

Electricity Pricing in the Residential Sector of Vietnam

1. Component of Electricity Bill

In Vietnam, an electricity bill for residential consumers consists of two components: base tariff and the tax (10% VAT).

1.1. Base tariff

In principle, the base tariff reflects the costs of power-plant constructions, distribution lines, management systems, electricity imports, and other expenses from generating electricity to delivering to the end users. The calculation of the retail electricity tariff in Vietnam is based on generation costs (75 - 80% of retail price), transmission costs (7%), distribution costs (10%) and management and service costs. Consequently, the retail price mainly depends on the fuel costs, exchange rates, and generated capacity.

As of January 2012, the base tariff depends on three key organizations, which are General Directorate Energy (GDE)¹, Electricity Regulatory Authority of Vietnam (ERAV), and Electricity of Vietnam (EVN). GDE is responsible for overall energy planning and policy, but not for day-to-day management. ERAV is the country's regulatory agency, responsible for establishing and supervising the power market, power planning, tariff regulation, and licensing. EVN is a state-owned and monopolistic utility that is responsible for the whole chain of electricity production, transportation, and distribution.

Vietnam's retail prices vary between weekday, time of the day, regions, sectors, voltage levels and consumptions. Electricity tariffs of the residential sector are strongly depending on the income and the location of the household. The different tariffs of each sector are shown in table below:

Table 1: The different tariffs of each sector

Tariff	Urban areas		Rural areas	
	Price per unit (VND/kWh)	Price per unit (USD/kWh) ²	Price per unit (VND/kWh)	Price per unit (USD/kWh)
Level 1: 0 - 50 kWh	1,484	6.7	1,230	5.6
Level 2: 51 - 100 kWh	1,533	7.0	1,279	5.8
Level 3: 101 - 200 kWh	1,786	8.1	1,394	6.3
Level 4: 201 - 300 kWh	2,242	10.2	1,720	7.8
Level 5: 301 - 400 kWh	2,503	11.4	1,945	8.8
Level 6: above 401 kWh	2,587	11.8	2,028	9.2
Using prepaid meters	2,141	9.7	1,322	6.0

Source: Decision No. 2256/QĐ-BCT dated 12 March 2015 signed by MOIT.

According to the Electricity tariffs the rate charges consumers at higher price when the more electricity is consumed. For example, the payment for a household that uses 140 kWh will depend on location as calculated in below:

¹ Under Ministry of Industry and Trade (MOIT)

² Using exchange rate of 22,000 VND per 1 USD

- In urban areas:
Base tariff = $(50 \times 1.484) + (50 \times 1.533) + (40 \times 1.786) = 244,519 \text{ VND} \sim 11.11 \text{ USD}$
- In rural areas:
Base tariff = $(50 \times 1.230) + (50 \times 1.279) + (40 \times 1.394) = 199,331 \text{ VND} \sim 9.06 \text{ USD}$

From 2011, the Government decides to use two mitigation measures to deal with increasing electricity prices, as regulated by Decision 268/2011/QĐ-TTg (of 23/02/2011): (i) incremental block tariffs for all households, including a lifeline tariff for the poor; and (ii) cash transfers.

(i) Incremental block tariff and lifeline tariff (households)

Electricity tariffs for households are determined by the monthly usage of consumers under an Incremental Block Tariffs (IBT) scheme that relates to the average retail price as calculated according to Government decisions. From 2011 to 1 June 2014, a fixed lifeline tariff for ‘low-income’ households was set at 993 VND/kWh (0.046 USD/kWh). To be eligible for the lifeline tariff, households needed to register and to consume no more than 50 kWh per month for three consecutive months. The group of low-consuming households included households classified as poor in particular, as well as other households. Higher-consuming households tend to be richer, so the cross subsidies are generally from high income groups to low-income groups (through EVN). As per Decision 268/QĐ-TTg households on the official poverty list³ were also able to benefit from cash transfers.

(ii) Cash transfers to households

With Decision 268/QĐ-TTg of 23/02/2011 Viet Nam introduced the lifeline tariff, described above, and households officially classified as poor could also receive a monthly cash transfer of 30,000 VND in order to compensate for electricity price increases (see figure 1). This policy does not meet the actual demand, as electricity prices increasing but the amount of subsidies for the poor and low income households is fixed. For this reason, the Government of Vietnam has issued the Decision 28/2014/QĐ-TTg on 7 April 2014 (effective from 1 June 2014), the cash transfer will be reformed.

Instead of fixed cash transfer of 30,000 VND/month in Decision 268/QĐ-TTg (2011), according to Decision 28/2014/QĐ-TTg the cash transfer to poor households will be equivalent to 30 kWh consumption per month at the price of the first block in the IBT scheme, no matter how much they consume. In addition, a so-called ‘social policy group’⁴ of households with consumption not exceeding 50 kWh per month are provided with assistance equivalent to 30 kWh/month. The amount depends on the average retail price set according to a formula by the Government. As of 1 June 2014, eligible households will be supported with 44,520 VND per month⁵. Cash transfers will be made to the poor and social policy groups on a quarterly basis as previously.

³ Poor households are those with monthly income per capita below 400,000 VND in rural areas and 500,000 VND in urban areas (Decision 09/2011/QĐ-TTg).

⁴ MOLISA, in coordination with MOF, MOIT and other concerned agencies, is responsible for developing criteria of ‘social policy group’ and submitting to Prime Minister for approval, within 3 months after issuing Decision 28/2014/QĐ-TTg.

⁵ MOIT Decision 2256/QĐ-BCT of 12 March 2014 puts the average retail price at 1,622 VND/kWh (this was VND 1,508/kWh in 2014). Based on Decision 28/2014/QĐ-TTg the retail price for the band 0-50 kWh/month is therefore $1,622 \text{ VND /kWh} \times 91\% = 1,484 \text{ VND/kWh}$. By using the formula derived from

1.2. Value Added Tax (VAT)

VAT is a type of indirect tax collected from a person who purchases goods and services. Vietnam set the VAT at 10% since 01/01/1999, the VAT component of the electricity bill will likely to be constant for the next few years.

2. Examples of How to Calculate Electricity Bill

According to the household analysis by EVN, the majority of rural Vietnamese in the lowest income group consumes less than 50 kWh per month. In the urban areas, most households in the lowest income consume less than 100kWh [GGFPV]. The tables below show the examples of how to break down the electricity expense into different components.

Table 2: The examples of how to break down the electricity expense into different components

Low income households		Urban areas			Rural areas		
		Price per unit (VND/kWh)	kWh	Amount	Price per unit (VND/kWh)	kWh	Amount
1	Base tariff Level 1: 0 - 50 kWh	1,484	45	66,780	1,230	45	55,350
2	VAT (10%)			6,678			5,535
	Total electricity bill (VND)			73,458			60,885
	Total electricity bill (USD)			3.34			2.77
	Subsidies (VND)	1,484	-30	-44,520	1,230	-30	-36,900
	Real payment (VND)			28,938			23,985
	Real payment (USD)			1.32			1.09

Decision 28/2014/QĐ-TTg, the monthly payments for low-income households are: 30 kWh * 1,492 VND /kWh, or about 44,520 VND/household/month.

3. Electric utility in Vietnam

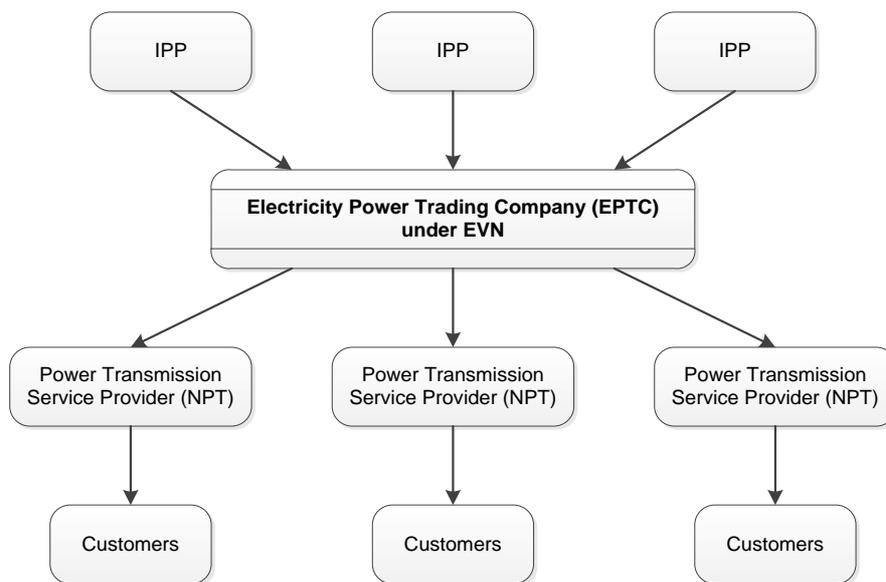


Figure 1: Vietnam’s electric utility

The figure above explains Vietnam’s electric utility, which engages in the generation, transmission, and distribution of Vietnam Competitive Generation Market (VCGM). The detail designed for VCGM was approved by Ministry of Industry and Trade by the Decision No. 8266/QĐ-BCT dated 10 August, 2015.

The Roles of market participants:

- Entities competing in generation: these are power plants with installed capacity equal to or higher than 30 MW and connected to the national power grid either directly to the transmission network or via a distribution network, but excluding wind power farms and geothermal power plants. These entities are further classified into:
 - Indirect trading Generators, including:
 - + Strategic Multi-Purpose Hydro Power Plants (SMHPs)
 - + Fast Start Reserve (FSRs)
 - + Cold Start Reserve (CSRs)
 - + Reliability Must Run (RMRs)
 - Direct trading Generators
- Single Buyer (SB) – this is the Electricity Power Trading Company (EPTC) under EVN and will be subsequently referred to interchangeably as either SB or EPTC.
- System and Market Operator (SMO) – this is the National Load Dispatch Center (NLDC)
- Service Providers including the:
 - Metering Data Management Service Provider (MDMSP) – this is the Information Technology Center under the EVN Telecom (EVN.IT)
 - Power Transmission Service Provider – this is the National Power Transmission Corporation (NPT).

Market operational Principles:

In the VCGM, all electricity generated by power plants is sold to EPTC (the SB), and their generating units are scheduled based on their variable cost-based bids. Payment for the transacted electricity is made at the contract price and the spot market price of each trading interval with the use of contract for difference. During the first year of the market, the proportion of electricity procured at the contract price will be set at 90% - 95% of the total electricity generated by the plant; the remaining will be procured at the spot market price. This proportion will be gradually reduced in the following years to enhance the competitiveness in generation, but shall not be less than 60%.

All Generators that own power plants with capacities above 30 MW are required to participate in the VCGM. The hydropower plants with the capacity under 30 MW are allowed to participate in the VCGM when they satisfy the conditions of the infrastructure. Besides, the BOT power plants and multipurpose hydropower plants participate by directly or indirectly making price offers. The import power sources, solar PV, wind power, geothermal plants and hydropower plants with capacity under 30 MW do not participate in the VCGM.

The SMO, as a service provider, operates the market, and is responsible for scheduling and dispatching the energy and ancillary services. The required participation in the VCGM differs among the generators.

The National Power Transmission Corporation (EVN-NPT) operates in the model of One member Limited Liability Company under Vietnam Electricity (EVN). It was established in accordance with Decision No. 1339/VPCP-ĐMDN dated March 3rd 2008 by the Office of Government on establishment of EVN-NPT and Decision No. 223/QĐ-EVN dated April 11th 2008 by EVN’s Board of Management. The EVN-NPT was on the basis of re-organizing 7 units including 04 power transmission companies: Power Transmission Company No. 1, 2, 3, 4 and 03 projects management boards: Northern, Central and Southern Power Projects Management Boards [EVN-NPT]

Energy consumers in Vietnam usually receive and pay the electricity bill on the post-paid basis; in other words, they pay after receiving the bills. The consumers can pay the bills at various locations, for example, at home, at the power transmission service provider companies, commercial banks, automatic transaction machine (ATM), Internet or mobile. For example the customers in Hanoi will pay the electricity bill to the Power Transmission Company No. 1, this company responsible for 10 provinces in the North of Vietnam.

References

[EP] Electricity price (2015) available on EVN website <http://www.evn.com.vn/EVN-khach-hang/EVN-khach-hang/Gia-dien/Index.aspx> (retrieved on 3 September 2015)

[APSV] Analysis of the Power System of Vietnam written by: Matthias Sebastian Leidl (2014), available at www.tum-create.edu.sg (retrieved on 3 September 2015)

[GGFPV] Green Growth and Fossil Fuel Fiscal Policies in Viet Nam, UNDP (2014), available at www.undp.org (retrieved on 3 September 2015)

[PSRV] A Case Study on Power Sector Restructuring in Vietnam, Pacific Energy Summit (2012) written by Nguyen Anh Tuan (retrieved on 3 September 2015)

[EVN-NPT] The introduction of National Power Transmission Corporation available on NPT website <http://www.npt.com.vn/eng/Pages/npt-nptdepartl-subsidiary-nptsite-2.html> (retrieved on 3 September 2015)