

Bringing Demand Flexibility to Market: Insight on Emerging Business Models from U.S. Projects

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BACKGROUND

Demand Flexibility (DF) Opportunity

By 2040, adopting DF approaches in buildings nationally could be worth between \$100–200 billion in U.S. electric system cost savings¹

Business Models

Business models encompass how technologies, stakeholders, and customers come together through programs and demonstrations to facilitate innovative DF offerings

Our Analysis

We interviewed 20 U.S.-based DF projects to understand their business models

INSIGHTS

Value Propositions

To Utility Company:

- Quantify the value of DF to provide grid services, including resiliency and investment deferral
- Adapt and develop innovative DF utility programs and new capabilities

To Building Occupants (renters, homeowners, commercial and industrial owners):

- Increased comfort, energy efficiency, and resiliency, and reduced costs
- Opportunity to earn money through incentives for providing flexibility

To Building Operators:

- Reduced costs for master metered properties
- Support environmental, social, and governance (ESG) goals and strategies

To Building Developers:

- Access to modern energy technologies to increase the value of the property
- Support commitments to sustainability and innovation

Customer Relationship Management

- Centered on the utility company, to leverage their existing customer-facing role
- Centered on the aggregators/distributed energy resources (DER) developer/program implementer
- Phased approach, where the relationship manager changes over time
- Shared approach, where the relationship is managed by multiple parties over time

LESSONS LEARNED

Value Proposition

Establishing an Effective Value Proposition

- Customers are more likely to engage when the value proposition aligns with their values

Rates

- Having a menu of rate options for different customer classes is important to access diverse load flexibility opportunities

Cost-Effectiveness

- Standardizing project delivery phases can support cost-effectiveness. This can include use cases, contract templates, and requests for proposals

Customer Relationship

Customer Journey

- Activities related to user interfaces and customer experience are the most resource-intensive in the early stages of the project

Customer Knowledge and Local Partnerships

- Well-established community partnerships are key to project success

Customer Interaction

- Managing and minimizing the cognitive burden on participants is important for recruitment and engagement

Stakeholder Network

Communication and Alignment

- Establishing strong connections with stakeholders is important
- It is important to have all the project stakeholders go through a standardized project delivery process

Technical Complexity of the Stakeholder Network

- Replacing project partners when necessary can be difficult and negatively impact the team's skill set
- The necessity to have a legal team engaged increases with more innovative DF programs

Program Life Cycle

Planning

- A site visit/audit during planning can be valuable to reduce any risks during installation

Implementation

- Using a general contractor to perform installations across buildings can add efficiency and support scaling

Operations

- Designing processes that support DF program continuity, such as onboarding new participants during program operation, and data access

Scaling

- Operating at scale may require a shared customer relationship management approach

¹U.S. DOE, 2021, A National Roadmap for Grid-Interactive Efficient Buildings