The Role of Renewable Energy in post-COVID-19 Recovery in Vietnam

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BACKGROUND

COVID-19 has changed everything and business-as-usual no longer exists. Since the World Health Organization (WHO) declared COVID-19 a pandemic on 11 March 2020, more than 150 million cases have been recorded globally as the virus has rapidly spread across borders.

Vietnam acted swiftly and drastically when the first news of the emergence of the COVID-19 virus broke, enacting strict and early prevention measures that other countries wouldn't adopt until months later, including travel restrictions, closely monitoring and eventually closing the border with China, increasing health checks at borders and other vulnerable places, early school closures and a widespread contact tracing operation.[1] Despite these measures, Vietnam has suffered from the severe consequences of the spread of COVID-19, both socially and economically. In 2020, Vietnam's economic growth slowed to its weakest rate in at least 30 years. Based on the General Statistics Office of Vietnam, there were 31.1 million people whose jobs were severely affected by the pandemic, including through downsizing, income decline, working-time reduction, etc. More than 101,000 companies suspended their business during 2020, reaching a record level in the last 10 years. Besides the immediately noticeable challenges that the pandemic poses to the economy, people's lives and public health, it also disrupts other sectors, including the energy sector.[2]

[1] BBC (2020): Coronavirus: How 'overreaction' made Vietnam a virus success, available on https://www.bbc.co.uk/news/world-asia-52628283.
[2] ASEAN Climate Change and Energy Project (ACCEPT) (2021): Assessing the Impact of COVID-19 Pandemic on Energy and Climate Change in ASEAN, available on https://accept.aseanenergy.org/covid-19/.

Vietnam can learn from the COVID-19 crisis and how it has been handled to address its environmental and climate challenges. First, the management of the pandemic has demonstrated (again) that it is better to be ready and to act early and boldly. Second, beyond vision and capacity, innovation is an effective way to change individual and collective behaviours, which is fundamental in the effort to cope with health and climate threats.[3]

This policy brief will first look at the impact of the COVID-19 pandemic on Southeast Asia and what green recovery measures being taken in the region in response to the pandemic. It will then look at Vietnam's energy sector and laying out the country's recovery efforts to date and the role renewables have played in those. As Vietnam's recovery measures are just being initiated and are largely still being developed, this policy brief concludes with some recommendations to give guidance on how to remove barriers for RE deployment and which sectors to concentrate on, so as to ensure that the country builds back better and greener.

A green recovery in Southeast Asia after COVID-19

As in other regions in the world, the COVID-19 pandemic has had a significant impact on energy demand and output in Southeast Asia. Lockdown measures have decreased electricity demand due to production halts in the major factory and industrial units.[4] This has had severs impacts on the fossil fuel industry. Notably, global coal demand fell by 4% in 2020[5] and oil demand suffered an unprecedented 8% contraction in the same year, mostly by curtailment in mobility and aviation.[6] As a result, the global oil price has plunged by about 50% to below USD26 per barrel, the lowest it has been since 2002.[7]

However, in terms of electricity demand, Southeast Asia is one of the fastest-growing regions in the world and there is some concern that post COVID-19, much of the resurgent global oil and coal demand will come from the region.[8]

While the development and deployment of renewable energy (RE) globally has also been affected by the fall in electricity demand due to COVID-19 measures, it has shown strong resilience according to data on monthly installations, awarded auctions, financing of new projects and equity performance.[9]

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[3] Worldbank (2020): Taking Stock: From COVID-19 to Climate Change - How Vietnam Can Become the Champion of Green Recovery, available on https://documents.worldbank.org/en/publication/documents-reports/documentdetail/436501607981697037/taking-stock-from-covid-19-to-climate-change-how-vietnam-can-become-the-champion-of-green-recovery.

[4] IEA (2020): Electricity market Report December 2020, available on https://www.iea.org/reports/electricity-market-report-december-2020/2020-regional-focus-southeast-asia.

[5] IEA (2021): Global Coal demand surpassed pre-COVID levels in late 2929, underlining the world's emission challenge, available on https://www.iea.org/commentaries/global-coal-demand-surpassed-pre-covid-levels-in-late-2020-underlining-the-world-s-emissions-challenge.

[6] Smith, Grant (2020): IEA Forecasts a serious ongoing oil demand hit from COVID-19, available on https://www.worldoil.com/news/2020/10/13/iea-forecasts-a-serious-ongoing-oil-demand-hit-from-covid-19.

[7] Ambrose, Jillian (2020): Oil rig closures rising as prices hit 18-year lows, available on https://www.theguardian.com/business/2020/mar/30/oil-rig-closures-rising-as-prices-hit-18-year-lows-due-to-coronavirus.

[8] IEA (2020): Electricity market Report December 2020, available on https://www.iea.org/reports/electricity-market-report-december-2020/2020-regional-focus-southeast-asia.

[9] IEA (2020): COVID-19 and the resilience of renewables, available on https://www.iea.org/reports/renewables-2020/covid-19-and-the-resilience-of-renewables.

Indeed, the growth rate in the world's renewable energy capacity jumped 45% in 2020, mainly due to "an unprecedented boom" in wind and solar energy.[10]

The disruption of the COVID-19 pandemic to RE was in no small measure due to the important role China plays in green energy projects globally, as Chinese companies are leading suppliers of the components of solar and wind infrastructure.[11] This also affected Southeast Asian countries. As production and export was reduced or stopped altogether, in order to contain the spread of the infectious disease, many projects in the ASEAN member states, including Vietnam, got delayed.[12] In Myanmar, for example, five power plant projects were delayed.[13] Therefore, some experts have expressed concern that the global pandemic is slowing down the energy transition from fossil fuels to renewable and alternative energy across ASEAN Member States.[14]

Governments across Asia have deployed a significant amount of emergency capital in response to the COVID-19 pandemic, with an initial focus on protecting lives and livelihoods. To ensure long-term economic revitalisation, governments need to prepare long-term recovery and stimulus packages. These plans will need to carefully factor in existing vulnerabilities and inequalities in countries in the Global South, which are further being exacerbated by COVID-19 impacts. Many countries in Asia were already facing the triple threats of climate change, biodiversity loss and declining ocean health before the pandemic. Further, in many major Asian cities, air pollution and water scarcity are already critical public health problems. Coastal populations, especially along Southeast Asia's long coastlines, are increasingly vulnerable to sea level rise and increasingly frequent typhoons. With COVID-19 spreading so rapidly, the linkages between health impacts, natural disasters, pandemics such as COVID-19, and changes in the climate, oceans, and forests are becoming more evident. For example, greater human incursion into animal habitats create a higher risk of zoonotic diseases infecting humans. COVID-19 is not a coincidence but a logical consequence from humans moving into and destroying natural habitats of wildlife. This trend needs to be stopped and RE can be of great help in this regard.

Next to the contribution to curbing emissions and mitigating climate change, pursuing a low-carbon energy transition would bring a variety of benefits for the economy, environment and public health. It's been estimated that investing in the energy transition delivers three to eight times the return on the original investment.[15] Similarly, it has been revealed that government spending on renewables and energy efficiency creates three times more jobs than spending on fossil fuels.[16] In addition, shifting to renewables has a tremendous impact on improving public health as it curbs air pollution,

[10] IEA (2020): Renewable Energy Market Update 2020, available at https://www.iea.org/reports/renewable-energy-market-update-2021/renewable-electricity.
[11] Samuel, P. (2020): COVID-19 and the effects of supplychains in Vietnam, available on https://www.vietnam-briefing.com/news/covid-19-effects-supply-chains-vietnam.html/
[12] GlobalData Energy (2020): COVID19 will have high impact on renewable energy projects: poll, available on https://www.power-technology.com/comment/covid-19-impact-renewable-energy-projects-poll/.
[13] Eleven Media Group Co., Ltd. (2020) Government faces hydropower project delays due to COVID-19, available on https://elevenmyanmar.com/news/govt-faces-hydropower-project-delays-due-to-covid-19.
[14] Board, Jack (2020): Southeast Asia's renewable energy transition likely to take hit from COVID19: Experts, available on https://www.channelnewsasia.com/news/asia/covid19-southeast-asia-renewable-energy-nuclear-asean-12617520.
[15] Prados, E.; Koehler, M.; Bülow, T. (2020): This powerful tool can help drive Europe's green recovery, available on https://www.weforum.org/agenda/2020/07/corporate-power-purchase-agreements-europe-decarbonization/.
[16] McKinsey (2020): A low-carbon economic stimulus after COVID-19, available on https://www.mckinsey.com/business-functions/sustainability/our-insights/how-a-post-pandemic-stimulus-can-both-create-jobs-and-help-the-climate.

which is a problem many Southeast Asian countries grapple with. A more fragmented and decentralised renewable energy system can also bring down electricity costs, improve livelihoods of the most vulnerable communities and unlock economic activity. Finally, achieving the energy transition can bolster energy security and make the economy and critical infrastructure (including health facilities) more resilient against future shocks, such as pandemics.

Recognising these links and co-benefits, various countries have been developing and implementing green recovery programmes. South Korea, China, Indonesia, the Philippines and other countries in the Asian region have made numerous green recovery efforts with various stimulus packages, such as South Korea's Green Deal which supports the development of green infrastructure, energy efficiency and renewable energy and the Green Green Green Program of the Philippines to make cities more liveable and sustainable.

The Asian Development Bank estimates that Asia's infrastructure needs from 2016 to 2030 will exceed USD26 trillion, including USD14.7 trillion in the energy sector and USD8.4 trillion in the transportation sector.[17] Given this enormous demand for infrastructure investment, and as governments experiment with innovative monetary policies[18] in order to fund big fiscal stimulus programmes, it would seem prudent to invest in projects that reduce carbon emissions and ensure a more sustainable long-term outlook – something akin to a Green New Deal for the region. Such an approach would use economic stimulus and recovery measures to strengthen the resilience of economies, invest in sustainable solutions, mitigate climate change and shore up climate adaptation, and engineer a just energy transition.[19]

Climate and Energy in Vietnam

Vietnam is highly vulnerable to climate change. Extreme weather events are intensifying and becoming more frequent. Rising sea levels risk inundating important economic zones in coastal areas, potentially displacing millions of Vietnamese people.

A new policy report by the Institute for Advanced Sustainability Studies (IASS) and the Green Innovation and Development Centre (GreenID) highlights how renewables play a strong role in preventing future shocks caused by climate change while similarly boosting employment, fostering rural electrification as a foundation of local value creation, and, importantly, unburdening health systems by reducing the prevalence of respiratory diseases.[20] Replacing coal power plants in Vietnam with solar or wind could more than double the number of jobs per average MW capacity. Electrifying rural areas in Vietnam with renewables is at least 20% cheaper than extending the grid.

[17] Asian Development Bank (2017): Metting Asia's Infrastructure Needs, available on https://www.adb.org/publications/asia-infrastructure-needs.

[18] Guild, James (2020): Indonesia's Monetary Experiment, available on https://thediplomat.com/2020/09/indonesias-monetary-experiment/.

[19] Volz, Ulrich (2020): Investing in a green recovery, available on https://www.imf.org/external/pubs/ft/fandd/2020/09/investing-in-a-green-recovery-volz.htm.

[20] IASS/UfU/GreenID. 2020. Making the Paris Agreement a success for the planet and the people of Vietnam. Unlocking the co-benefi ts of decarbonising Vietnam's power sector. COBENEFITS Policy Report. Potsdam/Hanoi, available on https://www.cobenefits.info/wp-content/uploads/2020/10/COBENEFITS-Vietnam-Policy-Report-2020.pdf.

In the past years, Vietnam has seen a rapid growth of solar power installations. Solar went from below 1% to more than 8% of the country's energy mix from 2018 to 2019.[21] Despite still importing most of its equipment, Vietnam is increasing its solar photovoltaic (PV) manufacturing capacities. In 2019, the country joined the ranks of large installation markets with an addition of 5.6 GW in the year.[22] The biggest solar factory in Southeast Asia, the Dau Tieng Solar Power Complex, was launched in the Tay Ninh province of Vietnam in 2019.[23]

Developments have been so rapid that they have overtaken recent projections. For example, a 2019 World Bank supply-chain assessment foresaw 12 GW of solar PV installations and some 45,000 full-time equivalent (FTE) jobs in the country by 2030.[24] However, IRENA estimates that due to the accelerated pace of deployments and large exports, Vietnam's solar PV workforce already stood at 56,700 jobs in 2019. The manufacturing and construction and installation segments of the value chain each accounted for around 25,000 of these jobs, with the remainder in operations and maintenance.[25]

Much of this growth in the share of renewable energy has been made possible by deployment policies – notably feed-in tariffs[26] and, most recently, auctions.[27] Additional reforms have made RE more competitive and an attractive investment option.[28] While the motivations behind those reforms are likely manifold, the fact that Vietnam became a net importer of coal in 2015 probably played a role as well.[29]

In addition to RE boosting policies, the Government has issued several policies on energy saving and efficiency, such as the 'National Target Programme on Energy Efficiency' (2006), and the Law on 'Economical and Efficient use of Energy' (2010). It has prioritized policies for renewable energy development consistent with Vietnam's mitigation potential and conditions, in order to contribute to energy security and environmental protection. In addition, policies encouraging energy savings and efficiency enhancements in production and daily life have been promoted through the application of energy saving and renewable energy technologies. Finally, recognising the importance of digitalisation in transforming the renewable energy sector, the government has also launched an

[21] Apanada, Marlon Joseph (2020): Clean Energy for Southeast Asia's COVID-19 Recovery, available on https://www.wri.org/blog/2020/10/clean-energy-southeast-asia-covid-19-recovery.
[22] IRENA (2019): Renewable power generation costs in 2019, available on https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Jun/IRENA_Power_Generation_Costs_2019.pdf.
[23] Djunisic, Sladjana (2020): Vietam inaugurates 420 MW Dau Tieng PV power complex, available on https://renewablesnow.com/news/vietnam-inaugurates-420-mw-dau-tieng-pv-power-complex-668299/.
[24] World Bank (2018): Vietnam: Achieving 12 GW of Solar PV Deployment by 2030; AN Action Plan. Washington, DC: World Bank, available on http://documents1.worldbank.org/curated/en/225381584425186495/pdf/Vietnam-Achieving-12-GW-of-Solar-PV-Deployment-by-2030-An-Action-Plan.pdf.
[25] IRENA (2020): Renewable Energy and Jobs Annual Review 2020, available on https://www.developmentaid.org/api/frontend/cms/file/2020/09/IRENA_RE_Jobs_2020.pdf.
[26] Thang Nam Do et.al. (2020): Underlying drivers and barriers for solar photovoltaics diffusion: The case of Vietnam: Energy Policy 144(Sept. 2020), available on https://www.sciencedirect.com/science/article/abs/pii/S0301421520303037?dgcid=author.
[27] Miechel, B.; Nguyen, T. (2020): Vietnam bets on solar auctions to develop its renewable energy market, available on https://asian-power.com/regulation/commentary/vietnam-bets-solar-auctions-develop-its-renewable-energy-market.
[28] Brown, David (2020): Analysis: Vietnam's leadership flex shows how to drive electricity reform, available on https://news.mongabay.com/2020/08/analysis-vietnams-leadership-flex-shows-how-to-drive-electricity-reform/.
[29] U.S. Energy Information Administration (2017): Country Overview analysis: Vietnam, available on https://www.eia.gov/international/analysis/country/VNM.

E-Government initiative, which includes developing smart power grids, including electric meters with integrated data collection.[30]

Challenges in Vietnman's energy transition

Despite the array of enabling policies and increase in the share of RE (mainly solar PV), continued vigilance is needed to ensure the country's 80 GW target of new power installations by 2030 is generated sustainably.[31] For example, many coal-fired power plants are still planned to be developed in the Red River Delta region. In June 2020, GreenID released a report on "**Impacts of coal-fired power on air quality and health in Vietnam**", which reveals that commissioned coal-fired plants were responsible for approximately 4,359 immature deaths in 2017. The number is projected to increase to 28,136 by 2030 as per the Coal Development Scenario of the Revised Power Development Plan VII. The Red River Delta region is revealed to be particularly affected by these plans, with Hanoi experiencing the most severe health impacts from commissioned coal-fired power plants.[32]

Furthermore, Vietnam needs a long-term policy to develop wind power and other sources of renewable energy and to prevent a negative impact on investment certainty for many domestic and foreign investors. In addition, asynchronous investments between source and grid extensions in some areas has led to a reduction in the capacity of renewable energy sources.[33]

In addition, the COVID-19 crisis could pose challenges to Vietnam's energy transition. First, the ambition of transitioning from fossil fuels to renewable energy is likely to be adversely affected by the economic and market crisis caused by the COVID-19 pandemic.

Second, the economic impacts of the coronavirus might undermine efforts to support renewable energy, at least in the short term, as the Vietnamese government may have many other political priorities to consider in bringing the pandemic under control. The government may be less likely to provide direct financial support to the renewable energy sector, subsequently disrupting renewable energy supply chains. The inevitable consequence is that the transition from fossil fuels to renewables may be delayed by a few years. Most of the equipment for wind and solar power plants, such as panels, inverters, wind turbines, blades etc., are imported from abroad as the domestic production rate is low, leading to the need for foreign currency. However, fossil fuels need to be imported as well. In fact, Vietnam started importing coal in 2013 and 2020 saw a record high in coal

[30] EVN (2020): Using telemetry meters: Transparency and convenience, available on https://en.evn.com.vn/d6/news/Using-telemetry-meters-Transparency-and-convenience-66-163-1865.aspx.
[31] Apanada, Marlon Joseph (2020): Clean Energy for Southeast Asia's COVID-19 Recovery, available on https://www.wri.org/blog/2020/10/clean-energy-southeast-asia-covid-19-recovery.
[32] GreenID (2020): Report on the impact of coal-fired power on air quality and public health available on http://greenidvietnam.org.vn/view-document/5f6c23b22ac5db783c8b4567 and CREA (2021): Air Quality, Health & Economic Impacts of planned Coal Power Capacity in Vietnam's PDP VIII available on https://energyandcleanair.org/publications/vietnam-pdp8-hia
[33] Power Engineering Consulting Joint Stock Company 2 (PECC2), (2020): Energy transition in Vietnam before the energy crisis scenario, English translation version available on https://translate.google.com/translate?sl=vi&tl=en&u=http://pecc2.com/Detail.aspx?isMonthlyNew%3D1%26newsID%3D101534%26MonthlyCatID%3D22

imports.[34] It seems that the country might face energy security risks due to dependence on coal supply and imported equipment.[35] Shifting to renewables, including decentralised RE solutions, and building in-country capacity to manufacture parts of the RE supply chain can greatly benefit Vietnam's energy security.

Renewables and Climate Action as part of COVID-19 Recovery

Vietnam's recovery efforts must aim to remove the aforementioned barriers and enable the large-scale deployment of renewables. Building back with renewables at the core of recovery measures could maximise job growth in the sector. Combining recovery efforts with necessary infrastructure investments can unleash the full transformative power of renewables, keeping long-term sustainability goals firmly in view. In order to maximise the impact of these investments, it is important to take Vietnam's contexts into account in terms of state capacity, policy design, regulatory architecture, financing options and the country's political economy. Otherwise there is a risk of misidentifying where the opportunities and roadblocks actually are.[36]

The government has taken notice of the growth in the RE market, the fall in costs of solar PV and other benefits from switching to renewables (e.g. reduced air pollution) and has taken some steps towards building a greener energy future for Vietnam. The National Power Development Plan VIII is considering to stop construction of 13 coal power plants,[37] as well as enhance the development of renewable energy, including offshore wind power.[38]

Recently, the Resolution of the XIII National Congress of the Communist Party stipulated in February, 2021 that Vietnam should be committed to adapting effectively to climate change, preventing, combating and mitigating natural disasters and epidemics, and managing, exploiting and using resources rationally, economically, effectively and sustainably. It further set the protection of the living environment and people's health as top targets and set the goal of building a green and circular economy, which respects the environment.[39]

Further, in March 2021, the authorities approved regulations to stop price increases until the end of Q2 for renewable energy. A month later, The Ministry of Industry and Trade (MoIT) decided to cut power bills for businesses and households by 10 percent over the next three months, decreasing the financial burden on people struggling with the impacts of the pandemic.

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[34] Argus Media (2021): Vietnames coal imports hit record high in 2020, available on https://www.argusmedia.com/en/news/2178698-vietnamese-coal-imports-hit-record-high-in-2020.

[35] Phu Viet Le (2019): Energy demand and factor substitution in Vietnam: evidence from two recent enterprise surveys. Journal of Economic Structures 8(2019), available on https://journalofeconomicstructures.springeropen.com/articles/10.1186/s40008-019-0168-9.

[36] Guild, James (2020): Is a Green New Deal on the Way in Southeast Asia?, available on https://thediplomat.com/2020/09/is-a-green-new-deal-on-the-way-in-southeast-asia/.

[37] Ha, Tim (2020): Vietnam considers scrapping half of coal power plant pipeline in favour of gas and renewables, available on https://www.eco-business.com/news/vietnam-considers-scrapping-half-of-coal-power-plant-pipeline-in-favour-of-gas-and-renewables/.

[38] Lorimer, Matt (2021): Vietnam's Draft Master Plan VIII – what it means for renewable energy, available on https://www.wfw.com/articles/vietnams-draft-master-plan-viii-what-it-means-for-renewable-energy/.

[39] Government of Vietnam (2020): Resolution of the XIII National Congress of the Party. Full text of the Resolution of the XIII National Congress of the Party, http://baochinhphu.vn/Hoat-dong-cua-lanh-dao-Dang-Nha-nuoc/Toan-van-Nghi-quyet-Dai-hoi-dai-bieu-toan-quoc-lan-thu-XIII-cua-Dang/424240.vgp.

E-mobility

As a consequence of the economic impacts of COVID-19, the motorcycle and car markets have taken a hit. In response, the Vietnamese government has started promotion of e-vehicles to some extent. For example, Resolution 55 by the Politburo of the Communist Party of Vietnam, adopted in February 2020, included a commitment to EV development.[40] VinFast, an automotive manufacturer that is part of the country's largest private business group Vingroup, is already the third largest player in the market, exceeding 100,000 sales in a single year. While electrical 2-wheelers (in particular small e-bikes) have been deployed in many Vietnamese cities since 2014, the e-mobility sector only recently gained more traction in Vietnam, with the announcement of Vinfast to produce electric vehicles (EVs) for export to the US market and production of e-buses for domestic pilot cities. In addition, a number of international organisations, such as the World Bank, GIZ and the Asian Development Bank, have launched various projects to support the development of e-mobility strategies. Nowadays, Vietnam is recognised as a domestic e-bike manufacturer with over 4.5 million e-bikes being deployed.

In mid-2020, Vinbus, another affiliate of Vingroup, begun requesting approval from the national and city authorities for rolling out its e-bus services in Hanoi, Ho Chi Minh City and Phu Quoc island starting from 2021.

Carbon pricing

On 17 November 2020, Vietnam's National Assembly passed the revised 'Law on Environmental Protection' which legalises an emission trading scheme.[41] The law will take effect on 1 January 2022. In order to implement this law, the Ministry of Natural Resources and Environment (MONRE) is drafting a decree on carbon pricing. Recognising that the post-COVID-19 period is an ideal time to adopt a carbon price in order to set one of the foundations for a green recovery, this policy is expected to strengthen Vietnam's commitment to greenhouse gas emissions reductions under the Paris Agreement, as part of the country's NDC.[42]

Recommendations

At the global level, there is an effort to anchor COVID-19 recovery measures in commitments to greening economies and building back better. However, post-COVID-19 recovery plans in Vietnam are not yet clearly showing such commitments to address the triple crises the country is facing (health, environment and climate), policymakers should speed up efforts to deploy renewables energy solutions to harvest their manifold cross-cutting benefits in addressing these crises.

[40] Government of Vietnam (2020): Resolution 55 NQ/TW on Energy Development Strategy to 2030 and outlook to 2ß45, available on http://vepg.vn/wp-content/uploads/2020/03/CPCs-Resolution-55.NQ-TW-on-Energy-Development-Strategy-to-2030-and-outlook-to-2045.pdf.

[41] Electronic resources and environmental report agency under the Ministry of Resources and Environment (2020): The National Assembly passed the Law on Environmental Protection (amended): A new step to meet the practical requirements of the country's development available on https://translate.google.com/translate?sl=vi&tl=en&u=https://baotainguyenmoitruong.vn/quoc-hoi-thong-qua-luat-bao-ve-moi-truong-sua-doi-buoc-tien-moi-dap-ung-yeu-cau-thuc-tien-phat-trien-dat-nuoc-315920.html

[42] Do, Thank Nam (2020) Vietnam pioneers post-pandemic carbon pricing, available on https://www.eastasiaforum.org/2020/11/19/vietnam-pioneers-post-pandemic-carbon-pricing/.

With the right policies in place, Vietnam could accelerate a clean energy transition by capitalising on the renewable energy revolution, creating jobs, addressing climate change and improving public health in the process. To this end, the government should consider the following recommendations:

- **Establish clear, consistent and achievable targets for energy development and environmental stewardship and anchor post-COVID-19 economic recovery measures in these targets.** The adoption of clear short, middle and long-term targets for renewables in energy policy can form the basis for reliable and effective policymaking and offers certainty for investment into RE projects.
- **In light of the vast locally untapped potential of wind and solar, these RE sources should be prioritised in energy planning.** To this end, enabling policies, such as Feed-In Tariffs and auctions should be prolonged, expanded or re-introduced.
- **Underpin policies aimed at realising Vietnam's energy transition by a commitment to the "3 D's": decarbonisation, decentralisation and digitalisation.** Commit to a deep decarbonisation of the economy, while maximising the potential of smaller, dispersed energy generation units (distributed renewable energy systems), and invest in digital solutions to manage large amounts of data collection and analysis and optimise increasingly complex and decentralised energy systems.
- **Internalise environmental and public health costs in fossil fuel generation, phase out (implicit) fossil fuel subsidies and halt the development of fossil fuel plants and imports.**
- **Improve energy efficiency through technical regulations and enforcements (e.g. in the infrastructure, construction and cement sectors) and consider financial support mechanisms for the related purchases of equipment and retrofits.**
- **In the wake of the COVID-19 pandemic, ensure that a wide variety of stakeholders (national and local government leaders, financial institutions, electricity distribution utilities, grid operators and energy consumers) are engaged in the energy transition.** Link energy and environmental policies to addressing urgent socio-economic concerns that have arisen from, or been exacerbated by, the present economic and public health crisis, such as rising unemployment, economic slowdown, higher electricity costs and increased health risks.
- **Deregulate the electricity markets to allow independent power producers and retailers to compete in all segments of the market, including generation, transmission and retailing.**
- **To attract foreign investment in RE projects and capitalise on private sector interest, liberalise the power market, increase transparency and simplify procedures.**
- **Ensure that in energy and environmental planning, the needs of vulnerable populations, including the poor, migrants, ethnic minorities, and people working in the sectors hardest hit by COVID-19 and/or climate disruption, are prioritised.** In particular, consider the effectiveness of decentralised RE solutions in improving the livelihoods of the most vulnerable communities.
- **Channel the urgency that underpinned the response to the COVID-19 crisis to climate, energy, environmental and energy policies.** Just as the recognition that Vietnam's healthcare system would collapse under the unchecked spread of COVID-19 informed the country's swift response, policymakers should ground environmental and energy measures in the understanding that Vietnam's vulnerabilities to climate change and the health effects of polluting industries and practices requires an equally urgent preventative intervention.
- **Promote public awareness about the efficacy and potency of renewable energy technologies (RETs).** Even if people are aware of RETs, their real potential and technical limits and constraints

are generally underestimated or poorly understood. To maximise the potential of varying RETs, education and awareness raising among policy-makers and the public at large (including communities that could operate decentralised RE installations) is critical.

Annex – Related News:

- 18 December – Vietnam gives second electricity discount as Covid-19 relief
- 25 November – PetroVietnam says annual output unaffected by COVID-19 pandemic
- 19 November – Vietnam pioneers post-pandemic carbon pricing
- 24 August – Power companies face hardship in pandemic
- 2 July – Improving business climate critical to post-pandemic growth
- 22 June – COVID-19 Could Cause A Boom In Coal Power
- 6 June – WB provides US$84.4 million for Vietnam to promote climate-resilient landscapes
- 12 May – EU, French agency support VietNam's resilience to climate change, COVID-19
- 11 May – Investors concern about wind power development
- 9 May – PM asks nation to save electricity
- 6 May – Việt Nam offers tremendous investment opportunities: VinaCapital CEO
- 4 May – Energy in ASEAN: Renewable Energy in Vietnam
- 28 April – Thai firms expanding presence in Vietnam despite COVID-19
- 24 April – Vietnam Needs to Act Now to Mitigate Wind energy Disruptions
- 14 April – Vietnam has high petroleum stockpile
- 14 April – Vietnam warns of refinery closures amid demand slump
- 14 April – Ministry approves 10 percent to power bills cut
- 7 April – Vietnam finally unveils new FITs for large-scale, rooftop, floating PV
- 7 April – In bittersweet move, Vietnam approves second feed-in-tariff scheme for solar
- 3 April – Vietnam's Dung Quat oil refinery cuts output on virus-hit demand
- 29 March – Earth Hour 2020 goes online globally amid Covid-19 pandemic
- 27 March – Covid-19 knocking the lights out in Vietnam
- 13 March – No electricity price increases until the end of Q2