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The Energy Infrastructure Reinvestment Program

Emerging opportunities from the DOE Loan Program Office's upgraded toolkit

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Introduction

As implementation guidance regarding the Inflation Reduction Act (IRA) continues to be released, industry participants should pay close attention to the DOE Loan Program Office (LPO) as an emerging source of federal funding to support the US energy transition. In particular, with the creation of the Energy Infrastructure Reinvestment (EIR) Program, the LPO is authorized to issue $250 billion in low-cost debt to replace traditional fossil infrastructure with environmentally cleaner alternatives.[1] Through a sevenfold expansion in lending authority, the LPO may now become a viable financial partner for a new segment of applicants who satisfy EIR program requirements. Furthermore, in a period of volatile interest rates and credit market uncertainty, this program may provide a novel opportunity for utilities and merchant generators to access low-cost credit.

In this whitepaper, CRA assesses the EIR Program and identifies the scope of the opportunity for potential applicants. Key findings include the following:

1. The EIR Program represents the largest expansion of the DOE LPO in history. The program now has over $250 billion in lending authority, and opportunities for its use will be wide-ranging and extend to new industry participants.
2. The EIR Program offers unique benefits to electric utilities, despite regulatory challenges. In some cases, through the bundling of securitization and debt financing, use of the program could unlock hundreds of millions in dollars of ratepayer savings and simultaneously stabilize equity returns.
3. The program is scheduled to end by September 2026. Those who wish to utilize the EIR Program should begin assessing opportunities in the coming months to avoid missing the program deadline.

What is the Energy Infrastructure Reinvestment Program?

At a high level, the IRA authorizes the LPO to grant up to $250 billion in loan guarantees or refinancing to projects that either

a. “Retool, repower, repurpose, or replace energy infrastructure that has ceased operations; or

b. Enable operating energy infrastructure to avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases.”[2]

Importantly, to qualify, projects need not simultaneously satisfy both of these clauses. Additionally, it is possible that a mix of objectives can be pursued through the same application. For example, a DOE loan could both securitize a retirement-age fossil asset and finance its replacement by storage or renewables.

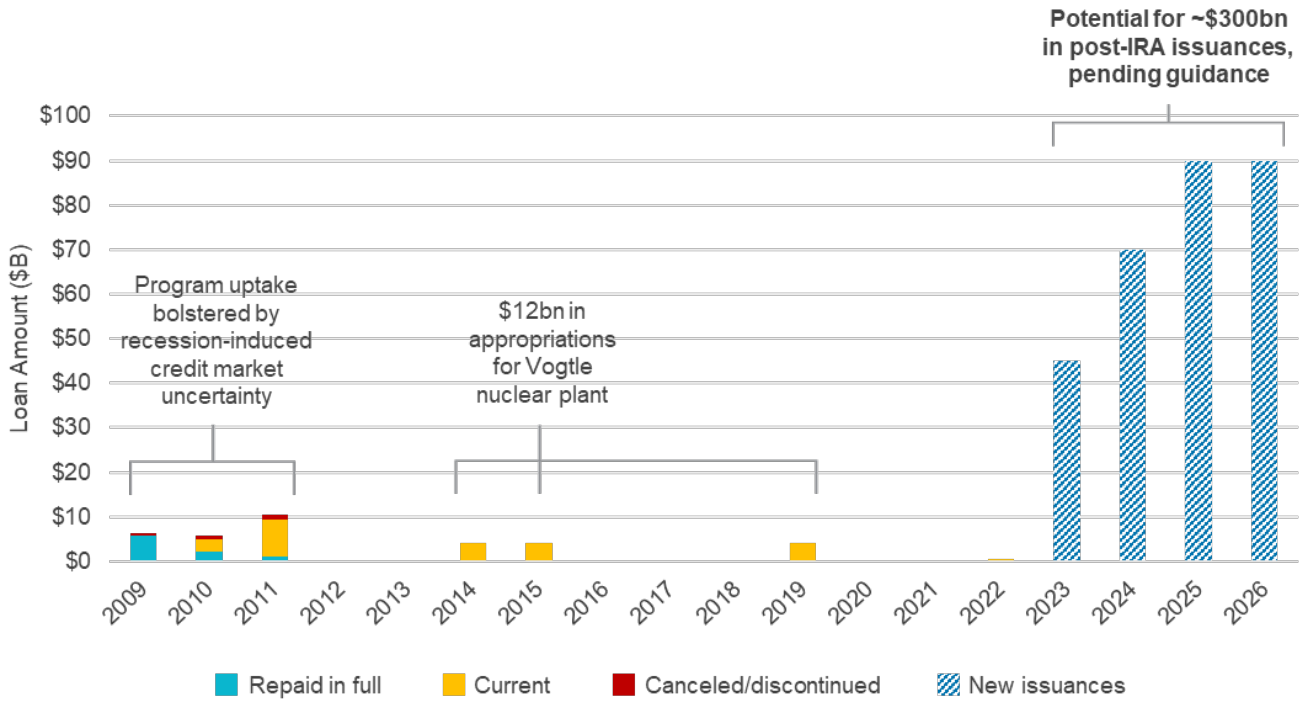
Guidance on the program is limited thus far, but some clarity can be gleaned from LPO blog posts and interviews, in which an expansive interpretation of the program seems to be presented. The general openness of the EIR definition will allow for creativity from applicants and opportunities to align financial, operational, and environmental objectives.

[1] H.R. 5376, “Inflation Reduction Act,” 117th Congress (2021–2022).

[2] Official definitions can be found in section 1706 of 42 U.S.C. 16516. Inclusion is made to allow for the remediation of environmental damage associated with energy infrastructure under this program.

The program is authorized to run through September 30, 2026, indicating that applicants should begin preparing in the near term if they wish to qualify. Additionally, because LPO leadership is based on executive appointment, a change of administration in 2025 could result in the program diminishing in strategy or scope, further narrowing the application window.[3]

Figure 1: DOE LPO historical and forecasted loan issuances ($ in billions)



Source: DOE LPO Portfolio Website[4]; H.R.5376, 117th Congress (2021–2022); CRA Analysis

Comparing the DOE LPO and the Corporate Bond Market

Given recent activity by the Federal Reserve Bank, leveraged projects are becoming increasingly uncertain across the energy industry as interest rates fluctuate.[5] Financial managers overseeing existing fossil assets may consider the EIR Program a potential hedge against rising rates, supporting new projects even as commercial banking options begin to diminish.

[3] LPO leadership can set financial criteria for assessing applications. It is unclear how future changes in leadership may affect the program's uptake.

[4] Loan issuances estimated from LPO portfolio website. CRA forecasts a lag in early program uptake, though final issuances are subject to change.

[5] An official press release on November 2, 2022, documented recent changes announced by the Federal Open Market Committee.

While guidance is pending on how spreads for the EIR Program will be calculated, past LPO programs have used the following structure to calculate a project's interest rate:[6]

Projected DOE LPO EIR Program Interest Rate =

Applicable US Treasury rate for tenor of the loan

+ 37.5 bps (FFB liquidity spread)

+ Applicable credit-based interest spread[7]

Using recent credit-spread and treasury-yield data from the Federal Reserve, CRA identified that LPO rates will come in significantly lower than those of traditional corporate bond markets. This is particularly relevant for the merchant generator segment, which is typically characterized as high yield and may face increased debt costs as credit markets tighten. While utilities may see only a moderate reduction in financing costs, unique LPO financing structures may still make the program attractive for certain asset replacement projects.

Table 1: Utility and IPP sector representative bond yields compared with EIR[8] (October 2022)

			Effective Yield (%)			
		Spread (bps)	3 mo	10Y	20Y	30Y
	Treasury Bonds	-	3.87	3.98	4.28	4.04
	EIR Program	37.5 – 100*	~4.56	~4.67	~4.97	~4.73
Corporate Debt Rating	A	122	5.09	5.20	5.50	5.26
	BBB	189	5.76	5.87	6.17	5.93
	BB	330	7.17	7.28	7.58	7.34
	B	538	9.25	9.36	9.66	9.42

Source: CRA analysis based on Federal Reserve Bank of St. Louis data[9] (*EIR spread represents CRA estimate)

[6] Information on historical LPO credit spreads can be found using the following link: https://www.energy.gov/lpo/downloads/credit-based-interest-rate-spread-title-xvii.

[7] Information on historical "applicable credit-based interest spreads" is available on the LPO website, though further guidance is needed. DOE LPO leadership stated, in a since-deleted Tweet in early October, that the applicable credit-based spread could be reduced to zero for EIR projects. Whether LPO spreads will trend lower or higher than in previous years is unclear.

[8] Credit spreads and yields representative of federal reserve bank data using the monthly average of October 2022. True spreads are likely to change based on credit market conditions.

[9] An investment-grade bond rating of A to BBB is assumed consistent with the average credit rating of a publicly traded investor-owned utility. For the IPP segment, two bond proxies are selected: a high-yield bond for the Term Loan B market (BB to B rated) representing thermal assets with material merchant exposure and a low-investment to non-investment rating (BBB- to BB) representing the contracted renewables (IPP-contracted) segment. Projects that would qualify under the EIR Program would likely fall on the lower half of this spectrum, as they may involve the acquisition of thermal assets before replacement.

Interpreting DOE LPO subsidy costs

Historical LPO credit spreads are a useful guide to assessing the value of an EIR Program loan. However, it is worth noting that the program is designed to finance projects with a unique risk tolerance. The EIR Program does not require applicants to use an innovative energy technology, as was the requirement in past LPO programs, which will reduce the general risk of the projected EIR Program portfolio. Therefore, the EIR Program was appropriated $5 billion for subsidy costs, which represent the estimated cost to the government of extending or guaranteeing credit for the EIR Program's $250 billion loan guarantees.

In comparison, the LPO's Innovative Clean Energy program was appropriated $3.6 billion in subsidy costs to cover just $40 billion in loan guarantees. In other words, the EIR Program is projected to cost the federal government $1 for every $50 of loans issued, whereas the Innovative Clean Energy program cost $1 for every $11 in loans issued. This indicates that the LPO's EIR portfolio strategy will need to make safer investments a priority, suggesting that electric utilities and investment-grade projects will be looked upon favorably in the loan application process. Novel credit-based spreads may be introduced to allow higher-risk projects to play a greater role in the program.[10]

Opportunities for electric utilities

Electric utilities are some of the strongest candidates for the EIR Program because they own a wide variety of assets, many of which will need to be retired and replaced in the near term. The EIR Program could allow utilities to replace existing assets with low-cost debt, finance environmental remediation efforts, and decarbonize or retrofit existing fossil assets.

While not every retirement-age asset will be a prime candidate and each utility's generation portfolio is unique, an assessment of potential EIR use cases could lead to ratepayer savings and allow utilities to maintain a balanced capital structure without incurring higher lending costs. Notably, the utility must pass on financial benefits to customers or associated communities, which can likely be achieved through proven ratepayer savings, although other approaches may be considered.[11]

Ultimately, the broad scope of the program allows for flexibility in determining how debt can be incorporated into an energy infrastructure reinvestment strategy. Creative applications and use cases could lead to major ratepayer savings and shore up utility exposure to debt markets. CRA conducted high-level analysis of a potential DOE LPO application strategy and identified a project structure that could reduce ratepayer costs and simultaneously increase utility returns to equity.

[10] As explained in the previous section, the LPO can use credit-based spreads to appropriately price riskier investments. However, as much of the value of a project comes from the comparatively lower LPO interest rate, additional credit spreads imposed by the LPO may reduce the likelihood that the program will be used for higher-risk projects.

[11] The IRA states that "associated communities" may also receive the pass-through of financial benefits (Section 1706(d)(3), IRA amendment to Title XVII of the Energy Policy Act of 2005). If an applicant chooses, it could defer a portion of ratepayer savings specifically for communities near the retired generation asset. This could include targeted rate reductions for customers in the vicinity of the plant. While no specific guidelines are mentioned, it is likely that applicants that have made preparations to support these communities will be viewed more favorably by program administrators.

Utility fossil asset replacement case study

CRA assessed how financial returns may vary for a utility that seeks to retire a fossil plant with remaining book value and replace it with a renewable asset. To provide an apples-to-apples comparison of scenarios, we assume that the book value of the plant to be retired is $200 million and that any replacement asset will cost $400 million. The assessment is technology agnostic, as the intent of the study was to determine whether there is a financial justification for the EIR Program. The following three scenarios were assessed to compare the use of the EIR Program to conventional utility financing options:

Table 2: Description of utility fossil asset replacement scenarios

Scenario	Description	% Equity of replacement asset	Uses EIR?
1	Depreciate fossil asset and replace with renewable PPA	0%	No
2	Depreciate fossil asset and replace with new renewable generation financed with both utility equity and corporate debt [owned asset]	50%	No
3	Securitize fossil asset and finance new renewable replacement with DOE LPO loan + utility equity	75%	Yes

In scenarios 1 and 2, the utility retires the fossil plant early and continues to depreciate it to recoup the investment through its rate base. Scenario 1 replaces the asset with a renewables or storage PPA, while scenario 2 assumes an owned asset with a mix of utility equity and debt from corporate bond markets to build replacement assets.[12]

In scenario 3, we consider a novel use case of the EIR Program: the utility securitizes the remaining book value of the plant with a federal loan from the LPO and builds the replacement project with a higher-equity stake. To finance the replacement, the utility would still use the EIR Program to access low-cost debt at a long tenor. However, we model the project with a 25–75 debt–equity split, which allows for utilities to stabilize their capital structure and replace equity lost from the securitization.

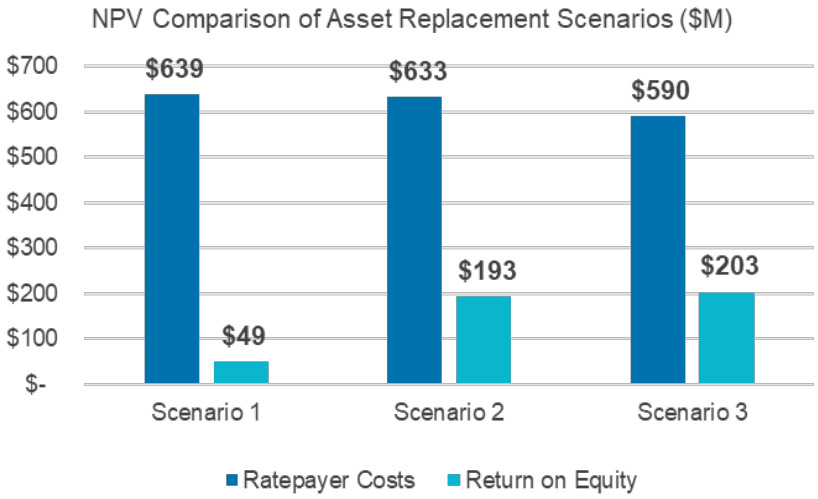
Comparing the results, we identify that the use of the EIR Program could result in both $50 million in ratepayer savings and $154 million in increased return on equity.

[12] A capital charge rate of 8% was used to determine PPA pricing. A 1.5% rate escalator was also assumed for the PPA scenario.

Figure 2: Scenario analysis for utility fossil asset replacement case study

Case study: A utility seeks to retire a fossil plant with $200M remaining book value and replace it with $400M in renewable assets.

Assumptions	
Remaining fossil plant life	5 years
Utility ROE	9.5%
Capital Charge Rate	8%
Corporate Debt Interest Rate (BBB+)	6%
EIR Interest Rate	4.72%
Debt Tenor	25 years



Challenges and uncertainties for electric utilities

While retirement-age utility assets may represent promising candidates, we note that several challenges and considerations affect program feasibility:

- Projects will likely need to be identified in the next two years to ensure that loan guarantees can be secured before the September 2026 program end date.
- Coordination will be necessary to ensure that a project approved for an LPO loan is also authorized by state regulators. It is likely that projects with proven ratepayer savings can be streamlined, but communication between the LPO and regulators will be important.
- For the case study, CRA assumes that replacement projects are financed with 75% utility equity. While this may differ from traditional utility capital structures, the higher equity share helps offset losses caused by securitization and will stabilize financial impacts to both utilities and ratepayers in the long run.

As mentioned earlier, the EIR Program requires electric utilities to pass on financial savings to customers or communities affected by the asset retirement. This creates uncertainties because the methodology for assessing "financial savings" is unclear; further guidance is needed. CRA assumes that applicants that can prove ratepayer savings using an LPO would qualify, but applicants may also want to consider bigger-picture benefits of their projects, such as emissions reductions and job creation.

Opportunities for merchant generators

Compared to utilities, merchant generators or IPPs are exposed to significantly higher credit spreads, which have gradually risen since the beginning of 2021.[13] Additionally, financiers are becoming less willing to service fossil assets due to increasing ESG risk, which may further increase financing costs. However, the introduction of low-cost EIR Program loans could allow generators to retire poorly performing fossil assets and replace them with renewables or storage.

Merchant generator case study

Assessing the economic impact of an EIR loan on merchant generators is relatively straightforward, as the primary assumptions involve capital structure and cost of debt. We look at a simple example of an IPP that has the choice to run a plant at breakeven or retire it early and replace it with a renewable asset. As can be expected, the significantly lower cost of debt provided by the DOE LPO could result in increased levered IRR, which may allow previously un-financeable projects to be greenlighted.

In scenario 1, a business-as-usual case, we look at an IPP that will need access to corporate debt markets. We assume a debt cost of 8.5%, which roughly corresponds to current rates on bonds rated BB or BB-. In any real scenario, diligence should be performed to determine the true spread and allow for sensitivity against the risk-free rate. The debt–equity split was assumed to be 25–75, which ensures that the project can meet a minimum DSCR of 1.25. In general, the IPP segment has trended toward de-leveraged project structures, so this assumption will likely reflect real industry scenarios.

In scenario 2, the IPP uses an EIR Program loan, which reduces the cost of debt to approximately 4.7% (see Table 2), and the debt–equity split shifts to 50–50. Projected revenues show that use of the program can transform project dynamics.

Table 3: Scenario analysis for merchant generator asset replacement case study

Scenario	Description	Uses EIR?	Debt–Equity Split	Cost of Debt	Leveraged IRR
1	IPP continues to run plant at breakeven. Replacement asset financed through corporate bond market (BB/BB-).	No	25–75	8.5%	**5.6%**
2	IPP retires fossil asset. Replacement asset financed partially through DOE LPO loan.	Yes	50–50	4.7%	**12.8%**

[13] Federal Reserve Bank of St. Louis data shows credit spreads on B-rating bonds to have fluctuated by more than 3 percentage points in the past 18 months; the comparable figure for A-rating bonds is less than 0.8 percentage points.

In general, the LPO could allow for increased leverage and provide a stronger business case for IPPs to co-locate renewables on existing fossil plant sites. Given the EIR Program's measurable improvement on leveraged IRR, qualifying IPPs may have new opportunities to retire plants with low financial performance early and replace them with new assets that would not be otherwise financeable.

Conclusions and future work

Historically, the LPO was structured to finance innovative energy technologies at commercial scale. The Energy Infrastructure Reinvestment Program seems to change this narrative, as the LPO is now authorized to finance projects intended to replace retiring assets, even if they rely on proven technologies such as wind or solar.

Given the broad language of the program definition, unique opportunities exist for industry participants to find creative financing solutions that can hedge against current economic headwinds. While CRA assessed a narrow scope of projects in this *Insights* piece (replacements of retirement-age power plants), a wide array of potential projects could emerge from the EIR Program. Qualifying use cases could include, among other things, gas distribution companies looking to replace stranded assets with hydrogen infrastructure and transmission operators seeking to upgrade aging lines.

Future work and analysis may identify several other promising project structures, and forthcoming DOE LPO guidance may further clarify program criteria to help streamline the application process. Despite this uncertainty, utilities and asset managers can begin identifying opportunities within their portfolios as early as today.

About CRA's Energy Practice

Charles River Associates is a leading global consulting firm that offers strategic, economic, and financial expertise to major corporations and other businesses around the world. CRA's Energy Practice provides services to a wide range of industry clients, including utilities, ISOs, RTOs, large customers, and investors. The Energy Practice has offices in Boston, London, Munich, New York City, Toronto, and Washington, DC. Learn more at www.crai.com/energy.

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