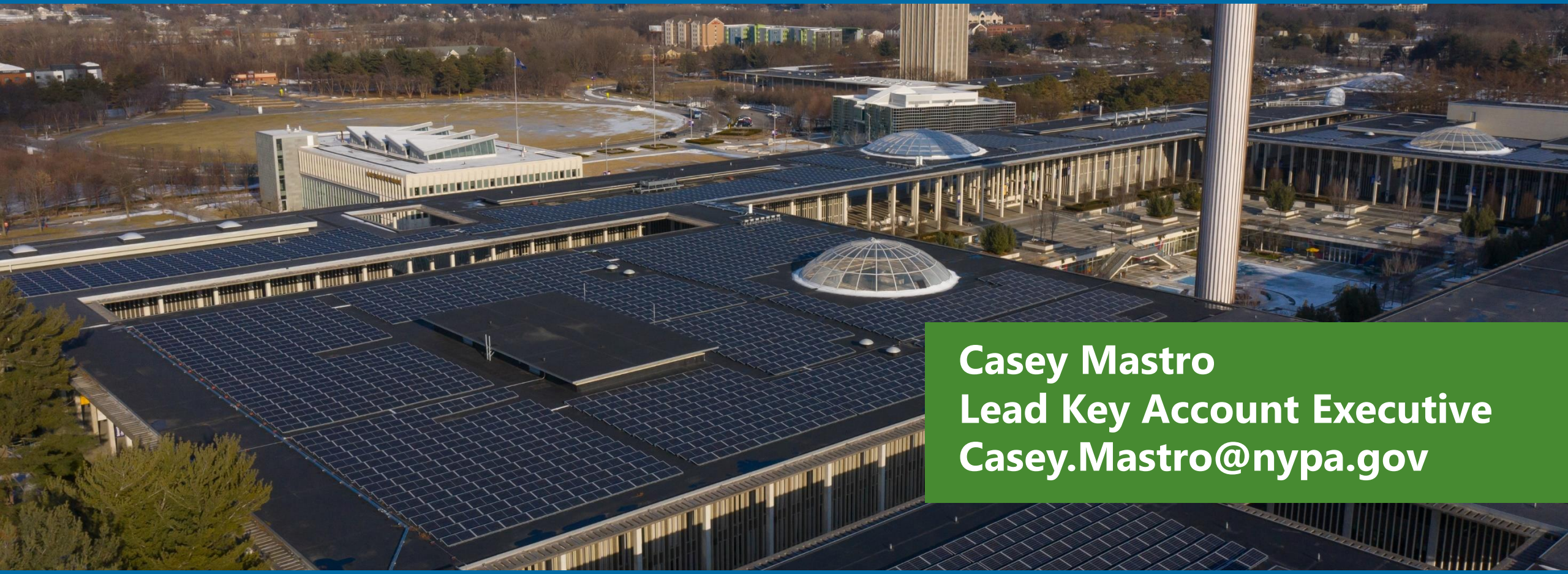
Solar Solutions for Higher Education



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NEW YORK STATE | NY Power Authority

Agenda

Distributed Energy Resource (DER) Overview

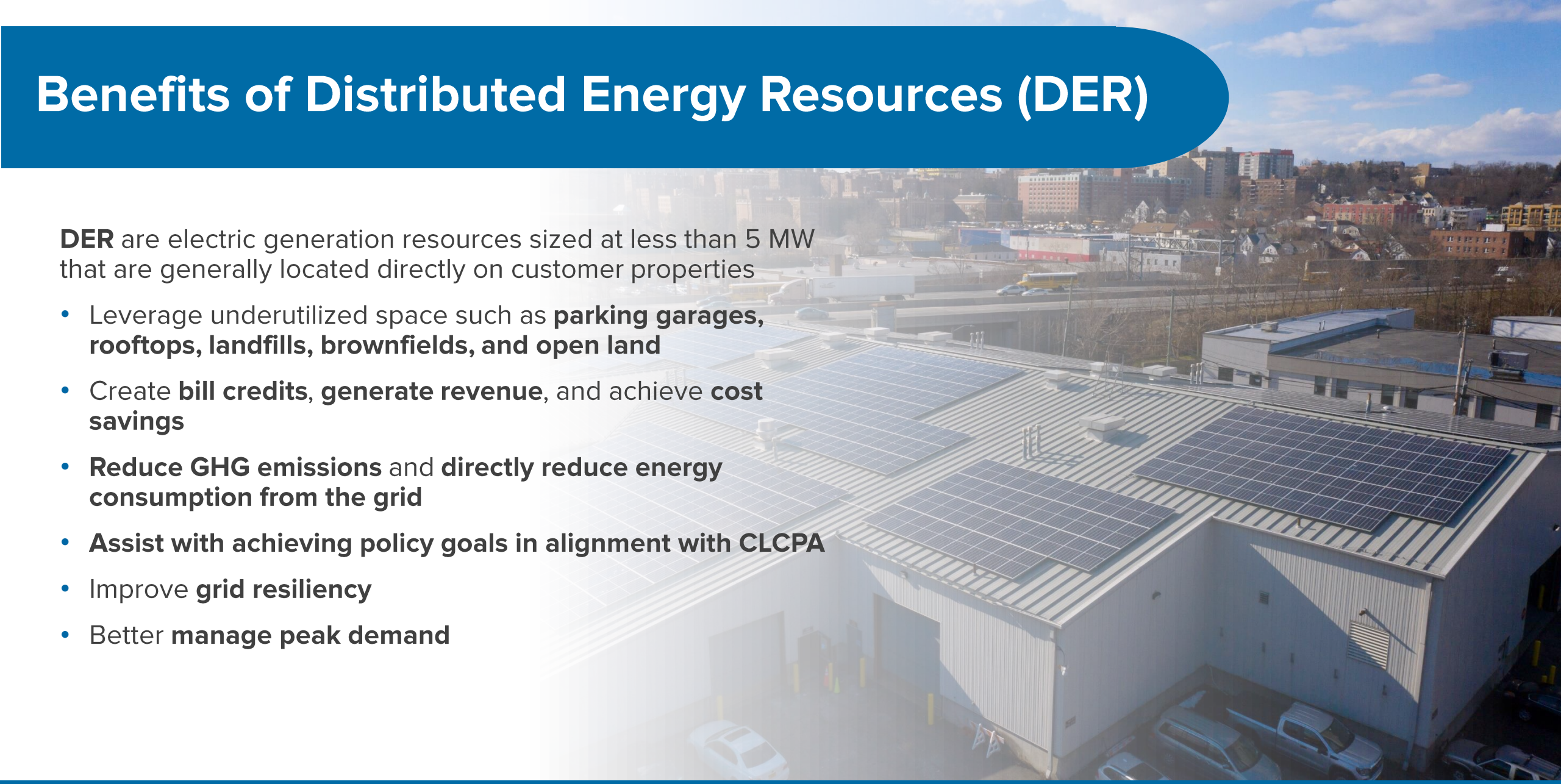
- Benefits & Challenges
- EO22 Eligibility and Funding Opportunities
- Project structuring and implementation models

NYPA DER Advisory Program

- Program Overview
- Case Studies

Q&A

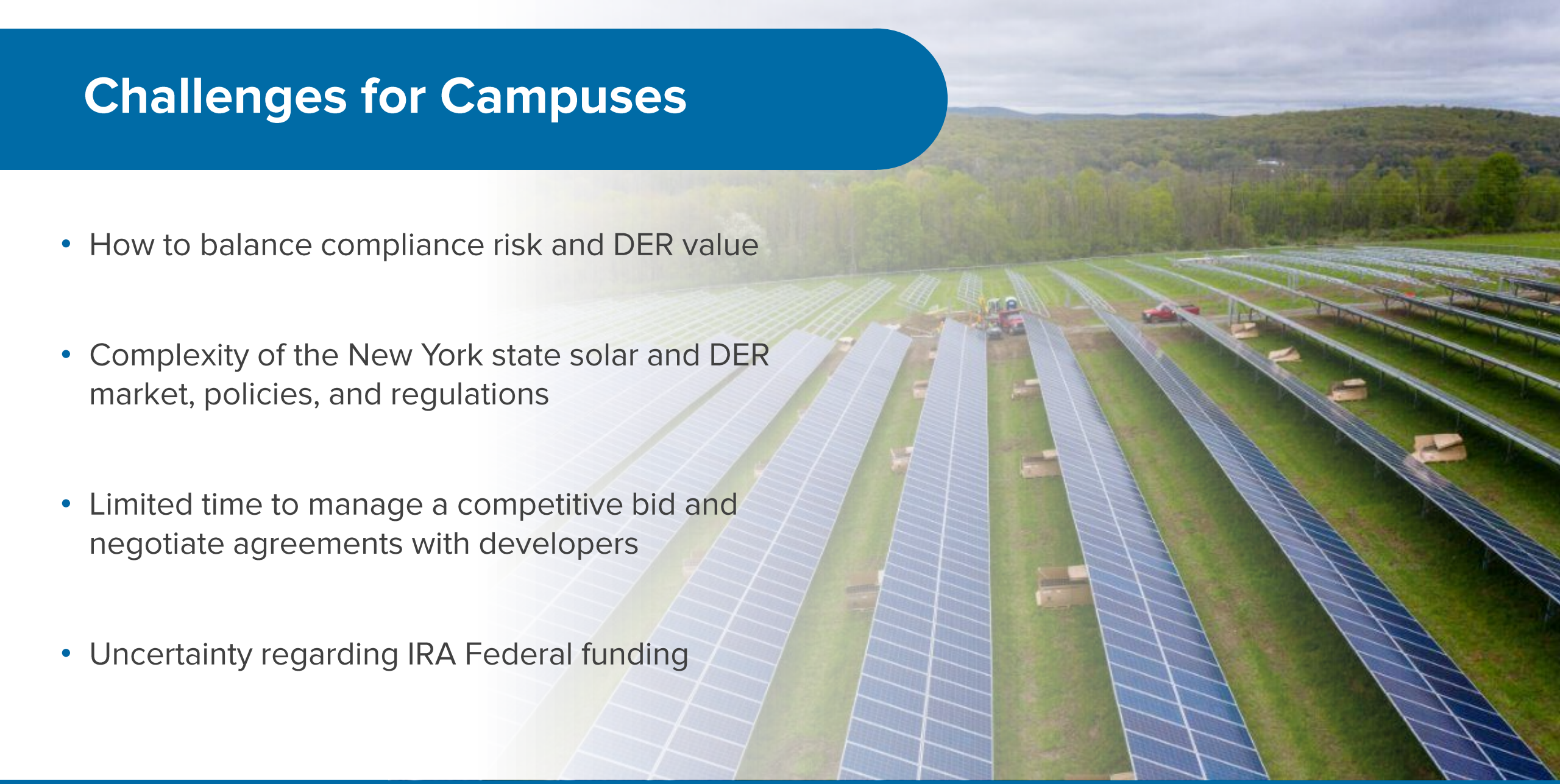
Benefits of Distributed Energy Resources (DER)



DER are electric generation resources sized at less than 5 MW that are generally located directly on customer properties

- Leverage underutilized space such as **parking garages, rooftops, landfills, brownfields, and open land**
- Create **bill credits**, **generate revenue**, and achieve **cost savings**
- **Reduce GHG emissions** and **directly reduce energy consumption from the grid**
- **Assist with achieving policy goals in alignment with CLCPA**
- Improve **grid resiliency**
- Better **manage peak demand**

Challenges for Campuses



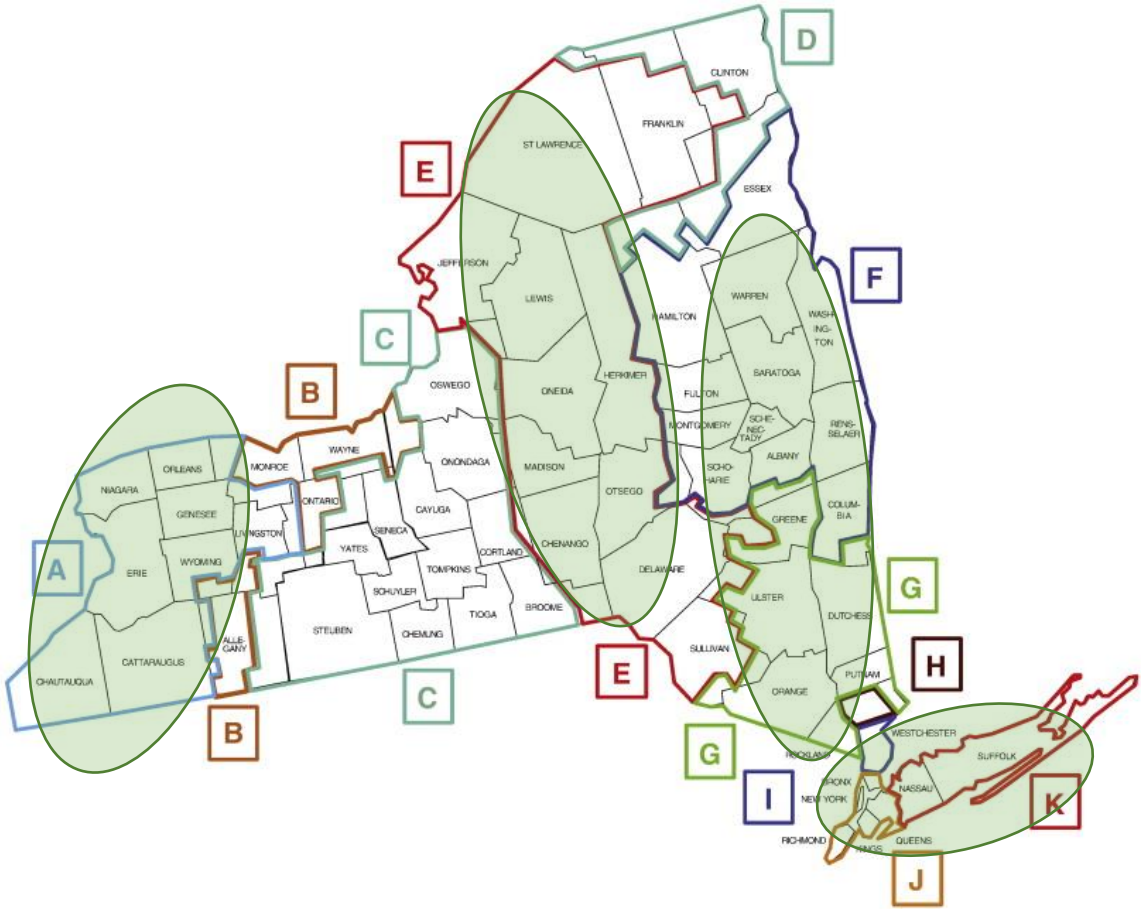
- How to balance compliance risk and DER value
- Complexity of the New York state solar and DER market, policies, and regulations
- Limited time to manage a competitive bid and negotiate agreements with developers
- Uncertainty regarding IRA Federal funding

How NYPA can help

Navigate project scoping, design, and implementation:

- Technical feasibility assessment and conceptual site design
- Economic analysis of tariff rates and utility data
- Development of project scope of work
- Administer and manage procurement process
- Dedicated policy & regulatory affairs team

Location, Location, Location



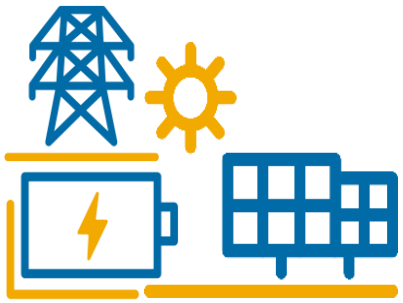
Variability based on geographic location

- NYISO Load Zones
- Distribution utility delivery constraints
- Region weather patterns

Highest Value Areas

- ConEdison and PSEG-LI
- Orange & Rockland
- National Grid – Zones A, E, and F
- Central Hudson
- NYSEG – NYISO Zone A, E, and H

Primary DER Applications



“Front of the Meter” (FTM)

- **All production receives Value Stack compensation**
- Typically constructed “off-site”
- Main project type for **Community DG**
- Energy storage may provide potential for participation in grid services markets and VPP

“Behind the Meter” (BTM)

- Majority of production **directly offsets grid purchases**, or **“avoided cost”**
- *May also receive Value Stack*
- **Multiple energy storage applications**
  - Customer demand charge reduction
  - Utility demand management programs
  - Resiliency services
  - Potential for participation in grid services markets and VPP

VDER & The Value Stack

Pricing methodology **based on time and location**

Places **monetary value on any injections** to utility grid

- Bill credits can be used to offset *any and all* on-bill electricity costs
- **Cannot offset dual-billing charges** (e.g. third party supply costs)

Subject to change based on utility cost studies and wholesale market prices

Executive Order 22 Eligibility

Structure of Eligible Resource	IX Tariff	Tariff Options/Details	Qualifies for EO22?
Behind the Meter	Net Energy Metering (NEM)	Only for existing projects installed before 2016	Yes*
	Phase 1 NEM	Available for on-site projects up to 750kWac; After operational year 20 converts to VDER	Yes*
	VDER	E Value Retained	No**
		E Value Forgone	Yes
Front of the Meter/"Off-site"	VDER	E Value Retained	No
		E Value Forgone	Yes
	LSR/NYISO	Tier 1 REC sold to NYSERDA	No
		Tier 1 REC retained	Yes

Yes*	NEM projects do not generate RECs, but do reduce an entity's electricity purchases.
No**	Net injections are ineligible, however, all direct consumption will reduce grid purchases/baseline
E Value Retained	Refers to a project electing to be paid (retain) the E Value.
E Value Forgone	Refers to a customer project to keep the Environmental Attribute and not receive (forgo) payment for the E Value.

Funding for Clean Energy Projects

	Program		Description
Federal	Inflation Reduction Act (IRA)		• Provides tax credits for renewables • Tax-exempt entities able to receive direct cash payments in lieu of tax credits
	Infrastructure Investment and Jobs Act (IIJA)		• Competitive grant and lending programs from the Federal government for infrastructure
State	NYSERDA	NY – Sun	• Provides cash payments to project owner based on PV Capacity • Varies by region and project characteristics (landfills/brownfields)
		Clean Energy Communities Certification	• Provides regional CC Coordinators, which help with prioritizing and identifying goals and funding opportunities • Earn points for high-impact actions. More points gets access to more/ different funding pools
	Department of Environmental Conservation (DEC)	Climate Smart Communities	• Helps local governments take action to reduce GHG and adapt to climate change • Provides grants to help fund some of these actions

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Federal Funding Opportunities

Inflation Reduction Act (IRA)

$663B in energy tax credits, available to tax-exempt entities accessible in tax year in which project goes into service

TAX CREDIT FOCUSED

- Many are entitlements, many are good through 2032
- Most operate on a Base Credit + Bonus Criteria formula
- 12 Clean Energy Tax Incentives – Elective Pay Eligible

+	Energy community (e.g., 10%)
+	Domestic content (e.g., 10%)**
+	Prevailing wage and apprenticeship (5x base)
	Base credit (e.g., 6%)
–	Project used tax-exempt funding (15% max)

** Beginning Jan 1, 2024, the overall text credit is reduced if domestic content is not met

Infrastructure Investment and Jobs Act (IIJA) aka Bipartisan Infrastructure Law

$550B in new federal investment in infrastructure and resilience distributed primarily through highly competitive grant programs

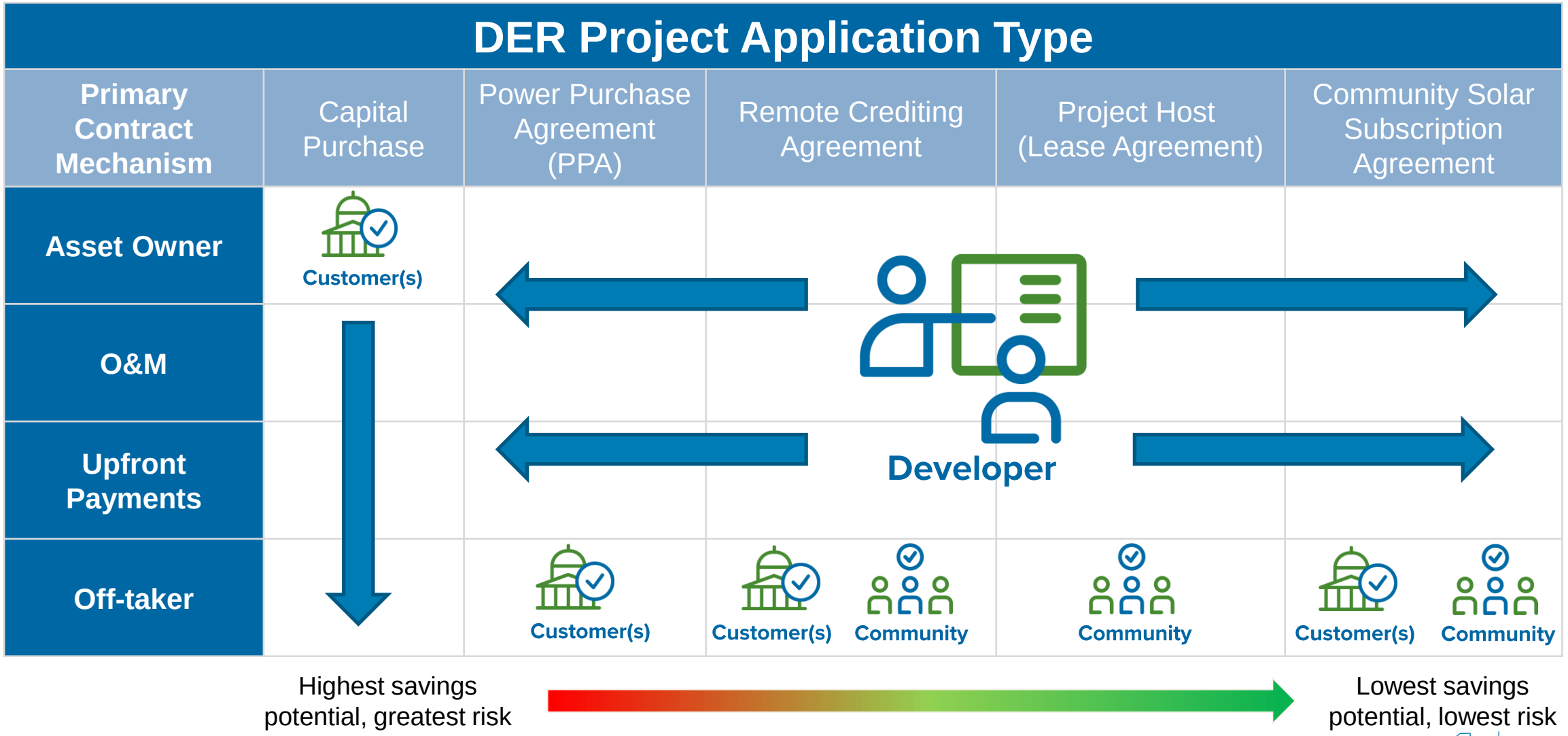
GRANT AND INCENTIVE FOCUSED

- Mostly formula funded and/or competitive programs
- Can be administered by federal agency or through NYS
- New: Community Benefits Plan to address workforce and equity

Notable IIJA Grant Programs

- $10.5B DOE Grid Resilience and Innovation Partnerships (GRIP)
- $5B DOE Preventing Outages and Enhancing Resilience of the Electric Grid (40101d)
- $1B DOE Energy Improvements in Rural and Remote Areas (ERA)

Implementation Models



Determining optimal contract structure

- **Depends on customer's project goals and individual circumstances**
  - Annual electric bill, proximity to hosting capacity, sustainability plan, etc.
- Remote Crediting usually has highest revenue potential and is less complicated, but capped at 10 subscribers
- CDG provides guaranteed savings and community benefit, but is most complex with a lower return
- Behind-the-meter usually has lowest interconnection cost, but only viable offsetting high electric supply rate
  - Adding **energy storage can significantly improve BTM economics**, but requires detailed analysis

Innovative Siting Practices

Landfills & Brownfields

- NYS DEC largely supports this type of development
- No ground penetrations required; but unable to build on steeply sloped areas
- Additional incentives available at State and Federal level

“Agrivoltaics”

- NYPA working with Electric Power Research Institute (EPRI) on best practices for incorporating agriculture into solar PV projects
- Pollinator-friendly seed mixes and apiaries; animal grazing; specialty crops
- Substantial area of research at national level

DER Advisory Program

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Case study: SUNY Niagara

- SUNY Niagara wanted to explore renewables to achieve **cost savings**, align with **CLCPA goals**, and provide **educational opportunities for students**

- Potential system is a **6MWdc ground mount array** on ~25 acres of land

- Tentatively leveraging **30% ITC worth $4.5M** as a local match – the State will provide an additional **$4.5M** to buy down PPA cost
  - Using taxable bonds issued by DOB

- NYPA partnered with SUNY Niagara using the SUNY Master Services Agreement to develop a customized plan, navigate local laws, and manage RFP process

7.2M kWh
Renewable energy generated annually

6MWdc
Capacity

Helioscope rendering

Case study: SUNY Albany

Helping New York State Transition to a Carbon-Free Power Grid

- NYPA partnered with SUNY Albany to install **almost 5,000 solar panels** on a rooftop that would have otherwise remained idle
- The system will supply the **equivalent of 60 percent of the estimated annual electricity** used by their electric net-zero energy-ready building
- The solar project supports SUNY Albany's goal of **reducing its carbon footprint 40 percent by 2050**

2.3 GWh
Renewable energy generated

1.8MWdc
Capacity

We can help move your clean energy initiatives forward!

Contact NYPA to learn more about how we can help you save money and improve your community through clean energy

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Q&A

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