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.

1. COMPONENT 1
   Low Emission Strategy Development for Energy Sector

2. COMPONENT 2
   Enhance Capacity and Improve Enabling Environment for Renewable Energy Development

3. COMPONENT 3
   Increase Energy Efficiency Adoption and Compliance
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.

- 2017
  - Reviewed several DPPA program alternatives for suitability in Vietnam

- 2018
  - ERAV selected a DPPA mechanism to be reviewed for market acceptability and regulatory compliance

- 2019
  - Gauge market acceptability through extensive consultations with Corporates and Developers
  - Pilot DPPA Program Launch
Presentation Outline

01 V-LEEP Introduction

02 DPP Program Overview

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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.

- Consumer Contractual Agreements

  **Consumer-RE GENCO Price Support & CfD (DPPA) Agreement**
  
  - Consumer enters into a Contract for Differences (CfD) with the GENCO based on a negotiated Strike (Support) Price.
  - The Consumer agrees to pay the difference between the Strike Price and the Hourly Spot Price (DPPA Price).
  - DPPA Price only applies to the volume of electricity that the Consumer has contracted with the RE GENCO for scheduled power.

  **DPPA Consumer Agreement with PC**
  
  - Consumer must enter into a DPPA with an RE GENCO to qualify to access to wholesale power.
  - Consumer takes retail supply from the PC but pays Spot Market Prices for all consumption.
  - The Market Based Tariff price is the Spot Market Price plus a fixed price (DPPA Charge) calculated to recover network costs and DPPA transaction costs.
The **DPPA Price** (amount paid to the GENCO) is the difference between the **Fixed Strike Price** and the Hourly Spot Price.

*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.

\[
MBT = \text{Hourly Spot Price} + \text{DPPA Charge} \quad (\$0.013/\text{kWh})
\]

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

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

Q_P, U = Unscheduled RE production, for which the RE GENC0 only receives spot market payments
Q_P, S = Scheduled RE production, for which the Consumer provides support payments
Q_C,U = Unscheduled consumption
Q_RT = 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

<table>
<thead>
<tr>
<th>Scenario:</th>
<th>Retail Business-as-Usual (cents/kWh)$^1$</th>
<th>DPPA Price Support (cents/kWh for $Q_{PS}$ only)</th>
<th>DPPA Market Based Tariff (cents/kWh for $Q_{CT}$)</th>
<th>Total RE Outlay$^2$ (cents/kWh for $Q_{PS}$)</th>
<th>DPPA Average Cost of Consumption (cents/kWh for $Q_{CT}$)$^4$</th>
<th>Average DPPA Program “Premium” (cents/kWh for $Q_{CT}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline Prices</td>
<td>8.0</td>
<td>3.0</td>
<td>6.3$^3$</td>
<td>9.3</td>
<td>8.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Low Spot Price$^5$</td>
<td>8.0</td>
<td>7.2</td>
<td>2.1</td>
<td>9.3</td>
<td>6.9</td>
<td>-1.1</td>
</tr>
<tr>
<td>High Spot Price$^6$</td>
<td>8.0</td>
<td>2.3</td>
<td>7.0</td>
<td>9.3</td>
<td>8.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Low RE Production$^7$</td>
<td>8.0</td>
<td>2.5</td>
<td>6.8</td>
<td>9.3</td>
<td>8.5</td>
<td>0.5</td>
</tr>
<tr>
<td>High RE Production$^7$</td>
<td>8.0</td>
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<td>8.1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

### 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_{PS}$) 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