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De-Risking the Clean Energy Transition

OPPORTUNITIES AND PRINCIPLES FOR SUBNATIONAL ACTORS

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EXECUTIVE SUMMARY

The clean energy transition is not just about technology — it is about trust, timing, and transaction models. As federal uncertainty grows and climate goals face political headwinds, a new coalition of subnational actors is rising to stabilize markets, accelerate permitting, and finance a more inclusive green economy. This white paper, developed by the <u>Federation of American Scientists (FAS)</u> in collaboration with <u>Climate Group</u> and the <u>Center for Public Enterprise (CPE)</u>, outlines a bold vision: one in which state and local governments – working hand-in-hand with mission-aligned investors and other stakeholders – lead a new wave of public-private clean energy deployment.

Drawing on insights from the closed-door session "De-Risking the Clean Energy Transition" and subsequent permitting discussions at the <u>2025 U.S. Leaders Forum</u>, this paper offers strategic principles and practical pathways to scale subnational climate finance, break down permitting barriers, and protect high-potential projects from political volatility. This paper presents both a roadmap and an invitation for continued collaboration. FAS and its partners will facilitate further development and implementation of approaches and ideas described herein, with the goals of (1) directing bridge funding towards valuable and investable, yet at-risk, clean energy projects, and (2) building and demonstrating the capacity of subnational actors to drive continued growth of an equitable clean economy in the United States.

We invite government agencies, green banks and other financial institutions, philanthropic entities, project developers, and others to formally express interest in joining this work. To learn more and get involved, contact Zoe Brouns (<u>zbrouns@fas.org</u>).

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THE MOMENT: OPPORTUNITY MEETS URGENCY

We are in the **complex middle** of a global energy transition. Clean energy and technology are **growing** around the world, and geopolitical competition to consolidate advantage in these sectors is intensifying. The United States has the potential to lead, but that leadership is being tested by erratic federal environmental policies and economic signals. Meanwhile, efforts to chart a lasting domestic clean energy path that resonates with the full American public have fallen short. Demand is rising — fueled by AI, electrification, and industrial onshoring – yet <u>opposition</u> to clean energy buildout is growing, permitting systems are gridlocked, and legacy regulatory frameworks are failing to keep up.

This moment calls for new leadership rooted in local and regional capacity and needs. Subnational governments, green and infrastructure banks, and other funders have a critical opportunity to stabilize clean energy investment and sustain progress amid federal uncertainty. Thanks to underlying market trends favoring clean energy and clean technology, and to concerted efforts over the past several years to spur U.S. growth in these sectors, there is now a pipeline of clean projects across the country that are shovel-ready, relatively de-risked and developed, and investable (Box 1). Subnational actors can work together to identify these projects, and to mobilize capital and policy to sustain them in the near term.



Box 1. Streamlining administrative procedure to unleash clean energy in New York. The New York Power Authority used a simple, quick <u>Request for Information (RFI)</u> to identify readily investible clean energy projects in New York, and was then able to financially back many of the identified projects thanks to its strong bond rating and ability to access capital. As Paul Williams, CEO of the Center for Public Enterprise, <u>noted</u>, this powerful approach allowed the Authority to "essentially [pull] a 3.5-gigawatt pipeline out of thin air in less than a year."

States, cities, and financial institutions are already beginning to provide the support and sustained leadership that federal agencies can no longer guarantee. They're developing bond-backed financing, joint procurement schemes, rapid permitting pilot zones, and revolving loan funds — not just to fill gaps, but to reimagine what clean energy governance looks like in an era of fragmentation. One compelling example is the Connecticut

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Green Bank, which has successfully blended public and private capital to deploy over \$2 billion in clean energy investments since its founding. Through programs like its Commercial Property Assessed Clean Energy (C-PACE) financing and Solar for All initiative, the bank has reduced emissions, created jobs, and delivered energy savings to underserved communities.

Indeed, this kind of <u>mission-oriented</u> strategy – one that harnesses finance and policy towards societally beneficial outcomes, and that entrepreneurially blends public and private capacities – is in the best American tradition. Key infrastructure and permitting decisions are made at the state and local levels, after all. And state and local governments have always been central to creating and shaping markets and <u>underwriting innovation</u> that ultimately powers new economic engines. **The upshot is clear and striking: subnational climate finance isn't just a workaround. It may be the most politically durable and economically inclusive way to future-proof the clean energy transition.**

THE ROLE OF SUBNATIONAL FINANCE IN THE CLEAN ENERGY TRANSITION

Recent years saw heavy reliance on technocratic federal rules to spur a clean energy transition. But a new political climate has <u>forced a reevaluation</u> of where and how federal regulation works best. While some level of regulation is important for creating certainty, demand, and market and investment structures, it is undeniable that the efficacy and durability of traditional environmental regulatory approaches has waned. There is an acute need to articulate and test new strategies for actually delivering clean energy progress (and a <u>renewed economic paradigm</u> for the country) in an ever-more complex society and dynamic energy landscape.

Affirmatively wedding finance with larger public goals will be a key component of this more expansive, holistic approach. Finance is a powerful tool for policymakers and others working in the public interest to shape the forward course of the green economy in a fair and effective way. In the near term, opportunities for subnational investments are ripe because the now partially paused boom in potential firms and projects generated by recent U.S. industrial policy has generated a rich set of already underwritten, due-diligenced projects for re-investment. In the longer term, the success of redesigned regulatory schema will almost certainly depend on creating profitable firms that can carry forward the energy transition. Public entities can assume an <u>entrepreneurial role</u> in ensuring these new economic entities, to the degree they benefit from public support, advance the public interest. Indeed, financial strategies that connect economic growth to <u>shared prosperity</u> will be important guardrails for an <u>"abundance" approach to environmental policy</u> – an approach that holds significant promise to accelerate necessary societal shifts, but also presents risk that those shifts <u>further enrich and empower</u> concentrated economic interests.

To be sure, subnational actors generally cannot fund at the scale of the federal government. However, they can mobilize existing revenue and debt resources, including via state green and infrastructure banks, bonding tools, and direct investment financing strategies, to seed capital for key projects and to provide a basis for larger capital stacks for key endeavors. They are also particularly well suited to provide "pre-development" support to help projects move through start-up phases and reach construction and development. Subnational entities can engage sectorally and in coalition to scale up financing, to draw in private actors, and to support projects along the whole supply and value chain (including, for instance, multi-state transmission and grid projects, multi-state freight and transportation network improvements, and multi-state industrial hubs for key technologies).

A wide range of financing strategies for clean energy projects already exist. For instance:

Revolving loan funds can help public entities provide lower-cost debt financing to draw in additional private capital.

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- Joint procurements or bundled financing can set technological standards, provide pricing power, and reduce the cost of capital for smaller businesses and make it easier for them to break into the clean energy economy.
- Financing programs for projects with public benefits can be designed in ways that allow government investors to take a small equity stake, sharing both risk and revenue over time.

Strategies like these empower states and other subnational actors to de-risk and drive the clean energy transition. The <u>expanding green banking industry</u> in the United States, and <u>similar institutions globally</u>, further augment subnational capacity. What is needed is rapid scaling and ready capitalization.

There is presently tremendous need and opportunity to deploy flexible financing strategies across projects that are shovel-ready or in progress but may need bridge funding or other investments in the wake of federal cuts. **The critical path involves quickly identifying valuable, vetted projects in need of support, followed by targeted provision of financing that leverages the superior capital access of public institutions.**

Projects could be identified through simple, quick Requests for Information (RFIs) like the one recently used to great effect by the New York Power Authority to build a multi-gigawatt clean energy pipeline (see Box 1, above). This model, which requires no new legislation, could be adopted by other public entities with bonding authority. Projects could also be identified through existing databases, e.g., of projects funded by, or proposed for funding under, the Inflation Reduction Act (IRA) or Infrastructure Investment and Jobs Act (IIJA).

There is even the possibility of establishing a <u>matchmaking platform</u> that connects projects in need of financing with entities prepared to supply it. Projects could be grouped sectorally (e.g., freight or power sector projects) or by potential to address cross-cutting issues (e.g., cutting pollution burdens or managing increasing power grid load and its potential to electrify new economic areas). As economic mobilization around clean energy gains steam and familiarity with flexible financing strategies grows, such strategies can be extended to new projects in ways that are tailored to community interests, capacity, and needs.

PRINCIPLES FOR EFFECTIVE, EQUITABLE INVESTMENT

The path outlined above is open now but will substantially narrow in the coming months without concerted, coordinated action. The following principles can help subnational actors capitalize on the moment effectively and equitably. It is worth emphasizing that equitable investment is not only a moral imperative – it is a strategic necessity for maintaining political legitimacy, ensuring community buy-in, and delivering long-term economic resilience across regions.

Funders must clearly state goals and be proactive in pursuing them – starting now to address near-term instability. Rather than waiting for projects to come to them, subnational governments, financial institutions, and other funders should use their platforms and convening power to lay out a "mission" for their investments – with goals like electrifying the industrial sector, modernizing freight terminals and ports, and accelerating transmission infrastructure with storage for renewables. Funders should then use tools like simple RFIs to actively seek out potential participants in that mission.

Public equity is a key part of the capital stack, and targeted investments are needed now. With significant federal climate investments under litigation and Congressional debates on the Inflation Reduction Act ongoing, other participants in the domestic funding ecosystem must step up. Though not all federal capital can (or should) be replaced, targeted near-term investments coupled with multi-year policy and funding roadmaps by these actors can help stabilize projects that might not otherwise proceed and provide reassurance on the long-term direction of travel.

Information is a surprisingly powerful tool. Deep, shared, information architectures and clarity on policy goals are key for institutional investors and patient capital. Shared information on costs, barriers, and rates of return would substantially help facilitate the clean energy transition – and could be gathered and released by current

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investors in compiled form. Sharing transparent goals, needs, and financial targets will be especially critical in the coming months. Simple RFIs targeted at businesses and developers can also function as dual-purpose information-gathering and outreach tools for these investors. By asking basic questions through these RFIs (which need not be more than a page!), investors can build the knowledge base for shaping their clean technology and energy plans while simultaneously drawing more potential participants into their investment networks.

States should invest to grow long-term businesses. The clean energy transition can only be self-sustaining if it is profitable and generates firms that can stand on their own. Designing state incentive and investment projects for long-term business growth, and aligning complementary policy, is critical – including by designing incentive programs to partner well with other financing tools, and to produce long-term affordability and deployment gains, especially for entities which may otherwise lack capital access. State strategies, like the one <u>New Mexico recently</u> <u>published</u>, that outline energy-transition and economic plans and timelines are crucial to build certainty and align action across the investment and development ecosystem. Metrics for green programs should assess prospects for long-term business sustainability as well as tons of emissions reduced.

States can finance the clean energy transition while securing long-term returns and other benefits. Many clean technology projects may have higher upfront costs balanced by long-term savings. Debt equity, provided through revolving loan funds, can play a large role in accelerating deployment of these technologies by buying down entry costs and paying back the public investor over time. Moreover, the superior bond ratings of state institutions substantially reduce borrowing costs; sharing these benefits is an important role for public finance. State financial institutions can explore taking equity stakes in some projects they fund that provide substantial public benefits (e.g., mega-charging stations, large-scale battery storage, etc.) and securing a rate of return over time in exchange for buying down upfront risk. Diversified subnational institutions can use cash flows from higher-return portions of their portfolios to de-risk lower-return or higher-risk projects that are ultimately in the public interest. Finally, states with operating carbon market programs can consider expanding their funding abilities by bonding against some portion of carbon market revenues, converting immediate returns to long-term collateral for the green economy.

Financing policy can be usefully combined with procurement policy. As electrification reaches individual communities and smaller businesses, many face capital-access problems. Subnational actors should consider packaging similar businesses together to provide financing for multiple projects at once, and can also consider complementary public procurement policies to pull forward market demand for projects and products (Box 2).

Explore contract mechanisms to protect public benefits. Distributive equity is as important as large-scale investment to ensure a durable economic transition. The Biden-Harris Administration substantially conditioned some investments on the existence of binding community benefit plans to ensure that project benefits were broadly shared and possible harms to communities mitigated. Subnational investors could develop parallel contractual agreements. There may also be potential to use contracts to enable revenue sharing between private and public institutions, partially addressing any impacts of changes to the IRA's current elective pay and transferability provisions by shifting realized income to the public entities that currently use those programs from the private entities that realize revenue from projects.

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Box 2. Combining financing and procurement policy to electrify bus systems. Joint procurements, whereby two or more purchasers enter into a single contract with a vendor, can bring down prices of emerging clean technologies by increasing purchase volume, and can streamline technology acquisition by sharing contracting workload across partners. Joint procurement and other innovative procurement policies have been used successfully to drive deployment of zero-emission buses in Europe and, more recently, the <u>United States</u>. Procurement strategies can be coupled with public financing. For instance, the Federal Transit Agency's Low or No Emission Grant Program for clean buses <u>preferences applications</u> that utilize joint procurement, thereby helping public grant dollars go further.

The rising importance of the electrical grid across sectors creates new financial product opportunities. As

the economy decarbonizes, more previously independent sectors are being linked to the electric grid, with load increasing (AI developments exacerbate this trend). That means that project developers in the green economy can offer a broader set of services, such as providing battery storage for renewables at vehicle charging points, distributed generation of power to supply new demand, and potential access to utility rate-making. Financial institutions should closely track rate-making and grid policy and explore avenues to accelerate <u>beneficial</u> <u>electrification</u>. There is a <u>surprising but potent opportunity</u> to market and finance clean energy and grid upgrades as a national security imperative, in response to the growing threat of foreign cyberattacks that are exploiting "seams" in fragile legacy energy systems.

Global markets can provide ballast against domestic volatility. The United States has an innovative financial services sector. Even though federal institutions may retreat from clean energy finance globally over the next few years, there remains a substantial opportunity for U.S. companies to provide financing and investment to projects globally, generate trade credit, and to bring some of those revenues back into the U.S. economy.

Financial products and strategies for adaptation and resilience must not be overlooked. Growing climate-linked disasters, and associated adaptation costs, impose substantial revenue burdens on state and local governments as well as on insurers and businesses. Competition for funds between adaptation and mitigation (not to mention other government services) may increase with proposed federal cuts. Financial institutions that design products that reduce risk and strengthen resilience (e.g., by helping relocate or strengthen vulnerable buildings and infrastructure) can help reduce these revenue competitions and provide long-term benefits by tapping into the <u>\$1.4 trillion market</u> for adaptation and resilience solutions. Improved cost-benefit estimates and valuation frameworks for these interacting systems are critical priorities.

CONCLUSION: A DEFINING WINDOW FOR SUBNATIONAL LEADERSHIP

Leaders from across the country agree: clean energy and clean technology are investable, profitable, and vital to community prosperity. And there is a compelling lane for innovative subnational finance as not just a stopgap or replacement for federal action, but as a central area of policy in its own right.

The federal regulatory state is, increasingly, just a component of a larger economic transition that subnational actors can help drive, and shape for public benefit. Designing financial strategies for the United States to deftly navigate that transition can buffer against regulatory uncertainty and create a conducive environment for improved regulatory designs going forward. Immediate responses to stabilize climate finance, moreover, can build a foundation for a more engaged, and innovative, coalition of subnational financial actors working jointly for the public good.

Active state and private planning is the key to moving down these paths, with governments setting a clear direction of travel and marshaling their convening powers, capital access, and complementary policy tools to rapidly stabilize key projects and de-risk future capital choices.

There is much to do and no time to lose as governments and investors across the country seek to maintain clean technology progress. The Federation of American Scientists (FAS) and its partners will facilitate further development and implementation of approaches and ideas described above, with the goals of (1) directing bridge funding towards valuable and investable, yet at-risk, clean energy projects, and (2) building and demonstrating the capacity of subnational actors to drive continued growth of an equitable clean economy in the United States.

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