

# Vietnam's Environmental Policy: A 30-year critical review

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## Abstract

This article critically reviews Vietnam's environmental policy development and implementation from 1991 to 2021, focusing on water and air pollution. The review integrates findings from literature research and insights obtained through expert interviews. The results indicate that Vietnam has demonstrated a clear commitment to environmental policy by establishing a substantial body of regulations aimed at achieving environmental protection objectives. Political attention, international integration, and public demand for a cleaner environment drive these efforts, with support from development partners. However, enforcement lags behind policy development due to interagency cooperation issues and over-decentralization. Balancing environmental protection and economic growth is a national goal but lacks operational commitment. Limited resources pose ongoing challenges. To advance, Vietnam could centralize decision-making and integrate environmental protection into economic development for broader support. Achieving net-zero emissions by 2050 would reduce air pollution. This ambitious goal can be expedited through international cooperation.

**Keywords:** environment, development, policy, pollution, Vietnam

## 1. Pollution challenges

Since the economic reform in 1986, known as "Doi Moi," Vietnam has experienced significant economic development. However, this growth has come with severe environmental pollution. In 2019, Vietnam was the second most air polluted country in South East Asia, behind Indonesia.<sup>1</sup> Exceeding the World Health Organization guideline on outdoor air pollution reduces life expectancy in Vietnam by about one year and costs the country about 5% of annual GDP.<sup>2 3</sup> Around 50,000 deaths were related to air pollution in Vietnam in 2017.<sup>4</sup>

The main contributor to the country's air pollution is fossil fuel combustion, which accounted for about 60% of greenhouse gas emissions in 2014.<sup>5</sup> CO<sub>2</sub> emissions from fossil fuel combustion rose at about 10% per annum in the 1991-2019 period and reached 285.9 million tCO<sub>2</sub> in 2019<sup>6</sup> (Figure 1). With 3.6 million automobiles and 58 million motorbikes<sup>7</sup>, transportation stands among the main causes of air pollution. Industrial emission is another important air pollution source.

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<sup>1</sup> IQAir, "World Air Quality Report," *2019 World Air Quality Report*, 2019, <https://www.iqair.com/world-most-polluted-cities/world-air-quality-report-2019-en.pdf>.

<sup>2</sup> (World Bank and Institute for Health Metrics and Evaluation, 2016;

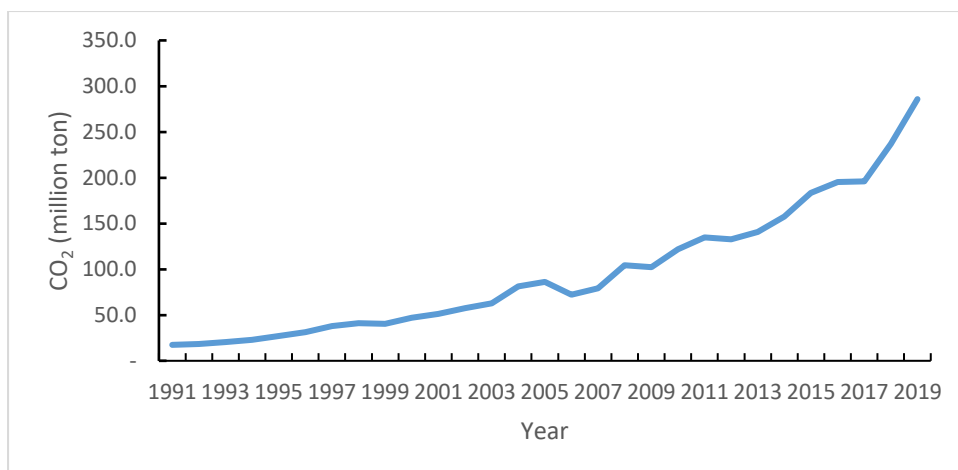
<sup>3</sup> Energy Policy Institute at the University of Chicago, 2019)

<sup>4</sup> Richard Fuller, Karti Sandilya, and Davide Hanrahan, "Pollution and Health Metrics: Global, Regional, and Country Analysis" (New York and Geneva, 2019), <https://doi.org/10.2307/3958682>.

<sup>5</sup> Government of Vietnam, "The Third National Communication to the UNFCCC" (Hanoi, 2019).

<sup>6</sup> BP, "BP Statistical Review of World Energy," 2020, <http://www.bp.com/statisticalreview>.

<sup>7</sup> Thang Nam Do, "Bold Action Needed to Address Vietnam's Air Pollution," East Asia Forum, 2020, <https://www.eastasiaforum.org/2020/03/25/bold-action-needed-to-address-vietnams-air-pollution/>.



**Figure 1.** Vietnam CO<sub>2</sub> emissions 1991-2019.

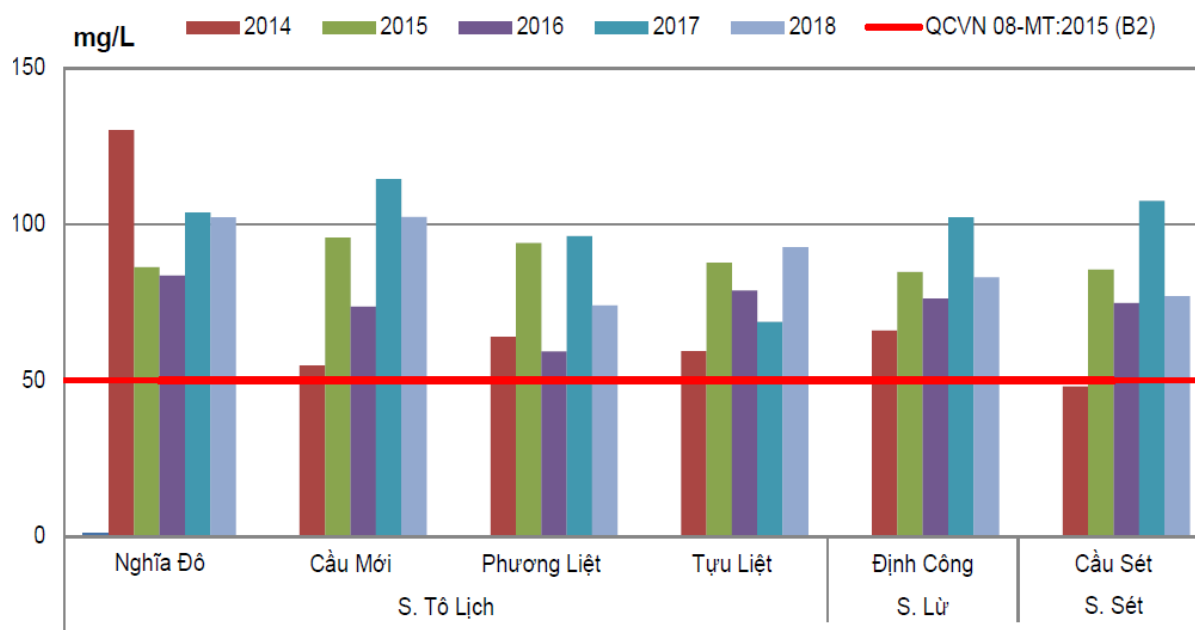
**Source:** BP 2020.

Another critical issue is water pollution. Some rivers – once clean – in and around major cities are now little more than open sewers. For example, the chemical oxygen demand levels exceeded the national standard TCVN-MT08:2015(B2) in most rivers and canals in Hanoi in the period 2014-2018 (Figure 2).<sup>8</sup> Untreated domestic and industrial wastewater is the largest contributor to water pollution. Plastic waste has worsened water pollution. Up to 3.7 million tons of plastic waste are generated every year, of which only about 15% is collected for recycling.<sup>9</sup> If the current trajectory continues, water pollution is estimated to reduce the country's GDP by about 3.5% by 2035.<sup>10</sup>

<sup>8</sup> Vietnam Ministry of Natural Resources and Environment, "State of the Environment Report 2019: Special Issue on River Basin (in Vietnamese)" (Hanoi, 2019).

<sup>9</sup> World Economic Forum, "How Vietnam Can Reduce 75% Marine Plastic Waste in the next Decade," 2020, <https://www.weforum.org/agenda/2020/12/how-viet-nam-can-reduce-marine-plastics-by-75-in-the-next-decade/>.

<sup>10</sup> World Bank, "Vietnam : Toward a Safe, Clean, and Resilient Water System," 2019, <https://www.worldbank.org/en/country/vietnam/publication/vietnam-toward-a-safe-clean-and-resilient-water-system>.



**Figure 2.** Chemical oxygen demand levels in Hanoi’s rivers and canals 2014-2018.

**Source:** Vietnam Ministry of Natural Resources and Environment 2019.

Environmental pollution has negatively impacted the country's sustainability. Vietnam's adjusted net savings, including particulate emission damage, have declined from about 26% in 2002 to about 9% in 2019, indicating an unsustainable development trend. In 2019, Vietnam's adjusted net savings were lower than those of other ASEAN countries with similar socioeconomic development, such as the Philippines, Thailand, and Indonesia, which had savings of 19%, 15%, and 14%, respectively. Thailand and the Philippines have maintained relatively stable adjusted net savings from 1996 to 2019, while Indonesia has steadily increased its adjusted net savings since 2007 (Figure 3).<sup>11</sup>

<sup>11</sup> World Bank, “Adjusted Net Savings,” 2021, <https://databank.worldbank.org/reports.aspx?source=2&series=NY.ADJ.SVNX.GN.ZS&country=VNM#>.

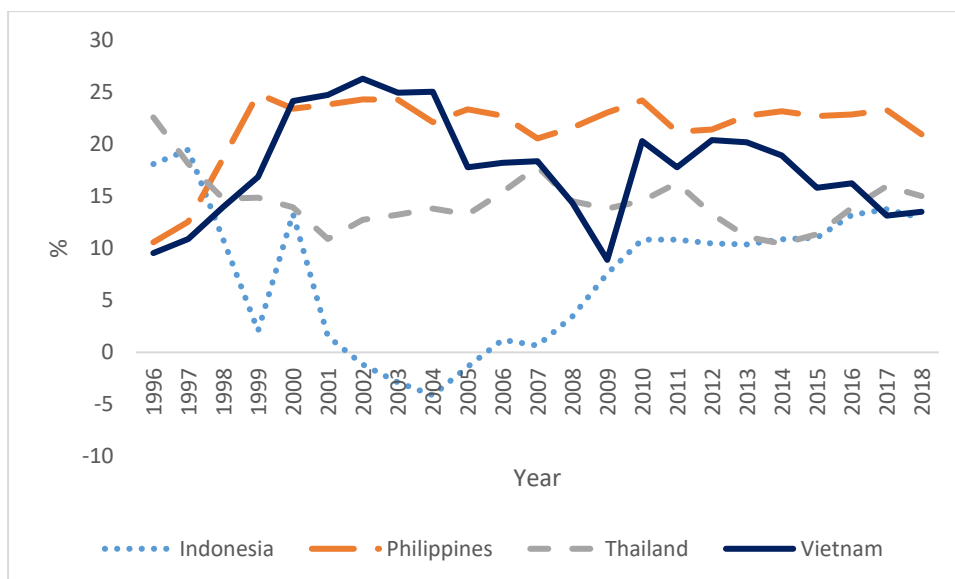


Figure 3. Adjusted net savings in some Southeast Asian countries 1996-2019.

Source: WB 2021.

Vietnam has issued various policies to tackle pollution, but with mixed success. Eight of 10 environmental objectives for the 2001-2010 period were not achieved.<sup>12</sup> In the 2011-2020 period, while some objectives such as the reduction of serious polluting firms and the installation of waste treatment facilities by new industries were achieved, many others were far from accomplished.<sup>13</sup> For example, by 2020, only about 13% of domestic wastewater was treated while the target was 70%.<sup>14</sup> The majority of over 5,000 recycling and manufacturing villages (also known as craft villages) has not met environmental standards. Carbon intensity

<sup>12</sup> Pham Ngoc Dang, "Environmentally Sustainable Development in Vietnam: Achievements and Challenges (in Vietnamese)," 2011, <http://www.vacne.org.vn/phat-trien-ben-vung-ve-mat-moi-truong-o-viet-nam-thanh-tuu-thach-thuc-hien-tai-va-dinh-huong-trong-thoi-gian-toi/27716.html>.

<sup>13</sup> Nhan Dan Newspaper, "Draft Report on the Implementation of 2011-2020 Socioeconomic Development Plan and Orientations for 2021-2030 (in Vietnamese)," 2020, <https://nhandan.com.vn/tin-tuc-su-kien/bao-cao-tong-ket-thuc-hien-chien-luoc-phat-trien-kinh-te-xa-hoi-10-nam-2011-2020-xay-dung-chien-luoc-phat-trien-kinh-te-xa-hoi-10-nam-2021-2030-621156/>.

<sup>14</sup> World Bank, "Vietnam : Toward a Safe, Clean, and Resilient Water System."

per unit of GDP increased from 0.27 in 2010 to 0.37 in 2019, while the target was a 7% reduction.<sup>15</sup>

This paper provides a critical review of the development and implementation of policies to address pollution during the 1991-2021 period. It seeks to answer the question: "How did Vietnam develop and implement environmental policy?" A policy mix analysis framework is employed to review environmental policy development and implementation, with particular attention given to water and air pollution due to their significant impacts. The analysis was informed by desk-based reviews of published and unpublished documents, complemented by semi-structured interviews with 12 Vietnamese experts. Four interviewees are from government agencies, four from non-governmental agencies, and four from academia. The interviews were conducted between January and November 2021.

The remainder of this paper is structured as follows. Section 2 discusses efforts to address pollution. Section 3 evaluates key trends in environmental policy. Key drivers of environmental policy are examined in Section 4. Section 5 analyzes remaining issues. Strategies to strengthen environmental policy are discussed in Section 6. Section 7 highlights implications for sustainable development.

## **2. Efforts to address pollution**

### *2.1 Political commitments*

The Communist Party of Viet Nam plays an important role in formulating environmental policy. Party resolutions have often been issued first, followed by environmental laws, government decrees, and technical regulations. Environmental protection is stressed as an important cause that requires joint efforts of the entire political system in the Party documents.

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<sup>15</sup> BP, "BP Statistical Review of World Energy."

The 7<sup>th</sup> Party Congress document for socioeconomic development 1991-2000 highlights that “economic development must go together with social justice, culture preservation, and environmental protection”.<sup>16</sup> The importance of environmental protection in the country’s industrialization and modernization is detailed in the Political Bureau’s Directives 36/CT-BCT in 1998 and 41/NQ-BCT in 2004. The Central Committee of the Party’s Resolution No. 24-NQ/TW in 2013 and the Political Bureau’s concluding remarks no. 56/KL-TW in 2019 provides guiding principles for the protection of natural resources and environment, and a pro-active response to climate change. Roles of marine environmental protection in sustainable sea-based economy development is discussed in the Party’s Resolution no. 36-NQ/TW in 2018.

## 2.2 Regulations, policy instruments, and institutions

Numerous environmental regulations and policy instruments have been developed to operationalize the political commitments. The Law on Environmental Protection (LEP) was promulgated in 1993. It was revised in 2005, 2014, and 2020 to suit development processes of the nation.<sup>17</sup> Hundreds of environment policy and legal documents were issued during 1991-2020. The key documents are in Table 1.

Table 1. List of the Party’s Documents, Laws, and Decrees related to pollution 1990-2020.

Names of the Party’s Documents, Laws, and Decrees	Issuance Number
<b>The Party’s Documents</b>	
1. The 7th Party Congress document for socioeconomic development 1991-2000	
2. The Political Bureau’s Directives on the importance of environmental protection	36/CT-BCT/1998
3. The Political Bureau’s Resolution on enhancing environmental protection in the country’s industrialization and modernization	41/NQ-BCT/2004

<sup>16</sup> Vietnam Ministry of Planning and Investment, “Rio+20 Vietnam’ Sustainable Development Report (in Vietnamese),” 2012, <https://fsppm.fulbright.edu.vn/cache/MPP8-502-R12V-Thuc-hien-phat-trien-ben-vung-o-Vietnam,2012--Bo-Ke-hoach-&Dau-tu-2015-09-25-11073543.pdf>.

<sup>17</sup> Vietnam National Assembly, “Law on Environmental Protection 2020,” 2021, <https://thuvienphapluat.vn/phap-luat/tim-van-ban.aspx?keyword=luat-bao-ve-moi-truong&match=True&area=0>.

4. The Central Committee of the Party's Resolution on guiding principles for the protection of natural resources and environment, and a pro-active response to climate change	24-NQ/TW/2013
5. The Political Bureau's concluding remarks on the need to continue with Resolution No.24-NW-TW	56/KL-TW/2019
<b>Laws</b>	
6. Law on Environmental Protection 1993	
7. Criminal Code 2000	
8. Law on Environmental Protection 2005	
9. Law on Environmental Protection 2014	
10. Criminal Code 2015	
11. Law on Natural Resources and Environment of Seas and Islands 2015	
12. Law on Environmental Protection 2020	
<b>Decrees</b>	
13. Providing guidance on implementing Law on Environmental Protection 1993	175/1994/ND-CP
14. Handling administrative violation on environmental protection	26/CP 26/4/1996
15. Environment protection fees for wastewater	67/2003/NĐ-CP
16. Guidance on implementing Law on Environmental Protection 1993	80/2006/ND-CP
17. Updated handling administrative violation on environmental protection	81/2006/ND-CP
18. Revising Decree 67 on Environmental Protection Fee for Wastewater	04/2007/ND-CP
19. Solid waste management	59/2007/ND-CP
20. Organization structures of environmental units in state agencies and enterprises	81/2007/ND-CP
21. Handling the administrative violations in the sector of water resources	34/2005/NĐ-CP
22. Water sewage and drainage in the urban area and industrial zones	88/2007/NĐ-CP
23. Management of river basins	120/2008/NĐ-CP
24. Environmental protection fee for solid waste	175/2007/ND-CP
25. Revising Decree 80/2006 on implementing Law on Environmental Protection	21/2008/ND-CP
26. Preferential conditions for environmental protection	04/2009/ND-CP
27. Updated handling administrative violation on environmental protection	117/2009/ND-CP
28. Compensation for environmental damage	113/2010/ND-CP
29. Strategic environmental assessment, environmental impact assessment, and environmental protection commitment plan	29/2011/ND-CP
30. Updated handling administrative violation on environmental protection	179/2013/ND-CP
31. Environmental protection fee for wastewater	25/2013/ND-CP
32. Revising Decree 29 on Strategic Environmental Assessment, Environmental Impact Assessment, Environmental Protection Commitment Plan	35/2014/ND-CP
33. Wastewater drainage and treatment	80/2014/ND-CP
34. Requirements for environmental monitoring service providers	127/2014/ND-CP
35. Compensation for environmental damage	03/2015/ND-CP
36. Guidance on implementing Law on Environmental Protection 2014	19/2015/ND-CP
37. Environmental protection planning, strategic environmental assessment, environmental impact assessment, environmental protection commitment plan	18/2015/ND-CP
38. Waste and scarp management	38/2015/ND-CP
39. Development, and management of the corridor for protection of water	43/2015/ND-CP
40. Guidance on the implementation of Law on Natural Resources and Environment of Seas and Islands 2015	40/2016/ND-CP
41. Updated handling administrative violation on environmental protection	155/2016/ND-CP
42. Updated handling administrative violation on environmental protection	55/2021/ND-CP

**Source:** World Bank 2019 and various government documents.



Various policy instruments have been introduced to address pollution. These include environmental impact assessment, ambient environment standards, emissions and effluent standards, effluent and solid waste charges, and inspection and penalties. Marine spatial planning was introduced in the Law on Marine and Island Natural Resources and Environment 2015 to address maritime environmental issues.<sup>18</sup> Other instruments include incentives for environmental protection via soft loans, and tax and land preferential conditions. Financial resources of at least 1% of the state budget for environmental expenditure have been allocated annually for state management of environmental protection since 2004.

State management organizations on the environmental protection have been established at three levels. The central level has the Ministry of Natural Resources and Environment (MONRE) and environment units in the line ministries. At the provincial level, the Departments of Natural Resources and Environment (DONREs) assist the Provincial People's Committees (PPC) to manage environmental issues. The district Divisions of Natural Resources and Environment are at the grass-root level of state management of environmental protection.

### *2.3 Participation in international agenda*

Vietnam has actively engaged with international environmental agenda. It has ratified eight international environmental agreements, particularly the United Nations Framework Convention on Climate Change 1993 and the Paris Agreement 2015.<sup>19</sup> Vietnam was among the first Southeast Asian countries to revise the Nationally Determined Contribution to include a commitment to reduce greenhouse gas emissions in 2030 by 9% or 27% relative to

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<sup>18</sup> Vietnam National Assembly, "Law on Natural Resources and Environment of Seas and Islands", 2015, <https://thuvienphapluat.vn/van-ban/Tai-nguyen-Moi-truong/Luat-tai-nguyen-moi-truong-bien-va-hai-dao-2015-282375.aspx>

<sup>19</sup> Government of Vietnam, "The Third National Communication to the UNFCCC."

business as usual without and with international assistance, respectively.<sup>20</sup> In 2018, Vietnam hosted the 6<sup>th</sup> Global Environment Facility Assembly at which it proposed important initiatives such as a regional marine plastics waste reduction program.

At the United Nations Framework Convention on Climate Change' 26<sup>th</sup> Conference of Parties, Vietnam announced a net zero emissions target by 2050. It also pledged to phase out coal power by the 2040s, end deforestation by 2030, and reduce methane emissions by 30% between 2020 and 2030.

## *2.4 Environmental objectives*

Environmental objectives have generally been specific, measurable, and time bound. These are specified in ten-year national environmental plans and strategies. Key documents are the National Plan for Environment and Sustainable Development 1991-2000, the National Strategy for Environmental Protection 2001-2010, and the National Strategy for Environmental Protection 2011-2020.

## **3. Key environmental policy trends**

### *3.1 Decentralization of environmental protection*

Vietnam's environmental protection was decentralized in 1990-2020. LEP 1993 set up centralized environmental protection systems. The Ministry of Science, Technology, and Environment (MOSTE) – renamed to MONRE in 2003 – was a single national agency in charge of the state management for environmental protection. Environmental protection activities in line ministries were subject to the guidance of MOSTE. At the provincial level, PPCs managed local environmental issues under MOSTE guidance. With these arrangements, MOSTE exercised the coordinating and supervising roles smoothly.

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<sup>20</sup> Government of Vietnam, "Updated Nationally Determined Contribution" (Hanoi, 2020), [https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Viet Nam First/Viet Nam\\_NDC\\_2020\\_Eng.pdf](https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Viet%20Nam%20First/Viet%20Nam_NDC_2020_Eng.pdf).

LEP 2005 decentralized state management for environmental protection. Each line ministry issued its own environmental regulations and supervised environmental protection of its subsidiaries. PPCs received more autonomy in approving environmental related permits. However, the decentralization has resulted in fragmented environmental management.<sup>21</sup> This is because LEP 2005 failed to clarify roles and responsibilities among ministries and local authorities.

LEP 2014 attempted to address the fragmented problem by adding the MONRE mandate of being accountable to the Government on *uniting environmental state management*. However, this was insufficient to solve the problem. Pollution control remained divided among the ministries.<sup>22</sup> LEP 2020 continues the effort to address institutional fragmentation by reducing the mandates of the line ministries. Instead of making their own decisions, the line ministries now play a supporting role. MONRE leads solid waste, air, and water pollution control. This centralization is expected to produce more coordinated environmental protection activities at the national level.

On the other hand, decentralization for local authorities has continued. The LEP 2020 gives provincial authorities more autonomy over environmental issues.<sup>23</sup> While this appears sensible, conflicts of interests at the local levels may hinder effectiveness. Development projects often result in financial benefits such as generating tax revenues and local employment that are highly attractive to provincial governments. Therefore, development

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<sup>21</sup> Grafton, R.Q., D. Garrick, A. Manero, and T.N. Do. "The Water Governance Reform Framework: Overview and Applications to Australia, Mexico, Tanzania, U.S.A and Vietnam." *Water (Switzerland)* 11, no. 1 (2019). <https://doi.org/10.3390/w11010137>.

<sup>22</sup> 2030 Water Resources Group, "Vietnam Hydro-Economic Framework for Assessing Water Sector Challenges," 2017, [https://www.2030wrg.org/wp-content/uploads/2018/02/ENG\\_Vietnam-Hydro-Economic-Analysis\\_August-2017.pdf](https://www.2030wrg.org/wp-content/uploads/2018/02/ENG_Vietnam-Hydro-Economic-Analysis_August-2017.pdf).

<sup>23</sup> Nguyen Hung Thinh, "Some New Contents of the Law on Environmental Protection 2020 (in Vietnamese)," 2021, <http://kinhtevadubao.vn/chi-tiet/90-18035-mot-so-diem-moi-cua-luat-bao-ve-moi-truong-nam-2020.html>.

usually receives priority over nature conservation.<sup>24</sup> Concerns about the risks of becoming less attractive to investment due to stringent regulations can result in lax enforcement. Without proper check and balance mechanisms, decentralization can pose risks of worsening environmental degradation.

### 3.2 *Gradually more stringent environmental regulations*

The strictness of regulations has increased gradually. In the 1990s and the early 2000s, more emphasis was on the ambient environment monitoring than on effluent and emission monitoring. Since 2005, the industries have been required to provide periodical self-monitoring reports as regulated in LEPs 2005 and 2014. LEP 2020 tightens the requirement by regulating that from 2022 all sizable emitters will need to provide real time monitoring data to the government agencies.<sup>25</sup>

Environmental standards have also become more stringent. For example, effluent standards for the steel production industry increased from 12 pollutants in 2013 to 25 pollutants in 2017 with lower thresholds.<sup>26</sup> Emission standards for new automobiles have been raised to Euro 4 since July 1, 2017, and Euro 5 will be applied from January 1, 2022.<sup>27</sup> The gradual approach is aimed at facilitating industries to adapt to environmental regulations.

### 3.3 *Wide applications of market-based instruments*

Economic instruments have been widely applied via a learning by doing process. While

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<sup>24</sup> Ruth D. Carlitz and Marina Povitkina, "Local Interest Group Activity and Environmental Degradation in Authoritarian Regimes," *World Development* 142 (2021): 105425, <https://doi.org/10.1016/j.worlddev.2021.105425>.

<sup>25</sup> Vietnam National Assembly, "Law on Environmental Protection 2020."

<sup>26</sup> Vietnam Ministry of Natural Resources and Environment, "Circular 78/2017/TT-BTNMT Dated 29/12/2017 on National Environmental Technical Regulations (in Vietnamese)," 2017, <https://thuvienphapluat.vn/van-ban/Tai-nguyen-Moi-truong/Thong-tu-78-2017-TT-BTNMT-quy-chuan-ky-thuat-quoc-gia-ve-moi-truong-390662.aspx>.

<sup>27</sup> Vietnam Ministry of Industry and Trade, "Roadmap for Application of Vehicle Emission Standards (in Vietnamese)," 2016, <http://www.moit.gov.vn/web/guest/tin-chi-tiet/-/chi-tiet/lo-trinh-ap-dung-tieu-chuan-khi-thai-cua-oto-xe-may-107761-16.html>.

command and control was the approach in the 1990s, market based instruments have become common since the 2000s. Wastewater charges have been in place since 2003. Law on Environmental Protection Taxes started in January 2012. Products subject to the taxes are gas, diesel, coal, hydrochlorofluorocarbon, plastic bags, restricted pesticides and herbicides, timber processing chemicals, and warehouse disinfectants. Viet Nam Environmental Protection Fund was established in 2003 to offer grants and soft loans for environmental protection. Green Label Program has operated since 2009 to promote environmentally friendly production and consumption. These market-based instruments have been regularly reviewed and revised to better suit socioeconomic development.

### *3.4 Increasing priority for renewable energy*

Solar and wind power development has received priority through generous feed-in tariffs. With over 17GW by the end of 2020, Vietnam now has the highest installed capacity for solar and wind power in Southeast Asia.<sup>28</sup> Government's commitment to energy availability and public opposition to the development of new coal power projects have triggered the switch to solar and wind power.<sup>29</sup> The possibility of continuing this momentum depends on the policy in the coming period.

### *3.5 Increasing public participation*

Public participation in environmental protection has increased. Information disclosure on enterprises' environmental performance has been regulated since 2005 to create additional incentives for the enterprises to comply with environmental regulations. Community

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<sup>28</sup> International Renewable Energy Agency, "Data and Statistics," 2021, <https://irena.org/Statistics>.

<sup>29</sup> Do, Thang Nam, Paul J Burke, Kenneth Balwin, and Chinh The Nguyen, "Underlying Drivers and Barriers for Solar Photovoltaics Diffusion: The Case of Vietnam," *Energy Policy* 144 (September 1, 2020), <https://doi.org/10.1016/j.enpol.2020.111561>.

consultation in environmental impact assessment has been legalized since LEP 2005, with increasing details in LEPs 2014 and 2020.<sup>30</sup>

The development of social media has enabled informal feedback on environmental decision-making. Advanced monitoring technologies have helped facilitate growing public awareness about air pollution, as one can now easily check real-time air pollution levels using widely available smart phone applications.<sup>31</sup> Environmental violation has been first detected by local community in many cases.

#### **4. Drivers of environmental policy**

Vietnam environmental policy has been driven by both domestic and international factors.

##### *4.1 Domestic factors*

Political attention to local environmental issues has been a key driver of Vietnam's environmental policy. This feature can be identified in the very early days of the republic when President Ho Chi Minh launched the tree plantation movement in 1959. Environmental protection spirit has been maintained in the Party's guiding documents and legalized by the state's regulations. The message of not sacrificing the environment for economic development has been highlighted in the Party and State's leaders' speeches.

Importantly, increasing public demand for better environmental quality has triggered more stringent environmental standards and enforcement. It has been a key driver for recent strong renewable energy development.<sup>32</sup> Citizens have certain environmental risk thresholds beyond

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<sup>30</sup> Thinh, Nguyen Hung. "Some New Contents of the Law on Environmental Protection 2020 (in Vietnamese)," 2021. <http://kinhtevadubao.vn/chi-tiet/90-18035-mot-so-diem-moi-cua-luat-bao-ve-moi-truong-nam-2020-.html>.

<sup>31</sup> Do, Thang Nam, Paul J Burke, , Nam Hoang Nguyen, Indra Overland, Beny Suryadi, Akbar Swandaru, Zulfika Yurnaidi, "Vietnam's solar and wind power success: Policy implications for the other ASEAN countries," *Energy for Sustainable Development* 65 (December, 2021), <https://doi.org/10.1016/j.esd.2021.09.002>.

<sup>32</sup> Do, Thang Nam, Paul J Burke, , Nam Hoang Nguyen, Indra Overland, Beny Suryadi, Akbar Swandaru, Zulfika Yurnaidi, "Vietnam's solar and wind power success: Policy implications for the other ASEAN countries," *Energy for Sustainable Development* 65 (December, 2021), <https://doi.org/10.1016/j.esd.2021.09.002>.

which they tend to reject investment projects despite their potential economic benefits.<sup>33</sup> Civil society has played an increasing role in voicing concerns about pollution. It is the public boycott that made the VEDAN monosodium glutamate producer to agree to pay compensation for damaged farmers in 2010.<sup>34</sup>

Awareness about the linkages between environmental quality and health issues has strengthened the arguments for environmental protection. It has been increasingly believed that poor environmental conditions could lead to serious health consequences. Concerns about mounting pollution pressure on social and economic development have enabled the revision of the LEP. The COVID-19 pandemic has also contributed to raising public awareness about environmental protection needs.

#### 4.2 *International factors*

International organizations have played an important role in providing input into Vietnam's environmental policy. Development partners have often selected Vietnam as a partner country for enhancing environmental capacity and technical assistance. Vietnam is among the most vulnerable developing countries to global climate change. It is also deemed to be open to new ideas.

Interest in international integration has contributed to shaping environmental policy to align with international agenda. Review of international experience is part of domestic decision making such as setting emission reduction targets and environmental standards. Referring to ASEAN peer countries typically is Vietnam's common practice. One driver for adopting carbon pricing is complying with free trade agreements, including those with the European

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<sup>33</sup> Nguyen and Malesky, "Fish or steel? New evidence on the environment-economy trade-off in developing Vietnam", *World Development* 147 (2021), <https://doi.org/10.1016/j.worlddev.2021.105603>

<sup>34</sup> Tuoi Tre, "Vedan agrees to pay compensation at the 89<sup>th</sup> minute" (in Vietnamese), <https://tuoitre.vn/phut-89-vedan-chiu-boi-thuong-394602.htm>.

Union where carbon border adjustment mechanisms have been proposed. Interest in joining the global climate efforts has contributed to Vietnam's decision on net zero emissions.

Concerns about transboundary environmental issues are another driver for aligning domestic and regional environmental policy. Given that 60% of the country's water comes from outside of its border,<sup>35</sup> Vietnam has participated in the regional frameworks such as Mekong River Commission, Greater Mekong Subregion, the Lancang-Mekong Water Cooperation to seek solutions to mitigate upstream impacts on Vietnam's Mekong Delta.

## **5. Remaining issues**

### *5.1 Inadequate priority for environmental protection*

While environmental protection is emphasized in separate thematic policy documents, it has typically been mentioned sparingly in socioeconomic development policy. Not until after 2010 were environmental indicators included in five-year socioeconomic development plans. The scope of environmental indicators tends to have been limited. The number of environmental tasks appear modest, and the tasks are often shown toward the end of the documents. Particularly, the contribution of environmental protection to socioeconomic development has not yet been highlighted.

Consequently, environmental protection has received less priority than economic development. For example, to power the economy, Vietnam has opted to rely on coal despite commitments to global climate mitigation efforts. It had ASEAN's fastest growth in coal consumption in 2009–2019 at an average rate of 16% per annum.<sup>36</sup> As a result, the country's

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<sup>35</sup> World Bank, "Vietnam : Toward a Safe, Clean, and Resilient Water System."

<sup>36</sup> Thang Nam Do and Paul J Burke, "Carbon Pricing in Vietnam: Options for adoption," *Energy and Climate Change* 2 (2021), <https://doi.org/10.1016/j.egycc.2021.100058>.



emissions have been increasing quickly. The average annual growth rate of Vietnam's CO<sub>2</sub> emissions from fuel combustion over 2009–2019 was 10.8%, the fastest in ASEAN.<sup>37</sup>

At local levels, pro-business interest groups have tended to lobby for less stringent environmental regulations, resulting in environmental degradation<sup>38</sup>. Local employment opportunities and revenue contribution have often been key arguments for project development. Environmental protection has not yet been seriously considered as a principal indicator of the province performance. Therefore, it tends to have received inadequate attention in decision-making.

## 5.2 *Mandate overlaps and limited coordination among government agencies*

Overlaps in government agencies' mandates have been a key obstacle to effective policy implementation. LEPs 2005 and 2014 empowered line ministries to implement the LEPs '*within the ministries' mandates*'. However, what it means by '*within ministries' mandates*' is ambiguous. For example, it is unclear whether managing pollution from craft villages belongs to the mandates of Ministry of Construction, Ministry of Agriculture and Rural Development or MONRE.<sup>39</sup> Task divisions between the central and provincial agencies in supervising environmental compliance have also appeared confusing. Although LEP 2020 has tried to specify that one task will be assigned to one agency,<sup>40</sup> challenges of the overlaps are unlikely to ease significantly in a near term.

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<sup>37</sup> BP, 2021. BP Statistical Review of World Energy [WWW Document]. URL <http://www.bp.com/statisticalreview> (accessed 6.5.21).

<sup>38</sup> Carlitz, Ruth D., and Marina Povitkina. "Local Interest Group Activity and Environmental Degradation in Authoritarian Regimes." *World Development* 142 (2021): 105425. <https://doi.org/10.1016/j.worlddev.2021.105425>.

<sup>39</sup> World Bank, "Vietnam : Toward a Safe, Clean, and Resilient Water System."

<sup>40</sup> Thinh, Nguyen Hung. "Some New Contents of the Law on Environmental Protection 2020 (in Vietnamese)," 2021. <http://kinhtevadubao.vn/chi-tiet/90-18035-mot-so-diem-moi-cua-luat-bao-ve-moi-truong-nam-2020-.html>.

Cooperation between government agencies has generally been limited. Different agencies typically argue for their own priorities and fail to agree on the common priorities. That has led to the problem of regulations that are issued later override the previous ones. For example, the Irrigation Law 2017 has increased the functions of the MARD over irrigation water that is not specified in the Water Resources Law 2012. In turn, the LEP 2020 readjusted this. While some adjustment is normally needed, instability due to too many changes in the agencies' mandates and functions appear inefficient.

Limited cooperation has created policy inconsistency. For example, the use of fossil fuels was set to increase in the Power Development Plan despite the emissions reduction target.<sup>41</sup> Another example is limited cooperation among provincial authorities in addressing the pollution of craft villages. To address the craft village pollution, land has been set aside for the development of industrial clusters. However, the land has been converted to residential and commercial areas instead, worsening the pollution.<sup>42</sup>

Another aspect of limited cooperation resides in information exchange. For example, PPCs and other ministries are supposed to report to MONRE on their environmental protection performance annually so that MONRE can report to the Government and the National Assembly. However, in 2017, only one of 16 ministries and 35 of 63 provinces sent reports to MONRE.<sup>43</sup>

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<sup>41</sup> Do, Thang Nam, Paul J Burke, Kenneth Balwin, and Chinh The Nguyen , "Underlying Drivers and Barriers for Solar Photovoltaics Diffusion: The Case of Vietnam," *Energy Policy* 144 (September 1, 2020), <https://doi.org/10.1016/j.enpol.2020.111561>.

<sup>42</sup> Nhan Dan Newspaper, "Hanoi Surrounded by Polluting Craft Villages (in Vietnamese)," 2020, <https://nhandan.vn/baothoinay-xahoi-phongsu/ha-noi-giua-vong-vay-o-nhiem-lang-nghe--615035/>.

<sup>43</sup> Vietnam Ministry of Natural Resources and Environment, "Official Correspondence No. 508/BTNMT-TCMT Dated 30/1/2019 on Environmental Reporting 2018 (in Vietnamese)" (Hanoi, 2018).

### *5.3 Imbalance between policy development and enforcement*

Policy development has received more attention than policy implementation. The number of regulations has often been used as a main indicator for annual performance evaluations of government agencies. Enabling public participation has focused more on policy development than on policy implementation. For example, LEPs specify public participation in environmental impact assessment but contain little detail on compliance monitoring. Public participation in reviewing the national environmental strategies and action plans has been limited. The dissemination of review results appears to have been mainly within the government systems.

It is fair to evaluate that environmental policy implementation generally has not met expectation due to insufficient enforcement. For example, tax revenue from plastic bags accounted for only less than 0.3% of the target.<sup>44</sup> While wastewater charges have generated certain revenues, they have failed to induce pollution reduction. Non-compliance rate has been high because it is often cheaper to pay a fine than invest in new waste water treatment systems. Up to 31% of inspected facilities in 2017 were found to be non-compliant.<sup>45</sup> About 60% of enterprises discharge exceeded permitted effluent standards.

### *5.4 Limited institutional and financial capacity*

Institutional and financial resources remained limited. On average, each province currently has only eight environmental inspectors. That is insufficient to cover the demanding tasks involving not only environmental protection but also mineral resources mining, water resources, and land administration. Financial resources allocated from state budgets for

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<sup>44</sup> Lao Dong Newspaper, "Regulation Loophole Causing Billion VND Losses in Tax Revenues (in Vietnamese)," 2018, <https://laodong.vn/kinh-te/lo-hong-phap-luat-tu-thue-bao-ve-moi-truong-that-thu-nghin-ti-dong-voi-tui-nylon-632665.laod>.

<sup>45</sup> World Bank, "Vietnam : Toward a Safe, Clean, and Resilient Water System."

environmental protection have met only about 55% of the demand.<sup>46</sup> The total state budget for environmental protection has accounted for only about 0.3% of GDP while the average of other countries in the region is 0.55%.<sup>47</sup>

Weak institutional capacity to supervise environmental compliance has caused policy ineffectiveness.<sup>48</sup> Although the Criminal Code has included environmental crime since 2000, so far, no case of water discharge violations has been treated as environmental crime. The reason is that treating an environmental violation as a crime requires evidence of cause and effect, and of severity of environmental damage. That is beyond the current institutional capacity.

### *5.5 Lack of environmental information disclosure*

Community has yet received sufficient environmental information. Access to environmental impact assessment reports of development projects appears restricted to government agencies. Public disclosure of firms' environmental performance remains limited although it has been regulated under the LEP. Data on environmental quality are only available in aggregated forms in yearly state of the environment reports. That makes it difficult for the public to obtain timely environmental information such as water quality of the lakes and channels in their community. Consequently, public awareness of pollution issues as well as public participation in environmental monitoring appear limited, except for the awareness of air pollution by some groups with more access to technology.

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<sup>46</sup> Government of Vietnam, "Environmental Protection Report 2017 to National Assembly (in Vietnamese)" (Hanoi, 2018).

<sup>47</sup> Thang Nam Do, "Environmental Expenditure in Some Countries and Orientations for Vietnam (in Vietnamese)," *Environmental Magazine* (Hanoi, 2011).

<sup>48</sup> World Bank, "Vietnam : Toward a Safe, Clean, and Resilient Water System."

## 5.6 Perverse policies

Perverse policies have remained significant. Sizable fossil fuel subsidies have hampered a transition to cleaner energy sources. Vietnam's total fossil fuel subsidy in 2019 was US\$270 million<sup>49</sup>. The existing environmental protection tax rates of fossil fuels are not the function of their carbon contents; hence fail to adjust fuel consuming behavior.<sup>50</sup>

Poor urban planning exacerbates air pollution.<sup>51</sup> Overdevelopment of high-rise buildings in city centers have worsened the overcrowding inhabitants and created pressure on the already overloaded wastewater infrastructure. Traffic electrification has not yet received due policy attention. The number of electric cars remained as low as around 1,700 by April 2021 out of over 4 million registered cars.<sup>52</sup>

In rural areas, subsidies for craft villages have hindered the incentives to be more proactive in technology innovation and pollution reduction. Farmers' overuse of fertilizers and pesticides due to lax government control of cheap and outdated products have resulted in increasing water pollution.<sup>53</sup> Overuse of administrative bans without sufficient financial supports for low-income households to switch their behavior have created infeasibility of policy. For example, opening burning of rice residuals in semi-urban areas of Hanoi and the use of char coal for household cooking have continued despite the ban since early 2021.

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<sup>49</sup> International Energy Agency, "Energy Subsidies: Tracking the Impact of Fossil-Fuel Subsidies" (Paris, 2021), <https://www.iea.org/topics/energy-subsidies>.

<sup>50</sup> Do, Thang Nam and Paul J Burke, "Carbon Pricing in Vietnam: Options for adoption," *Energy and Climate Change* 2 (2021), <https://doi.org/10.1016/j.egycc.2021.100058>.

<sup>51</sup> Do, Thang Nam, "Bold Action Needed to Address Vietnam's Air Pollution."

<sup>52</sup> Vietnam Pictorial, 2021 "High cost, lack of infrastructure barriers to electric car market" <https://vietnam.vnanet.vn/english/high-cost-lack-of-infrastructure-barriers-to-electric-car-market/493926.html>

<sup>53</sup> World Bank, "Vietnam : Toward a Safe, Clean, and Resilient Water System," 2019, <https://www.worldbank.org/en/country/vietnam/publication/vietnam-toward-a-safe-clean-and-resilient-water-system>.

## **6. Ways forward**

### *6.1 Improved mainstreaming environmental considerations into socioeconomic development*

Opportunities exist for Vietnam to adopt policies that help better mainstream environmental considerations into socioeconomic development. Applications of Green GDP at both national and provincial levels would highlight the contribution of environmental protection to economic growth. Improving the transparency of provincial environmental performance ranking by engaging community in ranking processes would ensure enhanced environmental considerations in provincial decision-making. Public disclosure of businesses' environmental performance would incentivize environmentally friendly investments. The Party could play a fundamental role by setting ambitious environmental targets and supervising their achievements. Enabling civil society in reviewing the targets would also enhance the impetus for their achievements.

### *6.2 More centralization in decision-making*

Centralization in decision making helps reduce function overlaps and improve policy implementation effectiveness through better coordination of environmental management. International experience has shown that centralization of environmental management is a trend. For example, while reducing the number of ministries, China formed the Ministry of Environmental Protection to take on the environmental mandates of other ministries in 2008 and it was upgraded to Ministry of Ecology and Environment in 2018. Korea and Japan centralized environmental management by establishing ministries of environment in 1990 and 2001 respectively.

Vietnam could consider following the international examples to empower MONRE with more authority. The Sub-Environmental Protection Departments currently under provincial DONREs and the Division of Natural Resources and Environment under District's People

Committee could be restructured to be under MONRE's direct supervision. Staff appointments and annual budget allocations for these environmental units would be under MONRE's control. This would improve policy implementation by minimizing conflicts of interest at the local level.

### *6.3 Strengthening enforcement capacity*

Strengthening enforcement capacity requires greater human resource capacity. Environmental inspectors will need ongoing training to keep up with increasing pollution complexity.

Strengthening enforcement capacity also requires increased financial resources. Advanced technology applications such as artificial intelligence should be applied in environmental monitoring and enforcement.

Improving compliance incentives could increase compliance rates. One possibility is replacing the present one-off fines by daily fines.<sup>54</sup> By imposing daily fines, the penalty will equal a violation fee times the number of days until the violations are corrected. If the polluter refuses to correct, such penalty of consecutive daily fines can be implemented successively. Hence, daily fines would incentivize polluters to take early corrective action.

In addition, greater community participation in compliance monitoring would increase the likelihood of violations being detected and enhance industry compliance incentives.

Improving access to environmental information would facilitate community participation.

Particularly, the National Assembly could increase their supervision of the implementation of environmental policy.

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<sup>54</sup> China Water Risk, "No Longer 'Cheap to Pollute': MEP Sets Regulations to Enforce New Environmental Law," 2014, <http://www.chinawaterrisk.org/notices/no-more-cheap-to-pollute-mep-sets-regulations-to-enforce-new-environmental-law>.

#### 6.4 *Developing and implementing a net zero emissions action plan*

A concrete and actionable plan is needed to realize the net zero emissions commitment. Key elements of the plan include clear and ambitious targets, detailed responsibilities of stakeholders, and close monitoring mechanisms. Better communication on potential benefits and support for the affected groups in the transition would facilitate the adoption and implementation of the plan.

In addition, political determination is needed to adopt and implement the plan, as the plan would involve radical changes in the economy structure. There will be winners and losers. For example, cancelling new coal power plants would have significant social benefits in terms of reduce air pollution and health impacts. In the meantime, some coal mining job and investment opportunities would be lost. Quick consensus among stakeholders thus is highly unlikely.

The plan would need to carefully consider the intention of replacing coal by imported liquefied natural gas for power generation.<sup>55</sup> Natural gas is not a zero-carbon energy. In addition, it will take years to establish the infrastructure needed for the new gas power plants. This poses high risks of stranded assets, given rapid declines in technology costs of the already cost-competitive zero-carbon energy sources of solar and wind.

Specifying ambitious targets for solar and wind energy would boost their uptake. Vietnam has the potential to achieve over 90 per cent penetration of domestic solar and wind power, coupled with off-river pumped hydro energy storage, in its electricity mix at a competitive cost.<sup>56</sup> Impetus for ramping up renewable energy uptake could be built upon Vietnam's early

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<sup>55</sup> IEEFA, Vietnam's PDP8 Signals Policy Confusion About the Economics of Coal Wishful Thinking on New Coal Financing Might Set the Country up for Big Disappointment. Institute for Energy Economics and Financial Analysis, 2021.

<sup>56</sup> Lu, B., A. Blakers, M. Stocks, and T. N. Do, Low-cost, low-emission 100% renewable electricity in Southeast Asia supported by pumped hydro storage. *Energy* 236 (2021) 121387. <https://doi.org/10.1016/j.energy.2021.121387>.



success in solar and onshore wind power development. Particularly, the plan could set clear and ambitious targets for offshore wind power for which Vietnam has sizable potential.

Offshore wind power could be deployed at scale to help to meet domestic demand as well as reduce GHG emission reduction significantly.<sup>57</sup>

Other important elements of the plan include enhancing energy efficiency, upgrading transmission and investment in energy storage systems. A road map to promote electric vehicles is essential to green the transport sector. Removing fossil fuel subsidies would free sizable resources, which can then be used for environmentally friendly purposes.

Operationalizing the carbon emissions trading scheme legalized by LEP 2020 would accelerate the transition to cleaner energy and reduce air pollution.<sup>58</sup>

## 6.5 *Other policies*

Improving urban planning would mitigate air and water pollution considerably. Densely populated facilities such as government offices, universities and hospitals could be relocated to the suburbs. Development of mass transit systems is needed. Green building codes could promote the development of energy efficient and solar-powered buildings. Domestic wastewater collection, treatment, and reuse needs to be considered as an investment priority via public-private partnerships.

Policies promoting the use of greener vehicles could reduce air pollution. Phasing out obsolete and polluting vehicles could be encouraged by providing subsidies for trading in old cars, paid for by higher taxes on new vehicles. This would help address distributional effect concerns, as owners of old vehicles tend to be from lower-income households. The

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<sup>57</sup> World Bank, Offshore wind roadmap for Vietnam, (2021).

<sup>58</sup> Do, Thang Nam and Paul J Burke, "Carbon Pricing in Vietnam: Options for adoption," *Energy and Climate Change* 2 (2021), <https://doi.org/10.1016/j.egycc.2021.100058>.

government could also issue enabling policies to promote electric vehicles, such as an income tax reduction for electric vehicle manufacturers to make them more affordable.

Removing subsidies for craft villages would eliminate these high polluting sources.

Enhancing applications of modern monitoring technology would strengthen enforcement capacity. Post pandemic is an ideal time to turn around the pollution problems with green recovery policy.

## **7. Implications for sustainable development**

Vietnam's experience in the development and implementation of environmental policy potentially has implications for sustainable development. Developing countries could refer to Vietnam's case to draw relevant lessons for overcoming challenges in balancing environmental protection and economic development. Developed countries may find useful information to enhance the effectiveness of their assistance to developing countries toward sustainable development goals. Below are the key messages drawn from Vietnam's case.

Firstly, decentralization of environmental decision-making is not always desirable. At the operational level, decision-making can lean in favor of economic development. An appropriate way forward could be applying centralized decision-making, coupled with extensive participation of stakeholders in monitoring environmental compliance.

Secondly, harmonizing environmental protection and economic development is more easily said than done. It is easy to reach a consensus that environmental protection is important. However, when it comes to the trade-off between environmental protection and economic development, views diverge. For example, people often support measures such as stopping new coal power plants to improve air quality. On the other hand, proposals for increasing energy prices associated with these measures have often received criticism from the public and rarely succeeded.

Vietnam has struggled to balance environmental protection and economic development harmonization. Giving priority to economic development in some cases appears unavoidable. In the early 2010s, energy demand surged while dominant hydroelectricity had reached its limit. Solar and wind energy technology costs, and associated energy storage, were then very high. Meanwhile, it was not easy to increase electricity tariffs to mobilize financial resources due to social and political reasons. The government had no choice but to increase coal power to meet the increasing energy demand.

Thirdly, transitioning from brown to green development is not without costs. Treating domestic wastewater and cleaning polluting rivers would require billions of dollars. The costs also include opportunity costs of allocating resources for environmental protection. For example, the opportunity costs of strengthening enforcement capacity are the foregone benefits of having the resources allocated to increasing the number of medical staff instead. The priority depends on the context of a country.

Environmental protection in developing countries is challenging. Many complex environmental issues are beyond their limited technical, financial, and institutional capacity. They also often face dilemmas, such as allocating limited resources to numerous urgent issues. Deciding which areas need more priority is not always clear and easy.

Fourthly, environmental protection will gain more priority if its contribution to socioeconomic development is stressed. Highlighting health issues resulting from environmental protection may help garner public support. Potential increases in GDP through avoided human health costs and damage due to pollution may better convince decision-makers to allocate more resources to address pollution. In this regard, environmental valuation can help provide information on the full costs and benefits of a proposed development project.

Finally, international cooperation plays an important role in driving the environmental agenda, both domestically and internationally. International support is crucial for Vietnam and other developing countries to unlock opportunities to pursue a greener pathway. Developed countries could and arguably should provide more technical and financial support to developing countries. This is particularly true for global common goods, such as mitigating climate change. The "common but differentiated responsibility" principle should be further applied to address equity issues. Increased technology transfer and financial assistance from the developed world would facilitate developing countries in contributing to addressing global climate change faster and more effectively.

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