



2019 DPPA Offering for Corporates in Vietnam

Vietnam Low Emissions Energy Program

April 17, 2019

Presentation Outline

01

**V-LEEP
Introduction**

02

**DPPA Program
Overview**

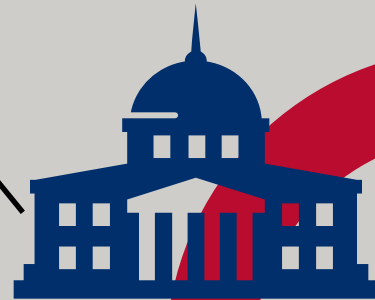
03

**Financial and
Operational
Arrangements**

Key Stakeholders

V-LEEP works with stakeholders in both the public and private sector to achieve targets.

Government of Vietnam,
Ministry of Industry and
Trade, Electricity and
Renewable Energy
Authority, Electricity
Regulatory Authority of
Vietnam (ERAV),
Provincial Departments
and Authorities



Domestic and
international
finance
institutions and
investors



Renewable energy and energy
efficiency project developers,
stakeholders throughout local
and regional RE/industry supply
chains

Program Components

Activities are implemented across three components.



Presentation Outline

01

V-LEEP Introduction

02

**DPP Program
Overview**

03

**Financial and
Operational
Arrangements**

Developing a DPPA mechanism in Vietnam

OBJECTIVE

The DPPA program will enable electricity consumers to directly access renewable power, providing them with more choice of electricity supply and a pathway for meeting their renewable energy goals

GOALS

1. Public Consultation in May 2019
2. Supporting regulations and policy to enhance greater VN energy market.
3. Launch of a DPPA program pilot in CY 2019

ACTIVITIES AND MILESTONES

The current program design is the result of a two-year collaborative process between USAID/V-LEEP and MOIT/ERAV.



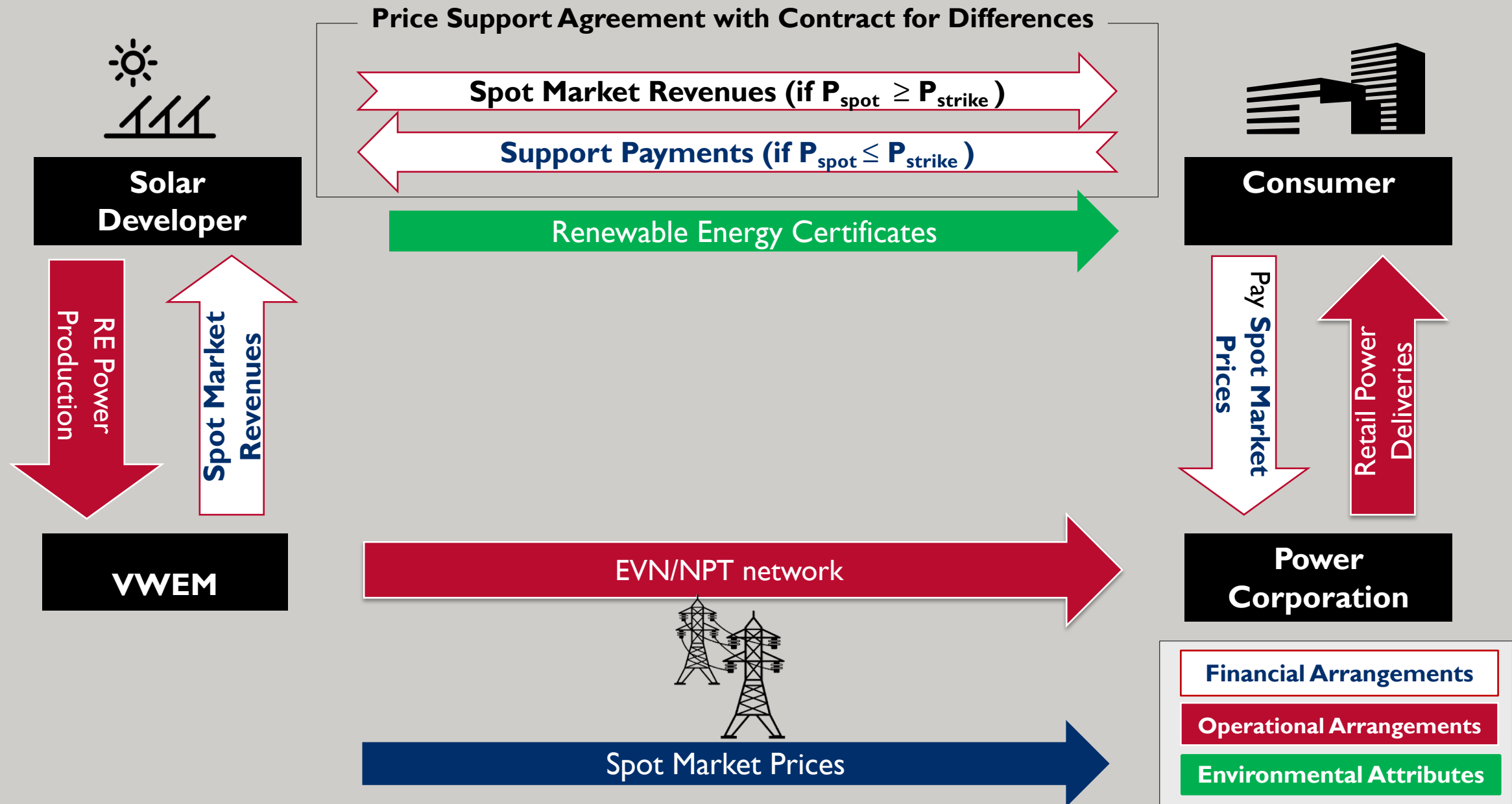
Presentation Outline

01 V-LEEP Introduction

02 DPP Program
Overview

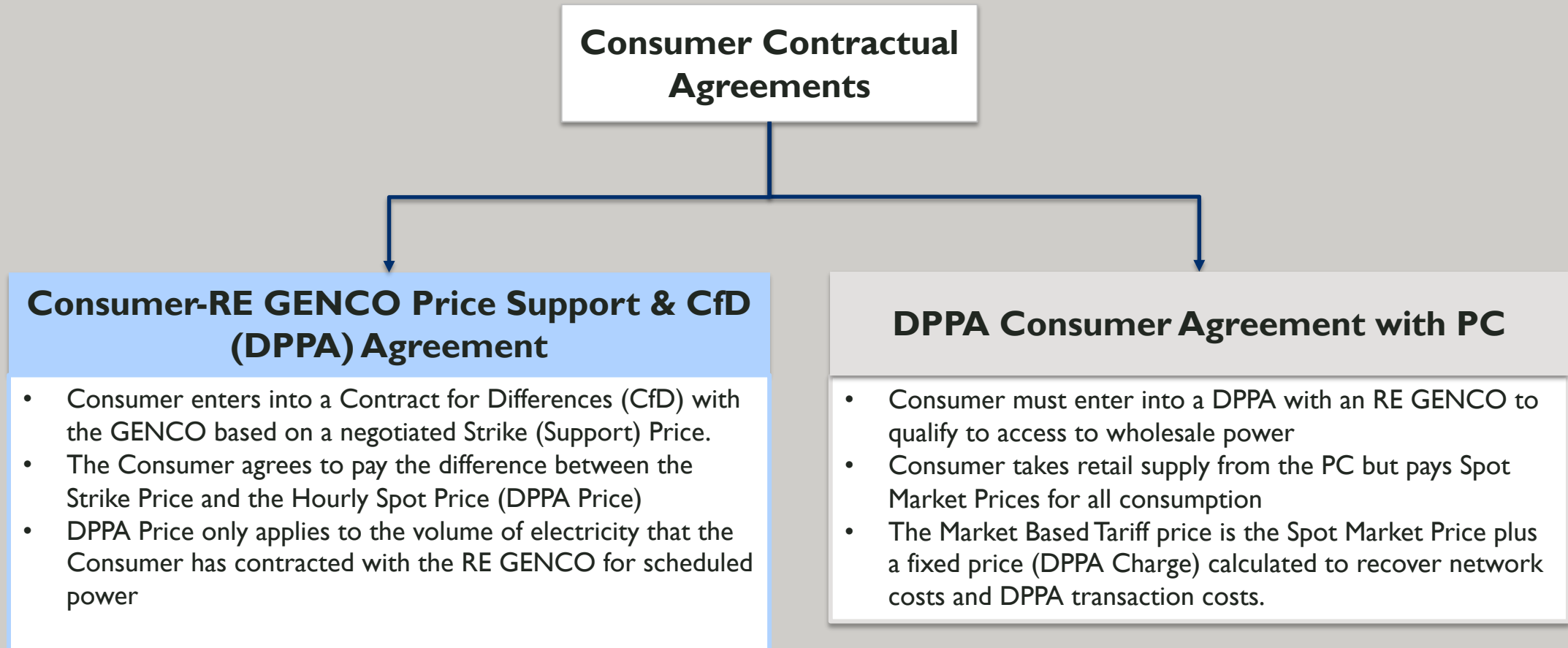
03 Financial and
Operational
Arrangements

DPPA Arrangements | Financial & Operational



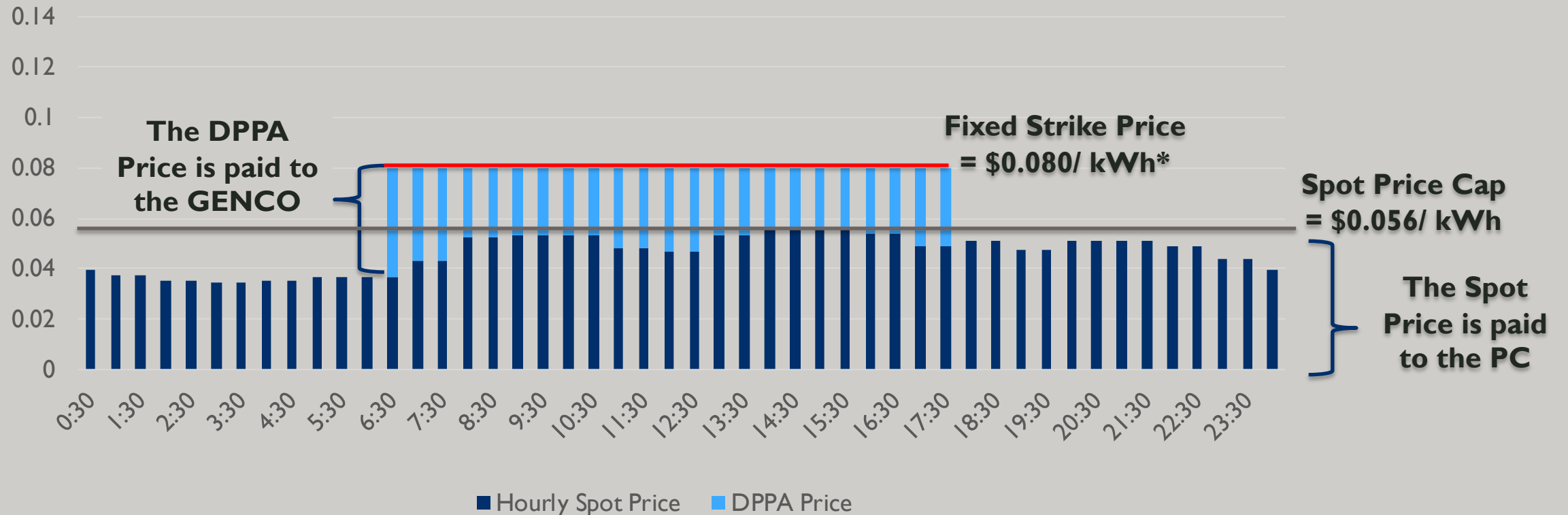
DPPA Contractual Arrangement for Consumers

The Consumer enters two contractual agreements for Power. The Consumer pays a agreed-upon DPPA Price to the GENCO *and* the Consumer will pay the MBT to the PC.



DPPA Price Calculation (USD/kWh)

The **DPPA Price** (amount paid to the GENCO) is the difference between the **Fixed Strike Price** and the Hourly Spot Price.

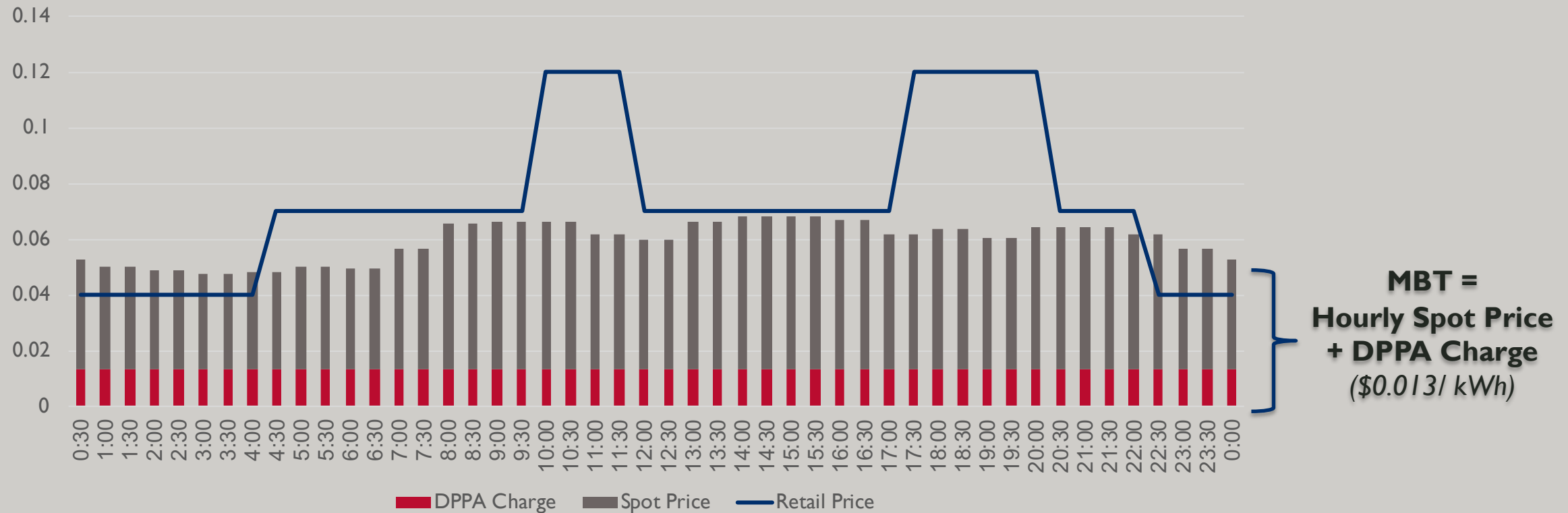


The DPPA Price provides the RE GENCO with sufficient revenues to finance and operate the RE Project

*Estimated strike price based on average FIT for ground-mounted solar power projects for FY 2020

Market Based Tariff vs. Retail Tariff* (USD/kWh)

Through the DPPA, the Consumer obtains access to a **Market-Based Tariff (MBT)**, which is generally lower than the Retail Tariff and does not fluctuate based on time-of-use periods.

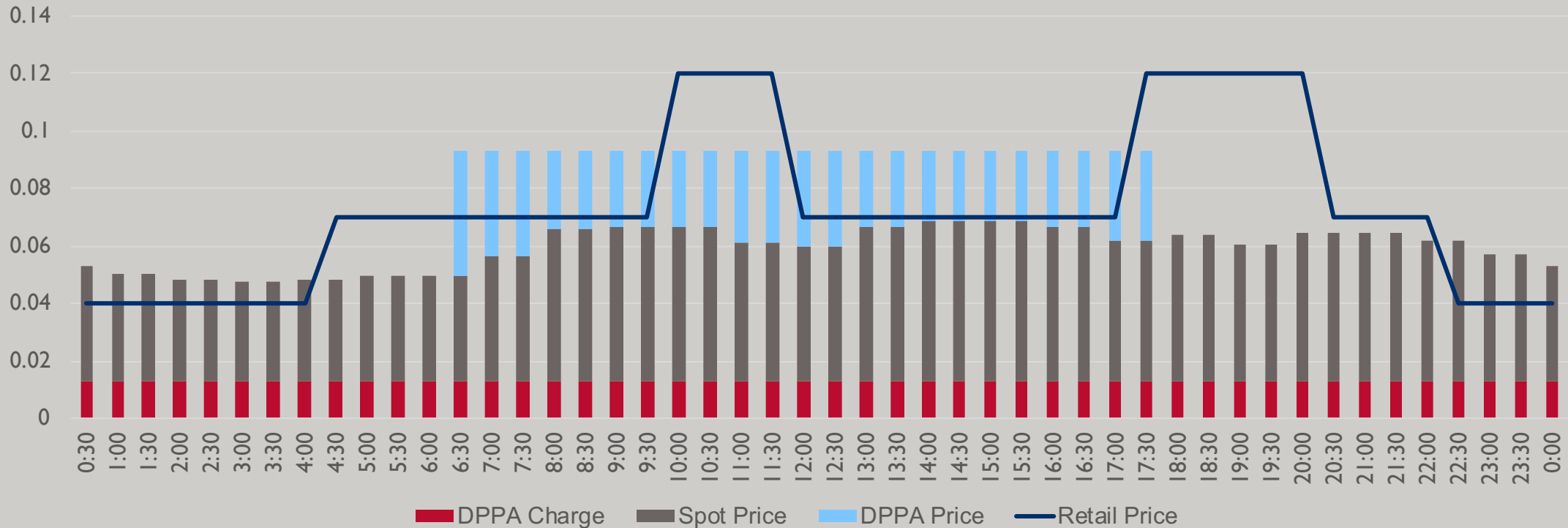


The DPPA Charge allows EVN to recover transmission, distribution, and system operations costs.

*Note: Average Retail Price is for customers between 22 to 110 kV; Data Source: EVN.com, accessed March 25, 2019

2018 Vietnam Electricity Price Comparison (USD/kWh)

The Consumer may expect lower-than average prices for typical consumption (MBT pricing), and higher prices for RE power contracted and paid for under the DPPA Price

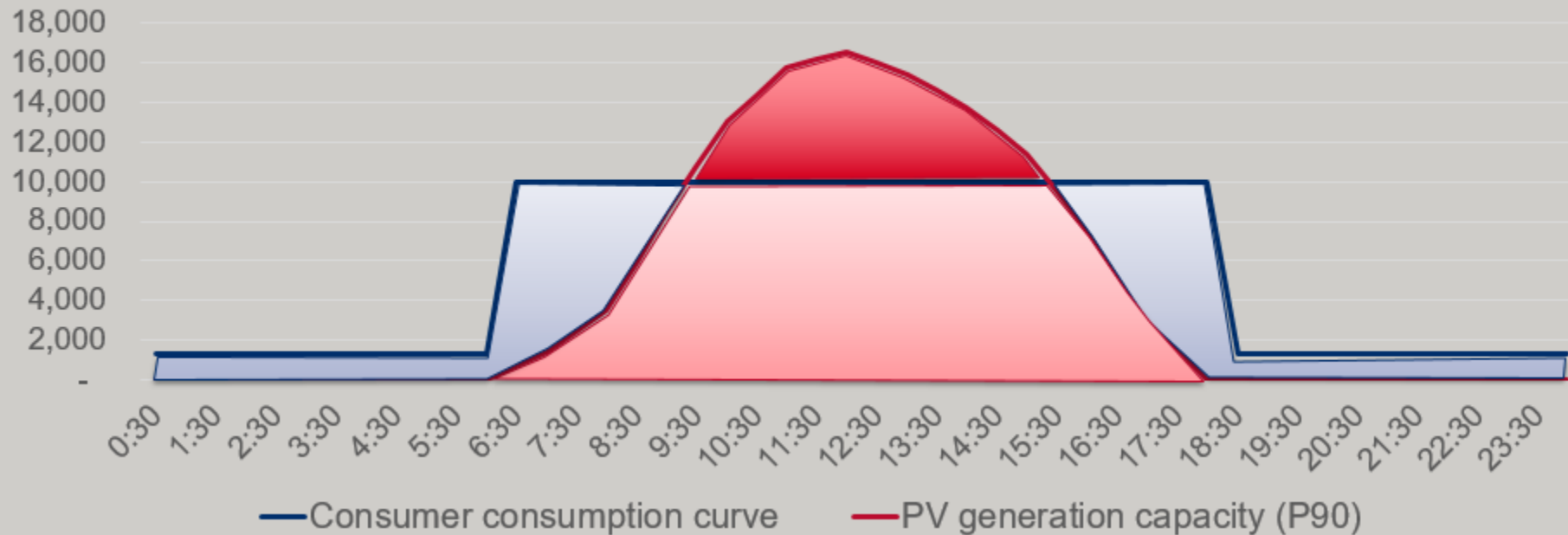







The all-in price for electricity under the DPPA program is comparable with normal Retail prices.

*Note: Average Retail Price is for customers between 22 to 110 kV; Data Source: EVN.com, accessed March 25, 2019

Matching RE Supply and Demand

Energy demand and supply in one 24-hour period



-  $Q_{P,U}$ = Unscheduled RE production, for which the RE GENCO only receives spot market payments
-  $Q_{P,S}$ = Scheduled RE production, for which the Consumer provides support payments
-  $Q_{C,U}$ = Unscheduled consumption
-  $Q_{P,T}$ = Total RE production ($Q_{P,S} + Q_{P,U}$)
-  $Q_{C,T}$ = Total Consumer load ($Q_{P,S} + Q_{C,U}$)

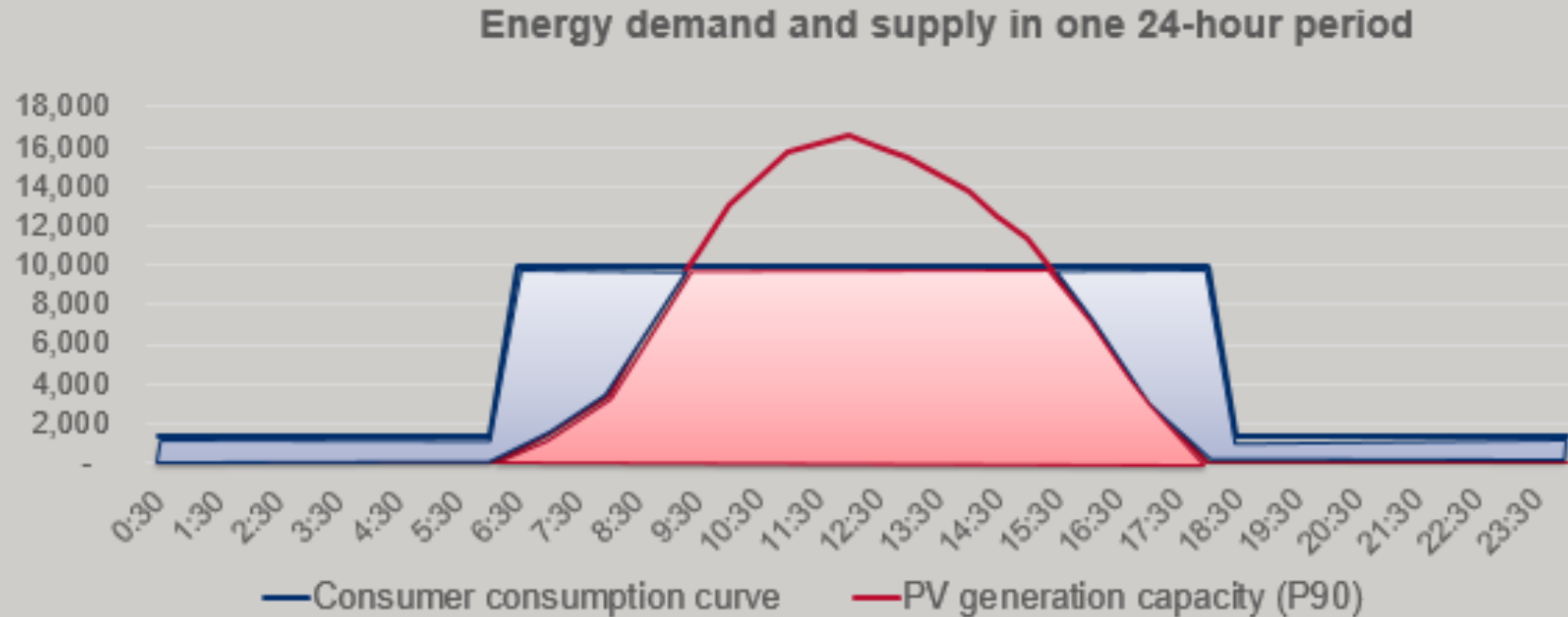
DPPA Price Sensitivity Analysis for Buyers


| Scenario: | Retail Business-as-Usual (cents/kWh) ¹ | DPPA Price Support (cents/kWh for Q _{P,S} only) | DPPA Market Based Tariff (cents/kWh for Q _{C,T}) | Total RE Outlay ² (cents/kWh for Q _{P,S}) | DPPA Average Cost of Consumption (cents/kWh for Q _{C,T}) ⁴ | Average DPPA Program “Premium” (cents/kWh for Q _{C,T}) |
|---------------------------------|---|--|--|--|---|--|
| Baseline Prices | 8.0 | 3.0 | 6.3 ³ | 9.3 | 8.3 | 0.3 |
| Low Spot Price ⁵ | 8.0 | 7.2 | 2.1 | 9.3 | 6.9 | -1.1 |
| High Spot Price ⁶ | 8.0 | 2.3 | 7.0 | 9.3 | 8.5 | 0.5 |
| Low RE Production ⁷ | 8.0 | 2.5 | 6.8 | 9.3 | 8.5 | 0.5 |
| High RE Production ⁷ | 8.0 | 3.5 | 5.8 | 9.3 | 8.1 | 0.1 |


Assumptions/ Notes:

1. Based on average retail tariff as of March 2019
2. Total RE Outlay = Fixed strike price + DPPA charge (\$0.080 + \$0.013 = \$0.093)
3. DPPA Market Based Tariff (MBT) = average spot market price plus DPPA charge (\$0.05 + \$0.013 = \$0.063)
4. Assumes scheduled RE production (Q_{P,S}) accounts for 66.7% of total consumption; remaining 33.3% of consumption is purchased from spot market at the DPPA MBT
5. Low bound assumes spot = average system capacity charge of 0.8 cents/ kWh plus the DPPA charge (\$0.008 + \$0.013 = \$0.021)
6. Based on 2019 spot market price cap of \$0.057/kWh
7. Illustrative, demonstrates that increased RE production (esp. hydro) will lead to decrease in spot market / MBT prices

Buyer Price Breakdown



 Q_{PS} (67% of consumption) = Buyer pays a fixed RE Outlay of 9.3 cents/kWh

 $Q_{C,U}$ (33% of consumption) = Buyer pays the variable DPPA Market Based Tariff

The Buyer pays the DPPA weighted average cost of all consumption

Thank you!

USAID Vietnam Low Emission Energy Program

