The DSP Transition: DER Developer Perspective

Let’s Build!

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

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**Developers only realize ~30% of their total pipeline**
Establish Bankable Cash Flows for Financing

- Most DERs are financed through 3\textsuperscript{rd} 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)
NY’s Value of DER Tariff: Risks to Developer

### NY’s Net Metering Successor Tariff

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

Of 5 potential revenue streams, DER Developer can only underwrite to 3 of them.
DSP Transition Risks & Opportunities

**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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