UTILITY FINANCING OF SOLAR PV

NEW BUSINESS MODELS PANEL

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2015 Finance Forum ACEEE

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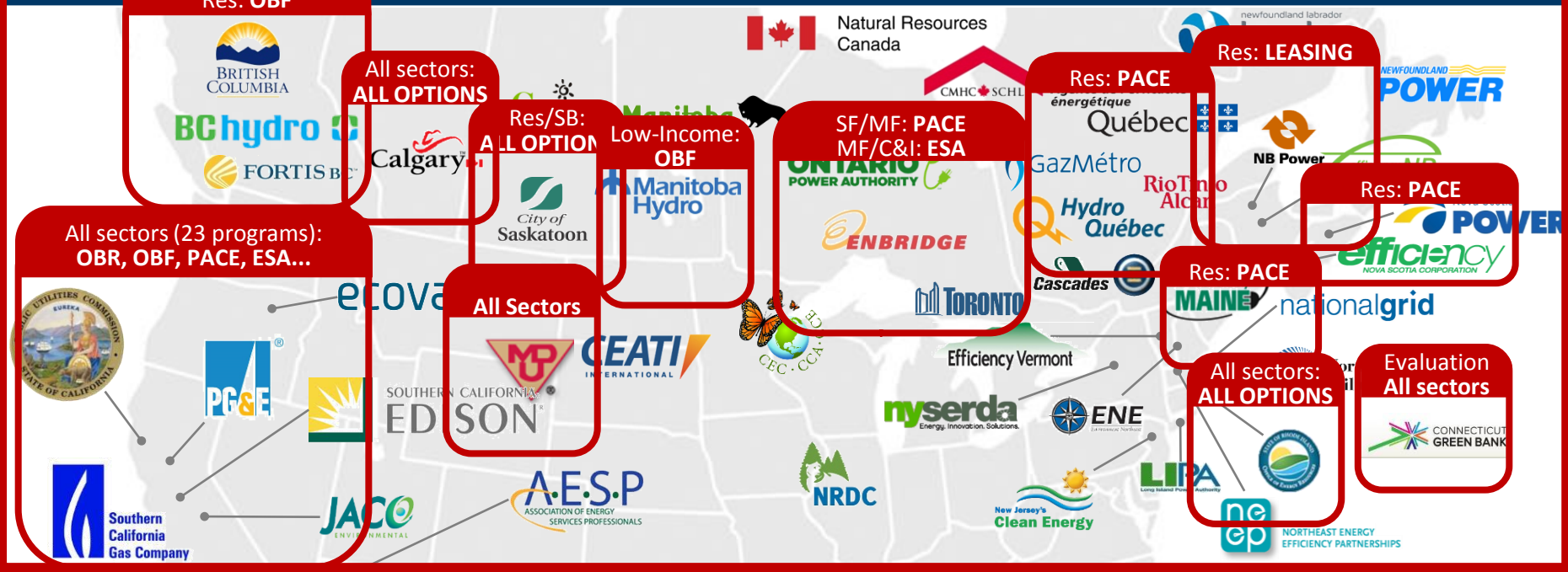
INTRODUCTION

DUNSKY FINANCING EXPERIENCE



EXPERTISE

- Energy Efficiency and Demand-Side Management
- Renewable Energy and Emerging Technologies
- Greenhouse Gas Reductions

SERVICES

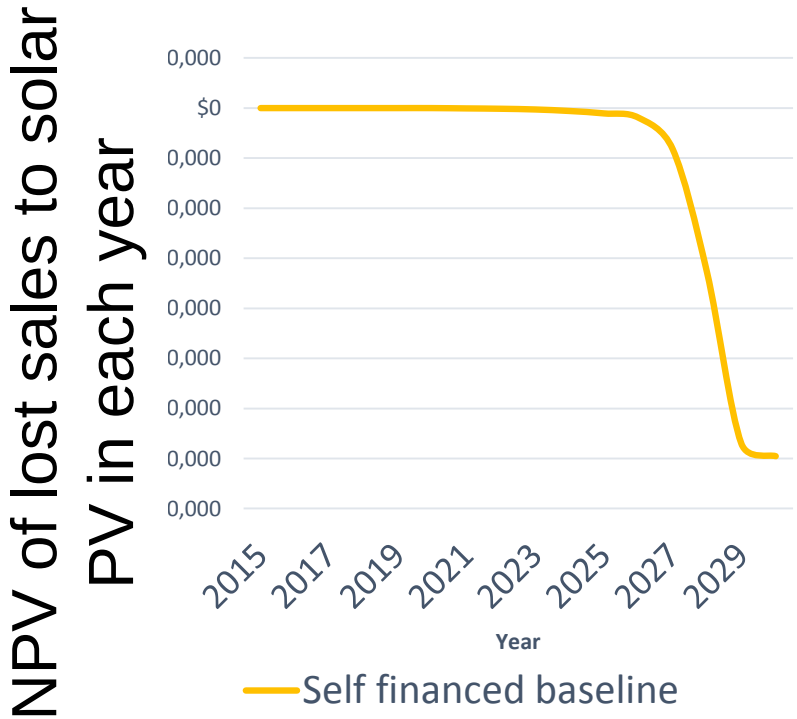
- Design and evaluation of programs, plans and policies
- Strategic, regulatory and analytical support
- New opportunities assessments

CLIENTELE

- Utilities
- Governments
- Solution Providers
- Large consumers
- Non-profits

UTILITY SOLAR **FINANCING MODELS**

- Key advantages for utilities to enter the solar financing market
  - Existing billing relationship with customer – sales channel and logistics
  - May control interconnection/permitting
  - Access to capital
- Challenges
  - Revenue losses (shifts)
  - DG load management
- **Our Goal:** Find a financing model with a positive NPV for utility and customers



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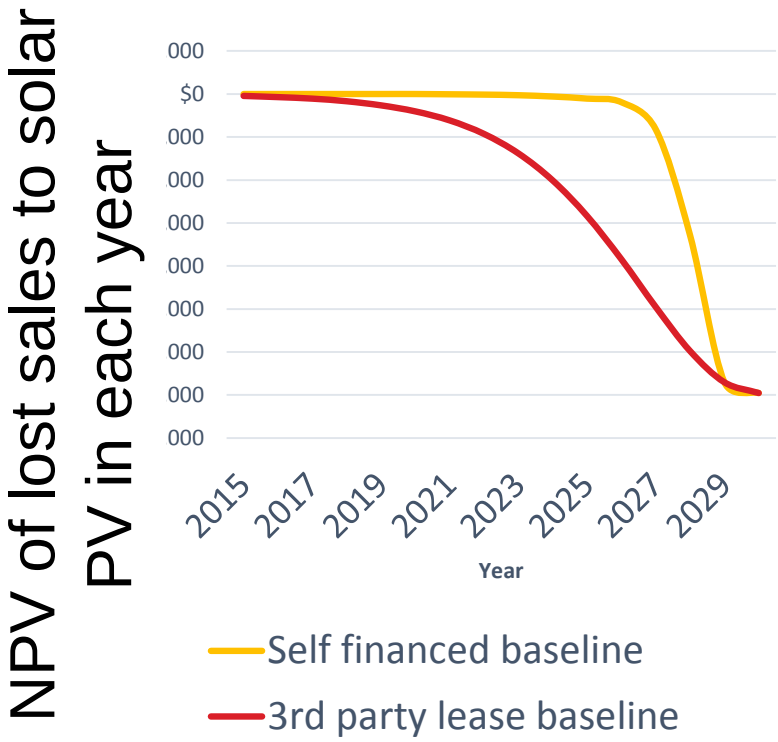
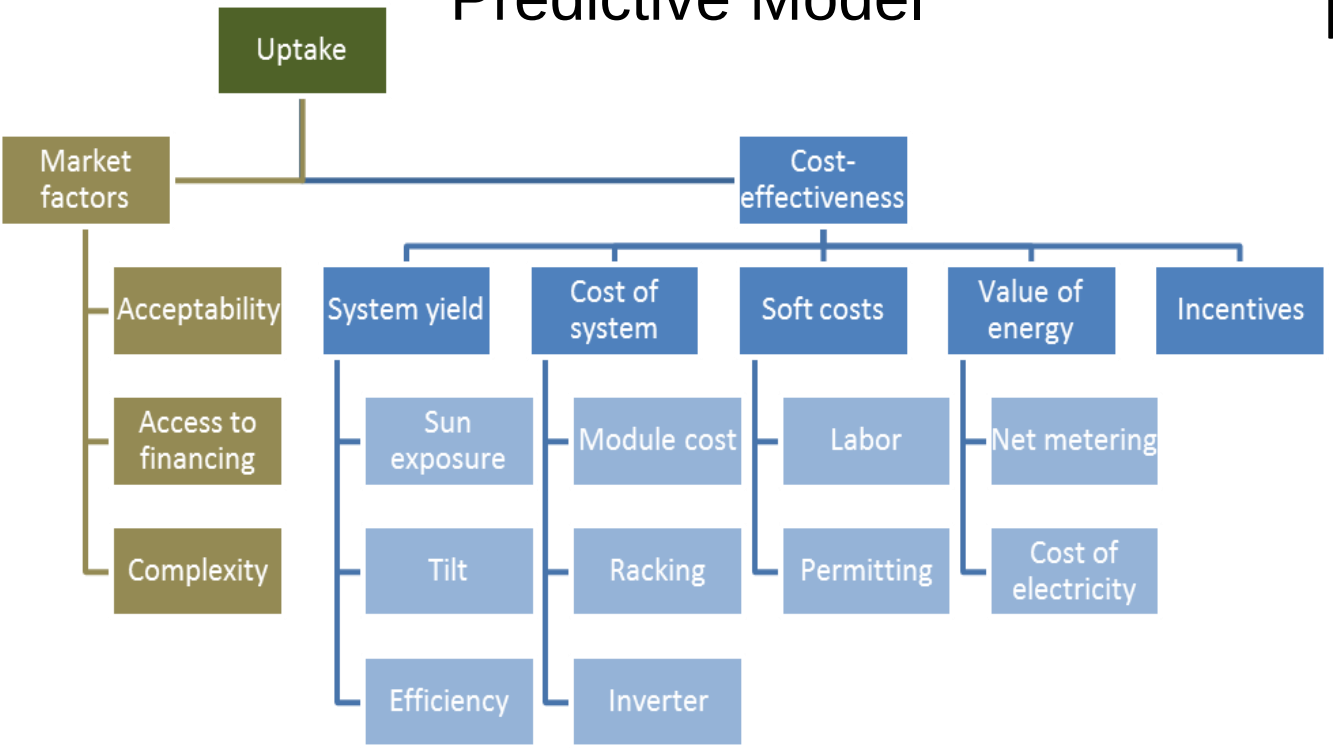
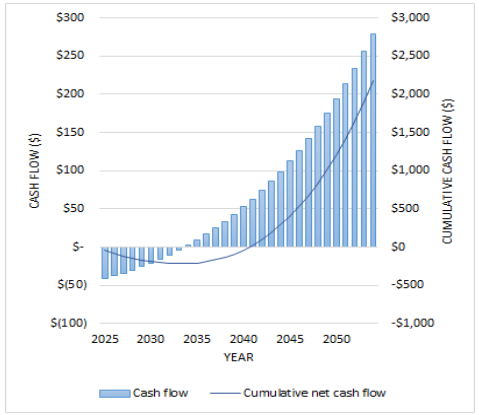


ASSESSING THE **BUSINESS CASE**

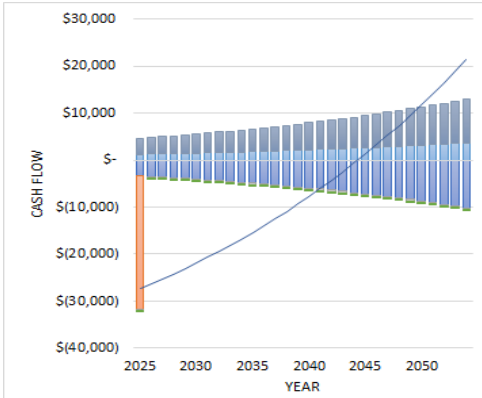
Predictive Model



Homeowner/Business



Utility Cash Flow



ESTIMATING **MARKET UPTAKE**

Step 1

Market: Portion of properties with solar potential

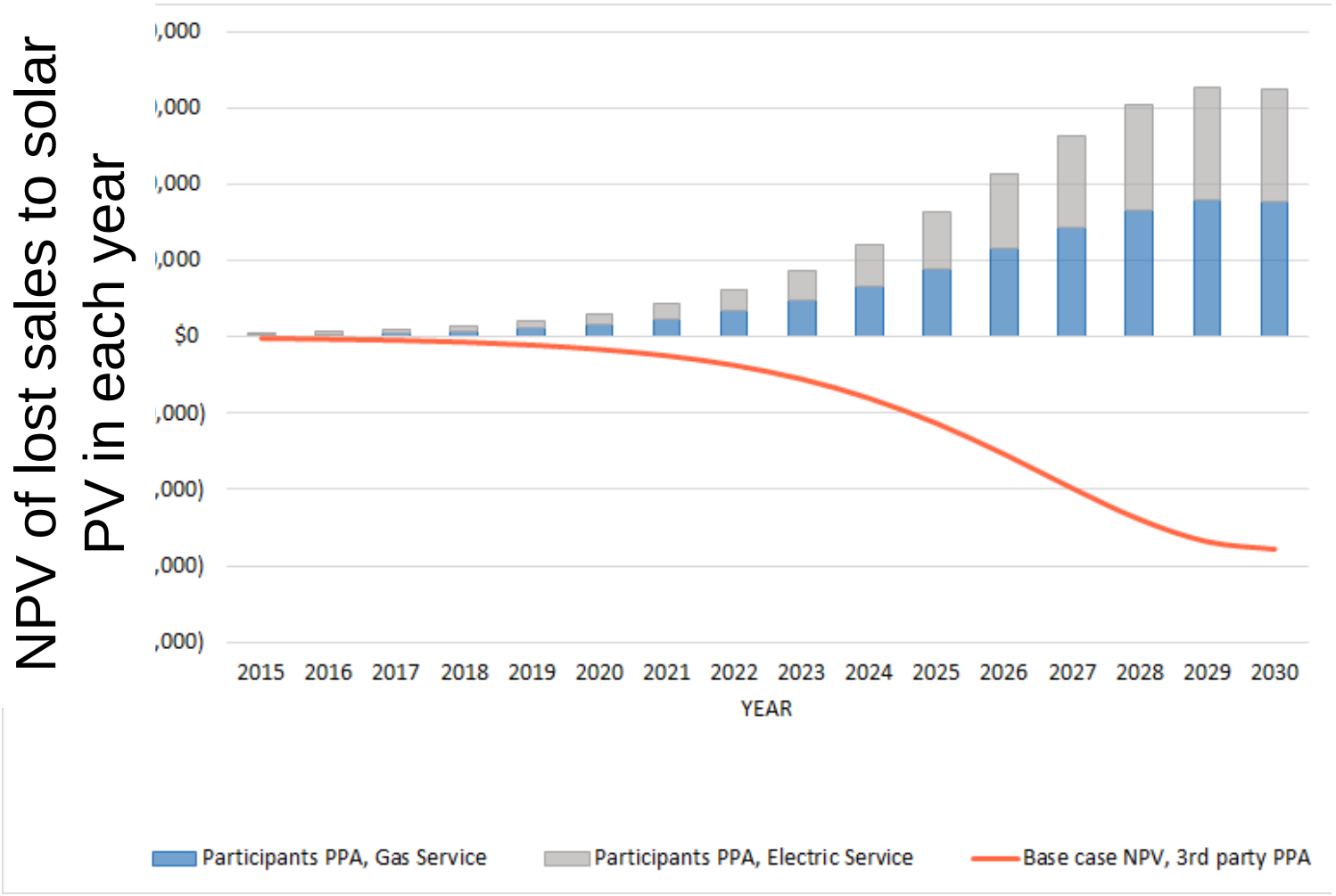
Step 2

Cash flow analysis for utility and homeowner (or business), covering various financing options

Step 3

Annual uptake estimated from Payback, NPV and adoption rates

BUSINESS CASE **SOLAR PPA**



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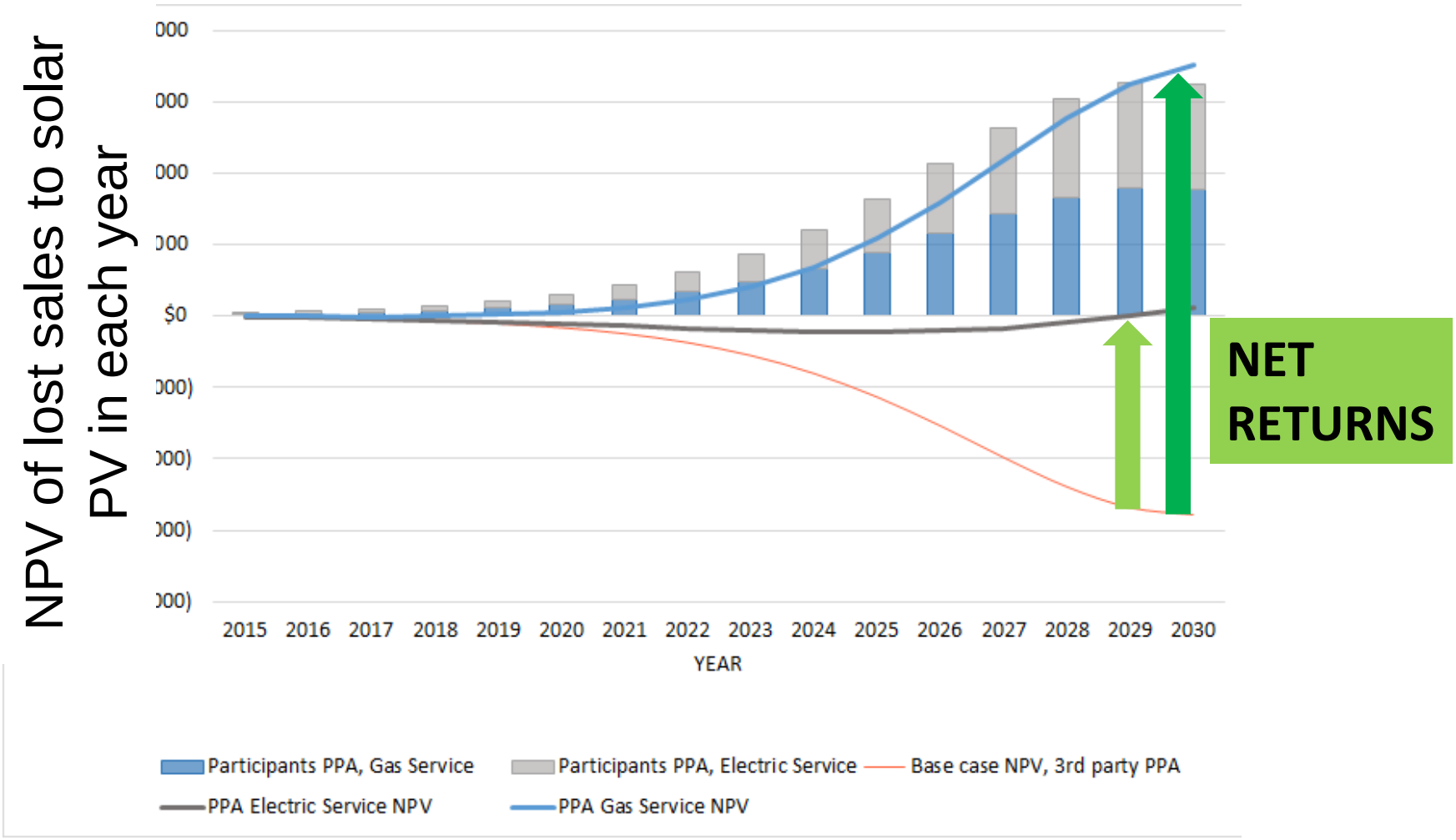


THREE UTILITIES: **THREE CHALLENGES**

MUNICIPAL

- **Distribution only (unregulated)**
- **Challenge:** Rising bulk rates and demand from citizens
- Explored financing models and implementation (i.e. streamlined permitting)
- **Solution:** Streamlined, long term (30yr) lease/PPA using tax/utility bill repayment
- **Advantages:** market outside of service area, low cost of capital, tax/utility bill

INVESTOR OWNED

- **Multiple states, integrated gas and electricity**
- **Challenge**: Lost revenues to 3rd party solar PV
- Defined NPV of various scenarios to develop business case.
- **Solution**: PPA offered to all customer. Test PPA pricing, and delivery
- **Advantages:** Access to gas customers, voluntary RE target, first to market

GOV'T OWNED

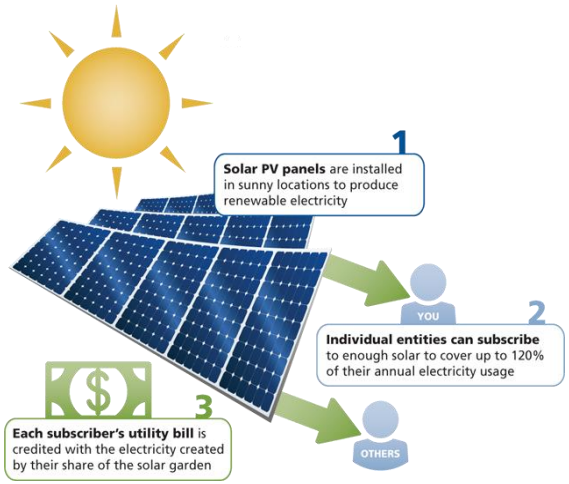
- **400,000 Customers (regulated)**
- **Challenge:** High DG and RPS Targets (40% by 2020 – 75MW of new DG)
- **Solution:** Drive and transform market with community solar
- **Next Steps:** Develop cost benefit model to test the planned programs: Solar garden, leases, PPA, HELOC
- **Advantage:** High summer peak bulk rates, RPS commitment

CONCLUSIONS

- Full cost and revenue loss recovery difficult in early years for utilities… *However the baseline is not zero*
  - Even low cost electricity markets will likely become attractive for solar leases in the next 5-10 years
  - Utilities can be first to market in areas where there is not significant 3rd party PPA and solar lease availability
  - Finding ways to sell outside of the existing customer base can help (if possible)
- Besides the Bottom Line, there are many other benefits
  - Maintains customer relationship, offers a new options
  - Geo-targeting DR and DG management
  - Meet RPS target, transform utility generation base
- Q: What is the advantage/disadvantage to market place of utilities becoming active in solar financing?

NEXT STEPS: **BUSINESS MODEL**

- Secure capital and determine cost
  - City utility has restrictions on use of financing
  - Utility claims a high discount rate, but has a low cost of capital
- Implementation model
  - Streamline permitting, interconnection rates and process etc.
  - Marketing, partnerships etc.
- Business delivery models
  - Contracted installers vs developing service internally
  - Community solar attractive as the first step



QUESTIONS?

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