,000	12,000	20,700	24,000
Solid Biomass	186,000	---	79,000	58,000	387,000
Biogas	145,000	---	7,000	85,000	67,000
Geothermal	2,500	---	35,000	---	23,000
Municipal and industrial waste	---	---	---	---	---
CSP	11,000	---	5,000	---	5,000
Tide, wave, and ocean energy	---	---	---	---	---
Total	4,078,000	1,125,000	855,000	719,000	1,235,000

Source: IRENA, Renewable Energy and Jobs – Annual Review, 2019

The table also shows the solar PV industry leading the renewable technologies in terms of job creation, followed by liquid biofuels, hydropower, and wind.

IRENA’s latest Global Renewables Outlook projects renewable energy jobs to reach 30 million by 2030 and 42 million by 2050<sup>56</sup> (see Appendix D).

Another report cited by the ADB from the Global Commission on the Economy and Climate concluded that strong climate action has the potential to generate over 65 million new low-carbon jobs by 2030. It is also expected to deliver at least \$26 trillion in net global economic benefits, and prevent 700,000 premature deaths from air pollution.<sup>57</sup>

Green Jobs and Climate Jobs: The Difference

Before going further into job details, it is important to note the difference between green jobs and climate jobs as they are often construed to mean the same.

The ILO defines green jobs as “decent jobs that contribute to preserve or restore the environment, they be in traditional sectors such as manufacturing and construction, or in new, emerging green sectors such as renewable energy and energy efficiency.”<sup>58</sup>

The U.S. Bureau of Labor Statistics (BLS) defines green jobs as either “jobs in businesses that produce goods and provide services that benefit the environment or conserve natural resources” or as “jobs in which workers’ duties involve making their establishment’s production processes more environmentally friendly or use fewer natural resources.”<sup>59</sup> Sectors falling under this definition include employment in:

- 1) Renewable energy;
- 2) Energy efficiency;
- 3) Pollution reduction and removal, greenhouse gas reduction, and recycling and reuse;
- 4) Natural resources conservation; and
- 5) Environmental compliance, education and training, as well as public awareness.

All the definitions clearly point to those considered as green activities or activities that produce green products or services. However, while climate jobs are green jobs, its social function in the context of global warming differs greatly with that of other green jobs. This is because the primary goal of climate jobs is to reverse carbon emissions by shifting to renewable energy production, energy efficiency, and building green infrastructure.

The South African campaign for One Million Climate Jobs has made this important distinction between climate jobs and green jobs. Are they one and the same? “No. Climate jobs are jobs which stops the world heating



up from climate change. Green jobs can mean almost anything, from a ranger in a national park to a worker in wastewater. These are important jobs. But they do not stop climate change.”<sup>60</sup>

This differentiation is important in policy formulations. For example, workers who are involved in guarding forests, digging dikes, manning parks, waste management, or those in organic farming are performing important green jobs, but do not cut carbon emissions on the level climate jobs do in the renewable energy, transport, construction, and agriculture sector. To be clear, this distinction is not meant to exclude or downgrade other jobs that are not or less related to the climate. .

Work is valuable, be that in skilled or low-skilled workplaces, in a ‘brown’ or ‘green’ economy. Each worker deserves a decent job, wherever he/she is, whenever possible. The differentiation is only made here to underscore the need for decisive climate action, hand in hand with the strategies for fighting the pandemic and recovery after. Otherwise, business as usual market solutions will continue to dominate the crafting of policies for the pandemic response.

IV. Calculating green and climate jobs

Climate jobs are generated during the shifts toward the production and consumption of renewable energy, deploying energy efficiency techniques, greening the transport system, building climate-smart infrastructures and resilient communities. This is also done by protecting, conserving, and taking care of the environment. Given these, it must be asked where these jobs are at now in the Philippines?

Unfortunately, green and climate jobs data remain scarce in the Philippines. However, a green jobs mapping exercise had already been conducted in 2014 with the support of the ILO.<sup>61</sup> Thus, methods and official data gathering are presumed to have already been done especially in the preparation of the National Green Jobs Human Resource Development (NGJ HRD) Plan.

Estimating Green Jobs

The ILO’s Methodologies for Assessing Green Jobs<sup>62</sup> has introduced a set of procedures in assessing direct, indirect, and induced jobs for projecting green jobs. Investment in sustainable sectors, the ILO said, will result in an expansion of production and the generation of a number of direct jobs. Expanded production invariably also leads to a higher demand for inputs, resulting in an increase in indirect jobs in supplier industries. The increased consumer spending of those in these newly created direct and indirect jobs in turn creates induced jobs.<sup>63</sup> The procedures it outlined include inventories and surveys, employment factors, input-output analysis and social accounting matrices, as well as computable general equilibrium (CGE) models and system dynamics.

Due to research limitations in applying these methodologies and absent official labor market information systems in the country on this subject, this paper relies primarily on previous studies and utilizes assumptions and “what if scenarios” in the initial determination of direct green and climate jobs potential in the country. Specifically on renewable energy, the employment factor per unit of energy is used as it is simpler to project using reference benchmarks established in earlier studies. Projecting total green jobs potential using social accounting and CGE models is deferred for further studies.

An earlier study on jobs and renewable energy by Greenpeace, “Green is gold”<sup>64</sup>, tried to illustrate how big the potential of generating green jobs in renewable energy is in the country. The DOLE’s policy think-tank, the Institute for Labor Studies (ILS), has lauded Greenpeace’s work as “the first of its kind report on the economic potential of renewable energy – particularly on the generation of jobs.” <sup>65</sup> The report, it said, “will help develop the policy and industry response needed to fuel interest on green jobs.”<sup>66</sup>

The ILS led then by its Executive Director Cynthia Cruz conducted pioneering research on green jobs as early as 2007. Under the Philippines’ Green Jobs Act of 2016, DOLE was identified to lead the 21 agencies in crafting the National Green Jobs Human Resource Development Program (NGJ-HRD Plan).

Yet, even with the limited information the government officially has at present, the great potential of RE in creating employment in a country where resources are vast is highly anticipated. The Philippines has an RE potential of at least 250,000 MW exclusive of solar power, according to earlier estimates made by the Department of Energy (DOE).

By 2040, the country’s demand for electricity is estimated to reach 90,584MW under the business-as-usual or reference scenario (REF) and 93,482MW under the alternative or clean energy scenario (CES). This is according to the draft Philippine Energy Plan 2018-2040 prepared by the DOE.<sup>67</sup> Actual installed capacity in 2018 is at 23,815 MW. The REF projection requires an additional capacity of at least 66,000 MW to meet the country’s growing demand for electricity for 2018-2040 (see Table 6).

Table 6: Demand and Supply Outlook 2018-2040 in MW

	2018	2030		2040		Capacity Additions by 2040	
	Actual	REF	CES	REF	CES	REF	CES
Coal	8,844	18,900	17,850	31,470	18,150	22,626	9,306
Oil-based	4,292	1,993	1,993	1,993	1,993	-2,299	-2,299
Natural Gas	3,453	4,760	4,620	18,240	21,660	14,787	18,207
Renewable	7,226	25,266	26,259	38,881	50,479	31,655	43,253
Geothermal	1,944	1,890	1,890	1,770	2,770	-174	826
Hydro	3,701	9,247	9,920	9,629	12,302	5,928	8,601
Biomass	258	660	660	660	1,550	402	1,292
Solar	896	11,393	11,393	22,050	24,960	21,154	24,064
Wind	427	2,076	2,396	4,772	8,897	4,345	8,470
Other Technology	-	-	-	-	1,200	-	1,200
Total	23,815	50,919	50,722	90,584	93,482	66,796	69,667

Source: DOE, draft Philippine Energy Plan 2018-2020, Chapter II, Demand and Supply Outlook.

The government plans to achieve the goal of increasing the installed RE capacity by at least 20,000 MW by 2040 based on the updated National Renewable Energy Program (NREP). However, meeting this target only brings RE to less than 30 percent of the total energy mix under the REF scenario and up to 37 percent under CES. In other words, at least 60 percent of the electricity requirement nationwide will still be supplied by fossil fuels such as coal and natural gas 20 years from now.

There is evidently enough room and reason to satisfy the country’s growing electricity requirements with RE. Increasing the RE share further from what was targeted in the plan will significantly reduce the country’s carbon footprint, while creating more climate jobs at the same time. Furthermore, the 2018-2040 energy plan has all the information on fuel consumption by sector, which demands stronger action.

For instance, in 2018, household fuel consumption is 60.93 percent biomass, 25.77 percent electricity, 12.47 percent LPG, and 13.30 percent petroleum. Providing access to modern energy supplies, especially on electricity, will cut down traditional biomass consumption to more than 50 percent.

The same will happen with the energy industry which at present utilizes 32.05 percent coal, 31.53 percent electricity, 19.52 percent petroleum, and 15.93 percent biomass, to run their production. The commercial sector also runs 47.61 percent on petroleum and 44.34 percent on electricity. Increasing RE share will cut down consumption on coal and petroleum.

Meanwhile, rolling out more electric vehicles, modern railway systems, building biking and walkway infrastructures, and promoting inclusive mobility will significantly reduce the transportation sector’s dependence on oil consumption, which at present stands at 95.5 percent.

Employment in renewable energy

The DOE reported in its revised Philippine energy plan the creation of 10,616 jobs from the 15,109.23 MW renewable energy projects that are in the pre-development stage as of December 2018<sup>68</sup> (see Table 7).

Table 7: Summary of investments costs under pre-development stage (As of 31 December 2018)

Resources	No. of RE Projects	Potential Capacity (MW)	Investment Cost (In Million PhP)	Jobs/ Project	Jobs Generation
Hydropower	119	6,798.86	2,039,658.00	15	1,785
Ocean Energy	7	21	73.97	15	105
Geothermal	25	585	16,721.25	280	7,000
Wind	39	1,239.70	343.02	20	780
Solar	86	6,464.67	5,177.72	11	946
Total	277	15,109.23	2,061,973.96	341	10,616

Source: DOE, draft Philippine Energy Plan 2018-2020, Chapter V, Renewable Energy.

The DOE’s job report is obviously limited. Its job per project estimate refers only to the pre-development stage set at 15 workers per project, whereas the most number of jobs needed in a power project is during its construction and commissioning phase. Then it decreases again during the operations and maintenance (O&M) stage. In addition, since the country does not have the capacity, which we should have, to produce RE technologies, there will be no manufacturing jobs in the government data in the immediate future. Fortunately, there are RE projects in the country that have jobs information.

Jobs generated from the newly constructed 3MW mini-hydro project of the Benguet Electric Cooperative (BENECO) bear similarity with the 15 jobs/project shown in the DOE report. However, the Man-asok Mini-hydro power plant was able to employ up to 150 people during the pre-development and construction phases, and about 10-15 full time jobs for the O&M phase, according to project manager Merlie Landocan during an interview in 2019.

The Romblon Electric Cooperative (ROMELCO), the leader in RE development among the 121 electric cooperatives in the country, has so far built four RE facilities with hundreds of jobs generated, according to its General Manager Engr. Rene Fajilagutan (see Table 8).

Table 8: Renewable Energy Jobs in Romblon Electric Cooperative (ROMELCO)

RE Resources	Capacity	Jobs		
		Pre-construction	Construction	O&M
Mini-Hydro	1,350 kW	20	200	21/15
Wind Power	900 kW	10	30	6
Solar-Diesel Hybrid System	30 kW	10	30	6
Solar Rooftop (grid-tied)	200 kW	10	6	2
Biomass	22 kW	6	25	3
Total	2,502 kW	56	291	38

GM Fajilagutan explained in an interview that the Catingas Mini-Hydro required more manual workers when IPs in the area demanded the non-use of machineries and blasting techniques during its construction phase.

Nevertheless, the DOE estimate can still be utilized in plotting jobs generation per unit of energy. In this case, a MW capacity for each technology, like how it is done in other jurisdictions. It must be noted that this calculation is based only on the pre-development stage report of the DOE, not for the entire life of these projects. Table 9 yields the following results.

Table 9: Jobs per megawatt capacity in pre-development stage projects

Resources	PotentialCapacity (MW)	Total Jobs Generation	Jobs/MW
Hydropower	6,798.86	1,785	0.26
Ocean Energy	21	105	5
Geothermal	585	7,000	11.96
Wind	1,239.70	780	0.63
Solar	6,464.67	946	0.15
Total average	15,109.23	10,616	0.70

From here, we can now calculate the number of RE jobs per MW for the 2018-2040 demand and supply outlook presented above. CES is used as the scenario here since it is the aspirational target of the government for alternative energy as against the business-as-usual projection (see Table 10).

Table 10: Estimated RE Jobs/MW 2018 – 2040 under clean energy scenario (pre-development stage)

Resources	2030		2040	
	CES	Jobs/ MW	CES	Jobs/ MW
Geothermal	1,890	22,604	2,770	33,129
Hydro	9,920	2,579	12,302	3,198
Solar	11,393	1,709	24,960	3,744
Wind	2,396	1,509	8,897	5,605
TOTAL		28,401		45,676

Perhaps the table’s findings can be further explained in paragraph form.

Other models

One study uses job-years per GWh for various energy sources. A job-year in their definition is one year of work for a person. The tool is somewhat controversial in the US, but proponents in the Obama administration defended it as a better way for calculating the amount of work needed to complete a project (see Table 11).

Table 11: Job-years per GWh<sup>69</sup>

Technology	Job-year
Solar PV	0.87
Landfill Gas	0.72
Small Hydro	0.27
Geothermal	0.25
Solar Thermal	0.23
Wind	0.17
Nuclear	0.14
Coal	0.11
Natural Gas	0.11

We can come up with our own estimate using this reference. The Philippines consumed a total of 82,602 GWh of electricity in 2018. Consumption in 2040 will reach 343,516 and 329,786 GWh under the REF and CES scenarios respectively. Under the clean energy scenario, 37 percent of the capacity for 2040 will be supplied by RE. That is equivalent to 122,021 GWh. Using the estimates made in this study, that would translate to about 106,158 job-years until 2040, assuming that 37 percent will be supplied by solar, or 20,744 job-years if supplied by wind. A combination of sources can only affect each share of RE in employment but not the overall trend.

In contrast, 63 percent of the remaining capacity (207,765 GWh) can only yield 22,854 job-years if supplied by coal or natural gas.

In 2014, the Council on Energy, Environment and Water (CEEW)<sup>70</sup> and Natural Resources Defense Council (NRDC)<sup>71</sup> conducted a more detailed research on the Indian solar PV market and its employment potential. India is one of the leading solar producers in the world. The focus of the CEEW and NRDC study is the megawatt-scale solar power projects ranging from 1MW – 5MW and those higher than 25MW.

Their job calculation begins with plotting the project capacities against the number of employees assigned or employed for each phase, and the duration of the solar project. The phases include: (1) Business Development, (2) Design and pre-construction, (3) Construction and Commissioning, and (4) Operations and maintenance. Their simulation was also able to calculate the average number of skilled and unskilled workers required in each phase and the duration they are needed in the project, as reported by industry players during the survey.

The CEEW and NRDC study came up with the following observations (see Table 12):

Table 12: CEEW and NRDC job calculations on solar projects

Phase	Key Findings		
	Capacity MW	Median # of workers	Duration
Business Development	1 – 5	5	75 days
	5 – 10	3	135 days
	10 – 25	3	105 days
	> 25	3	150 days



Design and pre-construction	1 – 5	Skilled 7	90 days
	5 – 10	12	90 days
	10 – 25	7.5	60 days
	> 25	7	120 days
Construction and Commissioning	1 – 5	Skilled 20	120 days
	5 – 10	12	105 days
	10 – 25	25	90 days
	> 25	30	150 days
	1 – 5	Unskilled 50	100 days
	5 – 10	105	150 days
	10 – 25	70	65 days
	> 25	450	210 days
Operations and maintenance.	1 – 5	Median # of skilled employees per Project per Year	Median # of unskilled employees per Project per Year
	5 – 10	3	7
	10 – 25	6.5	21
	> 25	4	10
		12	30

Source: Solar Power Jobs: Exploring the Employment Potential in India’s Grid-Connected Solar market, Council on Energy, Environment and Water, and Natural Resources Defense Council, August 2014.

This calculation provides us a better idea of how solar industry jobs can be computed based on size, duration of project, as well as the number of skilled and unskilled workers needed in each phase. It also gives us a reference benchmark for comparison when reviewing other information such as the limited job data of the DOE.

The study also found that more jobs are generated in smaller 1-5MW projects compared with larger projects. The Philippines has an average of 4-5 sun hours a day, making solar PV an ideal technology in the production of RE in the county.

Using this reference model, an estimate of solar jobs generated can be done based on the Philippine energy plan in each stage of the 1-5MW project. Total solar jobs are projected in Table 13 to reach 209,508 by 2030 and 504,264 by 2040.

Table 13: Solar jobs estimate under CES 2030 and 2040 using the CEEW and NRDC model

Stage	2030		2040	
	SOLAR MW (CES)	Jobs/ 1-5MW	SOLAR MW (CES)	Jobs/ 1-5MW
Business Development		11,393 (skilled)		24,960 (skilled)
Design and pre-construction		15,950 (skilled)		34,944 (skilled)
Construction and Commissioning	11,393	45,452 (skilled) 113,930 (unskilled)	24,960	99,840 (skilled) 294,600 (unskilled)
Operations and maintenance.		6,833 (skilled) 15,950 (unskilled)		14,976 (skilled) 34,944 (unskilled)
Sub-total		79,628 (skilled) 129,880 (unskilled)		174,720 (skilled) 329,544 (unskilled)
TOTAL SOLAR JOBS		209,508		504,264

This model is in some ways similar with the estimates made by the United Nations Environment Program (UNEP) and ILO (2008) as shown in the next table.

Table 14: Average employment (jobs/MW of average capacity) over life of facility

	Manufacturing, construction, installation	O & M, Fuel Processing	Total
Solar PV	5.76 – 6.21	1.20 – 4.80	6.96 – 11.01
Wind Power	0.43 – 2.51	0.27	0.70 – 2.78
Biomass	0.40	0.38 – 2.44	0.78 – 2.84
Coal fired	0.27	0.74	1.01
Natural Gas fired	0.25	0.70	0.95

Source: ILO Research Brief, “Investment in renewable energy generates jobs. Supply of skilled workforce needs to catch up.” A digest of the study Skills and Occupational Needs in Renewable Energy (ILO, 2011)

Applying these UNEP/ILO/IOE/ITUC estimates of job per megawatt capacity as cited above for the 66,000MW additional capacity needed until 2040, (assuming they all will be supplied by RE) will translate to 51,480 to 187,440 jobs (in biomass), reaching as high as 459,360 to 726,660 (in solar). In contrast, only 62,700 to 66,660 jobs will be generated when supplied by coal and natural gas (see Table 15).

Table 15: Potential jobs assuming 66,000 MW of new capacity until 2040 will be supplied 100% by RE and non-RE technologies, based on UNEP/ILO/IOE/ITUC 2008 estimates

Technology	Manufacturing, construction, installation	Operating and Maintenance/Fuel Processing	Total
Solar PV	380,160 – 409,860	79,200 – 316,800	459,360 – 726,660
Wind Power	28,380 – 165,660	17,820	46,200 – 183,480
Biomass	26,400	25,080 – 161,040	51,480 – 187,440
Coal Fired	17,820	48,840	66,660
Natural Gas Fired	16,500	46,200	62,700

Assuming only 30 percent of the 66,000MW, equivalent to 19,800MW, would be met by RE, its job equivalent would still be between 13,860 to 55,044 from wind, and 137,808 to 217,998 from solar power.

Other models make use of the amount of investments to come up with job estimates in green construction projects which deliver higher multipliers. Clean energy infrastructure is helpfully very labor intensive in the early stages. One model suggests that every \$1 million in spending generates 7.49 full-time jobs in renewable infrastructure, 7.72 in energy efficiency, but only 2.65 in fossil fuels.<sup>72</sup>

Social Housing and Building Sector

The housing sector is another area where green and climate jobs can be created. According to a news report quoting the Department of Human Settlements and Urban Development (DHSUD), the backlog in housing stands at 6.75 million units and may even reach 22 million by 2040 if not decisively addressed.<sup>73</sup>

Confronting the housing problem is a Herculean job for any government that can hardly reach 100,000 units in annual production.Senator Franklin Drilon said some Php24B is needed next year to partially address the 6.5 million backlogs.<sup>75</sup> Annual production of socialized housing by the National Housing Authority (NHA) was only 94,895 units in 2016, 82,883 in 2017, and 38,597 in 2018.<sup>76</sup> Yet housing is a social task that once translated into a climate strategy, will create not just resilient social assets but also thousands of green jobs. According to industry players, labor input accounts for about 30 percent of the total cost in private construction, a little bit higher than the 25 percent in the public sector.<sup>77</sup>

Furthermore, the National Climate Change Action Plan as cited earlier emphasizes the building of climate-resilient communities. The ARISE proposal for Structural Intervention, Chapter 6 (h) includes “The construction, improvement, and renovation of social housing projects and resettlement areas that adhere to climate change adaptation and climate risk reduction standards to ensure human, environmental, and ecological safety and security, as well as access to basic social services, which include communal facility for solar-powered electricity, efficient potable water and drainage and waste management system and services, among others.”<sup>78</sup>

Energization is another area in the social housing sector that can generate jobs, particularly with solar PV. Likewise, energy efficiency projects also have the potential to create thousands of jobs. A typical household may need at least 1kW capacity whether on-grid and off-grid. A 100,000 unit socialized housing project with embedded 1kW solar is equivalent to 100MW, or 6,000MW for the 6 million housing backlog. A calculation can then be made using the models discussed above. I Around 500 to 30,000 jobs can be created by 100MW and 6,000MW projects respectively, using the UNEP/ILO estimate.

But this only covers the housing backlog. Most social assets such as schools, hospitals, offices, training centers, and other multipurpose buildings are owned by the government. Thus, these can be remodeled for solarization and energy efficiency projects on a massive scale. Similarly, in 2017, a total of 152,012 buildings, 110,942 of them residential, were constructed based on approved permits<sup>79</sup>. By 2040, the number of households is estimated to reach 35 million.<sup>80</sup> Theoretically, all house-



holds and buildings, both private and public, can be made green. And for socialized housing where the provision of housing units and electrification has always been a “chicken-or-egg question”<sup>81</sup>, the inclusion of RE in government financing can address the twin needs of providing housing units and their immediate electrification.

**Transport sector**

Green and climate jobs in the transportation sector will depend largely on the increased penetration rate of electric vehicles, the construction of a modern and green mass transport system, and the promotion of active transportation that shuns the use of fossil fuel. For instance, the 2015 Comprehensive Automotive Resurgence Strategy (CARS) program worth Php27B for six years hoped to generate 200,000 jobs for the development and manufacture of eco-PUVs.<sup>82</sup>

Modern railway and bus rapid transit systems in the BBB pipeline will surely create new employment, but their operations may mean displacement of workers in traditional modes such as PUVs. Hence, a just transition framework is particularly important in this sector to prevent the negative effects of the shift. There must be social dialogue, but appropriate and adequate social incentives in leading workers to shift from the old to a greener and modern transport systems are equally important.

**Nature hires**

A recently published study, “Nature Hires: How Nature-based Solutions can power a green jobs recovery,”<sup>83</sup> by the World Wide Fund for Nature (WWF) and ILO called on policymakers to urgently explore the potential of nature-based solutions in their responses to COVID-19. It identifies some of the most job-intensive activities in the areas of reforestation, ecosystem or watershed rehabilitation and restoration, management of invasive species and the use of agro-ecological approaches in food production.

Several projects around the world were presented in this study, which include the number of jobs generated in each. China’s massive reforestation program which started in 1999 involved some 124 million people, providing approximately 24 million FTE jobs per year. Another example cited in the study are the watershed improvement projects in Africa which created 1 to 3 FTE jobs/ha, while creation and management of urban green spaces in Germany and in the US were able to provide 1 to 5 FTE jobs/ha.<sup>84</sup>

The Philippines has 5-12 million hectares<sup>85</sup> of declining forests to take care of and 36,289 kilometers of coastline<sup>86</sup> to manage sustainably. The findings of this study and the projects it cited may prove to be instructive for Philippine policymakers.

**V. A call for a LARGER program**

**In light of the present challenges with the pandemic, as well as the opportunity to push for green initiatives as part of recovery efforts, organized labor under the Nagkaisa! labor coalition has put forward its policy solutions.**The Labor Agenda on Recovery through Green Employment in Rebuilding (LARGER) Programs is a call for the inclusion of a green employment agenda in the government’s post-COVID-19 recovery plan. This green agenda is being advanced based on the principle that recovery should not just heal but also make people more healthy and secure; that it does not simply restore lost jobs and free markets but is one which also creates green, decent jobs and a sustainable future.

It is further emphasized that employment in sustainable jobs will play a critical, if not central role, in realizing this framework of recovery amid the challenges of pandemics, climate change, and the changes caused by the fourth industrial revolution (FIRe)<sup>87</sup> that has been shaping the world of work these last few years. In spite of all these changes happening before our eyes, work remains the ‘central pillar’ of our individual lives, societies, and our politics.<sup>88</sup>

LARGER’s starting point is the Nagkaisa! labor coalition’s SOLAR proposal as mentioned earlier. Specifically, on its agenda for income and employment guarantees named Unemployment Support and Work Assistance Guarantee or USWAG.<sup>89</sup> In brief, Nagkaisa’s USWAG calls for:

- 1.Income guarantees, equivalent to the prevailing minimum wage or P10,000 per month, whichever is higher, for those unable to work due to lockdown conditions.
- 2.Wage subsidies equivalent to 75% of the prevailing minimum wage to save jobs of workers in micro, medium and small enterprises (MSMEs).
- 3.Employment guarantees for those who are unemployed, ranging from 100 days to 9 months.
- 4.Training for strategic employment facilitation, with stipends of not less than 50% of the minimum wage.
- 5.Expansion of the public sector to take on social tasks such as upgrading the public health system, developing renewable energy, and carrying out mitigation and adaptation measures to climate change (climate jobs).

LARGER has now expounded on the green jobs agenda (Item 5) of USWAG by taking into account the policy instruments that have been instituted by the Philippine government over the last few decades. The focus of further discussion below will be on the implementation of the Green Jobs Act of 2016, a policy which can be regarded as an affirmative union of climate and employment strategies in the Philippines.

Also note that agenda 5 of Nagkaisa’s USWAG demands the expansion of the public sector to take on these social tasks. This goes against the dominant view among policymakers that it is better for the state to concentrate on health responses and leave investment in green jobs to the private sector. Again, breaking from this view is what this proposition has been forwarding from the very start.

A short review of previous Philippine employment programs will also be made to see whether the government is prepared or has the legal framework and programs to carry out these social tasks identified. This is an important consideration to note because countries that have been implementing PEPs such as India and South Africa have placed strong environmental, health, women, and youth components in their programs.<sup>90</sup>

In terms of mandate, India’s Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) is an act of parliament, while the Expanded Public Works Program (EPWP) is merely a program with strong backing from parties, trade unions and social movements in South Africa.<sup>91</sup>

**Philippine employment policies**

Employment policy in the country is market-driven, meaning jobs are generated mostly in private sector enterprises. The Duterte administration’s Philippine Development Plan (PDP 2017-2022) does not contain employment programs that are markedly different from that of the previous administrations.

The result of these homogenous policies is reflected clearly in the distribution of employment across the different classes of workers. Over the last few decades, employment is biggest in private establishments.<sup>92</sup> Check citation).

Nevertheless, this does not mean that previous and present governments do not have PEPs. The next table will show that different administrations throughout our history had their own PEPs or had simply adopted those of their predecessors (see Table 16).

Administration	Employment Programs	Contexts
Macapagal, D.	Emergency Employment Act of 1962	Poverty, post-war reconstruction
Marcos, F, Jr.	Manpower development (NMYC), labor export (POEA)	Poverty, oil crisis, martial law
Aquino, C.	Community Employment and Development Program (CDEP), CBEP, Tulong sa Tao Self-employment,	People power, post-recession, growth, poverty, power crisis
Ramos, F.	Technical Education Skills Development Administration (TESDA), CBEP	Globalization, growth, stability, poverty, Asian financial crisis
Estrada, E	Philippine Employment Service Office (PESO), TESDA	Asian financial crisis, poverty, political crisis
Arroyo, G.	PESO, TESDA, Livelihood and Emergency Employment Program (CLEEP), TUPAD	Globalization, growth, poverty, political crisis, global financial crisis
Aquino, B.	PESO, TESDA, TUPAD	Growth, poverty, stability
Duterte, R.	PESO, TESDA, TUPAD	Growth, war on drugs, pandemic

It is important to note that enhanced PEPs are rolled out during crisis periods. Examples were Macapagal’s Emergency Employment Act of 1962 to address post-war reconstruction; Marcos’ labor export policy to address unemployment and the oil crisis during the 70s; Corazon Aquino’s CEDP and ‘Tulong sa Tao’ to address unemployment resulting from the 1983-86 recession; and Gloria Arroyo’s CLEEP and TUPAD when the country was hit by the global financial crisis in 2008.

Presidents Aquino III and Duterte kept implementing TUPAD or TUPAD-like programs by simply (re)calibrating its target beneficiaries and the budget needed for their 10-30-day emergency employment in existing government projects.

In short, the Philippines during the last 50 years has been implementing public employment programs but on a limited basis, depending on the scale of the crisis each administration had to address. From what we have seen in the roll out of programs under the Bayanihan I and II, TUPAD remains the government’s PEP at present despite the immensity of the prevailing job crisis.

Workers maintain that this kind of PEP is not enough to arrest the unemployment bloodbath, or to lead our way to a better normal. Hence, the call for the USWAG and LARGER Programs. These aim not only to make public employment a key strategy for recovery, but also to incorporate climate and the environment in the way forward. The Philippine Green Jobs Act of 2016 itself mandates the government towards this direction.

The Philippine Green Jobs Act

In its 2019 Philippine Journal of Labor Studies, the Institute for Labor Studies (ILS), the policy and research arm of DOLE, allotted an entire chapter explaining the Philippine Green Jobs Act of 2016 and the plans for its implementation.

According to the ILS, the Philippine Green Jobs Act of 2016 is the first piece of legislation in the country designed specifically, “to generate, sustain, and incentivize green jobs.”<sup>93</sup>

The law defines green jobs as “employment that contributes to preserving or restoring the quality of the environment” and that they are also “decent jobs that are productive, respect the rights of workers, deliver a fair income, provide security in the workplace and social protection for families, and promote social dialogue.”<sup>94</sup>

The law, added the ILS, further recognizes that green jobs “are created when all sectors – both public and private – take on a whole-of-nation approach to pursue a sustainable and green economy.”<sup>95</sup>

The law assigned 21 government agencies, to be headed by DOLE, to jointly ensure its effective implementation. Each agency has specific tasks defined under Section 6. Critical to its implementation is the formulation of the NGJ HRD Plan to address the many challenges facing its implementation starting from program promotion, mainstreaming, education and training, up to financing. One of those challenges is the problem and difficulty in forecasting employment trends, together with the corresponding skill requirements for green jobs.

Enabling policies cited in both the IGES and ILS documents confirm the country’s preparedness in dealing with climate and employment challenges.

The NGJ-HRD Plan, according to the ILS, is an evolving document. Its first version that came out in 2019, the National Green Jobs Human Resource Development Plan 2019-2022, discussed the process leading to its formulation, identified the major challenges, and from these produced a three-year Strategic Action Plan to Promote Green Jobs. The action plan contains specific assignments for each concerned agency. For example, responsibilities are listed on improving the labor market information system necessary for the creation and sustaining of green jobs. This is assigned to DOLE as the lead agency, with the participation of DepEd, CHED, TESDA, PRC, DENR, DTI, and PSA<sup>96</sup> (see Appendix C).

The action plan also includes programs for skills development and the mobilization of public and private funding for it. It also specifies the strengthening of labor inspection for green jobs, among others. On social protection, the action plan aims to ensure that the livelihood and emergency employment programs also enhance resilience to climate change, rehabilitate natural resources, and create new productive and sustainable assets that are environmentally-friendly<sup>97</sup> (emphasis added ).

In spite of these promising frameworks and programs, ILS Executive Director Ahmma Charissma Lobrin-Satumba explained that the main challenges confronting the implementation of the green jobs program are the lack of public awareness, capacity building, and green financing. (Include citation)

Here, we can easily get a grasp of the limitations of a climate program that relies heavily on the market. Absent green financing and private investments, creating green jobs will be very slow and capacity buildup in terms of skills would simply follow suit . The same thing befell the Renewable Energy Act where 12 years after its implementation, only 3.5 percent of new renewables (outside of the old hydro and geothermal capacity) were added to the country’s total electricity production. It seems that green and climate jobs are facing the same old problems, notwithstanding the impact of the pandemic in its implementation.

The Covid-19 pandemic has affected the work of all government agencies and the strategic plan to promote green jobs may have assumed lesser importance. But on the positive side, it can be argued that the same attention will be given , or in fact, a higher level of promotion and implementation may be observed once green jobs are translated into an employment strategy in the government’s recovery programs.

The bigger question, however, is whether employment, particularly public employment in the longstanding and emerging social tasks, is/will be considered a primary strategy in ensuring the country’s economic recovery and resiliency.

It cannot be business-as-usual, President Duterte told the UN Assembly last September. This paper’s initial assessment, however, points to a condition where the existing green and climate programs have become less visible in his government’s pandemic response and recovery agenda. Sadly, despite getting increased funding under Bayanihan and in the 2021 budget, emergency public employment will be carried out only under the usual TUPAD program.

VI. Conclusion and recommendations

The government’s pandemic response and recovery program contains no green agenda. This absence is validated upon examination of government programs starting from the Bayanihan I and Bayanihan II, and under the proposed National Expenditure Program for 2021. Even attempts by some lawmakers to introduce a green agenda in their stimulus proposals were effectively redlined by the Executive.

Evidently, green and climate jobs can help address the employment crisis that the country is facing today. As we have shown earlier, tens of thousands of green and climate jobs can be created depending on what sector, type of technology, level of investment, and the kind of policies and programs the government employs. They can be in the matured renewable energy and energy efficiency sectors of the power industry, the housing sector, as well as in nature-based solutions for green recovery. Likewise, previous studies, international agreements, and existing recovery programs being utilized in other countries point to the potential of green recovery in effectively tackling the combined health, economic, and climate crises.

Finally, existing employment policy allows both market solutions and public employment programs in the country. The most recent and coherent of these policies is the National Green Jobs Act of 2016. This makes the proposed LARGER Program an immediate labor agenda for the government to consider in its PEP. The NGJ HRD Plan's Strategic Plan of Action is one platform where this proposal can find a space for government consideration. Another platform are legislative measures together with USWAG, to institutionalize and appropriate the necessary funds.

For the Philippine labor and social movements, it is important that a serious green and climate jobs agenda does not end up only on paper, but builds into a powerful campaign to reach its goals. South Africa's EPWP and India's MNREGA were products of major campaigns for employment and social protection. The Green New Deal in Europe, US, and now in South Korea at first were social movement initiatives, until they were incorporated in varying degrees by politicians into their own programs.

There has never been a labor campaign for green and climate jobs in the country. There should be one, now.

This campaign will require further study and collaboration with other green groups and institutional partners. It will also need a sustained education campaign on climate jobs where the labor movement engages not just its members, but also the unorganized, the youth, women, and the academe.



VII. Appendix

A. LIST OF EXISTING SGD POLICIES BASED ON IGES ASSESSEMENT

- Climate Change Act of 2009 established the Climate Change Commission (CCC) and directed the formulation of national and local climate change actions plans.
- National Disaster Risk Reduction and Management Act of 2010 provides for the overarching country policy for DRRM, and established the national and local DRRM funds
- People’s Survival Fund Act of 2013 established a special fund of at least PHP2 billion (US\$45million) from the 2013 to 2015 annual national budget to augment financial support for local adaptation projects.
- Sectoral & framework plans have also been updated to incorporate climate change and disaster risk parameters such as the Agriculture and Fisheries Modernization Plan, Philippine Energy Plan, Environment and Natural Resources Framework Plan, and river basin master plans.
- At the local level, Comprehensive Land Use Plans and Comprehensive Development Plans are also made climate and disaster risk-informed.
- The Cabinet Cluster on Climate Change Adaptation and Mitigation (CCAM), and DRR was created in 2011 and strengthened in 2017 to lead the effective coordination, harmonization, and complementation of policies and programs on climate risk management, DRR, and sustainable development.
- The National Climate Risk Management Framework has also recently issued CCC Resolution 2019-001 to harmonize and integrate efforts of sectors and stakeholders in addressing the intensifying impacts of climate change.
- Energy Efficiency and Conservation Act of 2019
- Green Building Code of 2016
- GHG Inventory Management and Reporting System (2014)
- National Integrated Climate Change Database and Information Exchange System
- Green Jobs Act of 2016 (Also mentioned under SDG 8.)
- Securities and Exchange Commission Memorandum Circular No.4 s. 2019 that provides the Sustainability Reporting guidelines (Also mentioned under SDG 8.)
- The government is also working on the completion of high-resolution multi-hazard and risk maps that will be more useful for LGUs and communities in planning and preparing for disasters, including slow onset events.
- A National Color-Coded Agriculture Guide Map, which contains projected rainfall and temperature information, was launched in 2017 to better guide farmers in crop planning.
- Project NOAH exemplifies the partnership between the academe and government in providing timely weather information for disaster preparedness.
- Climate Budget Tagging System to track and monitor climate change-related expenditures of the national and local governments (2015)
- Risk Resiliency Program, which focuses on priority climate-vulnerable provinces
- Community-based Early Warning System (CBEWS) has been successfully replicated in several areas of the country.
- Green, Green, Green program funded under the Local Government Support Fund – Assistance to Cities, to promote the development of public open spaces and create greener, and more sustainable cities.
- Public Utility Vehicle Modernization Program
- National Ecolabelling Program
- Government Energy Management Program
- Green Public Procurement
- Waste management programs such as rehabilitation of Manila Bay and other waterways in Metro Manila, and issuance of local policies related to single-use plastics.
- A Sustainable Consumption and Production Action Plan is now being formulated to provide a coherent framework for climate action. (Also listed under SDG 8)

B. NGJ-HRD PLAN STRATEGIC ACTION PLAN

Overall Goal for 2019-2022: Just transition of the Filipino workforce toward an environmentally sustainable and climate resilient development pathway that creates green jobs

	Objective	Strategy	Lead gov't Agency	Co-lead gov't Agencies	Potential tripartite partners
1	EDUCATION AND SKILLS DEVELOPMENT FOR GREEN JOBS				
1.1	Ensure that the education and skills development system is able to develop the skills needed for greener economy and society	a.) Introduce, integrate, and mainstream environmental awareness, sustainable development, and decent work in early childhood education curricula, policies, and programs	DepEd (for primary and secondary education),	CCC, DOLE, DENR, DOST	
		b.) Build on, heighten, and reinforce environmental awareness, sustainable development, and decent work in tertiary education and continuing professional education curricula, policies, and programs	CHED (tertiary education), PRC (professional regulations)	CCC, DOLE, DENR, DOST	
		c.) Update training regulations to reinforce environmental awareness, sustainable development, and decent work in technical and vocational education system	TESDA	CCC, DOLE, DENR, DOST	
		d.) Foster and expand enterprise-based trainings, apprenticeships, and community-based trainings for existing and emerging green sectors to promote sustainable practices and use of green technologies and skills development strategies	TESDA	DOLE, DTI, DA-BAFS, DOST	Industry associations, community-based enterprises
		e.) Develop and support, through public and private employment service providers, tailor-made courses, training, and learning systems for those who are at risk of job displacement as a result of	DepEd (for alternative learning systems), CHED (tertiary education),		

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		training packages, development of Centers of Excellence and Specialized Training Centers, upgrading of facilities and equipment, among others.	SEC, Insurance Commission	TESDA (technical and vocational education) PRC (professional regulations)	
<b>2</b>	<b>EMPLOYMENT FACILITATION FOR GREEN JOBS</b>				
<b>2.1</b>	Improve labor market information system necessary for the creation and sustaining of green jobs	a.) Strengthen national capacities for identifying and anticipating skills needs by establishing a statistical system for green jobs and a green jobs or careers database	DOLE	DepEd, CHED, TESDA, PRC, DENR, DTI, PSA	
		b.) Establish platforms for dialogue and cooperation at <i>sectoral level</i> between education and training institutions, and employers and industries to discuss current and future green skills requirements, and to agree pathways in developing and sustaining skills for green jobs	DOLE	DTI	Industry Associations, Industry Tripartite Councils
<b>2.2</b>	Promote an efficient and effective delivery of employment services that respond to the needs of enterprises and workers in the transition to environmentally sustainable economies and extends outreach to those outside of the formal labour market	a.) Strengthen Public Employment Service Offices (PESOs) to further develop their role as transition agents for green jobs, including providing information, guidance, matching services and training	DOLE	DILG	
		b.) Strengthen career guidance program for green jobs	DOLE	DepEd, CHED	
		c.) Integrate and mainstream green jobs in current employment facilitation strategies by holding green jobs fairs regularly	DOLE	DTI	
		d.) Integrate green jobs parameters in public works and public employment programmes such as "Build, Build, Build"	DPWH	DOLE, DOF	
<b>3</b>	<b>HARMONIOUS, SAFE, AND PROGRESSIVE WORKPLACE</b>				
<b>3.1</b>	Promote sound industrial relations necessary for the creation and sustaining of green jobs	a.) Promote institutionalized labor-management cooperation at <i>workplace or enterprise level</i> by fostering a culture of dialogue, knowledge sharing and mutual advice aimed at improving resource and energy efficiency, reducing waste, and applying safe and clean technologies and working methods that promote productive employment and decent work	DOLE	DTI, DOST	Industry Associations, Industry Tripartite Councils
<b>3.2</b>	Foster safe and healthy environment in the workplace	a.) Improve policy coherence in occupational safety and health (OSH) and cooperation among occupational health and environmental agencies or other relevant institutions with regard to regulation and enforcement	DOLE-OSHC	DA-BAFS	
		b.) Develop and intensify awareness of OSH standards for green technologies, green work processes and new materials related to green transition	DOLE-OSHC	DA-BAFS	
		c.) Promote the use of appropriate prevention, protection and safety processes and strengthen government capacity to enforce laws at national and subnational level in relation to situations which pose an imminent threat of major accidents or risks	DOLE-OSHC		
		d.) Establish, promote or provide for the setting up of joint workers' and employers' OSH committees in the workplace and consider the introduction of issues related to the environment	DOLE-OSHC		
		e.) Promote adequate OSH training in green jobs for workers and for employers, members of OSH committees and labour inspectors	DOLE-OSHC	DA-ATI	
		f.) Regulate and incentivized enterprises to reduce, minimize, and, eliminate hazardous materials across the supply chain of products and production processes	DOLE-OSHC		

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		g.) Promote the inclusion of OSH aspects in certification programs for sustainability	DOLE-OSHC	DA-BAFS	
		h.) Support technical assistance to conduct research to better understand the range of OSH risks across the life cycle of products, new technologies and jobs, and use this knowledge to improve prevention and safety in the workplace	DOLE-OSHC		
		i.) Address the OSH impacts of informality, and facilitate the transition toward the formal economy, in activities related to the greening of the economy, such as materials recovery and recycling, through training, capacity building, certification and, if necessary, legislation	DOLE-OSHC	DA-BAFS DA-ATI	
3.3	Strengthen capacity for labor inspection of green jobs	a.) Introduce and mainstream green jobs in labor inspection system for the purpose of regulating the <del>availability</del> of incentives and ensuring green jobs content pursuant to the National Green Jobs HRD Plan	DOLE-BWC		
		b.) Provide adequate capacity to labor inspectors to monitor compliance of enterprises that sell green goods and services or utilize green technologies	DOLE-BWC		
		c.) Formulate labor inspection system or approach and integrate green jobs in the approach for hard-to-reach sectors such as mining, agriculture, solid waste management, and the informal sector	DOLE-BWC	DA	
4	SOCIAL PROTECTION FOR ALL AND IMPROVED RESILIENCE OF VULNERABLE SECTORS				
4.1	Strengthen minimum social protection floors for green transition	a.) Establish and/or enhance unemployment protection policies and programs for workers in the formal and informal sector who will be affected by impacts of climate change and the green transition	DOLE - BWSC, DOLE-ECC	SSS, DSWD	
		b.) Develop innovative financing models to fund and augment current unemployment insurance schemes	Insurance Commission	SSS, GSIS, DOF	
		c.) Ensure that the livelihood and emergency employment programs also enhance resilience to climate change, rehabilitate natural resources and create new productive and sustainable assets that are environmentally friendly	DOLE-BWSC	DSWD, DENR	
		d.) Formulate adequate, accessible, and innovative social protection measures for hard-to-reach sectors that are often hardly hit by climate change such as such as mining, agriculture, fishing, solid waste management, and the informal sector	DOLE-BWSC	DA	

## C. STIMULUS PACKAGE IN RATIO TO GDP AND PER CAPITA (ASEAN COUNTRIES) From ADB Database

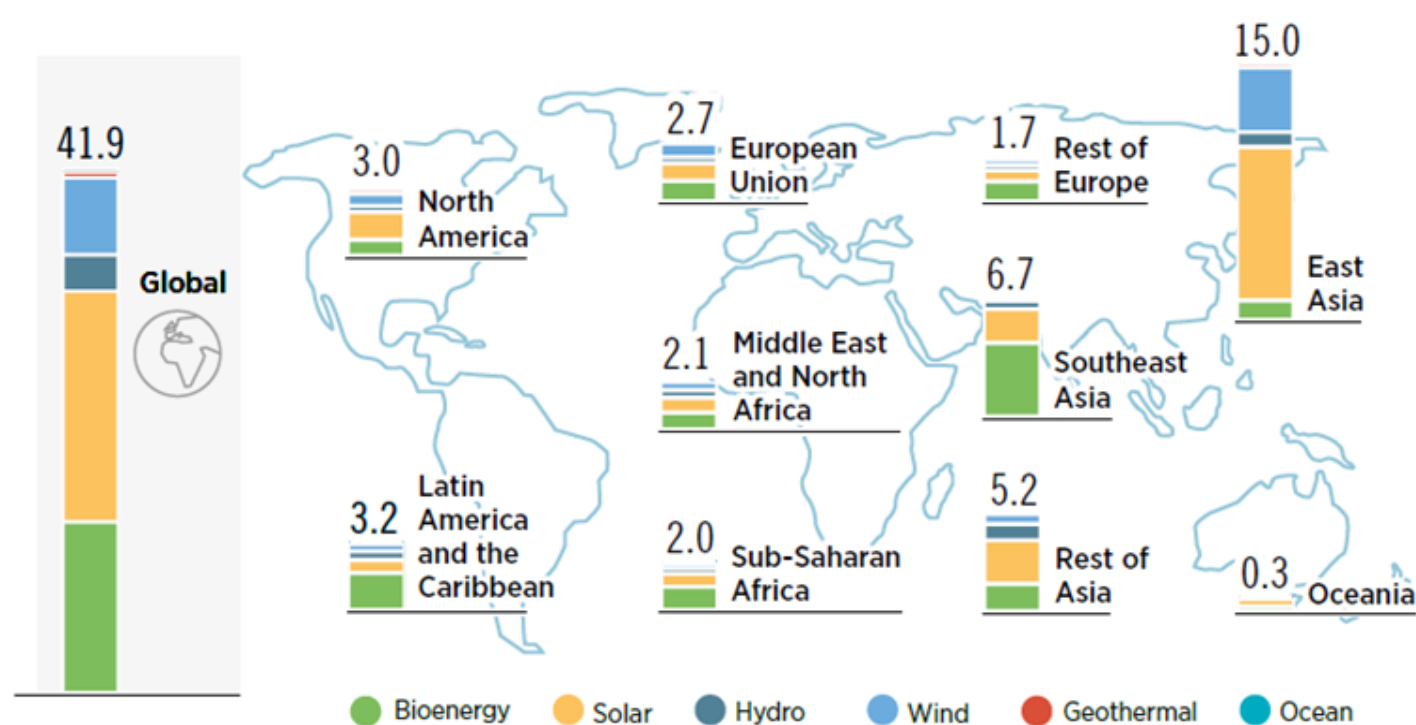
COUNTRY	AMOUNT OF STIMULUS PACKAGE	% GDP	Per Capita
Brunei Darussalam	\$318.12 million	2.66	\$741.61
Cambodia	\$2.21 billion	8.27	\$144.63
Lao PDR	\$30.35 million	10.94	\$4.26
Indonesia	\$115.78 billion	0.16	\$432.54
Malaysia	\$78.45 billion	22.07	\$2,488.18
Myanmar	\$98.64 million	0.13	\$1.83
Philippines	\$21.45 billion	5.83	\$201.11
Singapore	\$92.12 billion	26.2	\$16,337.50
Thailand	\$84.09 billion	15.96	\$1,211.20
Timor Leste	\$254 million	8.65	\$192.14
Vietnam	\$26.5 billion	10.12	\$277.40

Source: Philippine Daily Inquirer, <https://business.inquirer.net/308270/bayanihan-2-raises-covid-19-response-fund-to-21-45b>



## D. IRENA jobs projections for 2050

Renewable energy jobs in 2050 under the Transforming Energy Scenario, by region



## ► Jobs in 2050: TES / ● Southeast Asia

Technology jobs (thousands)		Segment value chain (thousands)		Occupational requirements (thousands)	
Solar PV	1560	Construction & installation	805	Workers and technicians	1515
Solar water heaters (SWH)	322	Manufacturing	988	Experts	206
Onshore wind	45	Operation and maintenance	198	Engineers and higher degrees	176
Offshore wind	-	Biofuel supply	-	Marketing and administrative	94
Geothermal	63				
<b>Total</b>	<b>1991</b>		<b>1991</b>		<b>1991</b>

## Renewable energy jobs (thousands)

Bioenergy	502	1302	1457	2752	4412
Solar	91	186	372	628	1882
Hydropower	155	139	154	285	283
Wind	15	18	19	40	45
Geothermal	15	35	27	56	63
Ocean	0	0	0	18	34
<b>Total</b>	<b>779</b>	<b>1681</b>	<b>2028</b>	<b>3780</b>	<b>6720</b>
Renewable energy jobs in energy-sector employment (%)		30.6%	34.9%	47.8%	63.9%

## Job differential in 2050 (thousands) TES vs. PES

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