Vietnam’s Electricity Sector: Is competition the answer?

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ABSTRACT

Rapid economic growth has increased demand for electricity in Vietnam, but the generating capacity, transmission and distribution system has been unable to meet that demand. Government policy proposals are based on liberalization to induce competition into wholesale or retail markets, but these policies have been inconsistent and contradictory, heavily influenced by World Bank conditionalities linked to hundreds of million dollars in loans, and still rely on the existing under-performing management of EVN. There is also no evidence that liberalisation will deal with the three main problems: the inefficiency of EVN arising from bad management, technical problems, and corruption will remain; there will be no real competitive incentives or opportunities for new investment in generating capacity; and the affordability of electricity will be worsened by the policy of increasing prices towards full cost recovery. The experience of the UK, the country which led global privatization and liberalization, demonstrates that competition does not happen in wholesale markets; underinvestment means that the UK now risks blackouts, and cannot deliver the required growth in renewable energy; while consumer prices, even under regulation, have risen sharply so that there is a serious problem of fuel poverty. The UK government has now re-established central planning of the development of the industry.
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INTRODUCTION

Since 2001, the Vietnamese government has acknowledged the need to increase generation capacity in the electricity industry to support annual economic growth averaging 6.1% from 2009 to 2011 (World Bank data, 2013) and 7.3% between 2000 and 2009 (Business Monitor International, 2011). With unprecedentedly growing demand of 14% pa (World Nuclear Association, 2012), the electricity industry, however, commonly fails to deliver, most frequently during peak hours and dry seasons. It is reported that ‘in the whole country there were 3,000 blackout incidents due to system overloading during the first 7 months of 2008’, equivalent to ‘14 blackouts a day’ (Nguyen and Dapice, 2010). As a way to mitigate this chronic electricity shortage, the industry’s biggest player, EVN has to buy in all that is produced domestically and import from neighbour countries such as Laos and China. Yet, EVN not only cannot satisfy its primary objective of ensuring security of electricity supply but also suffers significant annual financial losses of hundreds of million dollars (in 2010, about $343 million-VND 10000 billions; in 2011, VND 8040 billions). EVN claims that too-low average pricing of electricity is the cause of this loss. In addition, audit reports revealed that EVN’s diversification policy had caused further losses. The inefficiency in infrastructure investment and inadequacy in organizational management have caused anger amongst the public, creating an extremely negative attitude towards the traditional monopoly structure of the electricity sector. Utilising a popular measure, policy makers choose to apply the ‘marketisation’ or liberalization model that is, in theory, similar to the liberalization model implemented in the UK and EU since the 1990s. The main reasons behind the policy are: one, to assist the government in infrastructure investment (this was expected to cost $13.5 billion from 2005-2020); two, to expose EVN to competitive forces through encouraging private and foreign investment forcing it to improve its financial and operational performance; and three, to provide affordable and stably-priced electricity. These 3 major objectives are thought to be the outcomes of introducing competition to the traditional monopolistic market structure. This causal link is however more believed than discussed and tested.

ACTORS IN ELECTRICITY SECTOR

GOVERNMENT AND POLICY-MAKING
Under the Electricity Law 2004 and Prime Minister’s Decision 2005, the sector is moving towards a competitive generation market (with a single buyer) from 2005 to 2014, a fully competitive wholesale market from 2014 to 2022 and finally a competitive retail market from 2022 onwards. However, the liberalisation process of Vietnam’s electricity sector has been slow and painful. The Master Plan for Sector Reform has been written and rewritten several times. In 2011, the government announced the Seventh Power Master Plan. The content of these plans is not different from the original plan in 2006 other than that they are increasingly assertive in dealing with EVN’s reluctance and inefficiency. However, there are critical contradictions between the co-existing policies.

First, the Electricity Law 2004 paves the way for a future of a liberalized electricity sector with the opening of generation market in 2009, creation of a competitive wholesale market in 2016 and of retail market in 2024. However, in 2007, Prime Minister Nguyen Tan Dung declared that for the sake of national security, Vietnam needs to hold 100% ownership in electricity transmission lines and large generation companies and at least 50% ownership in medium-size generation companies. The state-owned companies will take up major positions in the sector. EVN is destined to be the single buyer, while PetroVietnam (gas-fired) and Vinacomin (coal-fired) have monopoly control of key fuels for thermal power generation. The structure leaves the market that is open to entry too small or too unattractive for foreign and large domestic private companies. The Decision clearly closes the door to a proper liberalised sector as planned in the Electricity Law.

Second, there is a contrast between the establishment of a competitive generation market during 2009-2014 set by the Electricity Law 2004 and the signing of dollar-pegged PPAs (power purchase agreements) between EVN and foreign power producers for 20 years of electricity provision, namely Electricité de France (EDF), Sumitomo and the Tokyo Electric Power Company. Under such PPAs, EVN is forced to buy in any amount produced at the regularly exchange-rate-adjusted price. In fact, these producers do not face any competition even when the generation market is open. In Europe, it has been ruled that PPAs are incompatible with liberalised markets.

As pointed out above, these contradictions in policy-making by the government undermines regulatory stability and worries foreign and private investors. This incoherence of sector policies makes
investment even more risky in a business environment like Vietnam which is already seen as high-risk (AMB Country Report 2011).

INTERNATIONAL AGENCIES AND POLICY-PUSHING

Erdogdu (2011) examined electric power sector liberalization in 63 countries, 31 of which are developing countries, from 1982 to 2009. It shows that despite economic differences, a number of developing countries are progressing towards a complete reform at a relatively similar pace as developed countries. The key reason for this is that they are more inclined to accept WB loans in order to expand their capacity, and liberalization of electric sector is one of the conditionalities of such loans (Hall et al, 2009).

A similar process can be observed in Vietnam. So far, the World Bank has made 16 loans to the energy sector in Vietnam, of which only $606 million (23% of the total) are for infrastructure purposes while $2181 million (77% of the total) is for sector reform (Authors’ calculations based on World Bank data).

The latest loan for a reform project, Power Sector Reform DPO2 worth $200 million was approved by the Bank in 22 March 2012 and expected to close in July 2013. The project aims to assist power sector reform policy-making process by MOIT, specially targeting ‘electricity tariff reform’, ‘development of a competitive power market and subsidy reduction (The World Bank Group-Program Document, 2012).

The pressure on MOIT, the main recipient of WB loans, is therefore certainly high, so that policy-makers are highly influenced by the constant background noise from the World Bank. Even though the Bank gives tremendous help to the country on development projects, its policies and decisions are still controlled by major donors such as the US, UK and France, whose economic interests will be built into these projects. It is not certain that the new policy proposal is also in the economic interests of Vietnam.

ELECTRICITY VIETNAM (EVN)

Vietnam’s power sector is dominated by Electricity Vietnam (EVN), which is the integrated state-owned monopoly that covers all elements from generation to retail. It is experiencing a number of serious issues that involve the efficiency of management of EVN, delays in upgrading the transmission/distribution system, and the inability to meet national demand without large-scale
imports. In 2006, EVN was reorganised into a corporate group with more than 60 subsidiaries under one ultimate objective of servicing the electricity sector (‘Tập đoàn Điện lực Việt Nam có ngành, nghề kinh doanh chính là: Sản xuất, truyền tải, phân phối và kinh doanh mua bán điện năng’ – EVN 2012).

Yet, for the last 6 years, EVN has branched out investment to other sectors, including telecommunication (VND 3,000 billion in EVN Telecom), Securities (about VND 115 billion in CTCK An Binh ABS and in HASC), Banking and Finance (in ABBank, EVNFinance) and real estate (about VND 100 billion in CTCP Bat dong san SaiGonVina), etc. (Vietnam Economic Forum, 2011). State Audit reports show that the majority of such businesses make a loss or too little profits for EVN. Even though such investment takes up only 2.8% of total equity, the loss made in other sectors adds to the total loss of EVN, which is eventually paid for by the government, hence taxpayers. The distraction in board management this diversification causes has harmed the core business.

COMPETITION AND THE SECTOR’S ISSUES

THE ISSUE OF INEFFICIENCY

The bad managerial practices in EVN should be considered as one valid cause for the inefficiency of EVN and the bad image of state-owned companies in the public’s eyes. Another issue of inefficiency in the sector is the quality of transmission system. The report by ERAV (Electricity Regulation Authority of Vietnam) forecasted that in 2012, the electricity industry will be able to meet national demand. However, in major urban cities, there was still be blackouts as a result of system overloading in transmission, which was designed for only 77% of current generation capacity. BMI (2011) estimates that from 2008 to 2015, there will always be more electricity supplied than demanded according to the national construction plan. Yet, the annual technical loss averaging 10% of output decreases the actual consumption amount of electricity to below the demand level. In World Bank’s report 2011, Vietnam only ranks at 88 out of 125 countries on quality of electricity supply. Thus any efforts in increasing generation would be inadequate without properly maintaining and upgrading the transmission system.

Since the beginning 2012, the government has tried to combat the issue of operational inefficiency by changing the organizational structure of EVN, avoiding unprofitable diverse businesses and the issue of
lack of investment incentives and financial loss by increasing price. In response to public anger at the waste of taxpayers’ money on inappropriate investment, EVN’s Chairman (Chu tich Hoi dong thanh vien) Dao Van Hung was removed from his position. Repercussions from his bad managerial practices are mainly in making significant losses in business diversification and significant overdue debts with PetroVietnam and Vinacomin (reported respectively at VND 14,000 billions and 2,000 billions in 2011). However, possible cases of corruption are not yet revealed or officially judged. It is hard to believe that inefficiency issues in EVN operation comes and goes with the former president.

Any efforts in creating competition and improving efficiency will be wasted if the roots of the problems are ignored, such as bad management of the corporation, technical loss, inadequacy in infrastructure investment and alleged corruption.

**The issue of Lack of Investment**

Until now, the electricity sector has supported this liberalization plan. A competitive market for generation (with a single buyer) was planned to be in operation by 2009 but the implementation has been delayed several times. Not until July 01, 2012, CGM was finally in operation. The number of participating generators started at 29 at opening, now expected to increase by 48 to a total of 77 in 2013. However, the increasing number of generators does not necessarily signal the increasing competitiveness of the wholesale market. While there is a growth potential in the wholesale market, there is barely potential for growth in market share for private generators. The sector is dominated by SOEs [eg 12 still owned by EVN although autonomous, 5 Vonacomin, maybe few IPPs]. In addition, from 2020, with two nuclear plants in operation, the share of generating capacity by nuclear is expected to increase from 1.5% in 2020, to 6% in 2025 to 20-25% by 2050 (World Nuclear Association, 2012). And as expected from Prime Minister’s Decision 2007, these nuclear plants will certainly be operated as state-owned. The future structure of the market is almost pre-determined, hence making it unattractive for private investors.

EVN also controls the transmission lines and is the parent company of distribution and retail subsidiaries in all regions. Financially strong foreign investors have the opportunity to invest in EVN-funded distribution and transmission projects or BOT power generation projects, but that cannot be described as the outcome of introducing competition in the wholesale market. Yet, while the government wishes to
encourage foreign investment with BOT and PPP, procedures are often complicated and information is not well available.

![Diagram showing ownership structure of Vietnam's electricity sector](image)


**THE ISSUE OF AFFORDABILITY**

As in 1/6/2011, Prime Minister Nguyen Tan Dung agreed to adjust the electricity price on the basis of actual costs, i.e. the sum of input costs, resulting in gradual price increases from this year on until average price truly reflects actual costs. This adjustment is controlled by the supervisory bodies, i.e. MOIT and MOF and has to be passed by the Prime Minister himself. However, these are temporary measures and cannot bring in as much change as the government wishes. The authoritarian and financial pressure on MOIT and MOF by the government and the public has been mounting up. The authorities believe the process of market opening needs to speed up and the government needs to make amendments to the current Electricity Law 2004. Suggestions include a creation of a retail market for electricity (Proposal Draft 2 on 28/09/2011), a reduction in the government’s involvement in setting electricity price and a shift of setting-price power from government authorities to strategic energy companies.

Following the Prime minister’s Decision in Sep 2011, within one year, the price has increased in a number of steps by 15.28% in total. The buy-in price in 2012 is expected to increase by 4.6% but the
retail price will increase by roughly 15.6% partly to make up for last years’ loss by EVN. EVN estimates that the current price is around 62% less than the market price, for some inputs like gas, less than the production costs and is at an unsustainable low level compared to other countries. Yet, this is only the minimum price increase under current economic situations. There are three other factors that will continue to push up the price of electricity in the short and medium term.

Firstly, there is the annual increase in basic salaries (the base that salaries for the state workforce is calculated on) that is always one-year behind in the race with increasing inflation (The basic salary was increased by 26% in early 2012 to make up for inflation in 2011 of 25%; that in 2011 was 13.6% for inflation of 11.75% in 2010) (calculations based on General Statistics Office of Vietnam, 2012). Input costs will increase and so will electricity price.

Secondly, the international price of oil, coal and gas inputs to electricity generation is likely to continue to rise, and the devaluation of Dong will make these price rises even greater.

Thirdly, the operation of new nuclear power plants in 2020, in contrast to what many people believe, will not reduce the price, because the huge debt incurred in construction (estimated at $11 billion) will have to be paid off through the electricity price (World Nuclear Association, 2012).

Therefore, the retail price, if decided by the market mechanism, will sharply increase in the future - and it will constantly fluctuate under pressure of constant changes in input prices and the exchange rate. The clearest consequence of such increases is continuously higher inflation in living costs, given that electricity is in the CPI basket, which will hit poorest families the hardest will also increase costs for all companies, and so have a negative effect on GDP.

Since 2011, the constant increase in electricity price under Prime Minister’s Decision proves that the government wants the sector to be able to self-financing. This realisation of government withdrawing subsidies is also displayed in the proposal, suggesting that price should be at the market mechanism level, hence hopefully causing no deeper loss for EVN and other state-owned generation/distribution companies. Studies in China have shown that energy subsidies are equivalent to 1.43% of GDP, and that withdrawing these subsidies by increasing prices would result in massive economic and social consequences: a cut in living standards of 2%, a loss of 1.6% of GDP, and a fall of 1.4% in employment
(Lin and Jiang, 2011). When government budget is tightened and subsidies are re-allocated, negative economic and social impacts are likely to incur, hence offsetting the marginal financial gain by the withdrawal of subsidies. Simply, raising prices does not constitute an improvement in economic position. More importantly, electricity should be made affordable to all.

**THE UK AND THE LIBERALISATION LEADER’S LESSONS**

The reforms to the British electricity system undertaken in 1990 have become a model for reforms throughout the world. While in Britain, the reforms are commonly referred to as ‘privatisation, they were far more far-reaching than a simple change of ownership. They included:

- A change of ownership from national public ownership to private ownership;
- Creation of a wholesale electricity market to replace the previous monopoly;
- Creation of retail competition so final consumers could choose their electricity supplier rather than being required to buy from a monopoly supplier;
- Introduction of an independent regulatory body to set prices for remaining monopolies and monitor the operation of markets.

While these reforms were seen as a package, the change of ownership was theoretically entirely separable from the liberalisation elements – introduction of competition and opening up to entry by new companies. Elsewhere, there has been liberalisation with no change of ownership, for example in the Nordic countries and in some developing countries, reforms have entailed little more than change of ownership.

The new structure of the industry in Britain was of four sets of companies, some operating in competitive markets and some, where the operations were a natural monopoly, operating as regulated monopolies with prices set by the regulator.

The two competitive sectors were generation and retail supply to final consumers. To facilitate competition in generation, the existing monopoly company was split into three competing companies and barriers to entry for new companies were reduced. For retail competition, the existing 12 regional monopolies were privatised intact but allowed to compete outside their previous territories and new entrants were encouraged.

The two monopoly activities were transmission – the operation of the national high voltage grid, previously part of the national generation company which was placed in a single new company. The regional low voltage distribution systems, previously part of the regional monopoly distribution companies remained in these distribution companies but with an accounting separation to prevent the monopoly distribution business cross subsidising the competitive retail business.
• The new model was seen as very attractive because it appeared to replace monopoly by markets and it reduced the scope for what was often seen as arbitrary and destructive political interference by politicians. However, it is important to note that at the heart of the reforms was the creation of an efficient wholesale electricity market. Without this, none of the other elements of the reform (except privatisation) make any sense. An efficient wholesale electricity market driven by a half-hourly spot market would:

• Be the arena where the price of wholesale electricity prices would be set either directly or indirectly via contracts indexed to that price;

• Would minimise barriers to entry for new entrants by providing an arena where they could sell their output at the same price as their competitors (level playing field);

• Most important, would provide price signals that stimulate new investment when it was needed. This would mean no generation capacity planning would be needed because the market would always ensure there was just enough capacity available.

This ideal has never been achieved anywhere in the world and certainly not in the UK. The ‘liquidity’ of the wholesale market has always been minimal, about 1 per cent of electricity supplies are bought and sold on the visible spot market. This has meant prices are far too unreliable to be used as an index for contracts and new entrants have never had the confidence to build plants that would survive by trading in the spot market. It has clearly not provided investment signals.

Whether the ideal wholesale market is feasible is a moot point but in Britain, the decision to allow the generation companies to integrate with the retail companies has meant there was never any prospect of an efficient wholesale market. Integrated companies sell their generation to their retail businesses as an internal transaction at invisible prices. An integrated company has a strong incentive not to use the wholesale market as this would make it more reliable and would encourage new competitors in generation or retail in to compete against them.

The fact that supplies have been reliable in the 20 years since the reforms is due to two factors: first, the industry has become an oligopoly of 6 dominant integrated companies who can plan their generation to meet the needs of their consumers without reference to the market; second, these companies have strong incentive to ensure supplies are reliable, albeit at an inflated price, as a supply failure would be catastrophic and would invite a major reform of the industry that would remove their privileged position.

For 20 years, the government and the regulator refused to acknowledge these problems and concentrated their efforts on marginal changes to make the markets work a little better.

However, in 2010, the situation changed. Whether wholesale markets are feasible where cost is the only criterion, ie, where generation companies choose their generation investment solely on the basis of cost, is not clear. However, the challenge of climate change means that there is a requirement to replace fossil fuel generation with low carbon sources, renewables or nuclear power, which are clearly far more expensive than fossil fuel generation.
In 2010, the Energy Minister, Ed Miliband said: ‘We are going to need a more interventionist energy policy to deliver the low-carbon investment we need.’ We need: ‘capacity payments to guarantee returns to developers of low-carbon sources of power [nuclear & renewables]’. The CEO of the regulatory body, Alistair Buchanan, warned the current system is not working, and said there was ‘reasonable doubt’ over the government’s current plans to ensure Britain has enough energy to fulfil demand past 2015. Ofgem said staying with the current market model was not an option.

There followed a process instigated by the government of ‘Electricity Market Reform’ culminating in the publication of a new law in November 2012, the Energy Bill. At time of writing, the Bill is still being discussed in Parliament. The main element of the Bill is the introduction of a new government owned body, yet to be created and named, which would negotiate long-term contracts of up to 40-50 years, with companies seeking to build new low carbon capacity at prices independent of the market price. It is planned that low carbon resources would progressively replace fossil fuel generation so the electricity system would increasingly be taken over by plant operating with the protection of long-term contracts. The wholesale market would therefore inevitably wither away and would remain as no more than a mechanism to balance the electricity system on an hour by hour basis buying and selling a small amount of power to ensure supply and demand balance exactly.

CONCLUSION

In Vietnam’s electricity sector, there exist various issues that deter the required long-term growth of generating capacity including inefficiency of monopolist EVN, lack of infrastructure investment, and inadequate pricing. The root causes of the sector’s issues need to be addressed thoroughly, otherwise, true competition will not happen as foreign and private investors do not have incentive to invest without government support and ever-growing market price will disturb national electricity consumption. As the leader in electricity liberalization, the UK has done it all and has well seen that the market cannot be considered as competitive while it comes with high costs. The UK government has now embarked on reversing the liberalization process, bringing the wholesale market back to central planning. While Competition is commonly believed to be the product of liberalization model and the driving force of an efficient market structure, competition alone is not the answer and not the only answer to the sector’s issues.

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