AUS4REFORM PROGRAM

REPORT ON
REFORM OF THE STATE MONOPOLY IN NETWORK INDUSTRIES IN VIETNAM

Ha Noi, 2018

PREFACE

Over the past 30 years of renovation, Vietnam's economy has made many important achievements, laying the foundation for a competitive and dynamic market economy. The rapid development of private enterprises goes together with the down-size of the state participation in economic activities, creating space for the participation, creativity and competition of other economic sectors. The scale of state monopolies has narrowed, focusing more on the natural monopoly industries, ensuring the public interest, etc…

In the past, the state monopolized in all network industries and assigned state owned enterprises (SOEs) to manage these monopolies. The reform of state monopolies in network industries has been deployed together with economic reform processes. In some industries, the participation of the non-state sectors has increased significantly. The competition level of some industries, such as telecoms and aviation has improved. However, in some network industries, although many mechanisms and policies have been issued, the state monopoly reform has only taken the first step and many problems have been encountered, especially in the context of international economic integration and Industry 4.0.

This report studies on the state monopoly reform with a focus on network industries (namely electricity, railways, aviation and telecommunications) to strengthen the evidence-base on the need for further reform in network industries in Vietnam in order to reduce monopoly and promote market competition; to contribute to the discussions on the state monopoly in network industries; and to propose policy recommendations on the state monopoly reform in order to promote fair competition, increase transparency in the state monopoly, monitoring, restricting and abolishing business monopoly.

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All remaining errors, view and opinions presented in the Report are solely of authors and may not necessarily reflecting those of Aus4Reform Program and/or CIEM.

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LIST OF ACRONYMS

ACV	Airports corporation of Vietnam
ADB	Asian Development Bank
GOV	Government
CR	Concentration Ratio
SOEs	State-owned enterprises
EPTC	Electricity Power Trading Company
EVN	Vietnam Electricity Group
EVNNPT	National Power Transmission Corporation
FTA	Free trade agreement
ICT	Information & Communication Technologies
IPP	Independent power plant
Mobifone	Vietnam Mobile Telecom Services One Member Limited Liability Company
OECD	Organization for Economic Co-operation and Development
PVN	Vietnam Oil and Gas Group
QĐ	Decision
TKV	Vietnam national coal - mineral industries holding corporation limited
TTg	Prime Minister
Viettel	Military Telecom Corporation
VNPT	Vietnam Post and Telecommunications Group

EXECUTIVE SUMMARY

1. “Network industries” are industries those activities involve conveying people, products or information from one place to the other via some kind of physical network. They include transportation networks, information networks, and utility networks. Basically, the network industries basically consist of upstream activities, infrastructure activities (including the construction, maintenance and operation of the physical network); and downstream activities related to the delivery of network services to final consumers.

2. From the economic point of view, the network industries have the following basic characteristics: (i) the existence of network externalities (this means that the benefits that a user derives from the network is determined not only determined by the use of the network, but also by the total number of users); (ii) the existence of a natural monopolies in the network infrastructure (this means that it is not always efficient, thus placing the single network in a monopoly position); and (iii) the delivery of services of public interest. However, from a social perspective, many services of the network industries are basic needs that everyone has the right to easy and affordable access.

3. Network industries play an important role in the economy, not only itself but also through other sectors (key inputs to other sectors). Effective network industries will contribute to the efficient functioning of other industries, thereby promoting the competitiveness of the whole economy. Therefore, it is necessary to have mechanisms and policies to create conditions for network industries to operate effectively. However, these conditions are strongly influenced by the economic and social characteristics of network industries, particularly natural monopolies and public interest aspects.

4. Due to the nature of the natural monopoly, the public interest may not be served without government intervention. Therefore, network industries demand special attention from the

governments. In the past, this has led to the creation of legal or de facto state controlled (and often state owned) monopolies in all activities of network industries. For a long time, network industries have been state monopolies (at the national level) and protected from both domestic and foreign competition. state monopolies have been usually awarded to state-owned enterprises.

5. Horizontal state monopoly or vertical monopoly have not created a motive force for growth, a healthy competitive market, thereby, restricting the participation of non-state sectors into competitive activities. In most countries, reforms of state monopolies in networking industries has been implemented; the level of reform of each industry varying depending on the conditions and context of each country.

6. Despite differences across network industries, the network industry reforms typically focus on the following: (i) separation of network infrastructure activities from downstream activities; (ii) ensuring equal access for downstream and upstream service providers to network infrastructure; (iii) control of access and interconnection pricing; (iv) adequacy of investment programs; (v) a clear reform roadmap; and (vi) safeguarding the public interest.

7. The Report focuses on reform of state monopolies in some network industries, namely electricity, railways, aviation and telecommunications. These are important industries in the economy. The importance of these sectors is reflected not only by the contribution of themselves but also by the whole economy because the products of these network industries are important inputs of other sectors and vice versa. Therefore, reforming these industries to improve their efficiency will have a great impact on the whole economy.

8. Considering the separation of infrastructure from downstream activities. Given the characteristics of natural monopoly of the network industry, this is relevant for electricity, railway and aviation industries. However, in practice, the separation is not complete in any of these industries. Regarding the legal framework, the separation has been in place but has not been implemented. Incumbent companies (for example, Vietnam Electricity Group, Vietnam Railways Corporation) still dominate the entire operation of both network infrastructure and downstream activities, and even upstream activities (electricity generation). In the case of the railways, the separation is mainly in the separation of accounts, the separation of the organization is also formal.

9. Regarding the reform roadmap or market opening, the telecoms has almost completely opened up for the participation of other economic sectors. The electricity has partly opened; the railway has only taken a very first step. In terms of competition level, significant competition only exists in mobile telecoms and air transport. In the remaining markets, the incumbent companies (especially state-owned companies) still have dominant or very dominant market positions.

10. The reform of network industries has impacted on the price and quality of their products, consequently impacting on the users (organizations and individuals) and their competitiveness show that the state monopoly reform in the network industry will contribute to price cuts and improving service quality. The telecoms sector provides the best evidence for this, with similar benefits seen in the aviation industry.

11. The important issue associated with the state monopoly reform (opening of the market) in network industries that require specific attention from policy makers is the dominant market position of incumbent companies. For example, in the telecoms, the total market share of VNPT, Mobifone and Viettel (3 state-owned enterprises) remained dominant, with strong market power. The Department of Telecommunications plays an important role in monitoring and supervising the implementation of commitments made by telecommunication enterprises to avoid monopoly behaviour and behaviour that restrain competition.

12. In the case of electricity, the Vietnam Electricity Group (EVN) has a very dominant position. EVN has significant stakes in power generation and monopoly position in transmission, distribution and sale to final consumers. Moreover, there is uncertainty about access tariffs for electricity transmission capacity and all consumers are bound to long-term contracts with EVN (via its subsidiaries). Therefore, the government attention is required in order to improve the conditions for the creation of a competitive market.

13. In the case of the railways, there is no separation between railways infrastructure and downstream activities (rail transport business) because the Vietnam Railways Corporation still manages them all. It is necessary to have mechanisms to ensure the access to infrastructure for new entrants. Another problem is that the Vietnam railway network infrastructure lacks the ability to connect and interact with the international railway network as well as to other transportation infrastructure (such as seaports, airports, etc.).

14. In the aviation industry, separation has been made. Airlines have evolved to create a strong competitive market, contributing to improving the quality and reducing the price. However, to some extent, monopoly still exists, especially in the fields of airport management and operation when giving the right to one unit in managing and operating all 22 commercial airports.

15. In the context of accelerating economic restructuring, enhancing national competitiveness, deepening international economic integration and strong impacts of technological progress, especially the Industry 4.0, network industries are required to continue reforming, especially it is necessary to identify the stages that require the state intervention. The intervention forms must be reasonable to avoid the transformation from state monopoly to enterprise monopoly.

16. For electricity, it is necessary to continue the reform roadmap in order to ensure the real competitive electricity market, ensure the independence of the power generation, transmission and distribution, with freedom to negotiate prices with customers; this will require the issuance of regulations to ensure a fair access price to the core infrastructure.

17. For the case of railways, it is necessary to separate the railway infrastructure from the rail transport business, and; to set up an independent agency to manage railway infrastructure and build a mechanism to provide fair access and connection of railway infrastructure to ensure that new entrants are able to participate in the competitive rail transport business.

18. Regarding the aviation industry, it is necessary to ensure fair access to airport infrastructure among airlines; monitor access prices of airport services, and; issue a mechanism to avoid airport management units abusing their monopoly position.

19. Regarding the telecommunication, it is necessary to continue restructuring the sector, drastically implementing the equitization of state-owned enterprises (especially VNPT and Mobifone), and; the sector regulator needs to supervise and prevent cooperation between dominant providers to establish cartels.

20. There must be independent sector regulators, with sufficient power and capacity to effectively manage and monitor natural monopoly.

INTRODUCTIONS

1. After more than 30 years of innovation (Doi moi), the Vietnamese economy has achieved many important achievements, laying the foundations for a competitive and dynamic market economy. The rapid increase in the number of private enterprises has been accompanied by a process of shrinking the scale and scope of the state participation in economic activities. The number of state monopolies has decreased significantly. In network industries, the scale and scope of state monopolies has narrowed. However, Vietnam remains far from good international experience.

2. In the past, in most countries, the state maintained monopolies in almost all network industries. However, the development trend has been to apply many liberalization policies to network industries. The main message of liberalization policy is that: once the network infrastructure has been built, economic efficiency requires a reduced state role to increase the room for competition in downstream markets. In other words, there is need for functioning markets in network industries. In fact, two main forms of reform in network industries may be chosen: Firstly, create good conditions for competition in the downstream market by providing competitive access to the wholesale bottleneck or essential facilities (network infrastructure); secondly, apply market competition to select a unique form to manage the network infrastructure. This means that the state should directly or indirectly control and manage the network. The reason for public control and management of the network is that the large economies of scale and the network nature of infrastructure means that it is very hard or even perhaps impossible duplicate this infrastructure. The objective of the state monopoly in the network is to ensure the equal access of related parties to essential facilities and to limit the abuse of the monopoly position of state-owned enterprises.

3. Compared with international experience, the Vietnamese state still intervenes in most network industries by using SOEs, but the SOEs monitoring is ineffective and formal. There remain many problems in exercising the state monopoly with SOEs, limiting competition in network industries.

4. This research was aimed at promoting the market development and enhance transparency in exercising a state monopoly in network industries. This research is set in the context of market economy reform, effective international economic integration requirement, the need to take advantage of Industry 4.0, and economic restructuring and transforming the growth model to enhance national competitiveness.

5. The objective of the study is to provide evidence of the need for further reform in the networking industries in Vietnam to promote market competition; to contribute to discussions on the state monopoly in network industries and; to propose policy recommendations on the state monopoly reform to promote fair competition, increase transparency in state monopolies, and to monitor, restrict and abolish business monopolies.

6. The study focuses on the power, railways, aviation and telecommunications sectors. These are the sectors that have great impacts on the productivity and efficiency of enterprises in particular and on the economic development and the competitiveness of the country in general.

7. The research report consists of 6 parts:

- Part 1 is a general overview of the framework for the state monopoly reform in network industries in Vietnam. This part will provide an analytical framework that covers the basic issues of network industries, the state monopoly in network industries, needs for reform, mechanism, policies and reform progress, and market opening.

- Part 2 - 5, respectively, analyse each sector (electricity, railways, aviation and telecommunications) based on the analytical framework set out in Part 1 and proposed a comprehensive reform agenda for the network industries in the coming time.

- Part 6: recommendations and conclusions.

PART 1. THE FRAMEWORK FOR THE STATE MONOPOLY REFORM IN NETWORK INDUSTRIES IN VIETNAM

1.1. The basic issues of the state monopoly in network industries and the needs for reform

1.1.1. Concept and some characteristics of the network industries

8. "Network industries" are industries that transport people, goods, or information from one point to another through a specific physical network. This network may include transportation networks (roads, railways, aviation, etc.), information networks (telegraph, telephone), and essential networks (electricity, gas, water)[1] .

9. Basically, network industries include network infrastructure, and upstream supply connections to downstream customers[2] . In particular, the network infrastructure consists of a system of connection points and paths with limited capacity that determines direction (one or two ways). The connection points are classified into In/Out points and transfer points. At the In/Out points, the flow of people, goods, information get into or out of the network infrastructure. At the transfer point, the flow of people, goods, information will be transferred in the desired direction. Connection paths connect between connection points and can be in the form of pipes, cables, railways, airport pickup /landing locations, etc. However, the distinction between network infrastructure activities and downstream activities is not entirely the same among network industries. For example, electric transmission is part of the operation of the power grid, while downstream activities are limited to electricity purchase and sale. For the railways, running trains is a part of providing

[1] D. Gusbin, C. Kegels, P. Vandenhove, J. van der Linden and M. van Overbeke (2003), Network industries in Belgium, Economic significance and reform, Working Paper 1-03, Federal Planning Bureau, January 2003.

[2] European Commission (1999), Liberalization of network industries: Economic implications and main policy issues, European Economy, European Communities, No. 4 (Printed in Belgium).

the rail transport services, while network infrastructure activities are limited to maintenance, maintenance and traffic control[3] .

10. Network industries have some following basic features:

First, network externalities: Some external effects may appear in network industries. However, the typical external impact on the networking industry are the group externalities and congestion externalities, the usefulness of the service to a consumer depends on the total number of consumers. Group externalities have a positive effect, for example in telecommunication network access. External congestion externalities carry negative impacts such as crowded roads or crowded ships.

Second, natural monopoly characteristics: The construction and establishment of network infrastructure often requires huge capital investment, while downstream activities in many cases are relatively low cost. In other words, network infrastructure often has a high fixed costs and low marginal costs. Installation of an additional similar network infrastructure system or separation of networks are often ineffective and does not guarantee economies of scale. It would be costly for the society to invest in the formation of a number of similar networks operating in parallel and competing with one another[4]. This makes the network infrastructure a natural monopoly.

However, the level and scope of natural monopoly characteristics (infrastructure/core equipment) depends on each network industry. For example, in postal services, the logistics infrastructure can easily be ignored, while in the power supply sector it is impossible to not use the power grid. The level of natural monopoly characteristics also depends on the technical/ technological level. As technology changes, the extent and scope of natural monopoly also changes. This change is due

[3] D. Gusbin, C. Kegels, P. Vandenhove, J. van der Linden and M. van Overbeke (2003), Network industries in Belgium, Economic significance and reform, Working Paper 1-03, Federal Planning Bureau, January 2003.

[4] Michael Klein (1996), Competition in Network Industries, Private Sector Development Department, the World Bank.

to not only the impact of technology in each area, but also the development of technology in other areas.

Thirdly, services for public interest: Network industries are often for the public interest, both economically and socially. From an economic perspective the production and selling of goods and services, requires the transport of people, goods and information: therefore, the efficient operation of the network industries will contribute significantly to improving the efficiency and competitiveness of the economy. From a social perspective, the services of networking industries are designed to meet basic needs like traffic, electricity, telephones, etc.

Fourthly, the network industries depend on elasticity of demand. The networking industries faces shrinkage of high demand over time and the products of the industries tend to become complementary or interchangeable despite varying degrees of homogeneity. Gas and electricity, for example, are interdependent: gas can be used both as an input to electricity generation, and can also be substituted for cooking and heating. In the field of transport, roads and railways can compete on short and long distances but different transport modes (port and road /railway) are complementary. In other words, the performance of this market may affect the performance of other markets[5].

1.1.2. State monopoly in the network industry and the needs for reform

11. With above characteristics -- especially network externalities and natural monopoly -- it is easy for network industries to experience market failures that require the state intervention. Therefore, in the past, most countries, have organized network industries as the state monopolies protected by the state (through the maintenance of the state ownership). However, since the late 1980s and early 1990s, the economic structure of the networking industries has changed.

12. There are three main reasons for the change in the structure of network industries: *Firstly,* monopolistic structures often lack motivation to compete and innovate, leading to inefficiencies in production and excessive use of the state resources; *Secondly,* progress in science and technology have influenced the characteristics of the network industries, especially the natural monopoly characteristic, so the issue of natural monopoly was re-examined. For example, progress in science and technology may allow the formation of an effective parallel network, e.g., eliminating the natural monopoly in telecommunication networks; *thirdly,* the maintenance of the state monopoly (through SOEs) does not enhance, but may even limit economic competitiveness. The state ownership may limit investment by private enterprises in network industries. Maintaining the state ownership in network industries can create an unfair playing field (often due to the "soft budget" constraint); confusion between the role of the state as a regulator/management agency and the state's ownership role; the state ownership can be a real (unofficial) barrier to foreign direct investment. Therefore, reforming and restructuring network industries has been a priority in most countries. The goal of reform is to open the door to, and apply the principles of, competition at feasible stages. The reform process also ensures the state control in market segments with natural monopoly characteristics or to meet other community interests[6] .

1.1.3. Contents of the state monopoly reform in the network industry

13. Implementing the reform of the networking industries requires the application of the principle of competition while ensuring public interest and avoiding monopolistic behaviour. In principle, the state only intervenes in the market when it has

[5] *Roller et al. (2006) (quoted in European Commission (2013), Market Functioning in Network Industries – Electronic Communications, Energy and Transport, European Economy, Occasional Papers 129, February 2013.*

[6] *D. Gusbin, C. Kegels, P. Vandenhove, J. van der Linden and M. van Overbeke (2003), Network industries in Belgium, Economic significance and reform, Working Paper 1-03, Federal Planning Bureau, January 2003*

the following two conditions: (i) There are economies of scale (one supply unit is more efficient than multiple suppliers); (ii) Irreversibility of investment costs (difficult to recover investment capital). This is a natural monopoly. In fact, the state monopoly reform in network industries depends on economic conditions, ability to respond, and technological progress, etc… of each country, each sector. However, the state monopoly reform in the network industries has a number of key issues:

First, the issue of separate the network infrastructure from downstream activities of the network industries with natural monopoly characteristic. Downstream activities may have potentially competitive markets. However, in the network industries with vertical monopoly holders, the downstream activities of existing state-owned enterprises can often access the network more favourably than new entrants. Thus, in many cases, reforms have to form an independent network operator by separating existing enterprises into network infrastructure operations and downstream operations. The separation can be on the basis of accounting, legal or ownership, in which the separation of ownership often assures the maximum independence.

Secondly, the problem of accessing the network infrastructure. Natural monopoly network operators have a large monopoly power over downstream suppliers. In order to access the network with their services, the downstream service providers must pay access fees and have access to the network infrastructure under certain conditions. However, with monopoly power, access fees may be too high and conditions may not be equal for all services providers, especially when the network operator is also a downstream service provider. This often happens to the former state monopoly units.

Thirdly, the problem of network connection. Network connection issues apply to cases where there is no natural monopoly when there are several network infrastructures that coexist and compete with each other such as telecommunication

networks. A telecommunications network operator must compete to attract the end user. Once this unit is attractive to consumers, it will have more monopoly power over other operators. In this case, other network operators must have access to, and connect with, the network to promote market power. This is a network connection problem.

Fourthly, investment and maintenance of the network infrastructure poses many problems for policy makers and market managers. It is necessary to have the best investment level to avoid both over-investment and under-investment. Social cost-benefit analysis is needed to show whether the social benefits outweigh the investment costs. The optimal access rates are critical to the optimal development of the network infrastructure, taking account of social cost-benefit analysis.

Fifth, the reform roadmap. The reform process is often divided into phases over several years. Bergman et al. (1998) divided the process into three phases, with phase one being the original monopoly; phase two the period of gradual transition of monopoly status to competition; and phase three is maximum competition. During phase two, the market gradually opens to attract potential market participants. Bergan et al. (1998) argued that not all network industries move completely to the third phase.

Sixth, ensure public interest is achieved by setting Universal Service Obligations[7] and Public Service Obligations[8] . Universal service obligations and public service obligations can be determined and funded in several ways. For network industries, the Universal Service Obligations (USO) and Public Service Obligations (PSO) are set for certain companies by law or by contracts. However, these obligations may also be bidden with

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[7] *Universal service obligations) identified and related to minimum quality of service standards, available to all citizens and at affordable prices.*

[8] *Public service obligations are broader than universal service obligations. Public service refers to all cases where the Government must consider market failures if only the private sector provide those service then market efficiency is unlikely to be guaranteed*

the participation of non-state sectors. Funding can be made by direct transfer of the Government budget or through user contribution funds.

Seven, the important role of market mechanisms and regulations. When network operators have market power, price conditions and access conditions must be monitored for cost orientation and fair treatment. This issue must be paid special attention when the network operator is also a downstream service provider; or in other words, when there is no complete separation of network infrastructure activities and downstream activities. It should be noted that when opening the market, there will be trade-offs between specific sectoral market rules and a general antitrust policy.

14. Multi-country experience also suggests that in all vertical network industries, there is a need for a regulator that has tasks corresponding to each sector and each stage of market opening of that sector. The role of this regulator is very important in establishing the optimal conditions for the operating market. In order to achieve this role effectively, the regulatory body must meet certain conditions. The regulatory body must have technical competence in network operation and must have sufficient means to perform the task. Typical instruments of the regulator are control, licensing, arbitration and capacity assignment. These tools are used to ensure adequate competition, fair access, and public benefits.

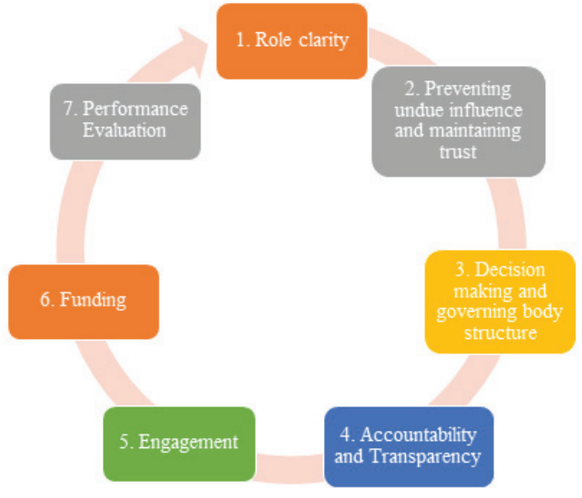
15. OECD[9] studies outlines four essential elements of good regulation and the seven principles of the governance for regulator to operate effectively. Four elements, including: (i) the rules and regulations must be designed to ensure the effectiveness and efficiency; (ii) the relevant institutional framework and related the governance arrangements; (iii) the efficient, consistent and accurate processes and practices; and (iv) to enhance

[9] *OECD, The Governance of Regulators: OECD Best Practice Principles on Regulatory Policy (See http://www.oecd.org/gov/regulatory-policy/Flyer-Governance-of-regulators.pdf)*

institutional capacity and high-quality resources, especially the leadership team.

16. Seven basic governance principles for effective regulatory bodies include:

Figure 1: Regulatory Principles of Regulatory Agencies



Source: OECD, Network of Economic Regulators: The First Five Years

- *Principle 1: Role clarity:* In order to help the regulator to play an effective role, the objectives and functions of the agency must be clearly defined in the regulations establishing the agency. The regulator must not perform duties that conflict with the regulated operational objectives of the agency. Regulations must be clear and ensure the regulator must be given sufficient power to implement the stated objectives and tasks; the regulator must be empowered to cooperate and coordinate with the relevant agencies in a transparent and transparent manner.

- *Principle 2: Preventing undue influence and maintaining trust:* Regulation must ensure the independence of regulatory bodies with the state management agencies and industrial regulators. This helps regulators to make fair, impartial, and legal decisions. As a result, regulatory outcomes will be improved,

investment will be encouraged, and a reliable environment for growth will be ensured.

- *Principle 3: The structure of the independent decision-making and regulatory apparatus:* Regulatory bodies must have a governance apparatus to ensure the effective implementation of their functions, and to maintain the integrity of regulations and implement legal goals. The governance apparatus structure of the regulatory body is determined by the nature of regulatory activities and its motivation. Members of the regulatory body must also ensure that potential conflicts of interest, or the impacts of the political process, are ultimately for the public interest.

- *Principle 4: Accountability and Transparency:* Enterprises and citizens expect regulatory outcomes from the government agencies and regulators and the rational use of public resources to achieve those outcomes. Regulatory bodies are responsible before: (i) the ministers and legislatures; (ii) the regulated units; and (iii) the public. The expectations for regulators should be announced and regulators must report periodically on the achievement of targets, through performance evaluation indicators.

- *Principle 5: Engagement:* Effective regulatory bodies must form mechanisms to involve stakeholders to achieve specified objectives. Regulatory bodies must regularly and deliberately engage with regulated entities and other stakeholders to enhance the confidence of the public and stakeholders in the regulatory body and to raise the regulatory efficiency.

- *Principle 6: Funding:* The amount and source of funding for a regulatory body will determine the organization and operation of the agency, but must not affect regulatory decisions. Regulatory agencies must ensure justice and efficiency in achieving its targets. The budget should be sufficient and the funding process should be transparent, effective and simple.

- *Principle 7: Performance Evaluation:* It is important for regulators to be aware of the impacts of their actions and regulatory decisions; thus helping to promote innovation and strengthen internal systems and processes. The performance of the regulator contributes to building confidence in the regulatory system. Decisions, actions and interventions by regulators should be assessed through performance evaluation indicators.

17. Network industries have basic characteristics that require the state intervention. In the past, most countries have formed state monopolies to provide network industry services. However, due to the ineffective status of the state monopolies, the progress of science and technology, and the process of international integration, reforms are being made to the management of network industries. This is reducing state monopolies and opening the market for other economic sectors to participate. In order to supervise, monitor and improve the level of competition in the remaining markets segments of the network industries, regulatory units must be independent and efficient.

1.2. Overview of the state monopoly reform in network industries in Vietnam

1.2.1. Mechanisms and policies of the state monopoly reform in network industries

18. In the three-stage framework proposed by Bergman et al. (1998), most Vietnamese network industries are transitioning to the second stage. That is gradual market opening process, gradually moving from the full state monopoly stage to a more competitive stage. This stage is characterized by both monopoly and competition. However, there remain differences between each network industry in terms of progress reforming industry mechanisms and policies and the degree of remaining state monopoly. The following sections provide specific analysis for each sector. This section focuses only on common regulations for network industries in Vietnam, including regulations on state-

owned enterprises reform, responsibilities for providing public services, and general trends in opening up Vietnam as a market economy.

19. The state monopoly issues in Vietnam are closely linked to the identification of the role of the state in the economy and has an important implications for how the state intervenes in the economy. In network industries, the state monopoly has been granted to SOEs, and the state facilitates SOEs to hold monopoly positions. Monopolistic organizations are formed through administrative decisions of the state rather than through free competition internal capacities (financial, science and technology capacity, etc.). Continuing the state monopoly have been justified as necessary to regulate the economy, ensure national security reasons, and perform public tasks, etc. During the long period, the nature of "natural monopoly" has not been thoroughly clarified in line with the technological progress technological progress, thereby, natural monopoly has been understood to be covered all stages of network industries. Therefore, the state monopoly exists in all stages and has been given to state-owned enterprises.

20. The reform of Vietnamese network industries has taken place along with the economic renovation (Doi Moi) process, the process of restructuring of the economy in general, and the process of reforming the SOE sector in particular. After more than 30 years of Doi Moi, moving from a centrally planned economy to a market economy, the state intervention in the economy has diminished, creating space for more active markets. From not recognizing the freedom of doing business at the beginning of Doi Moi, to legal reforms that gradually expanded the freedom for citizens to do business, and with eventual recognition of that right in the Constitution. Whereas previously citizens were restricted to doing business in fields specifically allowed by the state[10], citizen can now do business in all fields that the state does not prohibit[11]. Accordingly, the extent of intervention and the degree of the state monopoly are declining. The direction of narrowing, minimizing the scale and scope of the state monopoly has been clearly determined in Party resolutions as well as in legal documents and policies of the National Assembly and the Government, etc. From the 8th Congress of the Communist Party of Vietnam, the task of "Creating an environment for cooperation and positive competition in production and business" was established. The aim was to implement the state monopoly in some certain sectors for the benefit of the country, while restricting business monopolies, not allowing the abuse of its monopoly position to maintain privileges, rents and levies in the market[12]. The Resolution of the 3rd Plenum of the 9th Central Committee affirmed the guiding view of "Implementing the state monopoly in the necessary fields but not transforming the state monopoly into a business monopoly"[13]. Conclusion 50-KL/TW of the sixth plenum of the 11th Central Committee resolved that "Resolutely adjusting the state-owned enterprises sector into a rational structure ... focusing on the key stages of the fields: national security and defence; natural monopoly; essential goods and services provision; and some basic industries and high-tech industries with spill over effects[14]. Most recently, the Resolution of the fifth plenum of 12th Central Committee defined "state-owned enterprises focus on key and essential areas; important areas and national defence and security; fields that other economic sectors do not invest" [15].

21. Institutionalizing the above guidelines and orientations, the Prime Minister has promulgated 6 decisions on criteria and list to classify state-owned enterprises[16], which specify the sectors and fields the state should maintain 100% of charter

[10] Article 6 of the Law on Enterprises 1999 stipulates that enterprises are entitled to self-registration and conduct business in sectors not subject to business restriction or business prohibition.
[11] The Law on Enterprises 2005, The Law on Enterprises 2014 and The Law on Investment 2014

[12] Political report at the 8th National Party Congress of the Communist Party of Vietnam
[13] Resolution no. 05-NQ/TW dated 24/9/2001, the 3nd Plenum of the IX Central Committee on continuing to renovate. re-organize, develop and improve the efficiency of state-owned enterprises.
[14] Resolution no. 05-NQ/TW dated 24/9/2001, the 3nd Plenum of the IX Central Committee on "continuing to renovate. re-organize, develop and improve the efficiency of state-owned enterprises.
[15] Resolution no. 12-NQ/TW dated 3/6/3017, fifth plenum of 12th Central Committee on continuing to restructure, renovate, and improve the efficiency of state-owned enterprises.
[16] Decision no. 58/2002/QD-TTg, Decision no. 155/2004/QD-TTg, Decision no. 38/2007/QD-TTg, Decision no. 14/2011/QD-TTg, Decision no. 37/2014/QD-TTg and Decision no. 58/2016/QD-TTg

capital, more than 50% of charter capital.

Table 1: Regulations on the ratio of Charter Capital in enterprises operating in the network industry

	The State holds 100% of Charter Capital	The State holds more than 50% of Charter Capital
Decision no. 58/2002/ QD-TTg	1. Business enterprises - Enterprises operating in the field of state monopoly + National power transmission system + National and international information network - Enterprises operating in some following sectors: + Constructing and repairing means of sea, railway and air transportation + Information technology + Exploiting, filtering and supplying clean water in the city + Air, rail, sea transportation + Basic telecommunication services 2. Public utility enterprise - Flight operator - Maritime safety - Control and distribution of radio frequencies - Technical inspection of motorized vehicles - Management and maintenance of national railway systems and airports; - Management and maintenance of important road systems, waterways and ports;	1. Business enterprises Enterprises with state -owned capital of 10 billion VND or more, having the three preceding years' average level of state budget remittance of VND 1 billion or more, operating in the following sectors: - Constructing and repairing means of sea, railway and air transportation - Information technology - Exploiting, filtering and supplying clean water in the city - Air, rail, sea transportation - Basic telecommunication services 2. Public utility enterprise - Technical inspection of motorized vehicles - Management and maintenance of road and waterway systems - Management and maintenance of important docks and bus station.
Decision no. 155/2004/QD-TTg	- National electricity transmission system; - National and international communication axis networks; - Flight control; - Maritime security; - Management and maintenance of the national railway systems, airports and seaports of large scale and important position under the Decision of the Prime Minister.	- Companies which have the state capital of VND 20 billion or more; have the three preceding years' average level of state budget remittance of VND 2 billion or more; and operate in some following branches and domains: + Building and repairing means of air transportation; + The air and rail transport;
Decision no. 155/2004/QD-TTg	- Companies meeting the following conditions: having the state capital of VND 30 billion or more; having the three preceding years' average level of the state budget remittance of VND 3 billion or more; taking the lead in applying spearhead technologies and high technologies; contributing an important part to stabilizing the macro - economy; and operating in the following branches and domains: Building and repair of the air transport means; the air and rail transport.	+ Electricity production; + Exploiting, filtering and supplying clean water in the city; + Sea transportation; - Management and maintenance of important road and waterway systems
Decision no, 38/2007/ QD-TTg	- Load transmission on the national grid; large scale electricity production with special importance for socio-economic development and for national defence and security; - Management and operation of national and urban railways; airports; large scale seaports; - Operation of flights; operation of national and urban rail transportation; - Maritime safety; - Public benefit posts;	- Enterprises participating in manufacture and supply of public utility products and services: - Maintenance of national rail system; - Management and maintenance of the road system and inland waterway system; management and operation of seaports (except large scale seaports); - Enterprises having the role of ensuring important balances of the economy and stabilizing the market in the following branches and domains: + Electricity production with a capacity of 100 MW or more; - Building and repairing means of air transportation; + Providing information and communication networks; + Exploiting, filtering and supplying clean water of grade I and grade II; + International sea transportation; railway and air transportation.
Decision no. 14/2011/ QD-TTg	- Load transmission on the national grid; large scale electricity production with special importance for socio-economic development associated with the national defence and security;	- Enterprises participating in manufacture and supply of public utility products and services: + Maintenance of the national railway infrastructure system; + Management and maintenance

	- Management and operation of national and urban railways infrastructure; airports; first class seaports (which are specially important and with large scale for the national and inter-regional socio-economic development); - Operation of flights; operation of the national and urban rail transportation; - Maritime safety; - Public benefit posts;	of road and inland waterway systems; management and exploitation of seaports (excluding grade I ports); - Enterprises having the role of ensuring important balances of the economy and stabilizing the market in the following branches and domains: + Large-scale power generation of 500 MW or more; + Building and repairing air transport means; + Providing information and communication network infrastructure; + Exploiting, filtering and supplying clean water of grade I and grade II; + International sea transportation; rail and air transportation;
Decision no. 37/2014/ QD-TTg	- Load transmission on the national grid; large scale electricity production with special importance for socio-economic development associated with the national defence and security; - Management and exploitation of national and urban railways infrastructure; operation of the national and urban railways. - Managing, operating airports playing an important role to the national defence and security; flight assurance services; - Maritime safety; - Public postal service provision;	1. The state holds above 75% of charter capital - Managing, using and maintaining airports (excluding airports which are important the national defence and security); - Managing, operating national integrated seaports and international gateway; - Managing, maintaining the system of roads and inland waterways; - Maintaining the infrastructure system of the national railway; - Providing the telecommunication infrastructure.

Table 2: List of enterprises maintaining state capital to 2020 in accordance with Decision No. 58/2016/QD-TTg (related to network industries)

1. Wholly state-owned enterprises
- Electricity transmission, national electricity system dispatching, multipurpose hydropower.
+ Vietnam Electricity – Parent Company
+ National Power Transmission Corporation (Vietnam Electricity – Parent Company)
- National and urban railway infrastructure management:
+ Vietnam Railways
+ Hanoi Railways Co., Ltd
- Air traffic services, aeronautical information services, and search and rescue services:
+ Vietnam Air Traffic Management Corporation(The Ministry of Transportation)
- Maritime safety:
+ Southern Vietnam Maritime Safety Corporation (The Ministry of Transportation)
+ Northern Vietnam Maritime Safety Corporation (The Ministry of Transportation)
+ Vietnam Maritime Communication and Electronics LLC (The Ministry of Transportation)
- Public postal services:
+ Vietnam Post Corporation(The Ministry of Information and Communications)
2. Enterprises undergoing privatization, of which between 50% and 65% of charter capital is held by the state
- Telecommunications services having network infrastructure
+ Vietnam Mobile Telecom Services One Member Limited Liability Company (the Ministry of Information and Communications)
+ Vietnam Posts and Telecommunications Group – holding company (Vietnam Posts and Telecommunications Group)
- Electricity retailing :
+ Northern Power Corporation (Vietnam Electricity)
+ Southern Power Corporation (Vietnam Electricity)
+ Central Power Corporation (Vietnam Electricity)
+ Hanoi Power Corporation (Vietnam Electricity)
+ HCMC Power Corporation (Vietnam Electricity)

3. Enterprises undergoing privatization, of which less than 50% of charter capital is held by the state

- Electricity production

+ Petro Vietnam Power Corporation (Vietnam National Oil and Gas Group)

+ EVN GENCO 1 (Vietnam Electricity)

+ EVN GENCO 2 (Vietnam Electricity)

+ EVN GENCO 3 (Vietnam Electricity)

22. The Prime Minister also issued Decision No. 929/QD-TTg dated July 17, 2012 approving the Scheme on Restructuring state owned enterprises, focusing on the state–owned groups and state-owned corporations for the period 2011-2015; Decision No. 707/QD-TTg dated May 25, 2017 approving the Scheme on Restructuring state-owned Enterprises, focusing on state–owned groups and state-owned corporations for the period 2016-2020. One of the goals of these decisions is to "make arrangements for the equitization and divestment of the state capital so that SOEs are structured more rationally, focusing on key sectors; providing essential public goods and services to the society; national defence and security; natural monopoly field; applying high technologies and investing large amounts of money to create socio-economic development motives, which enterprises of other economic sectors do not invest".

23. In order to clearly identify goods, services and geographical areas where the state monopoly are carried out in commercial activities, the Government issued Decree No. 94/2017/ND-CP dated 10/8/2017. Accordingly, for the network industries covered by this report, the state monopolies can be maintained in the following areas: (i) electricity transmission, national electricity system dispatching, building and operating multipurpose hydropower and nuclear power plants which are specially important to socio-economic development; (ii) air traffic services, aviation information services, search and rescue services; (iii) the management and exploitation of railway infrastructure (excluding railway infrastructure maintenance).

24. The existing legal framework provides a clear legal basis for the involvement of all economic sectors in the stage and segments of network industries which are not natural monopoly.

25. The current regulations also state that state monopolies are activities carried out only by authorized state agencies or by organizations and individuals assigned by the state. The state agencies shall have the right to exercise the state monopoly either directly, or by appointing persons or organizations to exercise this right. The designation must be decided by the head of the competent of state agency in official documents. The state monopoly activities must be carried out under the supervision of the state management agencies in accordance with the law.

26. The Law on Competition, 2004 (Item 1, Article 15) regulated enterprises operating in the state monopoly sector through the following measures: (i) Decisions on purchase price and selling price of goods and services in state monopoly sectors; and (ii) Decisions on the quantity, volume and market scope of goods and services in the state monopoly domain. The Law on Competition, (2018 (Item 1, Article 28) adds measures to guide and organize markets related to goods and services in the state monopoly domain in accordance with the Law on Competition and other regulations in other relevant laws.

27. The Price Law (2012) specifies that the state shall set prices for goods and services in the domains of production and business that the state monopolizes. With respect to services in the network industries, Clause 3 of Article 19 of the Law on Prices provides:

- The state shall set specific prices for:

o Aviation services, including: take off, landing; flight operation; assisting in flight operations, security screening;

o Telecommunication connection services

o Electricity: electricity transmission prices, electricity system auxiliary services

- The state sets the price bracket for electricity generation price and electricity wholesale prices; the average electricity retail price, the inland air transport service for monopoly line.

28. The pricing principles of the state: ensuring offset for the actual production and business costs reasonably, having profit in accordance with the market price and the socio-economic development policies and guidelines of the state in each period; timely adjust prices when price constituents change.

1.2.2. The progress of market opening and current status of the state monopoly in network industries

29. Before the process of market opening began, network industries in Vietnam were completely monopolized by the state and this monopoly position was given to SOEs in all stages. Each network industry has different characteristics, therefore, the ability to open of each network industry to the market competition is also different.

30. For the power sector, the state (through Vietnam Electricity Corporation in the past or now Vietnam Electricity Group - EVN) operates as a vertical monopoly in all stages of the power sector. However, with the development of science and technology, the development of economic sectors, the stage of power generation has been opened to non-state firms. However, the level of openness is limited, EVN still dominates most stages of the electricity sector, and monopolizes core power sector infrastructure (details will be analysed in Section 2).

31. The state monopoly in the railways sector was assigned to the Vietnam Railways Corporation (VNR). The Law on Railways (2005) allows the participation of non-state actors in the industry. However, despite being in the process of restructuring, the monopoly position is still under the Vietnam Railway Corporation. Business in railway infrastructure and business in the rail transport business are still done by one enterprise - Vietnam Railway Corporation (details will be analysed in Section 3).

32. The state previously completely monopolized the aviation industry, granting the monopoly status to Vietnam Airlines (Vietnam Airlines Corporation). In line with the reform process, opening the economy, the strong development of the private sector, the Vietnam Civil Aviation Law (2006) stipulates that enterprises of all economic sectors are allowed to participate in doing business in civil aviation. However, the monopoly issue still exists, especially in the management of airports (details will be discussed in Section 4).

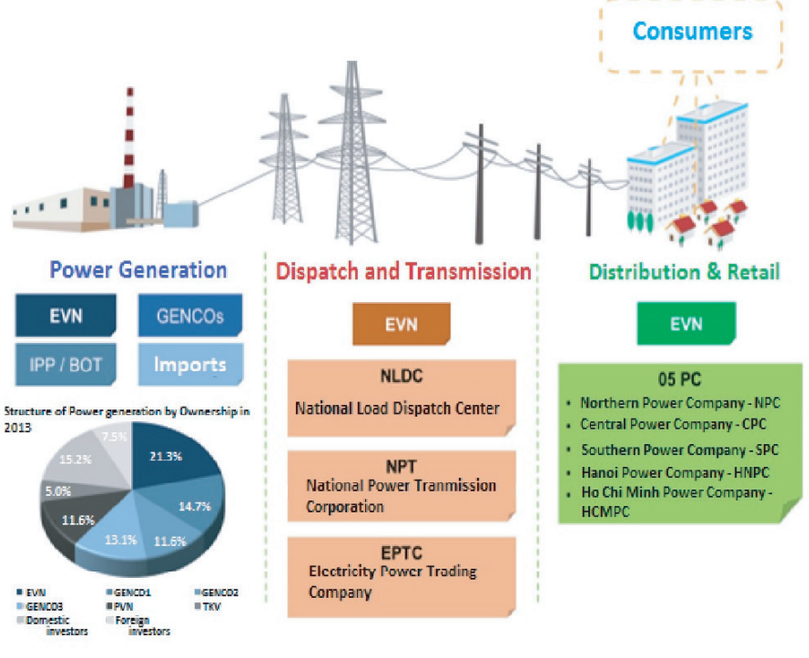
33. In the telecommunications industry, the state had a complete monopoly, granting the monopoly position to the Vietnam Post and Telecommunications Corporation (now the Vietnam Post and Telecommunications Group - VNPT). However, this monopoly has been eliminated by allowing other enterprises to participate in the telecom business (especially the Military Telecommunications Corporation (now known as Viettel Telecom), Saigon Post and Telecommunication Corporation, etc.). Accordingly, the quality of service has been improving while the price of telecommunications services tends to decrease. The Law on Telecommunications stipulates that enterprises from all economic sectors established under Vietnamese laws are entitled to participate in the provision of telecommunications services as well as establishment of telecommunications network infrastructure. Along with the development of science and technology, the opening of the economy, telecommunications is the earliest and fastest of the networking industries in Vietnam to open its markets to competition. (Details will be analysed in Section 5).

PART 2: STUDY ON ELECTRICITY INDUSTRY

2.1. Overview

34. Electricity is a special commodity. Like the electricity industry in other countries, in order to reach customers, electricity business operation of Vietnam consists of three phases: generation, transmission and distribution, occurring simultaneously. Electricity is produced at power plants and then transmitted through electricity transmission and distribution networks to be sold to consumers. Electricity is produced when it is capable of being consumed because the characteristic of the electrical system is at any time a balance between output power and power consumption.

Figure 2: Vietnam Electricity Sector Model



Source: FPT Securities (2015), Power Sector Report, 7/2015.

35. *On power generation (power generation)*, At the beginning of 2018, there are 81 power plants directly involved in the electricity market and 25 indirect power plants in the electricity market.

36. According to EVN (2017), on 31/12/2016, power generation industry of Vietnam has a total installed capacity of 42,135 MW, of which the capacity of EVN is at 25,884 MW, accounting for 61.4%; that of Vietnam Oil and Gas Group (PVN) is 4,435 MW, accounting for 10.5%; Vietnam Coal and Mineral Industries Group (VINACOMIN) holds 1,785 MW, accounting for 4.2%; The rest belongs to generators and other investors. Compared to FY2013, the proportion of electricity produced by EVN and its subsidiaries and by foreign investors are on the increase.

Table 3: Structure of the electricity generations by ownership

Owner	In 2013		In 2016	
	Capacity (MW)	%	Capacity (MW)	%
EVN	18.569	60,69	25.884	61,4
PVN	3.560	11,64	4.435	10,5
TKV	1.545	5,05	1.785	4,2
BOT & other investors	6.923	22,62	10.031	23,9
Total	**30.597**	**100**	**42.135**	**100**

Source: EVN (2013, 2017)

37. Power plants in Vietnam comprise three main groups: hydropower, coal-fired and gas-fired. As of 31/12/2016, the total capacity of the hydropower group is 15,857 MW (37.6%), coal power is 14,448 MW (34.4%). and that of gas is 7502 MW (17.8%). There are also other sources such as oil-fired thermal power and other types of power generation such as oil, small hydropower, and renewable energy.

Table 4: Structure of the electricity generations by sources by 31/12/2016

Source	In 2013		In 2016	
	Capacity (MW)	%	Capacity (MW)	%
Hydro	14.925	48,78	15.857	37,6
Coal	7.058	23,07	14.448	34,3
Oil	1.050	3,43	1.370	3,3
Gas	7.564	24,72	7.502	17,8
Diesel, small hydropower, and renewable energy			2.418	5,8
Imports	-	-	540	1,2
Total			**42.135**	**100**

Source: EVN (2013, 2017)

38. *Power transmission:* The transmission of electricity is undertaken by the National Transmission Corporation (NPT). As of December 31, 2016, the National Power Transmission Corporation managed and operated a total of 23,517 km of lines (including 7,446 km of 500 kV lines and 16,071 km of 220 kV lines); 126 substations (including 26 transformer stations of 500 kV and 100 transformers of 220 kV) with total transformer capacity of 67,638 MVA (EVN, 2017).

39. *About power distribution network:* The distribution of electricity is carried out by five corporations, including: Northern Power Corporation; Central Power Corporation; Southern Power Corporation; Hanoi Power Corporation and Power Corporation of Ho Chi Minh City. Under these Corporations are systems of subsidiaries to sell electricity to end consumers (including organizations and individuals).

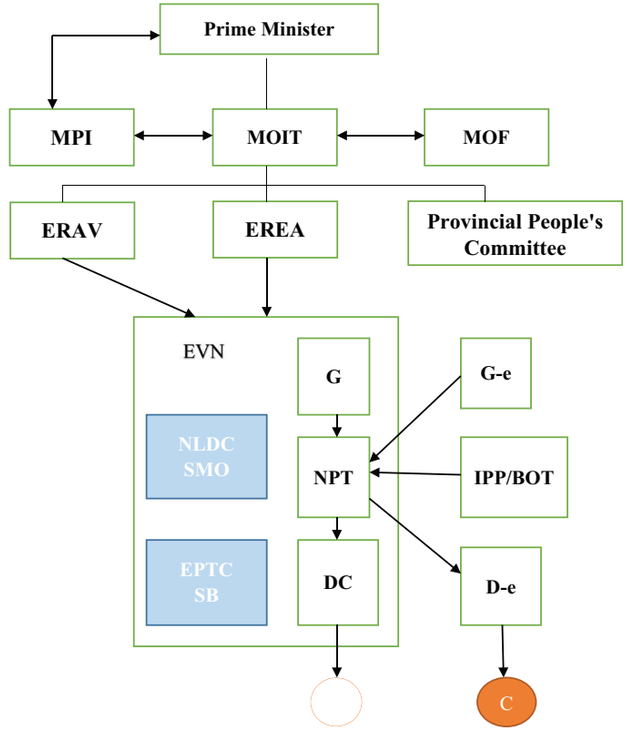
Table 5: Distribution network by 31/12/2016

Categories	Unit	Amount
220 kV line	km	108
110 kV line	km	19.335
Medium and low voltage lines	km	495.688
220 kV transformers	MVA	3.250
110 kV transformers	MVA	52.360
Medium and low voltage transformers	MVA	89.609

Source: EVN (2017)

40. Power industry management entities consist of the Prime Minister, the Ministry of Industry and Trade, Ministry of Planning and Investment, Ministry of Finance, the People's Committees of provinces and central cities with corresponding tasks (See Figure 3 and Box 2).

Figure 3: Structure of the electricity sector



Source: ADB (2015) and updated by the authors

Note: C = consumers; DC = distribution companies; D-e = Distribution – equitized companies; ERAV = Electricity Regulatory Authority of Vietnam; EREA= Electricity and Renewable Energy Authority; EVN = Vietnam Electricity; MPI = Ministry of Planning and Investment; MOIT = Ministry of Industry and Trade; MOF = Ministry of Finance; MONRE = Ministry of Natural Resources and Environment; NLDC = The National Load Dispatch Centre; EPTC = Electricity Power Trading Company; SB = Sole Buyer; SMO = System and Market Operator; IPP = Independent power plant; BOT = Build, operate and transfer.

Box 1: Organization structure of the electricity sector

The Prime Minister is responsible for approving policies and regulations for the electricity sector.

The Ministry of Industry and Trade is responsible for managing the electricity industry. The Ministry of Industry and Trade develops innovation initiatives and national power development plans (as approved by the Prime Minister) and monitors the implementation. The Ministry of Industry and Trade evaluates, approves and publishes new investment items in the power sector and issues licenses for wholesale and retail market participants and stakeholders involved in power generation, transmission and distribution activities related to the national power system. The Ministry of Industry and Trade manages energy efficiency programs. The Ministry of Industry and Trade also evaluates and confirms retail price adjustments before that are submitted to the Prime Minister for approval.

The Electricity and Renewable Energy Authority (under the Ministry of Industry and Trade) is responsible for making the overall energy policy and plan, proposing and evaluating plans for energy and electricity development; local and regional energy development plans; reporting to the Ministry of Industry and Trade; Managing BOT projects.

The Electricity Regulatory Authority of Vietnam - ERAV (under the Ministry of Industry and Trade) assists the Ministry of Industry and Trade in developing regulations on the operation of the competitive electricity market and guiding the implementation of regulations, and in evaluating electricity tariffs as well as transmission and distribution fees. The ERAV also issues guidelines on the conditions and procedures for power cuts. The ERAV supervises supply and demand of power, studies and recommends solutions to achieve supply-demand balance. The Electricity Regulatory Authority establishes valuation principles, sets up tariffs for regulated activities and committed purchases for the Electricity Power Trading Company, inspects the electricity production and business costs, inspects the adjustment of electricity prices by EVN and other electricity units; ERAV also implements the transparency of electricity prices; monitors the implementation of plans and investment projects in the development of power source or transmission and distribution grids, complying with master plans, etc.

The People's Committees of the provinces and central cities shall have to elaborate electricity development plans in their respective localities and submit them to the People's Councils and the Ministry of Industry and Trade for approval. Provincial People's Committees (PPC) also supervises the implementation of approved local power development plans. Within the scope of assigned powers, the PPC develops and implements the land clearance and resettlement plans for the people, compensates the people for land and related assets for electricity development projects. The PPC also licenses organizations and individuals to engage in small scale power generation activities within the limits of their regulatory power. Together with the Ministry of Industry and Trade, the ministerial-level agencies and other governmental agencies, the provincial People's Committees are involved in the development of projects promoting the efficient use of energy.

The Ministry of Planning and Investment is the coordinating agency that allocates resources for energy projects which are submitted to the Prime Minister for approval by the specialized ministries and agencies.

The Ministry of Finance is competent in taxing energy activities. Together with the Ministry of Industry and Trade, the Ministry of Finance issues guidance on spending in developing, evaluating, publicizing and amending electricity development plans.

Vietnam Electricity Corporation (EVN) is responsible

for meeting the basic electricity demand for socio-economic development, ensuring the implementation progress of electricity generation and transmission projects according to the master plan. Units of EVN include:

- The National Transmission Corporation is a transmission operator formed on the basis of four transmission companies. As the sole transmission company, the responsibility of the National Transmission Corporation is to operate transmission equipment, coordinate and maintain the assets, ensure compliance with service quality standards and market principles established by the transmission system operator and approved by the ERAV.

- The National Load Dispatch Centre with three regional power system modulation centres is the unit operating the system and the market. The responsibility of the centre is to determine the maximum and available capacity of the transmission system; optimize service requirements; establish technical standards for the design of transmission facilities, develop co-ordination programs, monitor compliance and propose updated performance criteria for the transmission system. The centre coordinates with domestic and international responsible organizations for all issues related to its functions; prepares forecast annual electricity demand; determines the number of annual contracts from direct generation companies and allocate them to each month in the year; prepares and publicizes annual and monthly action plans; publicizes the weekly water value, production schedule, marginal cost of the system and other information; and issues settlement reports.

- Electricity Power Trading Company is the sole buyer acting as a separate unit within EVN in the competitive electricity generation market. The company is a special wholesaler and it engages in the purchase of electricity with power plants in accordance with the relevant regulations and regulations.

2.2. Status of the state monopoly reform in the power industry

2.2.1. Foundation for the state monopoly reform in the power sector

41. Before 1990, most electricity industries in the world were monopolized by either a state-owned (majority) or private vertically integrated corporation, which meant that all power generation, transmission, distribution and retail activities were conducted by a single exclusive entity. In Vietnam, the power sector also derives from the traditional state-owned monopoly company model. In 1994, the North-South power transmission line was put into operation and connected the electricity system to the whole country into a unified nationwide electricity system. Along with that, the establishment of Vietnam Electricity Corporation (EVN) is to carry out all functions of electricity production, transmission, distribution and retail - the right to perform all stages of the electricity sector (Le Dong Hai, 2017). In other words, the state monopoly position in the electricity sector was given to EVN.

42. This model is formed and developed based on the specific characteristics of the electricity product and the economic efficiency theory of the size of the organization, and the theory of transaction costs applied to the electricity sector. In theory, this model minimizes fixed costs, transaction costs, best coordinates between investment, operation and exploitation, which in turn optimizes development investment costs, technical management, operation, maintenance, repair because of the same management and control of an organization. In addition, electricity companies are obliged to supply electricity to all customers in any areas including remote areas, such as residential, mountainous, island or rural areas. However, customers do not have the opportunity to choose electricity suppliers, they have to buy power from an exclusive company. In this mechanism, electricity companies also take the lead in advising on mechanisms and policies for the state management of electricity activities (Nguyen Huu Khoa, 2012)[17].

[17] *See http://nangluongvietnam.vn/news/vn/dien-luc-viet-nam/thi-truong-dien-dinh-hinh-hien-trang-nganh-dien-viet-nam-(ky-1).html, dated 10/6/2018*

43. The traditional model has revealed many shortcomings such as: (i) The electricity price, including the costs of electricity and the cost of the electricity system, caused the customers to pay for ineffective electricity investments, or outdated equipment and technology; (ii) Monopoly does not create incentives for utilities to reduce costs, increase profits and, in particular, to develop market competition strategies; (iii) Traditional adjustment often leads to high prices; (iv) Cross subsidies between types of customers creates inefficient performance. As a result, the electricity sector has very low productive and investment efficiency.

44. Moreover, the tendency of restructuring the electricity industry, which is gradually moving towards competitive market with the aim of reducing electricity prices and improving quality, is strong in many countries around the world. This process takes place under the influence of technological progress, changes in political opinion, electricity law, financial condition and electricity quality, etc.

Box 2: Trends in the electricity industry reform

Since the early 1980s, electricity industry reforms have been strong in many countries. However, the overall view, the reform of the power industry is based on the following steps:

i. Applying competition principles to the electricity sector to improve efficiency, meet consumer demand and innovation;
ii. Restructuring the power sector to apply the principle of competition through the separation of existing monopoly into separate units such as power generation, transmission, distribution and service delivery.
iii. Private sector involvement in electricity generation and supply, with the expectation that private investors and operators will bring not only capital but management experience.
iv. Developing and promulgating a regulatory framework to limit the deterioration of the participation of new investors through the use of market forces by independent or semi-independent regulatory bodies.

Box 3: Separation of electricity sector in the Federal Republic of Germany

Prior to 1998, German electricity companies carried out all stages, from production to transmission and distribution. These enterprises distributed and operate exclusively in the territory. Monopoly does not facilitate new entrants into the electricity generation and distribution market. Territorial monopoly have made price adjustments (but not accompanied by quality improvement), affecting the interests of consumers. In light of this, the German government has liberalized the energy market.

- Identification of the regulatory steps to be taken in the case of electricity / gas markets:

Power generation, distribution and retail: Electricity can be generated by using nuclear power, gas, gas, oil or coal or renewable energy (wind, hydropower, etc.). Therefore, in the production of electricity, the irrecoverable attribute of property is unclear because it can be removed and reinstalled elsewhere or when the investment fails to be completely controlled. In addition, in order to meet the power demand, more power generation units can be built, without appearing to be efficient in scale. Therefore, there is no natural monopoly in electricity production, there may be many power producers involved. The state should not regulate the electricity generation sector, so that private businesses and private investors are involved in electricity generation in the market. The state manages these enterprises through competition policy to ensure that they compete with each other. In Germany and the EU, electricity production is subject to competition policy but not subject to the state regulation. The same is true for the distribution of electricity and gas to consumers. In Germany, the purchase of electricity through the trading floor, consumers can finally buy electricity from 50-60 units of electricity supply, and power distribution is also not subject to the state regulation.

Electricity and gas transmission: This stage has two attributes (economic efficiency scale and no return of investment capital). For example, the transmission network. Only one supplier will save much more money compared to the case when multiple

suppliers are involved. This is a natural monopoly (in terms of cost and technical considerations, for a deployment unit). Therefore, the state needs to regulate and control.

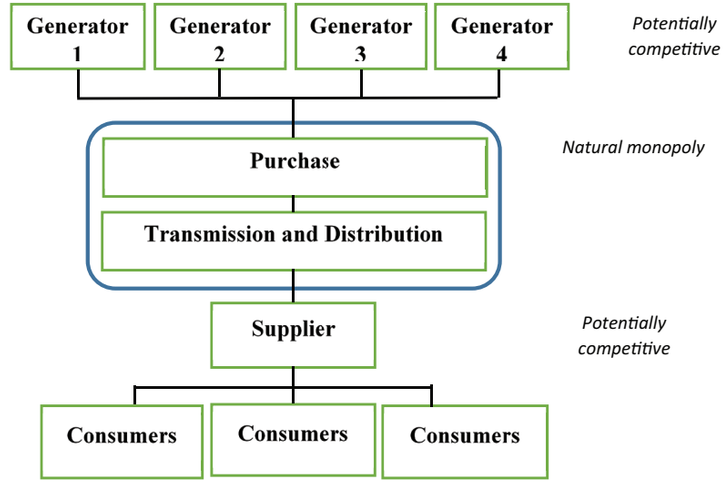
- The separation of production and power transmission:

Deriving from the requirement of equal access to the network of new market actors and improving the competitiveness of the energy market, the Federal Republic of Germany separated power production and power transmission, most power generators selling power transmission networks. A number of small-scale electricity generation enterprises retain the transmission network and separately account expenses arising between the network and production units in order to avoid cross-subsidization and cross-subsidization between enterprises and enterprises, ensuring equal access to the network of other market participants.

Source: CIEM (2014)

45. In addition, considerations from the supply-demand rule in a market can be seen: If for some reason, a commodity has only one supplier, consumers have no opportunity to choose. Accordingly, causes and motives are not competitive, cost of goods will not decrease, and it will be difficult to improve quality. In the electricity market, demand is the amount of electricity needed to deliver to Tier 1 transmitters - distributors (Tier 2) and consumers; Supply is the sum of the electricity supplied by the manufacturer to the market. Starting from the characteristics of each stage in the electricity sector, it is possible that the electricity sector has potential competition in power generation (electricity generation) and electricity trading (wholesale and retail). Because power transmission and distribution are natural monopolies, it is difficult to develop feasible options to compete in providing transmission and distribution services. But, because power generation can be competitive, power plants should belong to many different companies instead of belonging to a single operational company. Similarly, the power business needs competition, it must create mechanisms to have multiple suppliers joining the market.

Figure 4: The competitiveness of the power sector
Stages of electrical industry



46. Demand for electricity is increasing while the supply of electricity is limited. By 1995, nearly 50% of population of Vietnam had no access to electricity. To address this issue, the Government has set specific targets for the coming years. Accordingly, power supply has increased with access to electricity rising to 93% of the population in 2004 (ADB, 2015). However, to meet the electrification goal, EVN has faced many financial and management difficulties. This also creates significant financial pressure for the government because the revenue of EVN does not cover the need for capital and maintaining the operation of the power system. To deal with this problem, the government allowed the involvement of independent power producers in 2000. The government also began implementing the restructuring of EVN in 2003.

47. Starting from the above requirements, in order to promote the reform, the Electricity Law passed by the National Assembly of Vietnam in 2004 (amended and supplemented some articles in 2012) formally set up the construction regulations and roadmap of developing a competitive electricity market in Vietnam is a

turning point in changing the direction and character of electricity industry of Vietnam. Competition in the electricity industry is officially accepted and promoted.

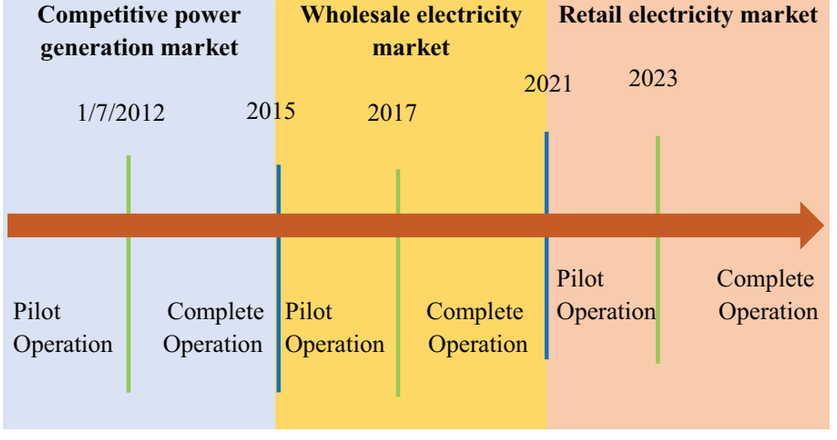
2.2.2. Mechanisms and policies of the state monopoly reform in the electricity industry

48. The existing mechanisms and policies have orientated the development of the competitive electricity market, clearly defining which stages need to maintain a state monopoly and which stages needs the implementation of competitive market.

49. According to the Electricity Law 2004 and the Electricity Law (amended) in 2012, Article 4 stipulates that "the development of the electricity market shall be based on the principles of publicity, equality, fair competition to improve efficiency in electricity activities; to ensure the legitimate rights and interests of electricity units and customers; to attract all economic sectors involved in electricity generation, distribution, wholesale of electricity, electricity retail and consultancy on electricity. "The state monopolizes the transmission and regulation of the national power system, the construction and operation of large power plants with special socio-economic, defence and security significance". The Electricity Law also regulates the development of a competitive electricity market. This would require the monopoly position of the EVN to be broken to form a competitive electricity wholesale market and eventually a competitive electricity retail market. Thus, the legal framework establishes that the state policy does not monopolize the entire electricity sector but wants to create a competitive electricity market in the power generation, distribution, wholesale and retail markets.

50. This regulation was concretized by two decisions of the Prime Minister, including Decision No. 26/2006/QD-TTg (26/1/2006) approving the roadmap for Developing power markets in Vietnam and Decision 63/2013/QD-TTg (January 8, 2013) regulating the roadmap, conditions and structure of the electricity sector to form and develop the Electricity Market in Vietnam in different levels. Accordingly, the roadmap for reforming the electricity sector has been identified in detail.

Figure 5: Roadmap for electricity sector reform under Decision 63/2013/QD-TTg.



- Competitive electricity generation market (level 1): Continue to implement the competitive electricity generation market until the end of 2014.

- Competitive electricity wholesale market (level 2):

+ 2015-2016: Implementation of the pilot electricity wholesale market

+ 2017-2021: Implementing the wholesale electricity wholesale market

- Competitive electricity retail market (level 3):

+ 2021-2023: Implementation of the competitive electricity retail market

+ After 2023: Complete the competitive retail market

In phase 3, in order to form a fully competitive electricity retail market, the electricity retailer under the power company will be separated into independent cost-accounting electricity retailers and final users have the right to choose suppliers.

Source: ADB (2015), http://www.aseanenergy.org

51. These decisions also indicate that for the implementation of a competitive electricity generation market, the first requirement is that the electricity plants participating in the market must be equally non-discriminatory among the plants. Except for large electricity plants of special importance as stipulated in Article 4 of the Electricity Law, electricity generation

corporations and power plants under EVN must be separated into electricity generation units that have no common interests with the electricity wholesalers, the electricity transmission units, the national electricity grid-regulating units and the electricity market transaction-administering units.

52. In addition, mechanisms and policies on restructuring the SOE sector in general (as outlined above) and the restructuring of the electricity sector provide the legal basis for the state monopoly reform in the electricity sector.

53. Pursuant to Decision No. 929/QD-TTg dated 17 July 2012, the Prime Minister issued Decision No. 1782/QD-TTg dated 23/11/2012 approving the restructuring project of Vietnam Electricity Group in the period 2012-2015, which clearly defines the objectives of equitization, divestment and capital of the Group at its subsidiaries and member enterprises. Recently, the Prime Minister issued Decision No. 168/QD-TTg dated February 7, 2017 approving the project of restructuring the power sector in the 2016-2020 period with orientation to 2025 clearly defining the target of transformation. The operation of the electricity sector is based on the market mechanism, enhancing openness, transparency, equality and fair competition. Pursuant to Decision No. 707/QD-TTg of May 25, 1977, the Prime Minister issued Decision No. 852/QD-TTg dated June 14, 2017 approving the master plan on restructuring and rearranging enterprises under Vietnam Electricity in the period of 2017 - 2020.

54. In addition, a number of documents guiding the implementation of the Electricity Law were promulgated as a legal basis for the reform of the electricity sector in general and the reform of the state monopoly in the power sector in particular.

2.2.3. The results of the state monopoly reform in the electricity sector and the problems

55. Prior to 1995, the power industry of Vietnam was completely state-owned, with three electricity companies in three regions administered by the Department of Energy. These companies perform all aspects of electricity generation, transmission and distribution within each region. In 1995, regional power companies were merged into a sole electricity company, the Electricity of Vietnam (now is EVN). EVN is a vertically integrated monopoly, monopolizing the whole process of production and business of electricity, from electricity generation, transmission to distribution, retail. In other words, EVN is the enterprise that implements the entire the state monopoly in electricity sector.

56. With the aforementioned mechanisms and policies as well as the restructuring of the electricity industry and of EVN, the opening of the electricity market has gained some achievements, as follows:

- Before the Electricity Law of 2004, EVN monopolized the entire process of electricity production and trading. In 2008, EVN separated and formed its own transmission and distribution units (national transmission companies). In 2012, EVN separated its electricity generation and generates three generators (GENCO).

- Electricity generation has changed. The scale of the competitive electricity market is constantly expanding. Since 2000, independent units (other than EVN) started to invest in electricity generation. Accordingly, the entities involved in the electricity market has changed, EVN was no longer the only unit involved in electricity production. In addition to EVN, there were participations of Independent Power Plant (IPP), in which Petro Vietnam (PVN) and Vietnam National Coal and Mineral Industries Group (Vinacomin) are the two largest IPP investors: domestic and foreign investors also took part in this sector. The number of plants participating in the electricity market increased significantly (from 31 generators directly involved in the competitive electricity generation market as of July 2012, to 80 units by July 2017). According to Decision No. 95/QD-

DTDL dated 27/12/2017 of the ERAV, the list of electricity plants participating in the competitive electricity market in 2018, 81 power plants directly involved in the market, and 25 electricity plants indirectly participate in the electricity market. Thus, the number of electricity generation plants has increased.

- Information on the operation of the electricity market has been fully disclosed, raising the transparency and fairness in the mobilization of electricity; creating a more open, fair and healthy competitive environment among the participating units; creating a motive force for electricity generators to take initiative in operation, shortening repair and maintenance time, reducing operation costs, contributing to raising production efficiency and the performance of the whole system.

57. Despite the above results, there are still many issues that turns from the state monopoly to corporate monopoly:

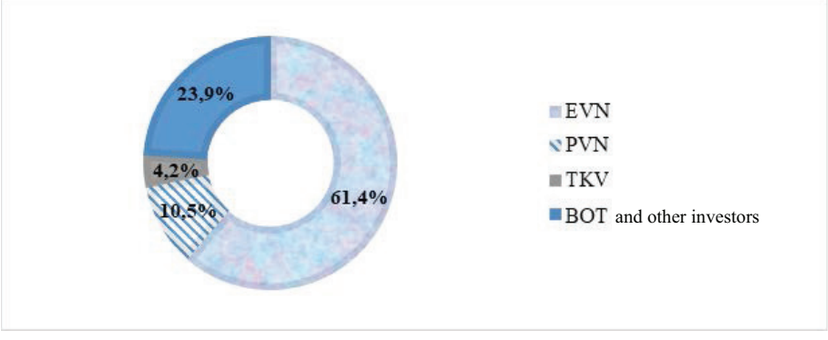
- The state monopoly has been given to SOEs and the electricity sector is still a monopoly sector where EVN is both a sole buyer and sole seller in the market. Although EVN is no longer the only entity involved in electricity generation, EVN (including GENCOs) still dominates the electricity generation market and remains the sole buyer of electricity generated, and it is the only wholesale unit for electricity utilities and electricity retail units. EVN plays a key role in securing electricity supply for the economy. EVN is responsible for deciding the strategy and strategic orientation for the development of the electricity sector, developing electricity projects, balancing supply and domestic demand. With an absolute role in the electricity sector, EVN has the power to make decisions on almost all issues in the industry.

a. At electricity generation:

- Power generation is no longer a monopoly of EVN as the number of generating units entering the market is increasing. However, EVN and its subsidiaries still dominate the electricity

generation market. By 2016, the total installed capacity of the electricity system of Vietnam will be 42,135 MW, of which the electricity generation capacity of EVN and its wholly-owned subsidiaries will be 25,884 MW (61.4% % of total system), the electricity output of EVN is 16,251 MW (38.6%). Therefore, in the electricity generation market, EVN can be regarded as a unit with considerable market power.

Figure 6: Ownership structure by 31/12/2016



Source: EVN (2017), Vietnam Electricity Annual Report

- Besides EVN, PVN and Vinacomin - Power of TKV are the two largest independent IPP investors in Vietnam, forming the 3 pillars of electricity sector with over 76% of total capacity. However, these are all state-owned corporations, so the dominance of the state ownership is still quite great, creating a competitive and equal market for small investors is a matter of need.

- Moreover, although the number of factories directly involved in the electricity market has increased sharply, the market share of indirect electricity plants in the electricity market remains high. At present, there are about 51% of capacity to enter the electricity market indirectly and not participate in determining the market price. Therefore, the market price does not accurately reflect the marginal cost of

the whole electricity system[18].

b. At transmission, distribution and retail:

- Currently, EVN is holding monopoly segments from wholesale electricity, transmission, distribution / retail, express:

o Electricity Purchase Intermediary: Electricity Power Trading Company (EPTC) was established in 2008 under EVN as the only unit authorized to purchase electricity from all power generation units in the market and wholesale to power distribution companies. Accordingly, the Electricity Power Trading Company is responsible for: planning, negotiating and implementing electricity purchase contracts; purchasing all power in the electricity market; and coordinate with National Electricity System Control Centre (also under EVN) in planning electricity market operation in next month, next year and other tasks as regulated by the electricity market.

o Electricity Transmission Intermediate to carry electricity to distribution and retail- National Power Transmission Corporation (EVNNPT) is carrying out the role of power transmission unit, management and operation of power transmission grid. EVNNPT is a wholly-owned subsidiary of EVN. Thus, it can be said that EVN is still monopolizing power transmission.

o Distribution, retail to users is a link that EVN holds monopoly (EVN holds 100% of the Electricity Corporation - PC)[19].

[18] *See http://www.erav.vn/d4/news/Nhin-lai-5-nam-van-hanh-thi-truong-dien-Viet-Nam-1-609.aspx dated 10/6/2018*

[19] *In the past, this segment was under the management of 11 electricity companies, includes 10 independent accounting companies and 1 equitized company (Khanh Hoa Power Joint Stock Company (KHP)). After 2010, 11 electricity companies restructured into 5 Power Corporation (PC) to specialize in each area and prepare for the competitive electricity wholesale market.*

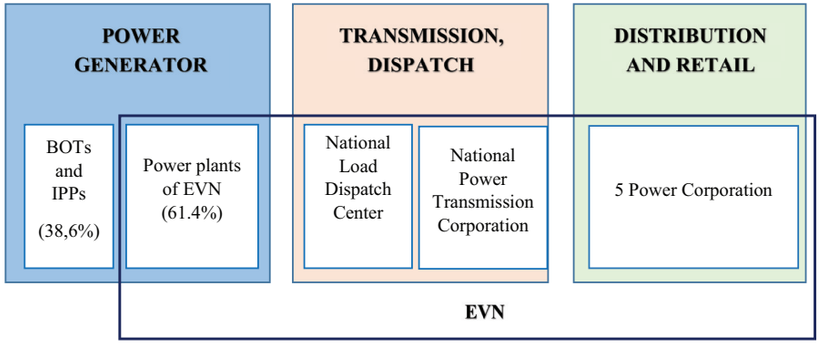
Table 6: Company structure in Vietnam Electricity Group

Parent company - EVN

subsidiaries of the parent company	
1. Hoa Binh Hydropower Company 2. Ialy Hydropower Company 3. Trị An Hydropower Company 4. Tuyên Quang Hydropower Company 5. Se San Hydropower Development Company 6. Nghi Son Thermal Power Company 1 7. Son La Hydropower Company 8. Huoi Quang-Ban Chat Hydropower Company 9. Hydropower Project Management Board 1 10. Hydropower Project Management Board 4 11. Hydropower Project Management Board 5 12. Hydropower Project Management Board 6	13. Project Management Board of Son La Hydropower Plant 14. Nuclear Power Project Management Board of Ninh Thuan 15. Electricity Power Trading Company 16. National Load Dispatch Centre 17. Electricity Information Centre 18. Telecommunications and Information Technology Centre 19. EVN Construction and Technology Investment Management Board and 20. Thermal Power Project Management Board 2
Subsidiaries that EVN holds 100% of charter capital (One Member Limited Company) 1. Power Generation Corporation 1 2. Power Generation Corporation 2 3. Power Generation Corporation 3 4. National Power Transmission Corporation 5. Northern Power Corporation 6. Central Power Corporation 7. Southern Power Corporation 8. Hanoi city Power Corporation 9. Ho Chi Minh city Power Corporation	**Companies that EVN holds more than 50% of chartered capital or other dominant power** 1. Thu Duc Mechanical Electric Joint Stock Company 2. Dong Anh Electric Equipment Corporation - Joint Stock Company 3. Electricity Construction Consulting Joint Stock Company 1 4. Electricity Construction Consulting Joint Stock Company 2 5. Electricity Construction Consulting Joint Stock Company 3 6. Electricity Construction Consulting Joint Stock Company 4
EVN owns less than 50% of charter capital 1. Vinh Tan Energy Joint Stock Company	

58. Thus, EVN (directly or through its wholly-owned subsidiaries) manages the entire core infrastructure of the power sector, including power grid (transmission and distribution), power counting systems (counting, collecting, storing and managing metric data) and information technology systems for the operation of power systems and electricity markets. Power transmission and distribution networks are provided by the National Power Transmission Corporation and five power companies including the Northern Power Corporation (EVNNPC), the Central Power Corporation (EVNCPC), the Southern Power Company (EVNSPC), Electricity of Hanoi (EVNHANOI) and Electricity of Ho Chi Minh City (EVNHCMC); The power metering facility is managed by the National Load Dispatch Centre (A0) of EVN.

Figure 7: Power Sector Structure

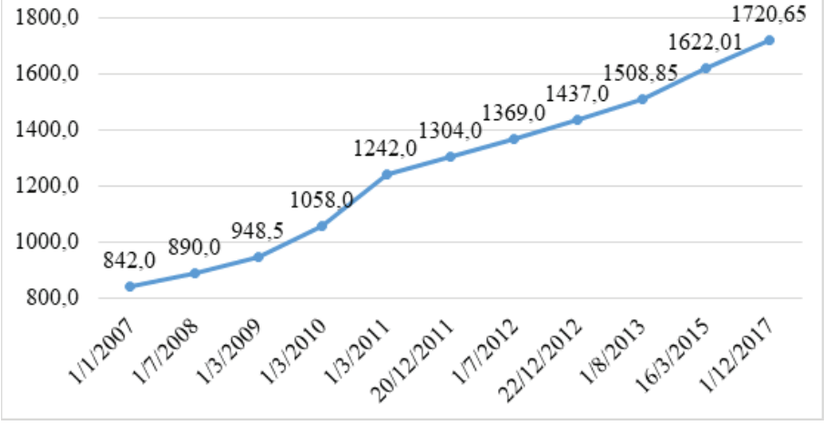


Source: Huu (2014), quoted in ADB (2015) and updated by the authors

59. Thus, although there have been some conversions, the electricity industry of Vietnam still exists as a near monopoly with EVN is a dominant electricity generator (over 61%), the only electricity trading unit, the transmission unit, the electricity system operator and the market transaction operator. Accordingly, vertical linkages between the agencies of EVN in all sectors of the power industry (power generation, transmission, distribution and retail) create competitive advantages for the affiliates of EVN, especially as the market grows higher, there are more private investors involved. In other words, the lack of a competitive market has not ensured the independence

of enterprises in the production, transmission, distribution and retail sectors. Therefore, the consequences may be: (i) Negotiating and signing contracts on the purchase and sale of electricity from new sources outside of EVN are difficult, lacking transparency and often lasting; (ii) The selling price depends on decision of EVN; (iii) The monopoly of EVN can significantly impede the attraction of private investment and foreign direct investment, thus hindering the development of the electricity sector, which is the sector with huge investment costs.

Figure 8: Average electricity retail price (VND / kWh)



Source: Authors' compilation

2.3. Some proposals for further state monopoly reform in the electricity sector

60. To continue the state monopoly reform, addressing the limitations of the current model and facilitating the development of a competitive electricity market, the following recommendations:

Firstly, the implementation of the restructuring of the electricity sector, in particular continue to restructure EVN, which includes:

- Continuing reorganizing the power plants of EVN into independent power generation units from EVN. The first

requirement for a competitive power generation market is that the power plants participating in the market must be equally discriminated between EVN power plants and power plants of other investors than EVN. PVN, TKV ... In addition to some large power plants with important economic, social and national defence and security meaning, the state continues to hold. Reorganize EVN power plants into a number of generators (GENCO) independent from EVN.

- Re-organizing electricity power trading companies, separating from EVN. In other words, it should soon break the monopoly or sole buyer position of EVN. EVN needs to transfer and gradually distribute EVN's current electricity purchase contracts signed for 5 electricity corporations.

- Reorganizing the national power grid operator or the operator of the electricity market must be a non-profit operating entity fully independent of EVN. This unit should also be independent of both the buyer and the seller. The degree of independence should be absolute, from facilities, personnel, functions are also separate from other parts of EVN.

- Separating transmission unit completely from EVN to ensure equal competition.

- Implementation of the competitive wholesale and retail electricity market will expand the participation of units inside and outside EVN. EVN currently owns most of the wholesalers and retailers. Implementation of this level is closely related to the restructuring of EVN and the electricity sector.

Power plants located in the territory of Vietnam do not have to be connected to the national power grid (or connected only for exchange) and sold to Electricity Power Trading Company of EVN; they have the right to sell directly to customers in accordance with the provisions of the Government and the Electricity Law. Consumers of all sizes have the right to choose and change the units that sell electricity to them.

Secondly, to effectively implement the roadmap for the formation and development of a competitive electricity market in Vietnam as stipulated in the Prime Minister's Decision No. 63/2013/QD-TTg dated November 8, 2013 with the principles (i) Electricity retailers (existing and new electricity retailers) purchase electricity from power generation units, wholesale units through bilateral contracts and from the spot electricity market to sell electricity to electricity customers; (ii) Customers using electricity that meet the prescribed conditions will be able to purchase electricity from power generation units, electricity wholesalers, electricity retailers via bilateral contracts and from the spot electricity market; (iii) Transmission units, electricity distribution units providing electricity transmission and distribution services.

Thirdly, strengthening policies to encourage the participation of investors who apply modern and economically efficient technologies and environment; development of renewable energy; encourage new models (such as small renewable energy clusters, utilizing resources and engaging businesses and the public, and reducing the burden on the state in the development of electricity). Strict control of investment projects, not accepting projects that are economically inefficient and environmentally damaging to any business / investor.

Fourthly, attention should be paid to the policy of encouraging the use of electricity economically and efficiently; Price policy of buying-selling price is calculated to cover all costs for all types of enterprises, towards formation of competitive electricity development policies, eliminating the state monopoly.

Fifthly, ensuring equitable access to the core system in the power sector (natural monopoly), including power grid (transmission and distribution), power counting systems (public measuring, collecting, storing and managing metric data) and information technology systems for the operation of the electricity system and the electricity market. The most basic principle in accessing the core infrastructure to promote competition in the electricity sector is the Open Access (World Bank, 2013)20 ,

which includes:

- Non-discriminatory (equal): The parties to the electricity market are ensured by the law in accessing the core infrastructure, especially power transmission and distribution networks. There is no discrimination, favouritism of the units owning and operating these core infrastructures.

- Transparency: the market mechanisms and regulations as well as the provision of market information, general information of core infrastructure must ensure transparency and provide maximum information to participating units, eliminating information asymmetry.

- Reasonable Costs: The cost of accessing and utilizing shared core infrastructures of market participants must be properly regulated and ensure the efficient operation of these infrastructures. At the same time, it ensures fairness (free or fair price). The cost-effectiveness of these services should also be in line with the design and development level of the electricity market at each level, particularly the mechanisms of electricity transmission and distribution prices.

Sixthly, enhancing the intrinsic role of regulators; ensuring the independence and capacity of the regulator (the Regulatory Authority of Power) and the competition administration authority not to allow the transmission unit to use its monopoly position to favour or discriminate deal with production units and consumers; ensuring that all network users have access to and use of the energy supply network on a non-discriminatory basis to promote competition in production, commerce and retail. The regulating body shall publicize the annual report on the review and evaluation of the regulation and operation of the electricity market.

[20] *Thepen access can be understood as the creation of opportunities and access to common core infrastructure for sellers and buyers in the electricity market on a non-discriminatory (equal) basis. , transparent and cost-effective*

Seventh, making public the electricity price structure; Issue and implement a mechanism to supervise the provision of products and services by electricity enterprises, especially EVN with the participation of industry associations and independent experts to ensure the quality of activities, the dynamics of businesses and the interests of consumers and the economy.

PART 3. STUDY ON RAIL TRANSPORT

3.1. Overview

61. The railways system was built by the French over 100 years ago. Currently, the railway network has changed with the new road sections which was built in the 1970s (railroad track wide of 1,435 mm), there are also many road sections have been dismantled.

62. *About railway scale:* current rail network of Vietnam has a total length of 3,143 kilometres, in which 2,531 kilometres are main lines and 612 kilometres are station and branch lines, including 3 types: 1000 millimetre, 1435 millimetre and mix type (1435 millimetres and 1000 millimetres) accounts respectively for 85%, 6% and 9%. Rail network density is 9.5 km per 1000 km^2.

63. *The national rail network is divided into 7 main lines:* North South (Hanoi - Ho Chi Minh City), Hanoi - Hai Phong, Hanoi - Dong Dang, Hanoi - Lao Cai, Hanoi - Quan Trieu, Kep - Luu Xa, Kep - Ha Long and some branch lines, such as Bac Hong - Van Dien, Cau Giat - Nghia Dan, Da Lat - Trai Mat. In addition, there are two international railway connecting with China at Dong Dang and Lao Cai.

64. *Technical standards:* Although the railway infrastructure of Vietnam has been operating for more than 100 years, it has not been upgraded. Technical standards, railway infrastructure in Vietnam is low and backward: it has had a lot of curve with too small radius (particularly, there is a curve radius of 97 meters), high slope (line Thong Nhat imax = 17%); bridges have exploited for nearly 100 years with low load level (P = 14 axle tons); tunnel has been weathered leading to water leakage; there are many types of sleeper; railway signalling and dispatching system have been backward which are only suitable for single-track railway, low speed, limited traffic capacity; some areas of railway corridor safety are severely damaged; the density of railway crossing the ground with roads and local roads is high (there are 1,464 level crossing on 4,000 local roads, average 2.15 km per 1 level crossing), that affect the train speed and threaten railway safety[21].

65. *Railway stations:* There are 259 stations, in which most of the stations meet the requirement to serve passengers at medium or higher level. However, the system of warehouses and storage are degraded, separated, does not meet the needs of mechanical loading and unloading, especially container loading/ unloading (except for a few newly invested stations).

66. *The lines of reception and departure siding:* 35 stations have only 2 lines of reception and departure siding, in which the North - South railway has 15 stations. The length of line of reception and departure siding in the railway line has been short: the Luy River station on Thong Nhat railway line has the longest line of 304 m (equivalent 19 trucks or 13 coaches).

67. *Railway vehicle:* At present, the national railway is managing and exploiting as follows:

- The locomotives: There are 296 old locomotives, produced by many countries (China, India, Germany, Czech Republic, USA, Belgium ...), in which: 44 units have been used for over 40 years (accounted for 14,8%); 86 units have been used for 30-40 years (accounted for 29%); 48 units have been used for 20-30 years (accounted for 16,2%) and; 118 units have been used for less than 20 years (accounted for 39,9%). There are various types of locomotives with different traction, in which lot of old and backward locomotives have had low capacity (accounting for nearly 60%), limited speed, high fuel consumption, difficulties and obstacles in use, maintenance and repair.

- Rolling stock: 5947 rolling stocks including 1010

[21] *Vietnam Railway Authority (2015), Report of Scheme on railway restructuring on the national railway (March 2015)*

passenger cars/carriages and 4.947 freight cars/wagons) have been used for a long time and produced in different countries (Vietnam, China, India, etc...), specifically, 1523 units have been use for over 40 years of use (accounting for 25.6%); 1987 units have been use for 30 - 40 years (accounting for 33.3%); 303 units have been use for 20 - 30 years (5%) and 2144 units have been use for less than 20 years (accounting for 36%).

68. *Rail operation:* Vietnam Railways is the state-owned operator of the rail system with the system of subsidiary and affiliate companies, joint stock companies of Vietnam Railways, etc...

Table 7: Enterprises belong Vietnam Railways

1. Subordinate agencies	
- Dependent accounting units:	- Railway Operation Control Centre
- 17 branches:	- Lao Cai Railway exploitation Branch - Ha Lao Railway exploitation Branch - Ha Lang Railway exploitation Branch - Ha Thai Hai Railway exploitation Branch - Ha Thanh Railway exploitation Branch - Nghe Tinh Railway exploitation Branch - Thua Thien – Hue Railway exploitation Branch - Nghia Binh Railway exploitation Branch - Phu Khanh Railway exploitation Branch - Sai Gon Railway exploitation Branch - Ha Noi Railway exploitation Branch - Dong Dang station Branch - Yen Vien Locomotive Enterprise Branch - Ha Noi Locomotive Enterprise Branch - Vinh Locomotive Enterprise Branch - Da Nang Locomotive Enterprise Branch - Sai Gon Locomotive Enterprise Branch
- 5 non-business units under the management of the Vietnam railways:	- Vietnam railways vocational college - Railway Medical Centre - Railway Project Management Unit 1 - Railway Project Management Unit 2 - Railway Project Management Unit 3
2. Joint stock companies	
- 24 Joint stock companies	- Hanoi Rail transport Joint Stock Company - Sai Gon Rail transport Joint Stock Company - Gia Lam Train Joint Stock Company - Di An Train Joint Stock Company - Ha Hai Railway Joint Stock Company - Ha Thai Railway Joint Stock Company - Yen Lao Railway Joint Stock Company - Ha Lang Railway Joint Stock Company - Vinh Phu Railway Joint Stock Company - Ha Ninh Railway Joint Stock Company - Thanh Hoa Railway Joint Stock Company - Nghe Tinh Railway Joint Stock Company - Quang Binh Railway Joint Stock Company - Binh Tri Thien Railway Joint Stock Company - Quang Nam - Da Nang Railway Joint Stock Company - Nghia Binh Railway Joint Stock Company - Phu Khanh Railway Joint Stock Company - Thuan Hai Railway Joint Stock Company - Sai Gon Railway Joint Stock Company - Hanoi Railway Signal and Telecom Joint stock Company - Bac Giang Railway Signalling and Telecommunication Joint Stock Company - Vinh Railway Signalling - Telecom Joint Stock Company - Da Nang Railway Signal Telecommunication Joint Stock Company - Sai Gon Railway Signal and Telecom Joint stock Company
3. Joint Stock Company, Limited liability company with two or more members	
- 2 companies	- Railway Import - Export and supply material equipment Joint Stock Company - Dong Mo Stone Joint Stock Company
4. Associated Companies	
- 17 companies	- Two member limited liability company Saigon Trade Hotel - Transport Investment and Construction Joint Stock Company; - Rail transport and trade joint stock company;

	- Transport Investment and Construction Consultant Joint Stock Company; - Railway Construction and Investment Consultant Joint Stock Company; - Railway Construction Corporation Joint Stock Company; - Construction Joint Stock Company No 6; - Project 3 Construction and Investment Joint Stock Company; - Investment and Construction Consultant Joint Stock Company No 1; - Da Nang Building Construction Joint Stock Company; - Vinh Nguyen Joint Stock Company; - Vietnam Railways Signal Telecommunication Joint Stock Company; - My Trang Stone Joint Stock Company; - Hanoi Railway Tourist Service Joint Stock Company; - Rail transportation Service Joint Stock Company region 1; - Hai Van Nam joint stock company; - Railway Urban and Infrastructure Development Investment joint stock company.

Source: http://www.vr.com.vn/cac-don-vi-trong-dsvn.html

3.2. Current situation of the state monopoly reform in the rail transport

3.2.1. Foundation for the state monopoly reform in the rail transport

69. As well as the other network industries, the state monopoly in the rail transport was given to SOEs. In 1955, the General Railway Administration was established. In 1990, the General Railway Administration was reformed to be the Vietnam Railway Union according to Decision No. 575/QD/TCCB-LD dated April 10, 1990 of the Minister of Transport. On 4/3/2003, Vietnam Railways was established on the basis of reorganizing the existing Vietnam Railway Union according to Decision No. 34/2003/QD-TTg dated March 4, 2003 of the Prime Minister. In 2005, the Law on Railways was approved by the National Assembly. It is the highest legal base for a sustainable development of Vietnam Railways (VNR). In 2010, parent company – Vietnam Railways was changed into a one-member limited liability company owned by the state according to Decision No. 973/QD-TTg dated June 25, 2010 of the Prime Minister. The state has covered the investment in railway infrastructure and Vietnam Railways which is the state-owned enterprise, has had monopoly position in the rail transport business as well as in the exploitation and use of railway infrastructure.

70. The monopoly position in the rail transport has not motivated the Vietnam Railways to invest and improve the quality, reduce the cost. There are many different types of transport, such as transport by road, inland waterway transportation, air transportation, and transport by sea. Types of transport are not only complementary, but also competitive, with each other. In the short term, the elasticity of rail transportation demand is at moderate level. It means that rail transport must compete with road transport and air transport. However, in the longer term, the elasticity of transportation demand is higher, rail transport must compete with all other types of transport. In fact, the competitiveness of the rail transport has increasingly reduced, the market share of the rail transport (both passenger and freight transport) is very small and tends to decrease[22] .

[22] *In the world, the rail transport has been one of the promoted modes of transport due to the economic efficiency. In the last 20 years of the 20th century, the market share of rail freight transport in US grew by 43% and now serves more than 2,000 billion ton.km annually, play the role of backbone in the US transportation industry.*

Table 8: Market share of the rail transport

	Rail passenger (%)		Rail freight (%)		Note
Year	Passenger	Passenger (km)	Goods	Goods (km)	
2010	0,48	4,47	0,97	1,79	
2011	0,48	4,2	0,81	1,9	
2012	0,46	3,93	0,72	1,84	
2013	0,43	3,55	0,63	1,71	
2014	0,39	3,06	0,67	1,93	
2015	0,34	2,68	0,58	1,79	
2016	0,27	2,03	0,41	1,34	
2017	0,23	-	0,39	-	

Source: Party Committee of the Ministry of Transport (2018)

71. Revenue, quantity and the volume by the rail transport tends to decrease sharply in the period 2010-2017.

Table 9: Revenue of the rail transport (2010-2017)

Unit: Million dong

Year	Rail passenger	Rail freight	Total revenue
2010	1.860.482	1.163.146	3.023.628
2011	2.360.291	1.566.217	3.926.508
2012	2.682.723	1.602.651	4.285.374
2013	2.921.801	1.589.547	4.511.348
2014	2.904.195	2.010.344	4.914.539
2015	2.631.272	1.869.527	4.500.799
2016	2.258.415	1.282.879	3.541.294
2017	2.494.174	1.326.992	3.821.166

Source: Party Committee of the Ministry of Transport (2018)

Table 10: Quantity and volume of the rail transport

Year	Rail passenger		Rail freight		Note
	Million Passenger	Million Passenger. km	Ton (thousand ton)	Million ton. km	
2010	11,2	4.377.860	7.800	3.900.669	
2011	11,98	4.571.080	7.200	4.100.546	
2012	12,21	4.558.960	6.900	3.959.000	
2013	12,13	4.416.567	6.400	3.732.973	
2014	11,85	4.252.580	7.200	4.311.500	
2015	11,17	4.149.585	6.560	4.125.401	
2016	9,8	3.421.363	5.147	3.198.180	
2017	9,5	3.657.308	5.559	3.574.704	

Source: Party Committee of the Ministry of Transport (2018)

72. In fact, the rail transport plays an important role in the socio-economic infrastructure system. The rail transport mainly carries large-volume goods over long or medium distance and passengers over long distance, inter- province or public transport in big cities. In Vietnam, the rail transport plays the leading role in carrying passengers on the North - South line, goods and passengers on the East - West line. However, the railway infrastructure in Vietnam has been quite isolated and backward, lacking connection with other types of transport, especially the connection with international ports in order to promote the goods circulation and the development of logistics services. It has also lacked connection with the bus station, leading to less attraction and higher cost, etc…

73. Besides, the trend of restructuring world rail freight industry has been strong, shifting towards the competition and the market with the aim of reducing prices, improving the quality through market competition. This process takes place under the impact of technological progress, railway law, financial resource and quality of the rail transport services, etc…

74. From the practices mentioned above, reform of state monopoly in the rail transport has been interested, especially in

recent times.

3.2.2. Mechanisms and policies for reforming the state monopoly in the rail transport

75. Mechanisms and policies for reforming, restructuring the rail transport shows quite clearly the trend of reducing the state monopoly, encouraging and attracting the participation of various economic sectors to invest in the rail transport development.

76. The legal framework for the rail transport has been completed for attracting investment in infrastructure development, the rail transport business: Law on Railways 2015 shows the innovative thinking in the state management in the field of railways, in particular, requiring the clear separation between the function of management of the state agencies and the function of business management of enterprises; between the infrastructure business and rail business invested by the state. Article 5 of Law on Railways 2015 provides the principle to encourage domestic and foreign individuals and organizations to invest in the rail transport. The state ensures a fair and non-discriminatory competition environment, protects the legitimate rights and interests of organizations and individuals who have rail investment and business. This is also affirmed and concretized more clearly in the Law on Railways 2017 to promote the development of the rail transport under the market mechanism. The Law on Railways 2017 creates an open mechanism to attract social resources to invest in rail business in order to reduce the burden of the state budget, to develop the modern, efficiency rail system. Besides, the Law on Railways 2017 overcomes the limitations of the Law on Railways 2015.

77. The system of planning and scheme has been issued to attract the participation of economic sectors, gradually narrowing the control of the state: The master plan on the development of the railways transport of Vietnam through 2020 with a vision toward 2030 clearly defines the trend of encouraging the participation of economic sectors to invest in railway infrastructure through

franchise business and exploitation of railway infrastructure, public-private partnership (PPP); promoting the private sector investment in rail transport business and the rail transport supporting services; strongly attracting economic sectors, including foreign investors, to invest in types of transport and supporting works for transport activities (such as platforms, warehouses, yards, loading and unloading facilities ...).

78. In addition, several schemes such as the Scheme on mobilization of private sector investment in railway infrastructure (Decision No.4907/QD-BGTVT dated 24/12/2014 by the Ministry of Transport), Scheme on the restructuring the rail transport to 2020 (Decision No.1512/QD-BGTVT dated 27/4/2015 of the Ministry of Transport), etc… set out groups of solutions to create environment as well as mechanisms and policies for the participation of economic sectors, in which studying and developing legal framework on private sector investment in the rail transport in order to help organizations and individuals have the basis for their investment; implementing the socialization of the rail transport business; building fair, equitable, non-discriminatory and lawful market mechanism between the rail enterprises; studying and formulating the regulations on freight charges and fees which not only create the right for enterprises, but also closely control in accordance with the laws in each period; studying and formulating the regulations on activities of the rail transport business on the national rail network, particularly specifying the contents on the business of the rail transport operation services and the rail transport supporting services, ensuring the equality and non-discrimination between enterprises.

79. Mechanisms and policies on restructuring and renovating enterprises also facilitate the participation of other economic sectors: to implement the orientation on equitizing and attracting the participant of all economic sectors in the rail transport business according to the Politburo's Conclusion No. 27-KL/TW dated September 17, 2008 on the development strategy for the rail transport of Vietnam up to 2020 with a vision toward

2050, the Prime Minister issued Decision No. 198/QD-TTg dated January 21, 2013 approving the Scheme on Restructuring Vietnam Railways period 2012-2015.

3.2.3. The results of the state monopoly reform in the rail transport and addressed problems

80. The process of state monopoly reform in the rail transport has achieved initial results, complete monopoly has been changed into separate accounting and organization.

81. Vietnam Railways is a state-owned enterprise established under the Prime Minister's Decision No. 34/2003/QD-TTg dated March 3, 2003. Vietnam Railways is assigned to carry out business activities and perform the task of managing, operating and maintaining railway infrastructure system assigned by the state. Only Vietnam Railways can control the traction, build and announce train schedule, speed command, load command and directly operate the rail transportation on the national rail network. Before 2014, there was still overlap between the state management function and business operating function. At that period, the Vietnam Railways performs several state management tasks such as providing construction permits, managing business capital, managing land areas for railways, etc…

82. From 2005, when the Railway Law was issued, to 2014, the railway infrastructure and the rail transport business has been carried out by an enterprise (the Vietnam Railways). After the Government issued Decision No. 198/QD-TTg approving the Scheme on restructuring Vietnam Railways in the period of 2012-2015, in 2014, separate accounting was completed and separate organization was implemented in 2015. The rail transport business on national rail network and railway infrastructure management is mainly undertaken by enterprises owned by Vietnam Railways:

- *The rail transport business:* Vietnam Railways currently holds the dominant share in Sai Gon Rail transport Joint Stock Company (78.44%) and Hanoi Rail transport Joint Stock Company (91.62%);

- *The railway infrastructure maintenance and management agencies:* Vietnam Railways currently holds the dominant share (≥ 51%) at 20 rail management joint stock companies.

Table 11: Ratio of charter capital of Vietnam Railways at the enterprises

Organization	Ratio of charter capital	Organization	Ratio of charter capital
1. Hanoi Rail transport Joint Stock Company	91,62	13. Quang Binh Railway Joint Stock Company	51,00
2. Sai Gon Rail transport Joint Stocks Company	78,44	14. Quang Binh Railway Joint Stock Company	51,00
3. Gia Lam Train Joint Stock Company	77,37	15. Quang Nam - Da Nang Railway Joint Stock Company	51,00
4. Di An Train Joint Stock Company	86,85	16. Nghia Binh Railway Joint Stock Company	51,00
5. Yen Lao Railway Joint Stock Company	51,00	17. Phu Khanh Railway Joint Stock Company	51,00
6. Vinh Phu Railway Joint Stock Company	51,00	18. Thuan Hai Railway Joint Stock Company	64,50
7. Ha Lang Railway Joint Stock Company	51,00	19. Sai Gon Railway Joint Stock Company	51,00
8. Ha Thai Railway Joint Stock Company	51,63	20. Bac Giang Railway Signalling and Telecommunication Joint Stock Company	51,00
9. Ha Hai Railway Joint Stock Company	51,00	21. Hanoi Railway Signal and Telecom Joint stock Company	51,00
10. Ha Ninh Railway Joint Stock Company	51,00	22. Vinh Railway Signalling - Telecom Joint Stock Company	51,00
11. Thanh Hoa Railway Joint Stock Company	51,00	23. Da Nang Railway Signal Telecommunication Joint Stock Company	51,00
12. Nghe Tinh Railway Joint Stock Company	51,00	24. Sai Gon Railway Signal and Telecom Joint stock Company	75,77

Source: Government (2016)

83. Thus, the restructuring and equitizing enterprises in the rail transport has been implemented, gradually separating the

management function of the state management agencies with the function of production and business activities of enterprises, separating railway infrastructure business with the rail transport business invested by the state. This aims to attract economic sectors in the rail transportation business on the basis of planning.

84. However, monopoly has been seen quite clearly in the rail industry:

- The rail industry has been shifted from closed rail model[23] to semi-separating model by separating and assigning the state management function for the state agency (Vietnam railway authority). However, the Vietnam Railways almost completely monopolizes rail industry.

- The rail transport business enterprises have not separated from Vietnam Railways. In fact, the Vietnam Railway Corporation still has held the function of the rail transport business through Hanoi Rail transport Joint Stock Company and Sai Gon Rail transport Joint Stock Company. Besides, the Vietnam Railways has also been assigned a function of national railway infrastructure management and business. Thus, currently, there is an enterprise has carried out not only railway infrastructure business but also the rail transport operating and the rail transport business, leading to have highly dominant position. This has not created a fair and non - discriminatory competition environment for enterprises involved in rail business. Therefore, the private investment in the rail transport business has been not encouraged.

[23] Closed rail model refers to the situation that an agency carries out both functions of managing the rail infrastructure and exploiting rail transport. In many countries, all activities, such as building strategy and planning, promulgating regulations and technical safety standards, organizing human resource training, carrying out construction, investment, management and maintenance; operating rail transport business and supporting services, producing rail industry, etc... have been carried out by an agency. The most common form is the Ministry of Railways or the (Corporation) National Railways.

85. In summary, because of maintaining high level of the state monopoly over long period, has been backward, slow developed. The role and contribution of the rail transport has significantly reduced in comparison with other types of transport such as transport by road, the inland waterway transportation, the air transportation, and transport by sea. To modernize the rail transport, firstly, the monopoly position must be reduced for creating competition.

3.4. Proposals for further reform of the state monopoly in the rail transport

86. It is important to re-identify the role of the rail transport in the economy, especially in the fourth industrial revolution. It is necessary to have thinking and strategy tending to Industry 4.0 in rail transport reform. Besides investing and upgrading railway infrastructure, it should have comprehensive policy, including the training of staff in accordance with standards of Industry 4.0.

87. Continue to restructure the Vietnam Railways towards:

- The railway infrastructure and the rail transport business need to be separated clearly in order to create a market-oriented rail transport, a fair competition between rail transport agencies using national railway infrastructure (competition intra-sector); to attract domestic and foreign private investors involving in the rail transport to reduce the burden of the state budget; to use rail infrastructure fee to invest in maintenance, upgrading the existing rail transport network.

- The function of licensing, allocating rail infrastructure and rail operation are not allocated to the rail transport business agency.

88. It needs an independent infrastructure management agency (a state management agency) in which this infrastructure management agency performs: the function of infrastructure management and maintenance (maintenance of technical safety of the rail network); the allocation of infrastructure capacity

(allocation of train timetable, train operation and infrastructure leasing business).

89. To distinguish clearly and have a separate development policy for the railway infrastructure (controlled and monopolized by the state) and rail transport (competition by many enterprises); to ensure the connection of rail transport business with railway infrastructure.

All participants in rail transport business must pay fees to connect railway infrastructure network. This fee is used to maintain and improve railway infrastructure.

Access to railway infrastructure requires the allocation of hours, location for existing businesses and competitors without discrimination. It should have a public information system for all participants to access the market (rail infrastructure).

90. The railway with a track gauge of 1,435 mm should be developed, replace the old and narrow rail gauge system. Besides, the connection between railways and roads, seaports, airports, etc... needs to be developed in order to increase efficiency for the rail transport. It is also necessary to promote the development of international rail connection.

PART 4. STUDY ON AIR TRANSPORT

4.1. Overview

91. In January 1956, the Civil Aviation Administration of Vietnam was established, marking the birth of the civil aviation industry in Vietnam. At that time, the scale was very small, with only five propeller aircrafts IL 14, AN 2, Aero 45, etc... The first domestic flight was launched in September 1956.

92. On August 29, 1989, the Council of Ministers (now is the Government) issued Decree No.112/HDBT regulating the functions, tasks and organizational structure of the General Civil Aviation Administration of Vietnam. General Civil Aviation Administration implemented the function of the state management agency on civil aviation. Vietnam Civil Aviation Corporation was established according to Decision No.225/CT, based on General Civil Aviation Administration. Vietnam Civil Aviation Corporation was a full accounting entity, operating in air transport and related services. Decision No. 112/HDBT and Decision No. 225/CT marked an important point in the history of Vietnam civil aviation. On July 30, 1992, the Council of Ministers issued Decision No. 242/HDBT on establishing the Civil Aviation Administration of Vietnam under the Ministry of Transport. The Civil Aviation Administration of Vietnam is the state management agency for all aviation enterprises. Thus, the function of the state management of the Civil Aviation Department of Vietnam was separated with the production and business activities of other aviation enterprises. In April 1993, the national airline (Vietnam Airlines) officially formed as a large-scale air transport business agency of Vietnam. On May 27, 1995, Vietnam Airlines Corporation was established on the basis of linking 20 enterprise business providing aviation services in which Vietnam Airlines was the core agency.

93. Despite the low starting point, from 1995 to now, Vietnam’s air transport services has developed rapidly: means of transportation have been renewed, transport capacity has been

improved, international competitiveness has been strengthened and gradually developed; air transport has advantages in international passenger transport and is an important type of domestic transport as well as being crucial to integrating with other countries in the region and in the world. In the period 2010-2017, the number of Vietnam air passengers grew by 16.64% per year and air freight grew by 14% per year. The total volume of air passengers is 16.91% per year and air freight is 13% per year. The total volume of air passengers and air freight via airports accounted for 16.91% per year and 13% per year, respectively. The transport volume of Vietnam's airlines accounted for 17.3% per year of total air passengers and 8% per year of total air freights. The operation capacity is 12% per year[24] .

94. Vietnam Civil Aviation includes three main sectors: passenger transportation, airport exploitation, flight management and operation. Each sector is carried out by a specialized enterprise. The aviation enterprises are divided into three basic groups:

- *Flight management and operation:* the state has invested and assigned Viet Nam Air Traffic Management Corporation to manage and exploit most of infrastructure systems serving management and ensure flight operations (stations, centres, flight command – operations offices, approach control office ...).

- *Air transport:* Vietnam Civil Aviation has four air freight enterprises, including: Vietnam Airlines (Vietnam Airlines) established in 1993; Pacific Airlines Joint Stock Aviation Company was established in 1995 (now is known as Jetstar Pacific Airlines); Vietnam Air Services Company (VASCO) established in 1995 and VietJet Aviation Joint Stock Company established in 2011 (according to Civil Aviation Authority of Vietnam, 2016).

[24] See http://www.caa.gov.vn/hoat-dong-nganh/quy-hoach-phat-trien-nganh-hang-khong-20180305143015692.htm dated 12/6/2018

- *Airport operations and aviation services:* Airports corporation of Vietnam (ACV)[25] is managing and exploiting the airport infrastructure system with 22 airports nationwide (in which 21 airports are in operation), 22 airports nationwide (in which 21 airports are in operation), including 3 grade I airports, 8 grade II airports and 11 grade III airports; divided into two groups: type A and type B, of which 11 airports are type A and 11 airports are type B. There are 7 international airports and 15 domestic airports. The equipment system ensuring flight operations includes the infrastructure system inside the airports and outside the airports but serving the flight operations. The aviation infrastructure system is specific in terms of structure and type of operation, specifically: (i) complex system includes infrastructure systems, passenger terminal system, system of runways, water supply and drainage infrastructure; electricity distribution system; communication infrastructure; aviation security infrastructure, etc...; (ii) operation principle: a united subject manage associated with security and aviation safety; The aviation infrastructure without united management will lead to shortcomings in aviation activities and risk of insecurity and unsafety.

Other businesses participate in the supply of synchronous aviation services at airports.

95. The contribution of the aviation industry: Quantity and volume of air transport (both air passengers and air freight) have increased over the years.

[25] Airports corporation of Vietnam was established under Decision No. 238/QD-BGTVT dated February 8th, 2018 by the Minister of Transport on the basis of merging three corporations: the Northern Airports Corporation, the Southern Airports Corporation, the Middle Airports Corporation

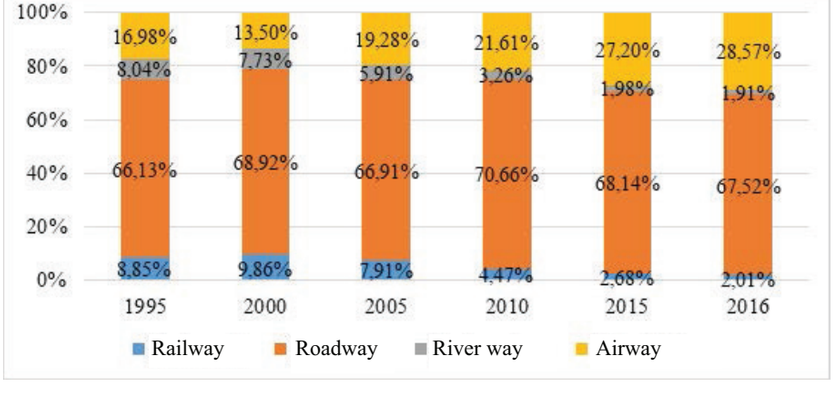
Table 12: Quantity and volume of air transport

	2005	2010	2013	2014	2015
Number of passengers carried (thous. pers.)	*6.495,0*	*14.195,4*	*16.891,0*	*24.431,4*	*31.150,0*
- Domestic	3.680,0	9.927,2	10.956,6	17.513,5	22.475,6
- Overseas	2.815,0	4.268,2	5.934,4	6.917,9	8.674,4
Volume of passengers traffic (mill. pers.km)	*11.124,2*	*21.162,0*	*26.877,7*	*34.707,5*	*42.068,4*
- Domestic	2.985,7	8.412,3	8.686,5	11.022,9	14.271,1
- Overseas	8.138,5	12.749,7	18.191,2	23.684,6	27.797,3
Volume of freight (thous. tons)	*111,0*	*190,1*	*183,7*	*202,0*	*229,6*
- Domestic	65,0	121,6	101,3	111,8	130,2
- Overseas	46,0	68,5	82,4	90,2	99,4
Volume of freight traffic (Mill.tons.km	*239,3*	*426,8*	*469,8*	*534,4*	*599,5*
- Domestic	71,4	121,2	106,4	109,4	125,1
- Overseas	167,9	305,6	363,4	425,0	474,4

Source: GSO (2017)

96. The market share of air transport compared to others types of transport has increased significantly over the years, from 16.98% in 1995 to 28.57% in 2016.

Figure 9: Structure of number of passengers traffic by types of transport



Source: GSO

4.2. Current situation of the state monopoly reform in the air transport

4.2.1. The basis for the state monopoly reform in the air transport

97. As mentioned above, the aviation industry is divided into three main sectors: air transport, infrastructure systems and airports, flight management and operation.

98. The activities of the air transport are assigned to monopolistic state-owned enterprises, such as the Vietnam Airlines Corporation monopolizes in air transport and synchronous services; the Northern Airports Corporation, the Southern Airports Corporation and the Middle Airports Corporation (then merged into Vietnam Airlines Corporation) hold the monopolistic position in managing and operating airports; the Viet Nam air traffic management corporation implements flight management and operation.

99. However, the implementation of SOE reforms, the process of international integration (participation in the WTO) and opening the market for international exchange, the state monopoly in the air transport has gradually narrowed by the involvement of many airlines in air freight.

4.2.2. Mechanisms and policies for reforming the state monopoly in the air transport

100. The legal framework has been increasingly improved, creating the legal basis for administrative reform, sector restructuring; facilitating the strong development of civil aviation industry; separating the management function of the state management agencies and the function of production and business activities of enterprises; separating the enterprises independently on managing, exploiting infrastructure of airports, flight management and air transport business.

101. In fact, since 1991, the Law on Civil Aviation of Vietnam has stipulated “Organizations and individuals of all economic sectors permitted to conduct air transport business shall be equal before law. The state encourages foreign organizations and individuals, Vietnamese overseas to cooperate and invest in the field of civil aviation in Vietnam on the basis of respecting national independence, sovereignty and law of Vietnam”. Regarding to operation of airport and aerodrome, the Law also states in Article 26 “Organizations and individuals applying for permission on operation of airport and aerodrome must meet the requirement about expertise, organization of exploitation, equipment, facility and other necessary requirements to ensure aviation safety”. Thus, the Law on Civil Aviation 1991 has created the legal basis for the non-state sector involved in air transport business and operate airport and aerodrome if the requirements of the law are met.

102. The Law on Civil Aviation 1991 remains the viewpoint of open market to encourage private sector to participate in civil aviation. The Law on Civil Aviation of Vietnam 2006 and the Law amending and supplementing a number of articles of the Law on Civil Aviation in 2014 allow private sector to cooperate and invest in the field of civil aviation (Article 6) and without restriction. Decree No. 76/2007/ND-CP dated May 9th, 2007 on air carriage business and general aviation allowed foreign ownership in Vietnam air transport business up to 49%.

103. According to Law on Investment 2014, investment and air transport business relating to aviation are not prohibited. According to the policy that Vietnamese are free to conduct activities which are not prohibited by the Vietnam laws, private sector is allowed to carry out air transport investment and business. Some fields of aviation include air transport business; airport and aerodrome business; design services; production, maintenance and testing of aircraft, aircraft engines, propellers, aircraft equipment in Vietnam; air services at airport and aerodrome; providing services for flight operations; providing

training services for aviation staff (according to Annex 4 of the Law in Investment 2014) are conditional businesses. Therefore, the private enterprises are allowed to participate meet the requirement of relevant legal provisions.

104. In 2016, the Government issued Decree No. 92/2016/ND-CP providing for conditional business sectors or activities in the civil aviation industry. This Decree creates many breakthroughs, removes many barriers to facilitate environment for organizations and individuals to participate in this industry. In particular, the Decree removes barriers on the state capital and the ratio of capital contribution of business at airports and aerodromes; abolishes the regulations on the rate of capital participation in airport enterprises; simplifies procedures for the grant of air carriage business licenses.

105. Condition for fair access to aviation infrastructure, flight management services for domestic airlines are also concerned through restructuring the airport clusters with only function of doing business, separating from the state management function according to the provisions of the Law on Civil Aviation of Vietnam. Meanwhile, the state has still managed most airport services by the Vietnam Law on Price.

4.2.3. The results of the state monopoly reform in the air transport and addressed problems

106. Due to the objective situation of the Vietnamese economy, all enterprises operating in the aviation industry was formerly state-owned enterprises, thus they gained many great advantages under the state policies, even some enterprises hold the monopoly position in some fields

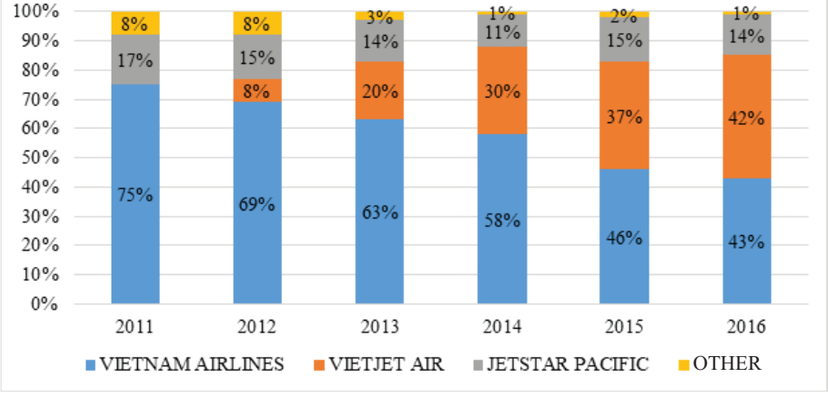
107. In recent years, along with the economic restructuring process and equitization of the state-owned enterprises, the structure has changed. The state monopoly has been remained only in the field of flight management, assigned to the Vietnam

Air Traffic Management Corporation. All other airlines of Vietnam were equitized (Vietnam Airlines Corporation officially operated as a joint stock company of which with the state has the controlling shares since 2015; the Airport Corporation of Vietnam officially operated as a joint stock company of which with the state has the controlling shares since April 2016)

108. The aviation industry has opened up for private sector involvement in aviation activities, especially in the air transport, specifically:

- *Regarding the domestic aviation market:* By 31/12/2015, the domestic aviation market had been operated by 4 domestic Vietnam airlines; had had 48 domestic flight routes. In the domestic market, the market share of domestic passenger transport accumulated by the end of 2016 respectively about 43% (Vietnam Airlines), 42% (Vietjet Air), 14% (Jetstar Pacific) and 1% (VASCO). Vietjet started to operate in 2011, after 5 years, the domestic market share of Vietjet has grown rapidly from 8% in 2012 to about 43% in 2017.

Figure 10: Domestic market share in Vietnam air transport



Source: Bao Viet Securities Joint Stock Company (BVSC)

Thus, the market share of domestic air transport has no longer the situation of an airline holds a dominant role in the market, ensuring a competitive aviation market with competitive price, protecting consumers' interests and creating conditions for airlines to organize and expand their network.

The domestic routes have gradually covered all regions of Vietnam. Many inter-regional routes are operated by two or more airlines, increasing competition in the market, providing opportunity to access air services for all customers

- *Regarding the international aviation market:* By 31/12/2015, on the international flights network, there are 52 international airlines and 3 domestic airlines, operating 95 international routes, connecting 6 international airports of Vietnam to 28 countries and territories. The international passenger market share of airlines of Vietnam increased from 39% in 2011 (only Vietnam Airlines operated) to 48.1% in 2015 (there are 3 airlines, namely Vietnam Airlines, Jetstar Pacific and Vietjet Air).

109. The system of aviation service supply at airports and aerodromes has developed strongly. A number of fields have created competition such as technical and ground commerce services in Noi Bai, Tan Son Nhat; gasoline and oil supply in Noi Bai, Da Nang, Tan Son Nhat, Cam Ranh. Vietnam Airlines Corporation no longer made the monopoly (or hold monopoly through its subsidiaries) of supplying some aviation services. The monopoly advantage of Vietnam Airline has been gradually removed.

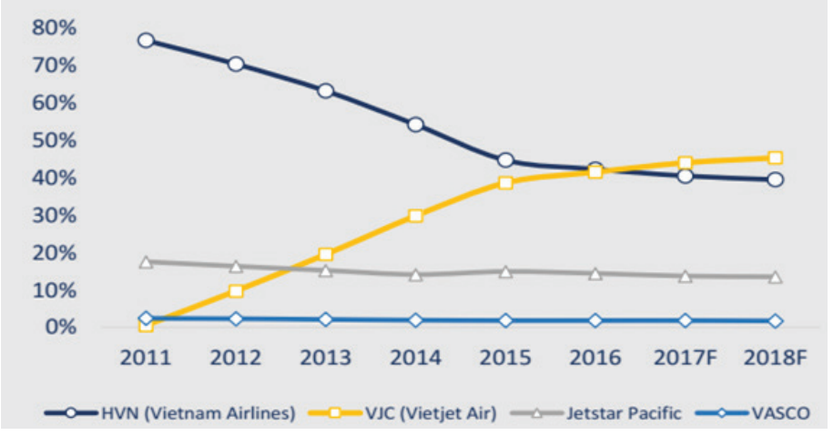
110. About freight charges and fees: The domestic passenger transport charge in Vietnam has been applied according to the market mechanism under the management of the state (according to the Law on Price, the state determines the price frame for monopoly route of domestic air transport) to ensure the effective business performance of airlines; at the same time, to create a competitive price environment, protect the interests of consumers and facilitate airlines to organize and expand their network. International passenger transport charge

is according to the International Air Transport Agreement which Vietnam has signed with other countries and territories. The Law on Civil Aviation of Vietnam basically guarantee the freedom of competition; airlines make decision according to market and their policy.

111. Regarding to aviation service prices, the Law on Prices stipulates that the state set the specific rates of prices for take-off and landing services; administration of outbound and inbound flights; assistance in ensuring air navigation; security screening. The guiding documents of the Ministry of Transport have set the price frame for a number of services specializing in aviation at Vietnamese airports and aerodromes, such as Circular No. 36/2015/TT-BGTVT dated July 24, 2015 on management of domestic air freight prices and aviation service prices; Decision No. 2345/QD-BGTVT dated August 8, 2007 issuing the charges and price frame of certain air services in domestic airports and aerodromes.

112. **However,** the domestic air transport market in Vietnam has had high level of economic concentration. Although the Law on Civil Aviation of Vietnam 2006 clearly shows the equality policy between airlines of Vietnam and between economic sectors involved in air transport business, the domestic air transport market has had high level of economic concentration (The two largest airlines in Vietnam which are Vietnam Airlines and Vietjet Air, have accounted about 99% of the domestic market share).

Figure 11: Domestic market of airlines of Vietnam



Source: Bao Viet Securities (2018)

113. The monopoly position of the Vietnam Airlines Corporation (ACV) is quite clear. ACV is the monopoly agency that manages and operates 22 civil aviation airports in Vietnam (includes 9 international airports and 13 domestic airports); according to that, ACV has performed in all fields related to aviation and invested in some other industries. At the airport, ACV has invested and managed the airport; invested in infrastructure, aviation facilities and equipment; provided aviation security services, maintenance, construction, consulting, repair, and installation of facilities and equipment; commercial services at airports. ACV is an agency providing transportation, warehousing, forwarding services, etc… for the airlines. ACV has performed many illegal activities using its monopoly position. According to the Government Inspectorate (2018)[26] , at April 2016, ACV has managed, operated and exploited 22 airports, revenue always increase. However, from 2012 to 2015, instead of organizing the bidding, ACV applied direct contracting for organizations and individuals leasing commercial space in the airport (Only in 2014

[26] *Announcement No. 27/TB-TTCP dated 5/1/2018 of the Government Inspectorate concludes the inspection of the observance of policies and law on the management and use of capital, assets, equitization, divestment and capital structure of Vietnam Airlines Corporation.*

and 2015, ACV signed 803 contracts valued at nearly 702 billion VND). In particular, 21 airports are collecting fees for the use of road to the airport terminal for cars to pick passengers up and drop passengers off. This is not in accordance with land regulations because they do not have to pay land use fees (From 1/1/2012 to 31/12/2015, 19/21 airports collected the amount of fees nearly 551 billion VND)

114. Because ACV is the unique agency to provide the services, ACV has received the benefits due to natural monopoly position. ACV operates the most important services at all airports in Vietnam. In fact, there are still many barriers and bottlenecks in the natural monopoly mechanism in aviation industry. The planning on the operation of the airports and aerodromes clearly identifies the key role of ACV in the operation of airports and aerodromes can also leads to difficult involvement of other enterprises.

4.3. Proposals for further reform of the state monopoly in the air transport

115. Ensuring that all airlines have equal access to the services provided at the airport; to access and use infrastructure and land of airports with reasonable expenses

116. Promoting private sector investment and investment in the form of PPP; implementing procurement and selection of the investor in order to create competition, transparency and reduce the monopoly position of ACV at the airports. Quality comparisons should be made between the two service providers at the airport. The situation of assigning ACV to invest in aviation infrastructure projects should be stop, because many others enterprises and investors will not have the opportunity to participate.

117. Continuing to invest, upgrade and modernize the airport infrastructure throughout the country in the direction of modernization, meets international standards; ensuring the safety, fast and efficiency, sustainable development; expanding the cooperation and investment, implementing the policy of socialization to attract private sector investment in infrastructure development of airports; promoting trade activities, developing high-quality aviation and non-aviation services; improving the quality of passenger service; meeting the growing demand of the aviation industry, contributing to promote the socio-economic development and ensuring national security and defence.

118. There should be synchronous cooperation between agencies, specifically Airport authority, airport, Customs, Security, airlines... to have the maximum efficiency of the airports in Vietnam.

119. Monitoring the prices and quality of services at airports, preventing the situation that airports abuse the market power in setting the price for services as well as accessing to airport infrastructure, including accessing to the road to pick passengers up and drop passengers off at airport terminal, etc…

PART 5. STUDY ON TELECOMMUNICATIONS

5.1. Overview

120. Telecommunications is an economic, technical and infrastructural sector that plays the role of not only a communications service but also an instrument, a platform for transferring a variety of other information and communications services. Telecommunications plays an important role in the economy, related to all sectors in the process of manufacturing, trade and investment... as well as people's well-being and the maintenance of national security[27] .

121. Over the past 10 years, Vietnam's telecommunication is one of the fastest growing telecommunications industry in the region and in the world. Telecommunications, infrastructure of telecommunications network, and Internet of Vietnam is assessed as modern and inclusive development with high speed broadband and stable operation.

122. According to a report by the Ministry of Information and Communications, by the end of 2017, mobile subscriber rate was about 116 subscribers per 100 people, mobile coverage reached 95% of whole country. Fixed broadband Internet subscriber rate was about 11.9 subscribers per 100 people; the rate of mobile broadband subscribers reached 52.8 subscribers per 100 people; the percentage of Internet users is 54.19% of the population. There are 77 telecommunication service providers and 52 Internet service providers operating in Vietnam; 32,602 licenses to use frequency were issued. By November 2017, 180 telecommunication licenses were issued to enterprises. By 2017, there are total 227,250 BTS/Node B stations in Vietnam; total international broadband for Internet connection is 5,370,096 Mbps[28] .

123. Currently, telecommunications industry of Vietnam has been considered as "potential market" for enterprises to develop due to the remarkable advances, especially the application of modern technology to meet the accessibility and use information technology services for the community.

Table 13: Number of telecommunications and internet enterprises

No.	Target	2015	2016
2.1	Number of enterprises receive license to provide band ground services	87	104
2.2	Number of enterprises providing band ground services	80	74
2.3	Number of enterprises receive license to provide fixed satellite service	2	2
2.4	Number of enterprises providing fixed satellite service	1	1
2.5	Number of enterprises receive license to provide mobile ground services	5	5
2.6	Number of enterprises providing mobile ground services	5	5
2.7	Number of enterprises receive license to provide mobile satellite service	1	3
2.8	Number of enterprises providing mobile satellite service	1	3
2.9	Number of enterprises receive license to provide maritime mobile service	1	1
2.10	Number of enterprises providing maritime mobile service	1	1
2.11	Number of enterprises receive license to provide mobile aviation service	1	2
2.12	Number of enterprises providing mobile aviation service	0	0
2.13	Number of enterprises receive license to provide Internet service	57	65
2.14	Number of enterprises providing Internet service	52	51

Source: The Ministry of Information and Communications

5.2. Current situation of the state monopoly reform in the telecommunications

[27] *Center for Economic Analysis and Data, Institute for brand and competitiveness strategy (2018), Report on telecommunications sector, http://vibiz.vn/upload/17604/20180118/BaO_CaO_NGaNH_VIeN_THoNG__1_.pdf*

[28] *See http://xahoithongtin.com.vn/vien-thong-cntt/201712/thi-truong-vien-thong-nam-2017-tiep-tuc-tang-truong-manh-me-589971/ dated 12/6/2018*

5.2.1. The basis for the state monopoly reform in the telecommunications

124. The characteristics of the telecommunications industry has led to the formation of monopoly market structures in telecommunications in many countries. Similar with many other essential network infrastructures, the natural monopoly of the telecommunications industry is due to the establishment of a national network requires huge investment. Moreover, positive external network plays an important role. Therefore, these monopoly sectors are the state monopoly, managed by the state and assigned to the state-owned enterprises for implementation.

125. However, the trend of world policy has shifted from the state monopoly into competition with strict regulation, from the SOEs to privatization through new regulatory agency or new management framework. This trend of policy change due to: (i) neo-conservatism requires the effective performance of SOEs; (ii) new ideas on universal service is not necessary to connect the idea on equal access to information infrastructure with monopoly agencies owned by the state; (iii) technological development such as convergence network and new communication technologies leads to difficulties to control the technical monopoly and maintain the in the hypothetical economic hypothesis of natural monopoly in economic theory; and (iv) political pressures and concerns about the loss of international competitiveness. The impacts of the factors mentioned above make traditional monopolies no longer sustainable. The mechanisms and policies of telecommunications have changed rapidly all over the world.

126. In Vietnam, the liberalization of the telecommunications and the implementation of the U.S. – Vietnam Bilateral Trade Agreement and the regulations of WTO on trade, services also requires that reforms to reduce monopolies in the Vietnam telecommunications industry must be implemented.

5.2.2. Mechanisms and policies for reforming the state monopoly in the telecommunications

127. Decree No.109/1997/ND-CP dated November 12, 1997 on post and telecommunications stipulates that the post and telecommunications sector is the state monopoly (only the state enterprises are allowed to conduct business). However, many policies to reform the state monopoly have been issued and implemented.

128. The telecommunications needs to be liberalized; removing the monopoly position of an enterprise.

The Ordinance on Post and Telecommunications in 2002 stipulates “To encourage and facilitate all economic sectors to participate in the post and telecommunications business in a fair, transparent and competitive environment, managed by the state with all kinds of services, ensuring the quality and reasonable charges” (Article 5, paragraph 3). In 2003, the Minister of Post and Telematics (now is the Ministry of Information and Communications) issued licenses for provision of telecommunications services, such as: international telecommunications, long distance, mobile, Internet, etc… for 6 telecommunications enterprises, including: VNPT, Viettel, SPT, EVN Telecom, Vietshipel, Hanoi Telecom. This started a new development period for telecommunications sector of Vietnam and ended the telecommunications development period following the model of the state-owned enterprise.

In order to create a competitive business environment in the telecommunications, some legal documents on the implementation of the Ordinance on Post and Telecommunications was promulgated; telecommunications licenses and management are established; mechanism to connect the telecommunication network and cooperation between telecommunications enterprises has been gradually adjusted. The telecommunications sector has become a competitive market. In other words, Vietnam has basically succeeded in transforming the telecommunications from a monopoly into a relatively opened competitive market.

However, the quality and charges of some services has been not ensured and meet the needs of society. In order to develop the telecommunication network throughout Vietnam, a huge investment is required to develop the national telecommunication network. Therefore, mobilizing and encouraging all social resources, including the private sector, to participate in infrastructure development is very necessary. In addition, if only the state enterprises are allowed to be involved in building network infrastructure, the investment efficiency will be reduced and the risk of state capital investment being wasted due to competition between state-owned enterprises. On the other hand, the expansion to other economic sectors involved in providing network infrastructure is also an inevitable requirement of the integration process, especially in the context that Vietnam officially became a member of the WTO with a commitment to ensure a fair competitive environment between economic sectors to entry into the telecommunications market.

As a result, the Law on Telecommunications stipulates that enterprises of all economic sectors are allowed to be established under Vietnamese law and to provide telecommunications services as well as to establish telecommunications network infrastructure.

129. In the first period, the preferential policies should be implemented to support new enterprises in order to accelerate the formation of competitive markets.

To facilitate the new telecommunications business in the early period of operation, the Minister of Post and Telematics applied the policy of unequal treatment between leading telecommunication enterprises (VNPT) and new telecommunication enterprises in order to regulate the telecommunication market of Vietnam. Accordingly, VNPT's business has been restricted, creating more room for new businesses to enter the market and affirm their position. The measures to restrict or give incentives to telecom enterprises are usually under administrative orders made by the Minister of Post and Telematics; thereby, creating advantages for

the new telecommunication enterprises. The unequal treatment policy is shown in many areas, such as:

Firstly, on charge policy: Law on Competition and the Ordinance on Post and Telecommunications protect competitive markets by regulating that the state will control/ regulate the state enterprises which account for 30% of market share. By this regulation, the Minister of Post and Telematics will manage and monitor closely all activities of VNPT. In the field of telecommunications charges, the Prime Minister issued Decision No. 217/2003/QD-TTg, allowing new enterprises that do not hold dominant market share to decide on their own telecommunications service charges. Meanwhile, the Ministry of Posts and Telematics sets the telecommunications service charges for most telecommunications services provided by VNPT. This regulation has created the maximum flexibility in the business of new enterprises. Price and charge tools are the fastest and most effective method to quickly increase the number of customer and market share of enterprise. New enterprise can not only decide the service charges themselves, but also choose the most profitable method of charges. For example, new mobile enterprises are allowed to apply the method "6 second +1" to identify the charge while VNPT must maintain the method "30 seconds + 30" for a relatively long time. However, after that, there are general provisions on charges such as Decree 25/2011/ND-CP, Circular 14/2012/TT-BTTTT prescribing charge rates for the terrestrial mobile communication service.

Secondly, for the connection policy: Networking is always a debatable issue when a country opens up the telecommunication market, in which conflicts of economic interests between enterprise network owners and enterprises requiring connectivity always exist. Regulating successfully network connections has led to the success of the policy on telecommunications market liberalization. At the beginning, the mode of application is through administrative measures. Operating the network connection by administrative order contributes to quickly resolve the connection requirements of the

new enterprises. However, to ensure the harmony of economic interests and the accordance with market rules, Ministry of Posts and Telematics issued Decision No. 12/2006/QD-BBCVT dated 26/04/2006 promulgating the regulation on interconnection between public telecommunications networks, Circular No. 07/2015/TT-BTTTT dated 24/03/2015 on telecommunication connection and Circular No. 48/2017 / TT-BTTTT dated 29/12/2017 on interconnection charges for voice calls from local terrestrial stationary telecommunications network to national terrestrial mobile network and interconnection charges for voice calls between two national terrestrial mobile networks. The principles of telecommunications connection, the regulations on inter-connection charges have been implemented to meet the requirements of market development and market entry of new enterprises. The establishment of new enterprises has contributed to more competitive telecommunications market and diversified telecommunications services.

The regulations on essential equipment and facilities are also considered to ensure the fair competition in accessing telecommunication service providers.

Thirdly, for the universal service policy: In principle, in order to balance the interests of telecommunications enterprises in the market, the obligation to universalize public services should be equally distributed to participating enterprises. New businesses often focus on profitable services (mobile services, ADSL services ...) in areas of high potential such as urban areas, cities, industrial zones, etc... The implementation of public service obligations is mainly carried out by agencies under VNPT.

130. Mechanisms and policies to renovate, develop and increase the efficiency and competitiveness of SOEs have been promulgated and implemented, particularly, the separation of post sector and telecommunications sector of Vietnam Posts and Telecommunications Group (VNPT) and the separation of Mobifone has helped enterprises focus and improve business performance in each sector.

5.2.3. The results of the state monopoly reform in the telecommunications and the problems

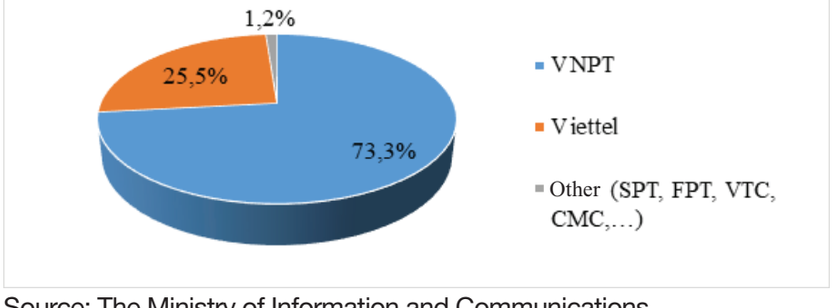
131. In the past, the post and telecommunications sector was a state monopoly (only SOEs were allowed to do business). Then, the state began to abolish the monopoly by licensing to other telecommunications enterprises, such as: Military Telecom Corporation (Viettel), Saigon Posts and Telecommunications Service Joint-Stock Corporation (SPT), etc... However, before 2000, the telecommunications market of Vietnam was basically a monopoly market. In 2004, Viettel officially launched mobile and internet services. In addition, some other telecommunication companies were appeared, such as EVN Telecom, Hanoi Telecom, Vietshiptel). The telecommunication market of Vietnam officially changed from monopoly to competitive market.

132. The “natural monopoly” in the telecommunications industry has been gradually narrowed due to many network operators have invested themselves in telecommunication infrastructure. The number of enterprises of all economic sectors involved in establishing telecommunications infrastructure and providing public telecommunications services has increasingly risen. By 2015, the total number of enterprises with licenses to establish public telecommunications infrastructure was 26 (included 15 nationwide enterprises; 6 enterprises in regional scope and 5 enterprises in provincial/city scope) and the total number of telecommunications service providers was 72 (Viet Nam Telecommunications Authority, 2016).

133. However, it can be seen from the market share (subscribers) of telecommunications service providers that the market share has mainly concentrated on three large telecommunications companies with 100% state capital (VNPT, Viettel and Mobifone), the participation of other enterprises has been limited, specifically: (i) in term of market shares (by subscriptions) of terrestrial fixed-line telephone service providers, VNPT accounted for 73,3% of market share and Viettel accounted for 25,5%; (ii) in term of market shares (by

subscriptions) of terrestrial mobile-cellular telephone service providers, Viettel accounted for 42,5%; Mobifone accounts for 30% and VNPT accounts for 21,5%; (iii) in term of market shares (by subscriptions) of terrestrial fixed (wired)-broadband service providers, VNPT accounts for 46,1% and Viettel accounts for 26,1%; (iv) in term of market shares (by subscriptions) of terrestrial mobile-cellular broadband service providers on generated voice, SMS, data traffic (3G), Viettel, VNPT and Mobifone respectively accounts for 57,7%, 23,9% and 16,1%; (v) in term of market shares (by subscriptions) of terrestrial mobile service providers on generated voice, SMS, data traffic (2G and 3G), Viettel, VNPT and Mobifone respectively accounts for 46,7%, 22,2% and 26,1%; (vi) in term of market shares (by subscriptions) of terrestrial mobile and fixed (wired) service providers, Viettel accounted for 51,5%, VNPT accounted for 28,4% and Mobifone accounted for 12,7%[29] .

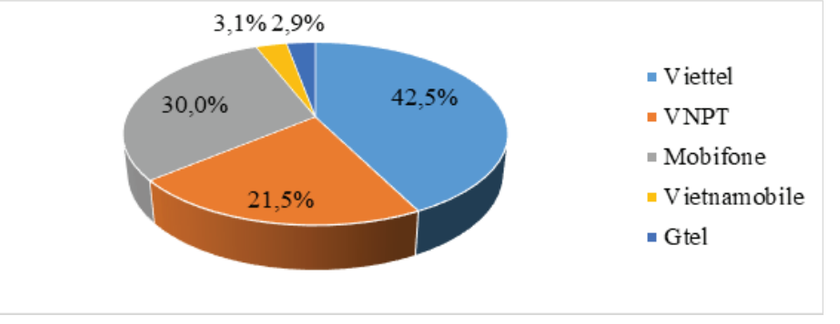
Figure 12: Market shares (by subscriptions) of terrestrial fixed – line telephone service providers



Source: The Ministry of Information and Communications

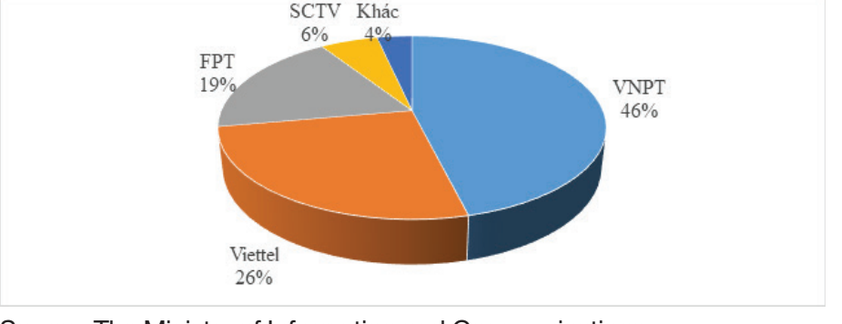
[29] *The Ministry of Information and Communications (2018), White book Vietnam Information and Communication Technology in 2017*

Figure 13: Market shares (by subscriptions) of terrestrial mobile – cellular telephone service providers



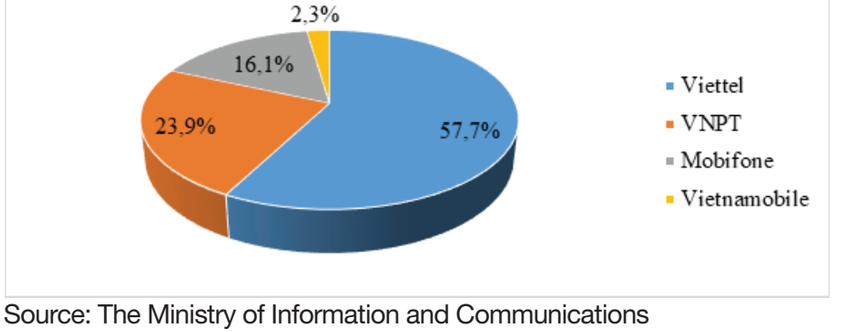
Source: The Ministry of Information and Communications

Figure 14: Market shares (by subscriptions) of terrestrial fixed (wired)-broadband service providers



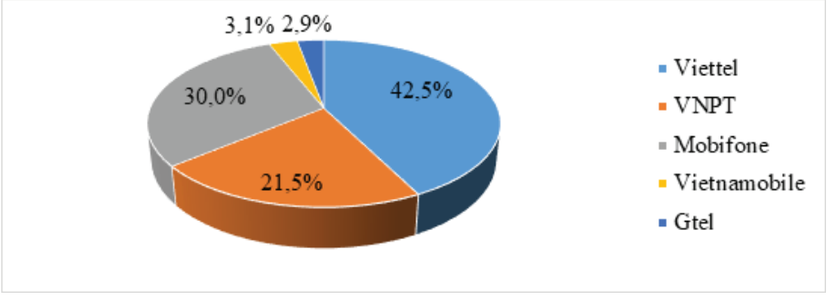
Source: The Ministry of Information and Communications

Figure 15: Market shares (by subscriptions) of terrestrial mobile – cellular broadband service providers on generated voice, SMS, data traffic (3G)



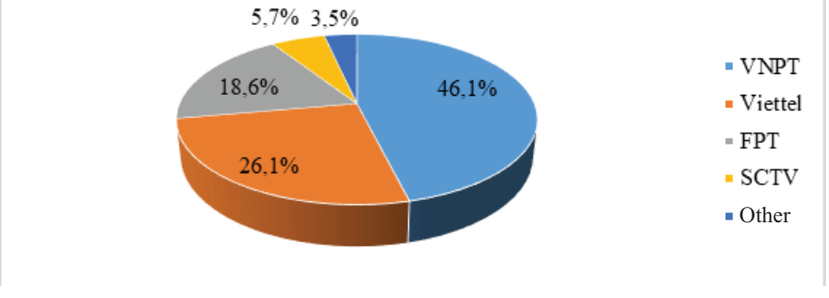
Source: The Ministry of Information and Communications

Figure 16: Market shares (by subscriptions) of terrestrial mobile service providers on generated voice, SMS, data traffic (2G and 3G)



Source: The Ministry of Information and Communications

Figure 17: Market shares (by subscriptions) of terrestrial mobile and fixed (wired) service providers



Source: The Ministry of Information and Communications

134. The market share data mentioned above shows that the telecommunications market is dominated by 100% state-owned enterprises (CR3 on all aspects of the telecommunications market is over 90%). In other words, the level of concentration in the telecommunications market has been at high level. It is difficult for private sector to enter the market when SOEs have had strong brand, experience, potentials and good infrastructure system.

5.3. Several proposals for the state monopoly reform in the coming time

135. Telecommunications is a relatively specific service market in the number of consumers, technicality as well as the market structure. In a developed society, the demand for communication has been increasingly high and became essential needs. Because the telecommunication market has a large number of consumers, the state management of the business activities of the suppler enterprises, especially the price and quality of services, is very necessary. In addition, the telecommunications market is characterized due to its complexity and rapid development of technology.

136. The development trend of technology convergence is increasingly extensive, therefore, the specific boundaries of information technology, communications, broadcasting, telecommunications and the Internet is increasingly unclear. Therefore, it is necessary to ensure consistency in the issuance of legal documents.

137. The current technological development trend is very fast, the time of existence of a technology is getting shorter and faster, and the technology is updated. The current technological development trend is very fast, a lifecycle of technology is increasingly short and the technology is replaced quickly by updated technologies. The environment of global broadband Internet connection allows the creation of a free environment between businesses, user, and global ICT application services. Therefore, the legal framework should concern to change and add to suit the development trend.

138. The state-owned enterprises are dominating the telecommunications market. It is necessary to continue to restructure the telecommunications industry, to concentrate on equitization of Mobifone and VNPT to create a fair competitive environment and benefit to society.

139. It is important to promulgate legal documents to against monopoly linkages and linkages to increase the price.

PART 6. CONCLUSIONS AND RECOMMENDATIONS

6.1. Conclusions

140. In the network industry, many activities relate to network infrastructure, such as railway infrastructure, electricity transmission and distribution networks, core infrastructure, telecommunication transmission system, airport systems, etc… These network infrastructures are natural monopoly nature, requiring close the state management and supervision to ensure equal access of related stakeholders in the market, appropriate and qualified costs, to protect the interests of the community, etc…

141. It is similar to many countries in the world, due to the socio-economic conditions of Vietnam, in the past, the state maintained monopoly in almost all network industries and assigned SOEs to perform all stages. In other words, network industries follow the traditional vertical integration the state monopoly model.

142. Since the implementation of innovation (Doi Moi), the Party and the state of Vietnam have had many policies to reform and open the market for the network industry, however, the level of market opening is differences between sectors. The quite sufficient system of promulgated mechanisms and policies is the basis for reducing the state monopoly, creating space for the participation of economic sectors to implement the stages which is not the natural monopoly.

143. There is a high gap between policy and the implementation of policy.

The state monopoly has been reduced in terms of policies, but the position of monopoly and market dominance of SOEs has been quite large restricting the participation of other economic sectors, especially, available position, resources and scale of SOEs creates many difficulties for the competition of new entrants.

144. It lacks of mechanism for monitoring and control natural monopoly. Law on Competition as well as the Government legal documents has not mentioned the requirements of natural monopoly control and supervision. The lack of effective, open and transparent monitoring mechanism leads to the stagnation and inefficiency in some network industries, especially the railway industry.

145. It lacks of open and transparent mechanism. The state set the specific rates of prices for monopoly services is regulated by the Law on Price. However, the regulations on price has not included regulations on open, transparency and they lack of participation of professional associations, independent experts.

146. Social tasks have not separated from the business tasks. The electricity sector often argue that they suffer losses due to investment in remote areas, therefore, the cost of electricity business increases. If these tasks are separated clearly, the monopoly position of the electricity sector can be reduced.

147. The role of regulators has not been demonstrated. The capacity of regulators has been limited, the status of regulators has not been independent.

6.2. Several recommendations

148. Maximum the application of modern technologies in the governance and development of the networking industry to improve the efficiency and competitiveness in order to contribute to reduce costs, increase competitiveness of industries using products, services of the network industry and the competitiveness of whole economy.

149. Accelerating the reform of the state monopoly, SOEs monopolised or dominated the market, in all sectors, especially sectors which Vietnam has committed to FTAs and other international agreements; implementing exactly committed contents and schedule. The state only holds natural monopoly

to ensure equal access for all enterprises to the special goods and services. If the enterprise is assigned the monopoly position, the state must strictly manage to ensure the creation of fair and equitable competitive business environment. The important legal task in reforming the network industry is regulating the natural monopoly with two important factors: the regulation of access mechanisms, access prices and the operation of the network infrastructure.

150. Continuing to strengthen the restructuring of the network industry, the state only holds natural monopoly; separating stages, ensuring competition in downstream and upstream. For example, in the electricity sector, it needs to ensure a competitive electricity generation market, competitive wholesale and retail markets; in the aviation and rail sectors, it is necessary to ensure fair competition in the air transport and rail transport business.

151. Changing the approach of the state monopoly in the implementation of natural monopoly stages. It is not necessary to assign all natural monopoly to SOEs, the state monopoly should be maintain in monitoring network access pricing and ensuring equal network access. Setting network access pricing contributes to more efficient use of existing infrastructure by allowing all enterprises to use existing infrastructure and pay for owners for maintenance of network infrastructure.

152. It must have an agency to regulate and monitor the effective implementation of natural monopoly with sufficient high power. This agency must be independence from the relevant stakeholders and having resources enough to manage, monitor and regulate effectively.

153. Establishing a National Access Regime for network industries, aims to improve the operational efficiency, the use and investment in infrastructure (economic efficiency); thereby promoting effective competition in the upstream and downstream markets. National Access Regime establishes the framework and principles, guiding to build regulations on access to infrastructure for each sector.

154. Inspecting, monitoring and handling monopoly linkages and linkages to increase the price. When the market concentrates on a few enterprises, the risk of abusing the market power, linking to control the market between large enterprises can absolutely appear.

155. Promulgating regulations on publicity and transparency, especially in production costs of the network industry and price structure; separating social activities with business tasks.

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