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Renewable energy sector

Revisions to the Electricity Law will pave the way for DPPAs to boost the viability of renewable energy projects in Vietnam

To date, no direct power purchase agreement (DPPA) has been executed following the introduction of the new DPPA regulation in July 2024. Beginning on 21 October 2024, the National Assembly will examine proposed changes to the Electricity Law that will incorporate the legal framework for DPPAs. Soon after the new law is enacted, we expect the Ministry of Industry and Trade (MoIT) and relevant authorities will finalize more policies and guidance to operationalize DPPAs.

New provisions in the Electricity Law will specify the rights and responsibilities of parties to a DPPA and empower MoIT to issue new policies to guide DPPA implementation. Market participants are waiting for regulatory guidance on multiple technicalities, such as the level of transmission and power system service fees to be charged, the process to track and monitor activity among DPPA parties, etc. The proposed changes to the Electricity Law are needed to accommodate the technical aspects of DPPAs and safeguard the enforceability of the rights and obligations of parties to a DPPA. We expect MoIT to issue detailed policies and procedures to guide power-generating companies and off-takers after the new law is passed. The successful execution of DPPAs will be crucial to boost the viability of wind and solar power projects in Vietnam and jumpstart the commercial operations of transitional renewable energy (RE) projects launched over the past 5 years.

Over the past few years, multiple issues related to the energy infrastructure and legal process led to RE projects incurring operating losses and hindered the launch of new projects. The rapid development of RE projects in the South Central Coast and Central Highlands region in recent years has led to a surge in power generation beyond the capacity that the current transmission grid can support. As such, many RE plants operate at sub-optimal capacity, leading to operating losses. In addition, transitional RE projects continue to struggle to obtain the necessary legal and regulatory approvals required to commence commercial operations. For those that managed to begin operations, they can only sell their outputs to EVN at a temporary price that is significantly below the initial Feed-in Tariff (FIT) price that drove the project development. These difficulties have not only hurt the viability of RE projects, but also curtailed the inflow of new investment over the past two years.

Dismal operating cash flow is the primary cause of RE bond defaults and low debt recoveries. A total of VND19 trillion of bonds issued by 16 issuers defaulted over the past two years. 90% of the defaults are linked to transitional RE projects that either failed to begin commercial operations or are selling their outputs at prices significantly below initial project estimates. The investors of these defaulted bonds had allowed issuers to defer their bond principal repayment by up to 2 years, in hope that operating conditions and project cash flows will improve over time. Among the RE bond issuers, we note that large energy groups with more diversified operations like Trung Nam Group, BCG Energy, and BB Sunrise Power, had been able to resolve debt issues faster than single-project bond issuers.

Over the long run, DPPAs will support Vietnam's growing clean energy needs and advancement towards its PDP8 targets, and revive investments and bond issuances in the power sector. Corporations will be able to purchase electricity directly from RE generators and accelerate on their energy transition goals. Improving operating conditions for the RE sector – aided by the smooth implementation of DPPAs - will drive new investment inflows and bond issuances that are required to fund the country's Eight National Power Development Planning (PDP8) capital expenditure.

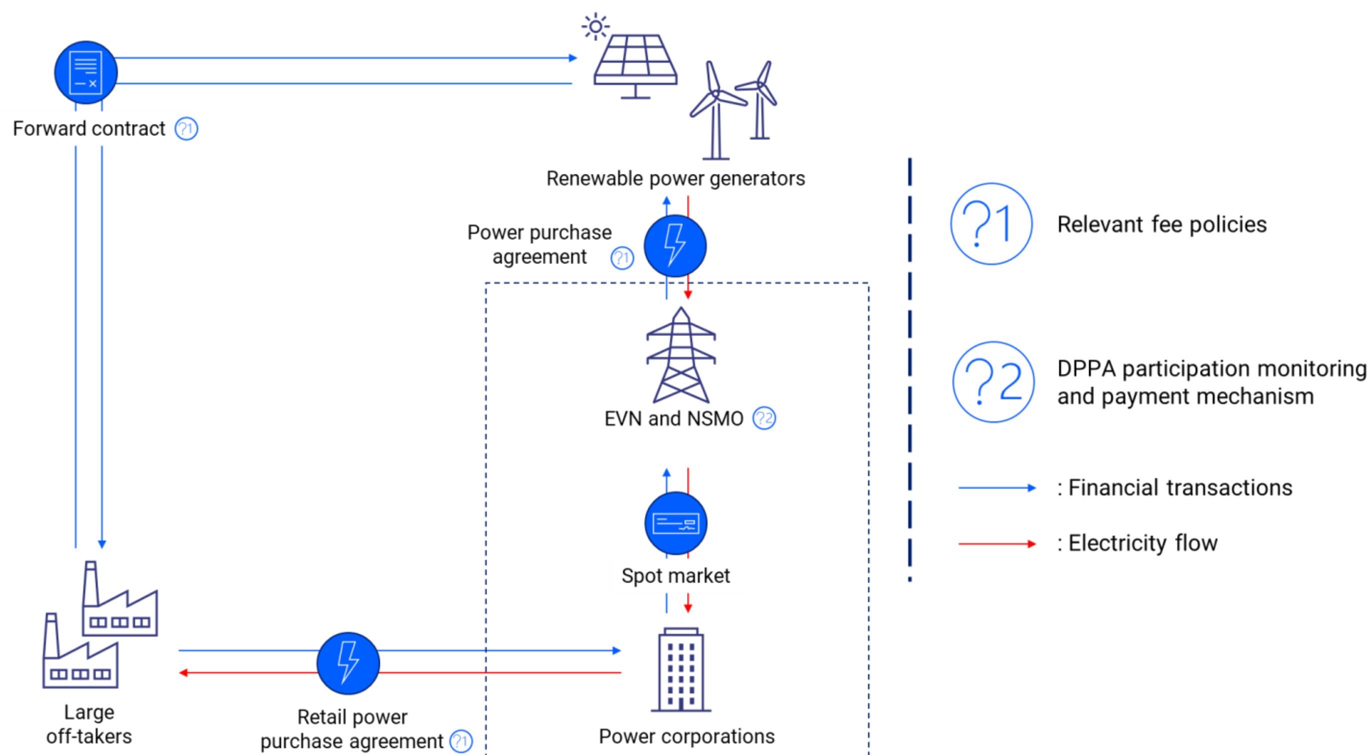
New provisions in the Electricity Law will specify the rights and responsibilities of parties to a DPPA and empower MoIT to issue new policies to guide DPPA implementation

On July 3, 2024, the Government issued Decree No. 80/2024/ND-CP, approving DPPA mechanism via private lines or the national grid. We view the DPPA via the national grid as the preferred option for RE companies as they can utilize existing infrastructure without incurring any capital expenditure and time to build new transmission lines.

However, to date, no direct power purchase agreement (DPPA) has been executed following the introduction of the new DPPA regulation. Market participants are waiting for regulatory guidance on multiple technicalities, such as the level of transmission and power system service fees to be charged, the process to track and monitor activity among DPPA parties, etc.

As illustrated in Exhibit 1, DPPA via the national grid involves not only forward contracts between renewable energy generators and large off-takers but also requires the participation of intermediaries including Vietnam Power Group (EVN) and National Power System and Market Operator Company (NSMO).

Exhibit 1: Overview of DPPA using the national grid



Source: Vietnam Investors Service

Note: - Renewable power generators: wind or solar power licensed generators with a minimum capacity of 10MW.
- Large off-takers: consumers in manufacturing sector with consumption volume of at least 200MWh/month.

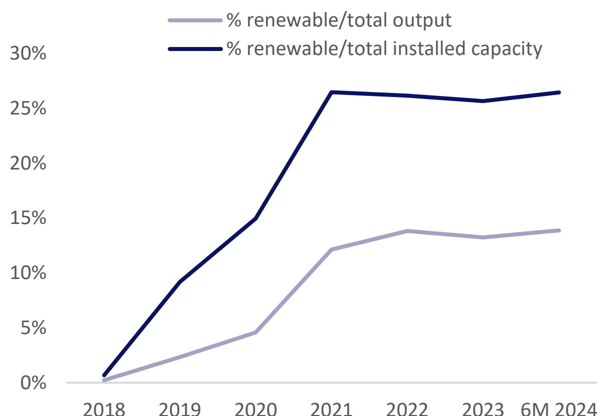
Beginning on 21 October 2024, the National Assembly will examine proposed changes to the Electricity Law that will incorporate the legal framework for DPPAs. The proposed changes to the Electricity Law are needed to accommodate the technical aspects of DPPAs and safeguard the enforceability of the rights and obligations of parties to a DPPA. We expect MoIT to issue detailed policies and procedures to guide power generating companies and off-takers after the new law is passed.

The successful execution of DPPAs will be crucial to boost the viability of solar and wind power projects in Vietnam and jumpstart the commercial operations of transitional projects launched over the past 5 years. DPPAs will allow renewable power generators to set output sale prices directly with their respective private off-takers and begin commercial operations. Prior to DPPAs, RE projects such as transitional projects relied solely on EVN to be their off-taker and determine the sale price.

Over the past few years, multiple issues related to the energy infrastructure and legal process led to renewable energy (RE) projects incurring operating losses and hindered the launch of new projects

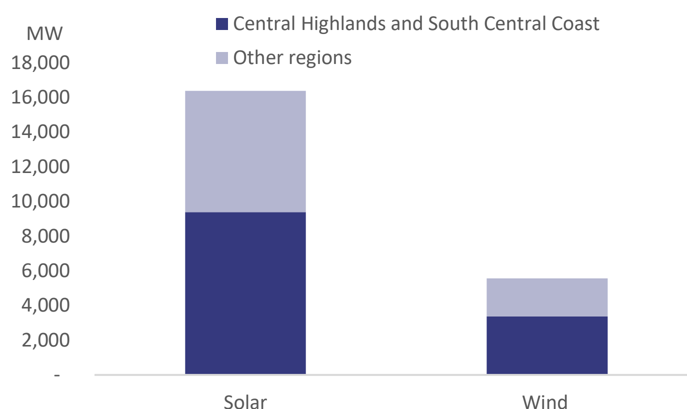
The RE sector benefited from a surge in investment over the 2018-2021 period. Today, RE accounts for 26% of Vietnam's total power generation capacity, but it contributes less than 15% of Vietnam's electricity output (Exhibit 2).The rapid development of RE projects in the South Central Coast and Central Highlands region (Exhibit 3) in recent years has led to a surge in power generation beyond the capacity that the current regional transmission grid can support.

Exhibit 2: RE accounts for 26% total installed capacity but only contributes 13-14% of electricity output



Source: EVN, Vietnam Investors Service

Exhibit 3: Most of RE capacity is concentrated in the Central regions of Vietnam



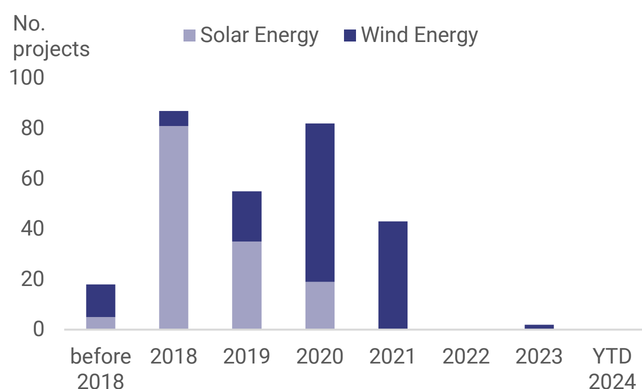
Source: EVN, Vietnam Investors Service

According to past statistics released by NSMO and National Power Transmission Corporation, the national grid infrastructure that supports RE electricity transmission cannot support the high volume of electricity output produced by the RE plants operating at full capacity. RE plants faced cut-offs from the grid once the grid lines and transformer stations reached their full loading levels. Hence, RE plants typically generate outputs and operate at below-optimal capacity, leading to operating losses.

In addition, transitional RE projects continue to struggle to obtain the necessary legal and regulatory approvals required to commence commercial operations. These difficulties have not only hurt the viability of RE projects, but also curtailed the inflow of new investment over the past two years (Exhibit 4).

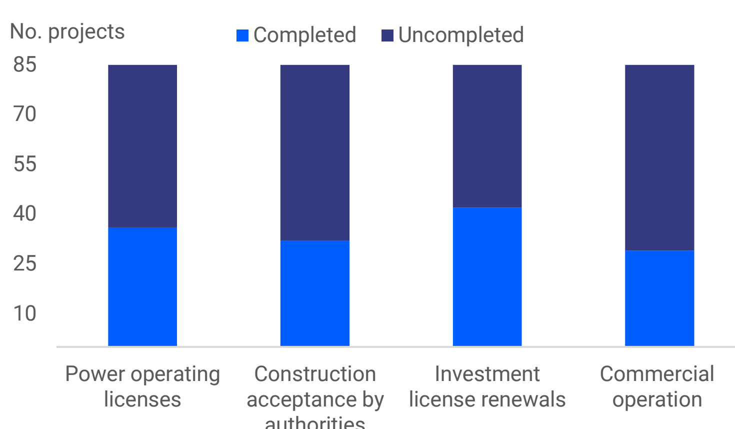
The transitional RE projects include 85 solar and wind power projects that completed construction in 2021-2022 but failed to meet the requirements and deadlines to be eligible for the government's FIT rates.[1] To begin operations, these projects had to rely on EVN to establish a new sales price scheme specifically for transitional RE projects that EVN and MoIT finalized in January 2023.[2] Many projects also needed to secure the necessary approvals related to power operating licenses, construction acceptance by authorities, and investment license renewals before operating (Exhibit 5).

Exhibit 4: New renewable energy project launch plummeted since 2022



Source: Vietnam Investors Service

Exhibit 5: As of September 2024, many transitional RE projects have not completed all procedures required to commence operations



Source: EVN, Vietnam Investors Service

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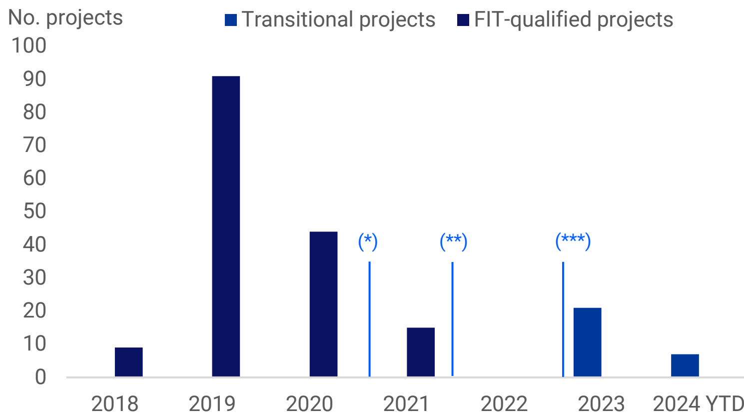
[1] *Refer to Prime Minister's Decision No. 13/2020/QD-TTg dated April 6, 2020, on the development of solar power projects and Decision No. 37/2011/QD-TTg dated June 29, 2011, on the development of wind power projects, as amended by Decision No. 39/2018/QD-TTg dated September 10, 2018*
[2] *Refer to Decision 21/QD-BCT dated January 7, 2023 on celling price scheme for transitional projects*

From January 2023 – October 2024, only 29 of the 85 projects were able to overcome all remaining roadblocks and begin commercial operations (Exhibit 6). For these 29 projects, they can sell their outputs to EVN at a temporary price under the new sales price scheme, which is set at 50% of the scheme's ceiling price. The temporary price will apply until EVN determines the final sales price for their outputs. We note that this temporary price is significantly below the initial FIT price that drove the project development, and hence, will hurt the viability of the transitional RE projects (Exhibit 7).

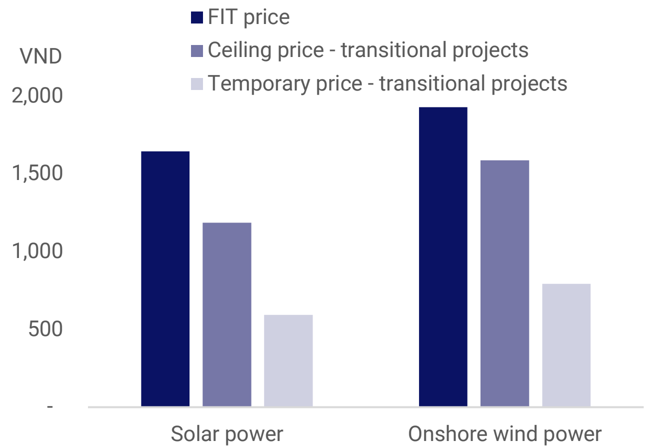
Exhibit 6: The progress of commencing commercial operation is slowing down in 2024 for transitional RE projects



Source: Other public sources, Vietnam Investors Service

Note: (*): December 2020 - Commercial operation deadline for solar power FIT price eligibility
(**): October 2021 - Commercial operation deadline for onshore wind power FIT price eligibility
(***): January 2023 - Issuance of ceiling price scheme for transitional projects to commence commercial operation

Exhibit 7: New temporary prices are significantly lower than initial FIT prices

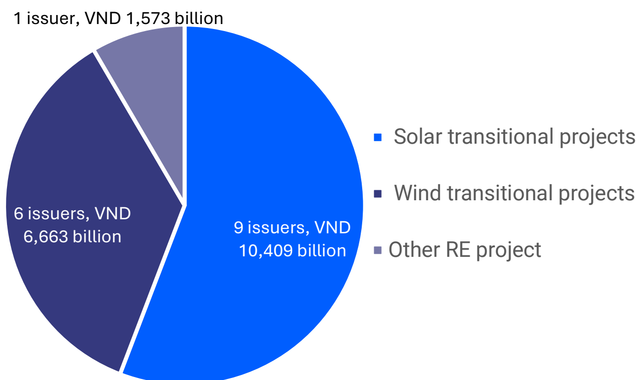


Source: EVN, Vietnam Investors Service

Dismal operating cash flow is the primary cause of RE bond defaults and low debt recoveries

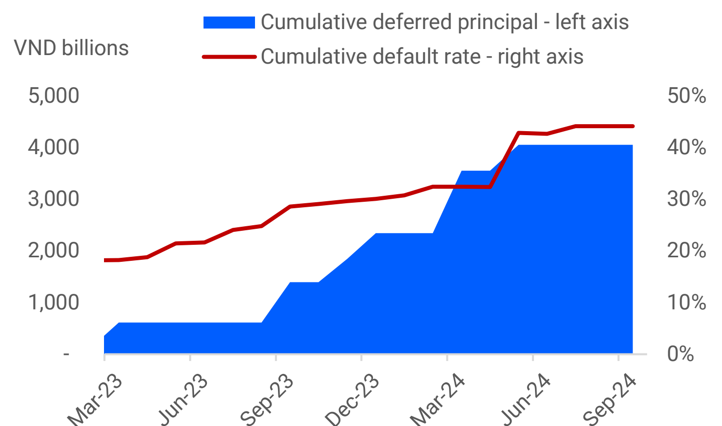
A total of VND19 trillion of bonds issued by 16 RE issuers defaulted over the past two years; and the majority of the defaults are linked to transitional RE projects (Exhibit 8) that either failed to begin commercial operations or are selling their outputs at prices vastly below initial project estimates. The investors of these defaulted bonds had allowed issuers to defer their bond principal repayment by up to 2 years, in hope that operating conditions and project cash flows will improve over time (Exhibit 9).

Exhibit 8: 90% of defaulted bonds in the renewable power sector relate to transitional RE projects



Source: HNX, Vietnam Investors Service

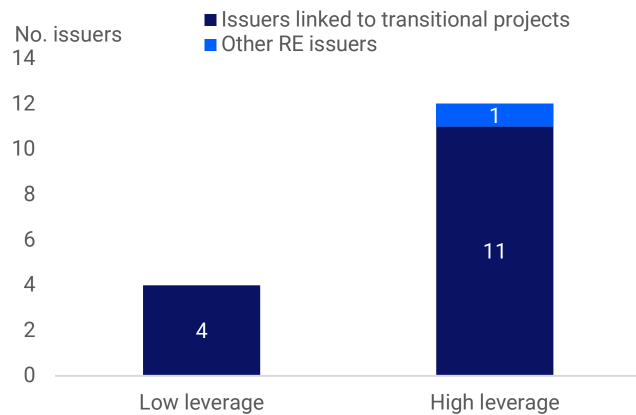
Exhibit 9: The bond default rate and maturity extension in the RE sector increased significantly



Source: HNX, Vietnam Investors Service

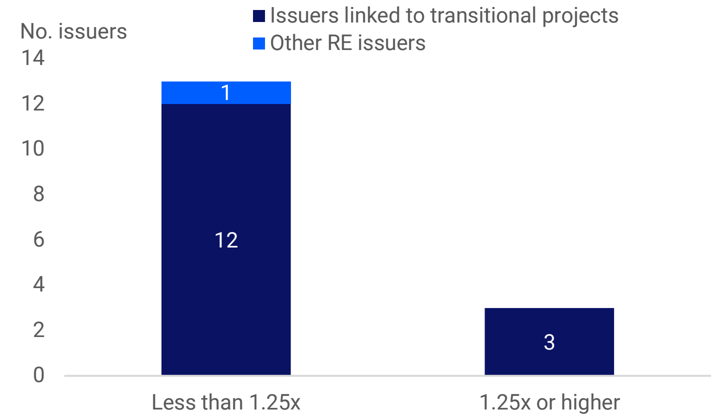
Among the 15 defaulted issuers related to transitional RE projects, the majority have high leverage ratios (Exhibits 10) as well as low interest coverage ratios (Exhibits 11).

Exhibit 10: Many defaulted RE issuers have high leverage



Source: Company data, Vietnam Investors Service
Note: - High leverage: Debt/Equity ratio >2x or negative equity
- Low leverage :Debt/Equity <2x

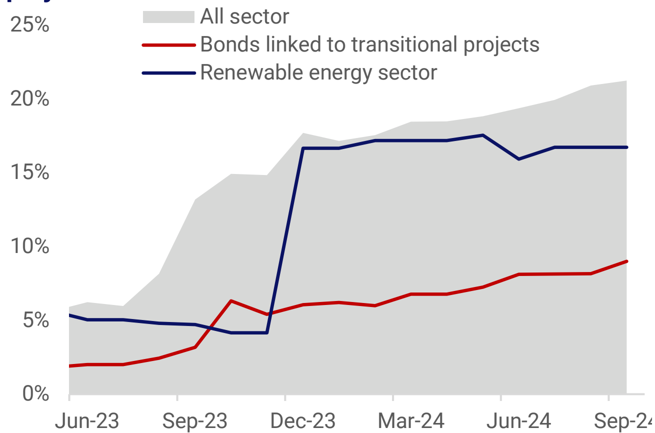
Exhibit 11: Defaulted issuers linked to transitional RE projects have weak interest coverage ratios



Source: Company data, Vietnam Investors Service
Note: Interest coverage ratios are calculated by EBIT (Earnings before interest and tax)/Interest expense

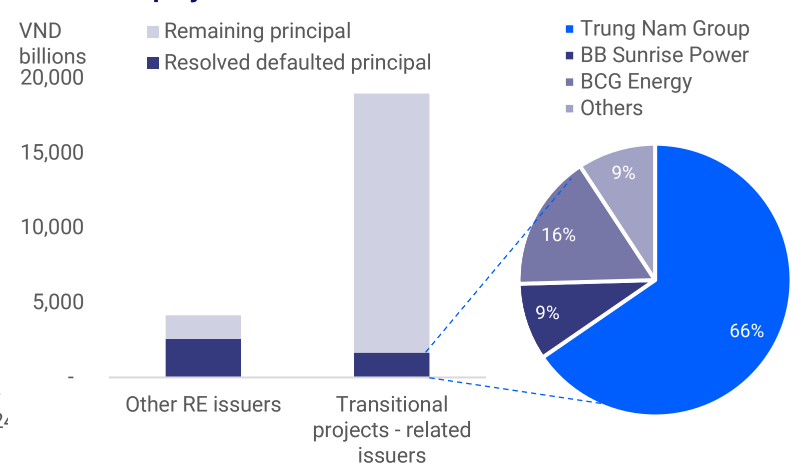
Dismal operating cashflows have driven low recoveries for defaulted bonds related to transitional projects (Exhibit 12). We note that large energy groups with more diversified operations like Trung Nam Group, BCG Energy, and BB Sunrise Power, had been able to resolve debt issues faster than issuers of single transitional projects (Exhibit 13). These groups are less impacted by transitional RE project issues; over 80% of the RE-generating facilities for each of the groups benefit from the government's FIT price scheme.

Exhibit 12: The bond recovery rates in transitional projects and RE sector are low



Source: HNX, Vietnam Investors Service

Exhibit 13: The recoveries from defaulted issuers linked to transitional projects are low



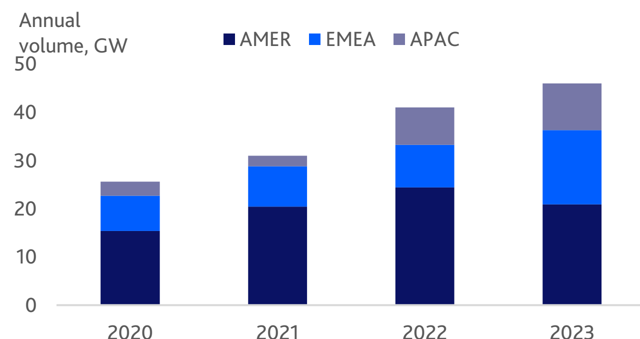
Source: HNX, Vietnam Investors Service

Over the long run, DPPAs will support Vietnam's growing clean energy needs and advancement towards its PDP8 targets, and revive investments and bond issuances in the power sector

Over the last four years, the volume of electricity purchased under DPPAs grew significantly in both APAC and EMEA regions (Exhibit 14). We expect corporations in Vietnam will similarly be able to purchase electricity directly from RE generators through DPPAs and accelerate on their energy transition goals.

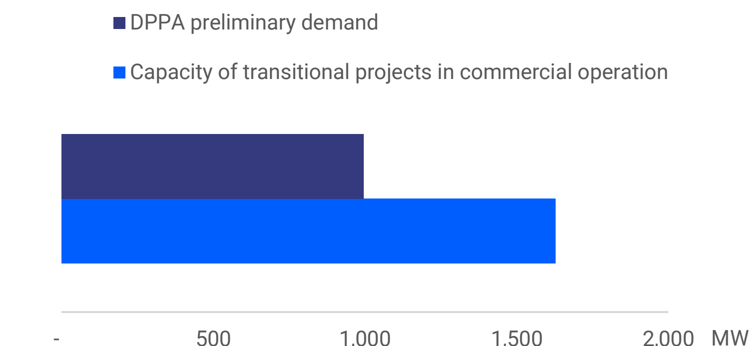
Based on a recent survey conducted by MoIT, MoIT estimated the total amount of clean energy that 20 large corporations could purchase through DPPAs to be 996 MW[3]. Transitional RE projects in commercial operations have full generating capacity that is much larger, and hence, are well placed to meet the future demand (Exhibit 15).

Exhibit 14: Electricity volume purchased under DPPA increased quickly in APAC and EMEA regions



Source: Bloomberg NEF, Vietnam Investors Service
Note: AMER - America region; EMEA - Europe, Middle East, and Africa region; APAC - Asia Pacific region

Exhibit 15: DPPA implementation will address future demand for clean energy in Vietnam



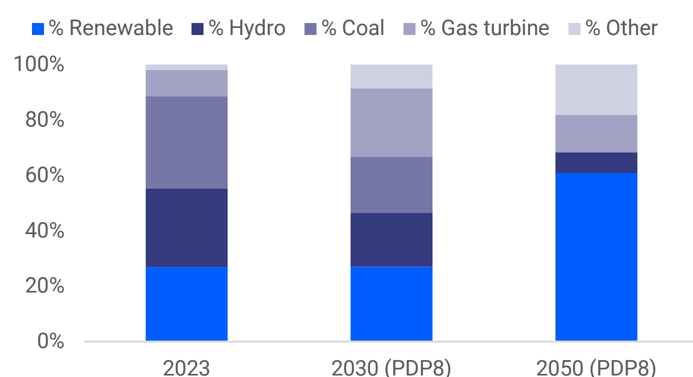
Source: MoIT, Vietnam Investors Service

Improving operating conditions for the RE sector – aided by the smooth implementation of the DPPA mechanism - will drive new investment inflows and boost Vietnam's RE capacity, as well as more bond issuances required to fund PDP8 capital expenditures.

In the government's PDP8 released in May 2023, the government plans to increase the use and production of renewable energy from solar and wind to 61% of its energy mix by 2050, from 27% in 2023; by 2050, the government also plans to phase out the use of coal-fired power completely (Exhibit 16). The government estimated that the country will need over USD134.7 billion over 2021-2030 period to build and install new capacity and upgrade the grid infrastructure to achieve its PDP8 targets[4].

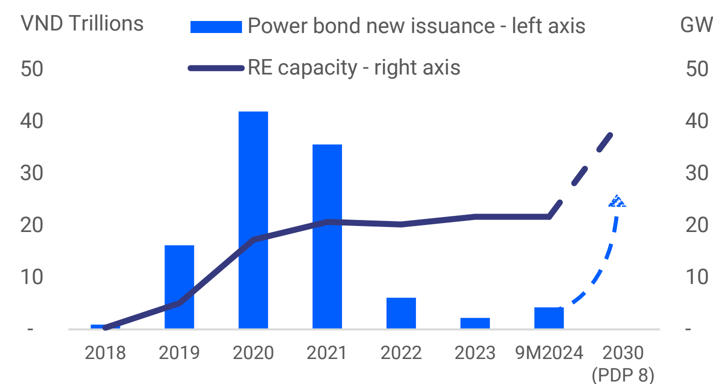
We expect a large part of this capital expenditure for RE will be funded by corporate bonds, similar to 2019-2021 period (Exhibit 17). DPPA will play a critical role to improve the viability of RE projects in Vietnam and help mobilize the capital required for new project development.

Exhibit 16: Vietnam's PDP8 targets to phase out coal-fired power from its energy mix by 2050



Source: PDP8, EVN, Vietnam Investors Service
Note: PDP8's energy mix excludes current rooftop solar power capacity

Exhibit 17: Large part of RE investments are funded by corporate bonds



Source: HNX, PDP8, Vietnam Investors Service

[3] Refer to MoIT's Policy impact assessment report for the DPPA mechanism dated May 4, 2024
[4] Refer to Decision No. 500/QD-TTg dated May 15, 2023, on approving the National Power Development Planning for 2021 - 2030 period and vision toward 2050, and Decision No. 262/QD-TTg dated April 1, 2024, on approving the Plan to implement the National Power Development Planning for 2021 - 2030 period and vision toward 2050

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