

CHAPTER 3 GREEN GROWTH

OVERVIEW

EuroCham established a Green Growth Business Sector Committee (GGSC) in May 2014 to mainstream and develop the essential conditions for Green Business to prosper in Vietnam. Representing the private sector, GGSC works closely with public stakeholders, including the Government of Vietnam and its agencies, donors and multilaterals. This Chapter focuses on two main topics which we believe should be priorities for the Government: Firstly, water and waste management, including air quality control and waste-to-energy;¹ and secondly, sustainable buildings and energy efficiency.

I. WATER AND WASTE MANAGEMENT, AIR QUALITY CONTROL AND WASTE-TO-ENERGY

Relevant State authorities: Ministry of Natural Resources and Environment (MONRE), Ministry of Construction (MOC), Ministry of Finance (MOF), Ministry of Planning and Investment (MPI), Vietnam Environment Administration (VEA).

1. Enforcing wastewater regulations

Issue description

In recent years, Vietnam has discovered that the lack of coordinated supervision of wastewater treatment can cause massive environmental and socio-economic disasters affecting the livelihood of millions of people.

Potential gains/concerns for Vietnam

The Ministry of Natural Resources and Environment (MONRE) reports that: “More than 2,000 investment projects have insufficient environmental impact assessments, while hundreds of industrial zones (IZs) have no wastewater treatment systems”² as required by law.³ “Industrial parks nationwide discharge more than a million cubic metres of wastewater each day, 75 per cent of which is untreated and harmful.”⁴ Residents are reporting serious health and environmental effects in connection with untreated wastewater from industrial zones: “Water pollution has affected agricultural production and people’s daily activities.”⁵ The amount of untreated sludge has become a major challenge.

Chapter 19 of Vietnam’s new Criminal Code,⁷ which came into effect on the 1st of January 2018, does have sanctions for environmental violations. These include sanctions for wastewater offences that could lead to the permanent closure of a business in serious cases. However, the legal sanctions cannot be an effective deterrent, if they are not enforced in practice or if the fines are too low compared to the cost of implementing effective wastewater treatment measures.

1 Please note that GGSC’s comprehensive position on energy is covered in the Energy and Electricity chapter of the Whitebook.
 2 “Environment Ministry’s report shows serious environmental problems”, *Vietnam Net*, 14 September 2016. Available at: <<http://english.vietnamnet.vn/fms/environment/163554/environment-ministry-s-report-shows-serious-environmental-problems.html>> last accessed on 20 December 2018.
 3 Article 37, Decree 38/2015/ND-CP dated April 24, 2015 of the Government on the management of wastes and scraps.
 4 “Over 1 mln cu.m of industrial wastewater dumped every day in Vietnam”, *Vietnam Net*, 3 December 2015. Available at: <<http://english.vietnamnet.vn/fms/environment/148243/over-1-mln-cu-m-of-industrial-wastewater-dumped-everyday-in-vietnam.html>> last accessed on 20 December 2018.
 5 “Environmental pollution from industrial complex threatens residents”, *Viet Nam News*, 30 November 2018. Available at: <<http://vietnamnews.vn/environment/481112/environmental-pollution-from-industrial-complex-threatens-residents.html#ZkRm1kLCffTdggk.99>> last accessed on 5 Dec 2018
 6 “Vietnam: Urban Wastewater Review”, *The World Bank*, 1 December 2013. Available at: <<http://www.worldbank.org/en/country/vietnam/publication/vietnam-urban-wastewater-review>> last accessed on 30 November 2018.
 7 Criminal Code No. 12/2017/QH14 of the National Assembly dated 20 June 2017 amending, supplementing a number of provisions of Criminal Code No.100/2015/QH13.

Recommendations:

- Create a task force for effectively enforcing current wastewater treatment standards.
- Focus on industrial parks that dump untreated wastewater into the environment and implementing measures to seriously sanction offenders to deter others.

2. Accelerate private investment in water and wastewater treatment solutions**Issue description**

The Ministry of Construction (MOC) estimates that Vietnam will require investments of over US\$10 billion for water supply and drainage by 2020.⁸ These targets will be difficult to reach in such a short time without accelerating investment from the private sector.

However, clean water and wastewater treatment prices are too low for private investors to build financially viable businesses. Vietnam's wastewater prices are calculated based on arbitrary percentages of the clean water supply price, despite the fact that wastewater treatment costs are higher than costs for clean water supply. Furthermore, our members report that confusion exists on the local level with regard to implementing apparently conflicting regulations, such as Decree 80⁹ and Decree 154¹⁰, on whether wastewater treatment fees and/or environmental protection fees are to be collected.

Potential gains/concerns for Vietnam

The potential gains are not just environmental. Given the right policy incentives and the coordinated implementation of reasonable regulations, Vietnam could build a sustainable water industry. Donors and multilaterals have been willing to support Vietnam in terms of financing, technical support and capacity building. These measures will not continue forever, and Vietnam is at a crossroads: It now needs to decide whether it is willing to adopt these recommendations or face further environmental degradation.

The Government has laid out a schedule to privatise Hanoi Water Corporation (Hawaco), Saigon Water Corporation (Sawaco) and 51 other water utilities by 2020.¹¹ Besides the need to improve the pricing mechanism, decision making processes and other technical factors with respect to the equitisation process of State-Owned Enterprises (SOEs), no significant private investment will flow into these companies if the underlying business conditions are not financially viable and economically sustainable.

Recommendations:

- Move toward a demand-driven pricing model for wastewater treatment;
- Coordinate the implementation of wastewater treatment and environmental protection fee regulations to remove uncertainties; and
- Provide sustainable conditions for investments in water SOEs.

3. Waste management and e-waste recycling**Issue description**

Vietnam's Law on Environmental Protection operates under the principles of minimisation, re-use, collection and treatment meeting environmental standards.¹² However, most waste is still dumped into landfills without further

8 "Over 10 billion USD needed for water supply, treatment projects", *VietnamPlus*, 7 November 2017. Available at: <<https://en.vietnamplus.vn/over-10-billion-usd-needed-for-water-supply-treatment-projects/120753.vnp>> last accessed on 29 November 2018.

9 Decree 80/2014/ND-CP dated 6 August 2014 of the Government on wastewater drainage and treatment.

10 Decree 154/2016/ND-CP dated 16 November 2016 regulating environmental protection fees on wastewater.

11 Annex II, Decision 58/2016/QĐ-TTg of the Prime Minister dated 28 December 2016 providing criteria for classification of wholly State-owned enterprises partially State-owned enterprises and list of State-owned enterprises undergoing restructuring in 2016-2020

12 Law on Environmental Protection 2014; Decree 80/2014/ND-CP dated 6 August 2014 of the Government on waste water drainage and treatment; Decree 19/2015/ND-CP dated 14 February 2015 detailing the implementation of a number of articles of the Law on Environmental Protection; Decree 155/2016/ND-CP dated 18 November 2016 of the Government on the sanction of administrative violations of environmental protection; Decree 03/2015/ND-CP dated 6 January 2015 providing the assessment of environmental damage; and Decree 38/2015-ND-CP of Government dated 24 April 2015 on management of waste and discarded materials

processing, including 90 per cent of all solid waste in Hanoi and 76 per cent in Ho Chi Minh City.¹³ Unsanitary landfills not only cause environmental hazards and infuriate local residents,¹⁴ but also waste valuable materials that could be recycled and used for power generation. Multinational corporations are setting their own recycling and renewable energy goals and require a supportive regulatory framework to do so.

In our 2018 and previous Whitebooks, we had recommended to set and implement clear collection goals and raise public awareness about waste management. In this respect, we welcome Decision 491¹⁵ setting clear targets for the management of waste up to 2025 with a vision to 2050, including collection and recycling quotas as well as awareness building activities. Decision 491 replaces Decision 2149¹⁶ and sets higher standards. For example, Article 1.3.b) sets forth specific objectives to be reached by 2025 as follows:

- In terms of hazardous solid waste:

- 100 per cent of hazardous solid waste discharged from production, business, service, medical facilities, trade villages must be collected, transported and treated satisfying the environmental protection requirement;
- 85 per cent of hazardous solid waste discharged from households or individuals must be collected, transported and treated satisfying the environmental protection requirement;
- 100 per cent of electronic equipment producers must establish and publish facilities for the recovery of waste products as regulated by laws.

- In terms of urban solid waste:

- All special-grade and grade-I urban centres as well as 85 per cent of other urban centers shall recycle solid waste in a manner consistent with the separating of waste in households;
- 90 per cent of daily-life solid waste discharged in urban centres must be collected and treated satisfying the environmental protection requirement; increase the capacity to recycle, reuse and treat solid waste in combination with energy recovery or organic fertilizer production; strive to reach the goal of achieving less than 30 per cent of collected solid waste disposed by burial;
- Use 100 per cent environmentally-friendly plastic bags in trade centers and supermarkets for the purpose of replacing persistent plastic bags to serve daily-life activities;
- 90 – 95 per cent of daily-life solid waste landfills in urban centres that have been closed will have their lands rehabilitated and reused, and;
- The investment in construction of solid waste treatment facilities must ensure that less than 20 per cent of solid waste will be disposed by burial.

- In terms of rural solid waste:

- 80 per cent of daily-life solid waste discharged in rural settlements must be collected, stored, transported, and undergo the self-treatment or concentrated treatment satisfying the environmental protection requirement; reuse or recycle ceiling organic waste into compost or provide home-based treatment of solid waste by transforming them into compost for using at site;
- 95 per cent of daily-life solid waste landfills in rural areas that have been closed will have their lands rehabilitated and reused; strive to reach the goal of handling 100 per cent spontaneous landfills not included in the planning meeting the environmental protection requirement;

13 "Experts: Waste-to-energy useful solution for Vietnam", *Vietnam Net*, 21 August 2017. Available at: <<http://english.vietnamnet.vn/fms/environment/185220/experts--waste-to-energy-useful-solution-for-vietnam.html>> accessed on 30 November 2017.

14 "PM calls for joint environmental efforts", *Vietnam News*, 9 September 2016. Available at: <<http://vietnamnews.vn/society/342513/pm-calls-for-joint-environmental-efforts.html#W8sAKJ1ivcUXDrtZ.97>> last accessed on 20 December 2018; "Ho Chi Minh City finally traces source of foul smell", *Tuoi Tre*, 22 September 2016. Available at: <<http://tuoitrenews.vn/society/37179/ho-chi-minh-city-finally-traces-source-of-foul-smell>> last accessed on 20 December 2018.

15 Decision 491/QĐ-TTg of the Prime Minister dated 7 May 2018

16 Decision 2149/QĐ-TTg of the Prime Minister dated 17 December 2009

- The investment in construction of solid waste treatment facilities must ensure that less than 20 per cent of solid waste will be disposed by burial.

- In terms of ordinarily industrial solid waste:

- 100 per cent of ordinarily industrial solid waste discharged from production, trading and service facilities as well as trade villages shall be collected, reused, recycled and treated meeting the environmental protection requirement;
- 80 per cent of ash, slag and gypsum discharged from power, chemicals and fertilizer plants shall be recycled, reused and treated as materials for production, construction, land grading, etc. meeting the environmental protection requirement.

- In terms of other particular solid waste:

- 90 per cent of total building solid waste discharged from urban centres shall be collected and treated meeting the environmental protection requirement, 60 per cent of which will be reused or recycled into products, materials by appropriate technologies;
- 100 per cent of sludge of septic tank collected in urban centres will be handled for environmental protection assurance;
- 80 per cent of solid waste discharged from cattle and poultry farming will be collected, reused or recycled into compost, biogas and treated meeting environmental protection requirement;
- 80 per cent of agricultural by-products generated by businesses of agriculture must be collected, reused or recycled into friendly-environment materials, fuels or products;
- 100 per cent of chemical and pesticide packaging used in agriculture industry must be collected, stored and handled as regulated by laws;
- 100 per cent of medical solid waste discharged from medical facilities or hospitals will be separated, collected, stored, transported and treated meeting the environmental protection requirement.

However, the next question is how these goals can be achieved.

Potential gains/concerns for Vietnam

The goals set in Decision 491 are ambitious, and we hope that all Ministries and authorities involved will work in concert on implementing a regulatory framework that will incentivise the public and the private sectors to help achieve these goals. Many of the goals set in Decision 491 require that existing laws be complied with. Therefore, the lawmakers and regulators need to clarify the reasons why compliance with the existing laws is currently lacking and find effective solutions.

Conducting business in the waste treatment sector in compliance with the relevant laws must be properly rewarded and incentivised. Bad actors who claim that they provide recycling and other waste treatment services at low cost and in accordance with the law but then dump collected waste into the rivers and environment must be held accountable. A compliant waste management industry will not develop, if non-compliant businesses are allowed to compete unfairly (and possibly dominate) the market.

Besides, Decree 38/2015/ND-CP was amended by Decree 136¹⁷ and several guiding documents regulating the collection, recycling and disposal of products including batteries and accumulators, civil and industrial electric and electronic equipment (EEE), lubricants, tubes and tires, as well as vehicles.

Vietnam has had a regulatory framework for power generation from solid waste, known as Waste-to-Energy (WTE), since 2014.¹⁸ Ho Chi Minh City aims to reduce landfill waste to 20 per cent by 2025 and plans to attract private investment in WTE.¹⁹ Since our last Whitebook, a number of smaller WTE projects have entered the construction

17 Decree 136/2018/ND-CP dated 5 October 2018 of the Government on amending and supplementing a number of articles of the Decree related to business and investment conditions in the fields of natural resources and environment.

18 Decision 31/2014/QĐ-TTg dated 5 May, 2014 of the Prime Minister on supporting mechanism for development of power generation projects using solid waste in Vietnam and Circular 32/2015/TT-BCT dated 08 October 2015 of MOIT on project development and model electricity sale contract applied to generation projects using solid wastes.

19 "Waste-to-energy a solution to waste management: experts," *Vietnam News*, 27 November 2017. Available at: <<http://vietnamnews.vn/society/418310/waste-to-energy-a-solution-to-waste-management-experts.html#iOgY55EeP2fq7Vzz.97>> last accessed on 20 December 2018.

phase.²⁰ We hope this progress will accelerate and that burdensome licensing procedures will be streamlined to enable more WTE projects to proceed to the implementation stage.

Recommendations:

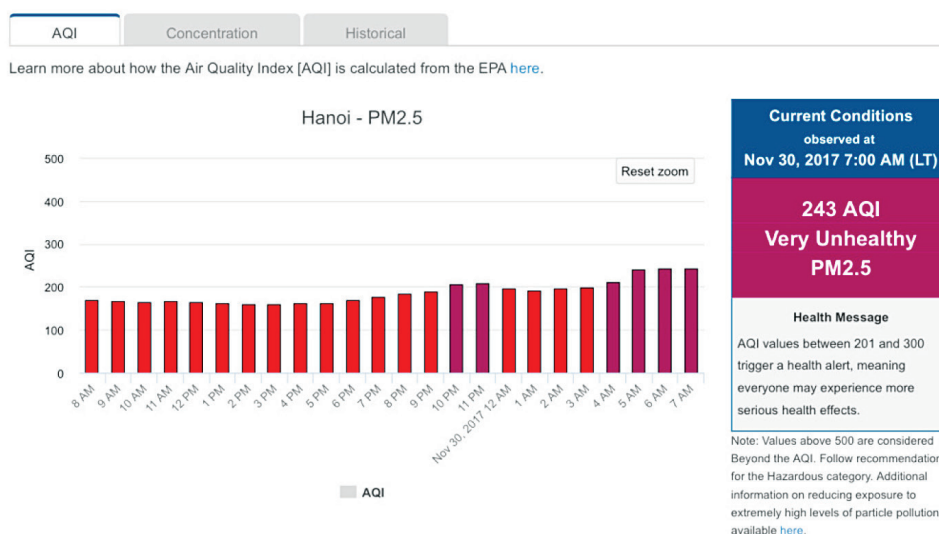
- Clarify the true reasons for non-compliance with current environmental regulations concerning waste treatment.
- Implement Decision 491 and its goals by providing a conducive business environment for compliant waste management businesses.
- Clear, enforceable guidelines and timelines should be provided for the approval of WTE projects and their implementation should be accelerated.

4. Air quality control

Issue description

Air quality has reached 'very unhealthy' and 'unhealthy' levels in Vietnam's major cities. Yale University has listed Vietnam among 9 countries with the worst air quality in the world.²¹ Indeed, Vietnam does not specifically regulate air pollution.²² Sulphur dioxide, dust, dioxide, carbon monoxide and nitrogen dioxide are emitted from transportation, industry and construction, as well as from coal power plants and cement factories.

Figure 5: Air quality in Hanoi and Ho Chi Minh frequently reaches 'very unhealthy' and 'unhealthy' levels



Source: U.S. Department of State²³

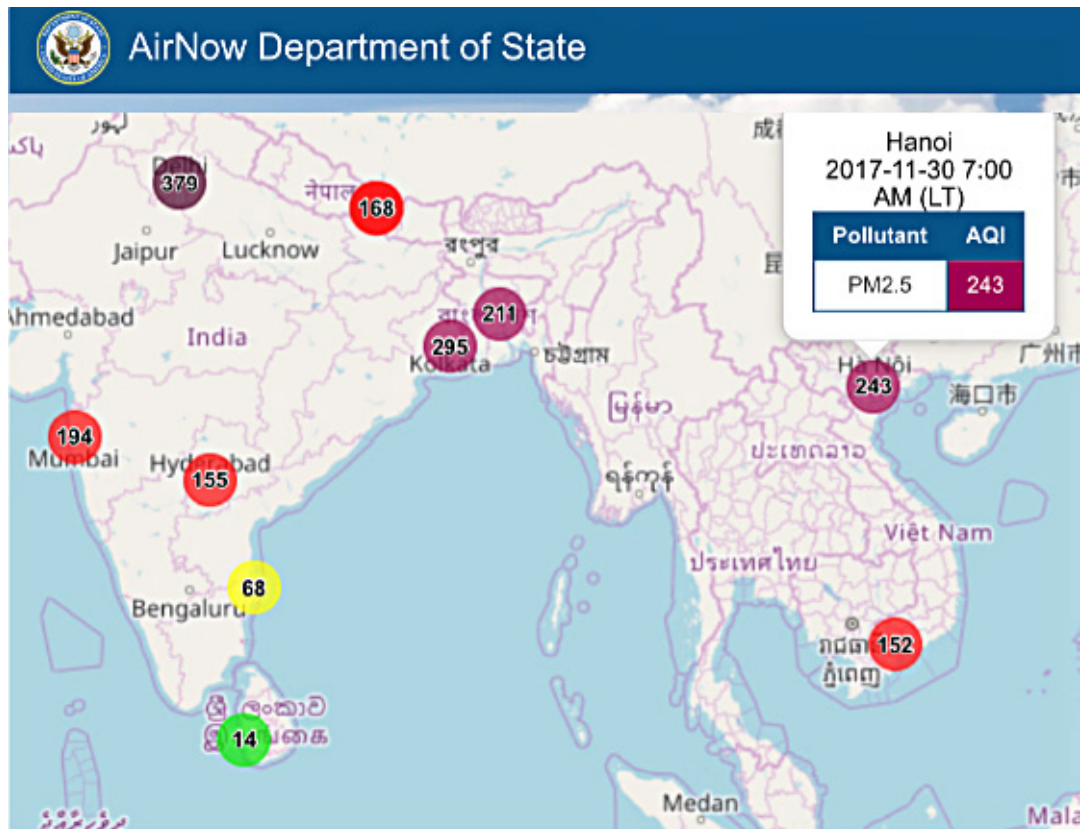
20 "VN's first waste-to-power plant to be officially operational in Nov", *VietnamPlus*, 25 October 2018. Available at: <<https://en.vietnamplus.vn/vns-first-wastetopower-plant-to-be-officially-operational-in-nov/140763.vnp>> last accessed on 5 December 2018; "Work begins on waste-to-energy plant in HCM City", *VietnamPlus*, 22 November 2018. Available at: <<https://en.vietnamplus.vn/work-begins-on-wastetoenergy-plant-in-hcm-city/142329.vnp>> last accessed on 5 December 2018

21 "Air Quality, Environmental Performance Index", *Yale University*, 2014. Available at: <<http://archive.epi.yale.edu/epi/issue-ranking/air-quality/>> last accessed on 20 December 2018.

22 "Legal loopholes make it impossible to control air quality", *Vietnam Net*, 22 September 2017. Available at: <<http://english.vietnamnet.vn/fms/environment/186758/legal-loopholes-make-it-impossible-to-control-air-quality.html>> last accessed on 29 November 2017.

23 Screenshot taken of U.S. Department of State's AirNow website on 30 November 2017: <https://airnow.gov/index.cfm?action=airnow.global_summary> last accessed on 19 February 2019

Figure 6: Air quality in Hanoi is among the lowest in the region



Source: U.S. Department of State²⁴

Potential gains/concerns for Vietnam

In our report, 'Made in Vietnam', prepared VBF, the estimated costs of health and environmental impacts of the current power development plan, with its reliance on coal, could be as high as US\$15 billion a year by 2030.²⁵ Acknowledging the problem, in mid-2016 the Vietnamese Government launched a national action plan to better control and monitor emissions and improve air quality. Hanoi, for example, is planning to install 70 air monitoring stations which would help to assess the situation and measure results of emission reduction actions.²⁶

The Vietnam Environment Administration is reported to set emissions targets,²⁷ however, Vietnam lacks clarity on Government policies with specific targets on air quality control. Moreover, Vietnam has no air odour regulations against strong smells from landfills, factories and aquaculture.

²⁴ *Ibid.*

²⁵ "Made in Vietnam Energy Plan", *Vietnam Business Forum*, October 2016, p.3.

²⁶ "Hanoi enjoyed just 38 days of clean air in 2017: report", *Channel News Asia*, 30 January 2018. Available at: <<https://www.channelnewsasia.com/news/asiapacific/hanoi-vietnam-pollution-clean-air-9909708>> last accessed on 21 February 2018.

²⁷ "Vietnam sets 2020 emissions targets as nation chokes on smog", *VN Express*, 23 September 2016. Available at: <<http://e.vnexpress.net/news/news/vietnam-sets-2020-emissions-targets-as-nation-choke-on-smog-3472995.html>> last accessed on 20 December 2018.

Recommendations:

- Introduce specific policy targets and regulations for air quality control and emissions;
- Tax coal power plants, cement factories and other major polluters according to the estimated socio-economic and health impact; and
- Accelerate the development of the public transportation sector.

5. Plastic bag pollution

Issue description

Plastic has become a major issue over the past few years. Up to 60 per cent of plastic waste dumped in the world's oceans each year comes from just 5 countries. Unfortunately, Vietnam ranks 4th (after China, Indonesia and the Philippines), discharging a huge amount of plastic waste into the ocean.²⁸ In a recent survey conducted by researchers of the Ho Chi Minh City Urban Development Management Support Center (PADDI) on 'Life cycle of floating debris in the canals of Ho Chi Minh City', the level of plastic waste pollution in the canals of HCMC was found to be 50 to 100 times higher than that of the Seine river in Paris, France which has a comparable population of 10 million inhabitants.²⁹

Recycling alone is not a complete solution, as about 80 per cent of plastics dumped are too low of value. Furthermore, the majority of plastics used in Vietnam are made of non-biodegradable materials, and under the sun's ultraviolet light and weathering agents like current or wind, they are broken into smaller and smaller fragments over time. Plastic fragments smaller than 5mm, known as micro-plastics, can be ingested by wildlife and create many problems in the ecosystem.³⁰ Thus, reducing the production and circulation of single-use plastic items like food packaging, bags, bottles or drinking straws is key.

Potential gains/concerns for Vietnam

Vietnam does have a tax on plastic bags, but it is not very successful.³¹ In our view, the fundamental issue is that the country's tax collection system is inefficient. Decision 582³² set forth goals on gradually reducing non-biodegradable plastic bags. In addition, Article 1.3.bof Decision 491 provides that by 2025, "100% environmentally-friendly plastic bags [be] used in trade centres, supermarkets for the purpose of replacing persistent plastic bags to serve daily-life activities". These are all laudable goals. The issue is as always implementation in practice.

Many European countries have successfully introduced a ban on non-biodegradable plastic bags. The case of Rwanda, where non-biodegradable plastic bags were banned in 2008, shows that this is achievable in developing countries.³³ We recommend consulting case studies of more than 40 countries that have banned, partly banned or taxed single-use plastic bags, including France, Germany and Italy in Europe; China in Asia; and Rwanda and Kenya in Africa. Their experience shows that retail outlets, food vendors as well as consumers can relatively quickly adapt and adopt less polluting solutions.

In addition, the above Prime Minister Decisions and subsequent implementing guidelines could be expanded to include single-use plastic straws, cups, packaging, utensils, bottles, and other non-biodegradable plastic products.

To showcase that even small steps contribute to tackling Vietnam's plastic problem, in late 2017 EuroCham

28 J.R. Jambeck, R. Geyer, C. Wilcox, T.R. Siegler, M. Perryman, A. Andrady, R. Narayan and K.L. Law (2015), *Plastic waste inputs from land into the ocean*, Science, Vol. 347, Issue 6223.

29 "Life cycle of floating debris in the canals of Ho Chi Minh City", *Centre de Prospective et d'Études Urbaines*, 2016. Available at: <http://paddi.vn/wp-content/uploads/WP4_PADDI_Chung_ENG-Final-221116-2.pdf> last accessed on 20 December 2018.

30 *Ibid.* p.14

31 "Loopholes and evasion limit success of plastic bag tax", *Vietnam News*, 27 September 2018. Available at: <<http://vietnamnews.vn/environment/466610/loopholes-and-evasion-limit-success-of-plastic-bag-tax.html#pIv6B5o3VZtgPBt5.99>> last accessed on 20 February 2019.

32 Decision 582/QĐ-TTg dated 11 April 2013 of the Prime Minister approving the project on improving the environmental pollution control for the use of non-biodegradable plastic bags by 2020

33 E. Clavel, "Think you can't live without plastic bags? Consider this: Rwanda did it", *The Guardian*, 15 February 2014. Available at: <<https://www.theguardian.com/commentisfree/2014/feb/15/rwanda-banned-plastic-bags-so-can-we>> accessed on 20 December 2018.



launched its own Sustainability Initiative. Companies that sign up to this initiative agree to implement measures to reduce their environmental impact. The first steps, including eliminating single-use plastic bottles and plastic straws in offices, are supported by EuroCham members and the Secretariat.

Recommendations:

- › Implement the Prime Minister's decisions as promulgated.
- › Strict enforcement of punishments on cases infringing waste and water treatment regulations;
- › Gradual limitation of non-biodegradable polythene bags and a complete ban of use of non-biodegradable polythene bags after two – five years;
- › Classification of domestic wastes at household level to enable cost-effective treatment of domestic wastes and private investors' participation in this sector;
- › Besides single-use plastic bags also reduce the use of other non-biodegradable plastic products, such as straws, cups, and packaging.

We appreciate that MONRE, in coordination with other Ministries, has continued to implement legislation to address these issues. However, there is more to be done.

We recommend strict enforcement and fair prosecution of waste and water treatment regulations. Vietnam has now developed at a level that can enable the ban of non-biodegradable polythene bags. Experiences in developed countries indicate that the entire ban of these products, supported by widespread behaviour-change outreach to the public, will contribute significantly to tackling the plastic problem. The Government should initiate more coordinated action both nationwide and in the wider region to curb plastic waste, including a ban on non-biodegradable polythene bags.

As a gradual approach to that ban, we also suggest Vietnam completes policies and mechanisms to, at first, limit the production and use of biodegradable plastic bags. The limitation of production and use of the products can be implemented with increased taxes for environmental protection in the use of plastic bags and promote outreach programs to raise public awareness. Pilot models can be used before it is applied on the national scale. The next step of this policy will be a complete ban on these products.

Another initiative that can be considered to reduce the use of plastic bags is classification of domestic wastes from the source. This will enable better efficiency of waste treatment as well as attract more involvement of private investors into this sector. This, of course, should be accompanied by comprehensive policies that favour the private investment in this field.

With the rapid urbanisation process, Vietnamese households – particularly in the big cities – are discharging increasing amounts of waste into the environment. The most basic components of solid waste are organic and inorganic waste. Inorganic waste includes, for example, glass, porcelain, metals, paper, rubber, plastic, nylon plastic, fabric, and electronics. Organic waste includes mostly left-over or spoiled food, falling leaves, spoiled fruits, manure, and dead bodies of animals. If wastes are separated into two groups i.e. organic and inorganic, or three groups i.e. organic, plastics and glass at the household level, it will enable much better cost-effective treatment of domestic wastes and allow for involvement of private investments into this sector.

The classification of domestic wastes can be applied on a pilot project in one or two cities before being multiplied on a national scale. This work in fact has long been undertaken in Europe and many countries in the EU can share their experience in this field.

II. SUSTAINABLE BUILDINGS AND ENERGY EFFICIENCY

Relevant Ministries: Ministry of Natural Resources and Environment (MONRE), Ministry of Construction (MOC), Ministry of Planning and Investment (MPI), Ministry of Finance (MOF).

Issue description

Buildings are, and will remain, the largest consumers of electricity. The rapid development of the middle class and its associated lifestyle, which includes intensive air-conditioning use, accounts for a considerable proportion of the energy consumption growth in the major cities of Vietnam. Proper building design can reduce this growth for the next 25 years of a building's lifetime. However, the development of green buildings is still in its infancy in Vietnam; just around 40 buildings have certification, the majority of these being in the industrial sector.

Potential gains/concerns for Vietnam

Firstly, due to a lack of enforcement of regulations, global corporate guidelines seem to be the only drivers. As there is no need to reduce operating expenses due to low energy prices, the green building investments remain far too low to address the current environmental concerns.

Secondly, by using clay brick, Vietnam destroys 3,000 ha of rice fields and consumes over 6 million tons of coal every year. Both the Government and Ministry of Construction (MOC) have introduced measures to address this. Firstly, Decision 567³⁴ aims to achieve 30-40 per cent Non-Fired Brick (NFB) usage by 2020, with 15-20 million tons of industrial waste. Secondly, Directive 10³⁵ and Article 3 of Circular 13³⁶, regulate that State-budgeted or State-related projects must use NFB. All construction in Hanoi and Ho Chi Minh City must use 100 per cent NFB materials. In other Northern, Midland and South-Eastern provinces: Urban centres from type III must use a minimum of 90 per cent, while the remaining shall use a minimum of 70 per cent. The remaining provinces must use a minimum of 70 per cent (from type III) and the rest shall have 50 per cent. Other construction projects with more than 9 floors shall have 80 per cent usage of NFB materials.

The Government has also introduced Decree 139, replacing Decree 131.³⁷ These new regulations set the fines for non-compliance at between VND20-30 million. However, we look forward to seeing the proper and effective implementation of these regulations.

Finally, the Vietnam Energy Efficiency Building Code (VEEBC), published in 2013 by MOC³⁸, is legally mandatory. The VEEBC code is comprehensive and reflects international as well as local norms. However, the code is not widely disseminated and buildings are not currently required to follow it in order to obtain a construction licence. Even a simplified version of this code would require owners to build much more efficiently, and would require engineers to acquire basic knowledge about the energy efficiency of equipment.

34 Decision 567/QĐ-TTg dated 28 April 2010 of the Prime Minister approval of the program of development of non-baked materials until 2020.

35 Directive 10/CT-TTg dated 16 April 2012 of the Prime Minister on increasing the use of non-baked building materials and limiting the production and use of clay brick.

36 Circular 13/2017/TT-BXD of the Ministry dated 8 December 2017 of the Ministry of Construction guiding on the use of non-fired building materials in construction. This Circular replaces Circular 09/2012/TT-BXD dated 28 November 2012 of MOC which stated that 100% state projects and others with more than 9 floors must have over 50% usage of NFB materials.

37 Decree 121/2013/ND-CP dated 10 October 2013 of the Government of the Government providing regulations on sanction of administrative violation in construction activities, real estate business; operation, production and business of building materials; management of technical infrastructure management of housing and office development

38 QCVN 09:2013/BXD set under the Circular 15/2013/TT-BXD dated 26 September 2013 of the Ministry of Construction, issuing the National technical standards on buildings adopting energy efficiency.

Recommendations:

EuroCham GGSC would like to suggest the following recommendations:

- › The Ministry of Industry and Trade (MOIT) should publish a Roadmap to Retail Electricity Tariffs for Commercial and Industrial power consumers, indicating the likely inflation in electricity tariffs for building owners to 2020 and 2025. Greater transparency on the timing of the introduction of market-based pricing for electricity and the removal of subsidies would stimulate immediate and widespread investment in energy efficiency measures. EuroCham members who are significant power consumers have requested a clearer pricing framework to allow them to anticipate electricity price inflation and to mitigate the impact on their businesses by reducing consumption of electricity;
- › The use of Green Building (GB) standards should be promoted. Many building owners have been introduced to the concept of GB, and organisations such as the Vietnam Green Building Council (VGBC) report a significant uptick in interest over the past couple of years. Over 100 buildings are now GB-certified or are undergoing GB certification in Vietnam. We recommend the Government provides effective encouragement for building owners to certify their buildings. In addition to international green building certifications already being used in Vietnam, such as the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) and International Finance Corporation (IFC) Edge, VGBC has developed the LOTUS certificate. We would support a move to recognise multiple systems for use in Vietnam, letting the market determine which are practical and useful. These systems could be licensed for operation based on a set of simple criteria such as transparency, reliability and coherence according to recognised norms;
- › The application of NFB solutions should be enforced and promoted through the Vietnam Association of Building Materials (VABM), since compliance may reduce carbon emissions from 70 to 40 per cent;
- › Buildings should become more energy efficient. Making buildings more energy efficient does not mean higher investment costs. This process can be applied from the architecture phase, with passive design and the use of environmentally-friendly construction materials, to the implementation of energy-efficient devices during construction. We would encourage all buildings to achieve the minimum standards of the VEEBC code (or a simplified version) in order to receive the Building Licence at Basic Design Stage. Furthermore, EVN could impose a tariff scheme that rewards low-energy consumption buildings with lower prices and impose higher prices on high consumption buildings, and;
- › There are many individual sustainable building solutions and best practice case studies available in the market. However, we believe that a clear urban planning showcase should be produced, including not just green buildings but also water, waste, traffic and environmental livelihood improvement solutions. This macro-level program of incentives and policies could help Vietnam move towards its vision of a Smart City.

ACKNOWLEDGEMENTS

EuroCham Green Growth Sector Committee