The DSP Transition:
DER Developer Perspective
Let's Build!

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DER Developer Objectives

#1 Goal: Build and finance MW's, drive revenue

How do we accomplish this?

- Understand policy and markets
- Move projects through a development pipeline
- Interconnect with the grid
- *Secure financing by lining up bankable cash flows and incentives*

Underlying principles:

- Gradually de-risk investments
- Ensure predictable, reliable revenue and system production
- Replicability

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DER Development Process

Duration: 24-36 months

Land Development

1. Initial outreach to landowners
2. Negotiate Letter of Intent (3 months)
3. Negotiate Lease Agreement (6 months)
4. Begin permitting process with Town Planning Board (6 months)
5. Perform site due diligence
6. Create a site plan

7. Gain Town Planning Board approval
8. Pull building and electrical permits
9. Prepare site for construction

Interconnection

1. Submit Interconnection Application
2. Utility performs preliminary system impact study (15+ days)
3. Developer pays Utility to undertake full system impact study (60+ days)
4. Developer signs Interconnection Agreement

Notice to Proceed

5. Developer pays Utility to undertake system upgrades ($150-600k)
6. Utility performs system upgrades (6-18 months)
7. Utility issues Permission to Operate

Developers only realize ~30% of their total pipeline

Establish Bankable Cash Flows for Financing

- Most DERs are financed through 3rd party financing arrangements
  - Developer sells the DER system when built
  - Bank owns the system and realizes an internal rate of return (IRR)
  - Ownership changes hands from Tax to Sponsor equity to monetize tax credits
- Value is determined by underwritable cash flows
  - System production (yield) x anticipated revenue
- Revenue stack
  - Power purchase agreements (PPAs) with creditworthy entities (i.e. Wal-Mart, City of Saratoga Springs, homeowners with high FICO scores)
  - Capacity contracts
  - Renewable Energy Credits (RECs)
  - State incentives (i.e. NY-Sun, MA SMART)
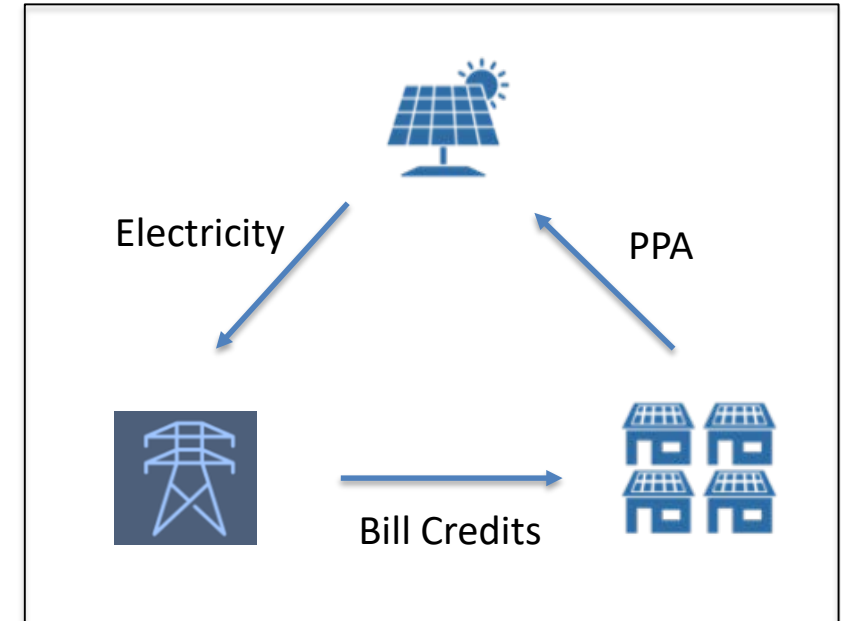
Securing financeable cash flows is KEY to raising capital, maximizing revenue and building your DER

NY's Value of DER Tariff: Risks to Developer

NY's Net Metering Successor Tariff

VDER Component	Fixed / Variable	Financeable?
Environmental Attribute (E)	Fixed	Y
Capacity (ICAP)	Varies predictably	Y
Energy (Day Ahead LBMP)	Varies predictably	Y
Avoided D: system performance during 10 peak ISO hours	Varies unpredictably	N
Locational System Relief Value (LSRV): Non-Wires Alternative compensation	Varies unpredictably	N

Of 5 potential revenue streams, DER Developer can only underwrite to 3 of them

LSRV

AVOIDED D

E

CAPACITY

LBMP

DSP Transition Risks & Opportunities

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DSP-Driven Grid Optimization	**Business as Usual**

DSP-Driven Grid Optimization

- Enhanced grid performance, efficiency and reliability
- Increased hosting capacity, allowing greater volume of DER to interconnect and get built
- Opportunity for storage to participate in markets, balance grid and stack revenue streams
- Complex
- **Dynamic management of DERs results in Developers losing control over system production (and thus revenue)**

Business as Usual

- Inefficient, opaque, static interconnection process
- **Predictable and linear** (little system performance risk to developer)
- Cookie cutter (repeatable)
- **Limited capacity**
- **Limited market for storage**

DSP Transition = Opportunity

- Large shift from present business model
- We must find ways to maintain system financeability while transitioning to a new grid paradigm
- Ultimately, goals of increasing DER penetration and hitting renewable energy standards is aligned

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