ASIA CLEAN ENERGY FORUM 2024

Accelerating the Clean Energy Transition and Ensuring Energy Security and Affordability – Time for Urgent Action Now

3-7 JUNE 2024
Policy-Based Loans – Creating Ripples for the Energy Transition

6 June 2023 | 2:00-3:30 p.m. (GMT+8)
Please note that this meeting is being recorded.

Please stay on mute unless you need to speak.

Please turn your microphone off after speaking.

Please click > Raise My Hand or the chat box to raise questions or to request the moderator for space to speak.

If at first you encounter a connection, audio, or video problem, please leave and rejoin the meeting.
Navneet, Trivedi
Co-Founder and Chief Operating Officer
Vrinda Inc., New York

ASIA CLEAN ENERGY FORUM 2024
Accelerating the Clean Energy Transition and Ensuring Energy Security and Affordability –
Time for Urgent Action Now
3–7 June 2024
Introduction – Navneet Trivedi, Co-Founder and COO, Vrinda Inc.

• Navneet is a thought leader and trusted advisor with more than 30 years of experience in the Energy and Utility industry and clean energy transformation. Navneet brings a unique perspective of hands-on experience working in eight countries with over 100 utilities covering North America, South America, and Asia. Navneet works with C-level executives, policy makers, regulators, and technology providers, to address complex question of enabling Utility of the Future with sustainable clean and innovative energy technologies through business model innovation which provide right value to all stakeholders.

• Navneet Co-Founded Vrinda, a New York based boutique consulting firm focused on Energy, Utility and Transportation sector. Navneet is currently helping several US utilities on key questions of energy transition including electrification of transportation, building, transitioning utilities from electricity providers to energy services providers.

• Navneet has worked with utility industry with key focus on Utility 2.0 strategy, business and economic modeling, utility business transformation, operational performance improvement, Smart Grid value enhancement, distributed energy resource integration, development and implementation of new product and service models.

• Navneet started his career with design, construction and automation of power generation, transmission and distribution systems in India and subsequently worked in Bangladesh, China and India on power sector reform, restructuring and commercial performance improvement. Since 2006, Navneet is based in North America working with utilities in United States and Canada on Smart grid, grid modernization, operational performance improvement, new business model for utilities of the future and Utility 2.0 implementation. Since 2011, Navneet has been working with Latin America, Brazil, Colombia on clean energy transformation and improving policy and regulation, technical and technology capabilities to implement sustainable energy transition.

Education

• Navneet an electrical engineer, graduated from the Indian Institute of Technology, Bombay with a M.S. in Energy Systems and Business certification from Columbia University in New York, with a focus corporate finance and valuation.

About Vrinda

• Vrinda Inc. is a New York-based utility transformation advisory service company. Vrinda creates success for your business through a focus on value creation by providing trusted, actionable advice, and practical solutions. We provide business and technology consulting services to the Energy, Utility, and Transportation sectors. Vrinda operates in the United States and Latin America and brings cutting edge expertise to the utility industry. Learn more @ www.vrindainc.com
Agenda

• US Investment in Clean Energy transition

• Key challenges in financing clean energy projects

• Lessons learned
  • What Asia can learn from US experiences?
BIL – The BIPARTISAN INFRASTRUCTURE LAW Or INFRASTRUCTURE INVESTMENT AND JOBS ACT (IIJA)

- Total $1.2 Trillion Grants and R&D investment with $550 Billion in new funding
- Largest funding (~50%) Transportation but other department also gets significant boost (at least $62 Billion for Department of Energy)
- The Bipartisan Infrastructure Law will stand up 60 new DOE programs, including 16 demonstration and 32 deployment programs, and expands funding for 12 existing Research, Development, Demonstration, and Deployment (RDD&D) programs.
- Funding: for the next 5 YEARS

IRA – The INFLATION REDUCTION ACT

- The IRA allocates ~$400 billion in funding to new programs in R&D, deployment, manufacturing, workforce development, and adoption of renewable technologies
- It will offer home energy rebates, tax incentives, grants, and loans to focus on decarbonization of the grid and lowering emissions by 2030
- Non for profit, Governments, school districts, local and municipal entities are also eligible for tax credits through “elective pay”. Additional bonus incentives for Low Income, disadvantage communities
- Funding: for the next 10 YEARS
US Department of Energy (DOE)

US DOE will invest $63 Billion under IRA and provide incentives, grants and loans to accelerate clean energy transformation

Building the Technologies of Tomorrow through Clean Energy Demonstrations

- $8 billion for clean hydrogen.
- More than $10 billion for carbon capture, direct air capture and industrial emission reduction,
- $2.5 billion for advanced nuclear, $1 billion for demonstration projects in rural areas and $500 million for demonstration projects in economically hard-hit communities.

Investing in American Manufacturing and Workers

- Invest more than $7 billion in the supply chain for batteries
- Provide an additional $1.5 billion for clean hydrogen manufacturing and advancing recycling RD&D.
- Create a new $750 million grant program to support advanced energy technology manufacturing projects in coal communities.
- Expand the authority of DOE’s Loan Program Office (LPO) to invest in projects that increase the domestic supply of critical minerals and invest in manufacturing zero-carbon technologies.

Expanding Access to Energy Efficiency and Clean Energy for Families, Communities and Businesses

- Invest $3.5 billion in the Weatherization Assistance Program to increase energy efficiency, increase health and safety, and reduce energy costs for low-income households
- Invest $500 million to provide cleaner schools for our children and teachers
- Invest $550 million in the Energy Efficiency and Conservation Block Grant Program (EECBG) and $500 million in the State Energy Program to provide grants to communities, cities, states, U.S. territories, and Indian tribes to develop and implement clean energy programs and projects that will create jobs.

Delivering Reliable, Clean, and Affordable Power to More Americans

- Provide $11 billion in grants for states, tribes, and utilities to enhance the resilience of the electric infrastructure against disruptive events such as extreme weather and cyber attacks.
- $3 billion expansion of the Smart Grid Investment Matching Grant Program,
- Allocate $6 billion for the Civilian Nuclear Credit program to prevent premature retirement of existing zero-carbon nuclear plants
- Invest more than $700 million in existing hydropower facilities
DOE loan program
A $400 Billion loan program to attract private capital

- Finances large-scale, all-of-the-above energy infrastructure projects in the United States.

- LPO administers 4 distinct loan programs, but each offers a similar value to borrowers:
  - **Innovative Energy (1703) Financing** - For commercial-scale deployment of innovative energy projects.
  - **Innovative Supply Chain (1703) Financing** for commercial-scale deployment of innovative manufacturing processes and technologies.
  - **State Energy Financing Institutions (1703)** Financing that aligns federal dollars with state clean energy priorities.
  - **Energy Infrastructure Reinvestment (1706)** Financing to leverage existing U.S. energy infrastructure for the clean energy future

- LPO can provide flexible, custom financing that helps to meet the specific needs of individual borrowers.

---

### Advanced Fossil Energy Projects Loan Guarantees
- $8.5 billion

### Advanced Nuclear Energy Projects Loan Guarantees
- $10.9 billion

### Renewable Energy & Efficient Energy Projects Loan Guarantees
- $4.5 billion

### Advanced Technology Vehicles Manufacturing Loan Program
- $17.7 billion

---

**Pre-Application Consult**
- Meet with LPO for no-fee, pre-application discussion about the project.
- Approx. one month

**Formal Application Submission**
- Part 1—Feasibility assessment (4-8 weeks)
- Part 2—Technical and Commercial assessment (4-8 months)

**Due diligence and term sheet negotiation**
- During the due diligence process, LPO confirms all material facts regarding the project by, looking at various aspects relating to the subject project

**Credit Approval Process**
- Applicant needs to get a credit rating of the company’s plans
- This is at the applicant’s cost

**Loan is closed, LPO monitors the loan**
- Loan documents are finalized and executed
- Applicant is responsible for applicable costs and fees
How funding is impacting states

Funding is spread across US, debunking myth of red vs. blue state divide

Funding is spurring growth in multiple dimensions from residential weatherization to advanced material processing and quite few nuclear facilities

Consumer incentives ~ $43 billion in IRA tax credits aim to lower emissions are administered through various state and local agencies, dealerships

- Starting in 2023, qualifying EVs will be eligible for a tax credit of up to $7,500 and $4,000 for new and used vehicles, respectively.
- Qualifying home improvements will be eligible for a tax credit of up to 30 percent of the total cost, capped at $1,200 per year.
- For heat pumps, the credit is capped at $2,000 per year.

As of January 2023, $10 billion has been awarded to clean-energy projects across the country.

Clean-energy funding awarded under Bipartisan Infrastructure Law

[Map showing funding distribution across states]
How States are organizing to take advantage of federal funding

Accessing funding opportunities requires a coordinated effort

- IIJA, the Inflation Reduction Act’s policies and investments will require states, local governments, and the federal government to collaborate to achieve the most transformative results.
- Planning, siting, and permitting authorities at the state and local levels can help guide and shape development, protecting low-income communities from the effects of highways, bus depots, warehouses, and other transportation facilities.
- Partnerships with communities will be critical for realizing the full power of federal funding, especially when it comes to certain rebates that are not directly routed through state and city governments with established relationships with community partners.
- State and local governments should support education and technical assistance for low-income communities to ensure these dollars are fully utilized.

**New York**
- Passed Climate Leadership and Community Protection Act (CLCPA)
- CLCPA goals
  - By 2040: achieve 100% zero-emission electricity | By 2050: reduce emissions at least 85% below 1990 levels.

**Oregon**
- One of the specific projects to be completed with IIJA funds is an update to the State Energy Security Plan.
- The 2023 draft plan compiles the foundational state-level information critical to energy security, including: Key agencies, emergency preparedness, Oregon’s energy profile, summary of known energy sector threats, etc.

**Texas**
- Houston METRO, the city of Houston’s public transit authority, plans to use IIJA funding to better maintain existing assets and invest for the future.
- More than a third of the agency’s employees are dedicated to maintenance-related activities, and Houston METRO intends to use IIJA dollars to make this workforce more efficient.
Key Energy Transition financing challenges

Having abundant money can not solve financing challenges

Ownership and Collateral

Government loan conditions in terms of subordination of Collateral can make project difficult to invest

Private Sector Investment

Private Sector need to put “Skin in the Game”
However, often time Private Sector seek to leverage other grants and tax credits to show as their cost share
Role of community and local government commitments in the project financing

Community Benefits

Community benefits are often convoluted resulting in hurdles in permitting, siting, local support, resulting in delays in the implementation

Commercial Success

Profitability of project is often ignored or punished by governments policy to recoup investment.

Data sharing and intellectual property

Data sharing with government has major implications for the private sector
However, data and analysis from the project is crucial for the sector to develop.
What is the right balance
Key Lessons learned:
What can Asia learn from US experiences

**Institutional capability assessment**

- Lack of organizational readiness, including specific plans around grant application procedures and pre-identified qualified projects, coupled with cultures that often lacked this type of internal cross-functional team collaboration, created significant challenges in pursuing and implementing impactful Recovery Act-funded projects.

- Some of the strongest partnerships leveraged national labs and universities to identify impactful projects, distribute grant applications, and manage work to allow utilities to focus on meeting project deliverables.

**Need for Private sector skin in the game**

- The earlier the private sector is brought into project discussions, the better the outcome will be. Develop a pool of on-call expert advisors who have been vetted, meet certain professional criteria, and can be tapped as needed to provide assistance to public agencies.

- Permitting risk (i.e., the risk that a project will be delayed during the permitting and environmental review process) has been a significant barrier to the entry of private capital into public infrastructure.

**Importance of community engagement and benefits**

- Requirements such as matching grants inadvertently leave out poor communities, local governments. Sophisticated local governments often get lion share of funding. Need to provide technical assistance capabilities to underserved communities/governments and states.

- Embrace public private partnerships that share risk, foster purpose-driven innovation and protect the interests of the public, workers, and communities.

**Important of commercial success**

- To ensure that all projects are making the most cost-effective use of federal funds, federal agencies should encourage recipients of federal funds to conduct a Value or comparable analysis for all major projects.

- Pursuit of Shovel-ready projects had negative consequences for more strategically motivated projects that required additional planning and longer completion timelines.

**Protecting technology and innovation**

- Long term maintenance and upkeep should be baked in the funding contracts to ensure infrastructure is serviced and able to deliver value over lifetime.

- Ensure that data is protected yet the sharing of learning should be paramount with government funded projects.
THANK YOU!